MERGE 56 DEVELOPMENT PROJECT

SAN DIEGO, CALIFORNIA

FINAL ENVIRONMENTAL IMPACT REPORT

TECHNICAL APPENDICES A-F

SCH NO. 2014071065

PROJECT NO. 360009

DECEMBER 2017

Prepared for:

City of San Diego
Development Services Department
Land Development Review
1222 First Avenue, MS 501
San Diego, CA 92101-4155

APPENDIX A

Notice of Preparation, Scoping Meeting Transcript, and Comment Letters

THE CITY OF SAN DIEGO

DEVELOPMENT SERVICES DEPARTMENT

Date of Notice: July 21, 2014

PUBLIC NOTICE OF THE PREPARATION OF A SUBSEQUENT ENVIRONMENTAL IMPACT REPORT AND SCOPING MEETING

SAP No. 24004023

PUBLIC NOTICE: The City of San Diego as the Lead Agency has determined that the project described below will require the preparation of a Subsequent Environmental Impact Report (SEIR) in compliance with the California Environmental Quality Act (CEQA). This Notice of Preparation of a project SEIR and Scoping Meeting was publicly noticed and distributed on July 21, 2014. This notice was published in the SAN DIEGO DAILY TRANSCRIPT and placed on the City of San Diego website at: http://www.sandiego.gov/city-clerk/officialdocs/notices/index.shtml under the "California Environmental Quality Act (CEQA) Notices & Documents" section.

SCOPING MEETING: A public scoping meeting will be held by the City of San Diego's Development Services Department on **Wednesday, August 6, 2014, beginning at 6:00 PM and running no later than 8:00 PM** at the Rancho Penasquitos Branch Library, located at 13330 Salmon River Road, San Diego, CA 92129. **Please note that depending on the number of attendees, the meeting could end earlier than 8:00 PM.** Verbal and written comments regarding the scope and alternatives of the proposed EIR will be accepted at the meeting.

Written/mail-in comments may be sent to the following address: **E. Shearer-Nguyen, Environmental Planner, City of San Diego Development Services Center, 1222 First Avenue, MS 501, San Diego, CA 92101** or e-mail your comments to **DSDEAS@sandiego.gov** with the Project Name and Number in the subject line Number in the subject line within 30 days of the receipt of this notice/date of the Public Notice above. Responsible agencies are requested to indicate their statutory responsibilities in connection with this project when responding. A SEIR incorporating public input will then be prepared and distributed for the public to review and comment.

GENERAL PROJECT INFORMATION:

- **PROJECT NAME:** **MERGE 56 PLANNED DEVELOPMENT PERMIT/SITE DEVELOPMENT PERMIT/VESTING TENTATIVE MAP/REZONE**
- **PROJECT NUMBER:** **360009**
- **COMMUNITY AREA:** Torrey Highlands
- **COUNCIL DISTRICT:** 5 / 6

PROJECT DESCRIPTION: COMMUNITY PLAN AMENDMENT (CPA) to redesignate the site from Commercial Regional (CR) and Medium High Density Residential uses to Local Mixed Use (LMXU); a REZONE from AR-1-1 to CC-3-5 and RX-1-1; PLANNED DEVELOPMENT PERMIT (PDP) to amend PDP No. 53203, for deviations from the zoning requirements in accordance with San Diego Municipal Code 126.0602(a)(1), to ensure consistency with the Torrey Highlands Subarea Plan as required in the plan; SITE DEVELOPMENT PERMIT (SDP) to amend SDP No. 53204 for development on a site that contains Environmentally Sensitive Lands (ESL), for ESL deviations, and for development on a site with historical resources (important archaeological site); a CONDITIONAL USE PERMIT (CUP) for a theater that's greater than 5,000 square feet in size; and a VESTING TENTATIVE MAP (VTM) to subdivide 3 lots into 88 lots (84 RX zoned lots, 2 CC zoned lots, one open

space lot "Lot Z" and one lot for a private street "Lot AA"), that would allow construction of approximately 525,000 square feet of commercial, office, theater and hotel uses and 242 residential dwelling units. The residential units would include a mix of housing types including multi-family (approximately 47 affordable units), townhomes (approximately 111 units), and single family (approximately 84 units). The project would also construct underground utilities (i.e., sewer, water, electrical and storm drains/detention basins), private streets and half-width improvements for Camino Del Sur and Carmel Mountain Road along the frontage of the Merge 56 project site. Furthermore, the project would also construct associated site improvements (i.e. hardscape, site walls, and landscaping).

Final grading and improvement plans would be concurrently processed for the off-site segments of Camino Del Sur and Carmel Mountain Road bordering the limits of Merge 56 project, as well as the southern extension of Camino Del Sur from its planned intersection with Carmel Mountain Road southerly approximately 0.5 mile to Dormouse Road in the neighboring Park Village area. Camino Del Sur would be designed as a four to six-lane major roadway, including 98-foot to 142-foot wide right-of-way, with 78-foot to 112-foot curb-to- curb width and a 14-foot to 24-foot wide median; Carmel Mountain would be designed as a four-lane major roadway, including a 92-foot to 98-foot wide right-of-way, with a 72-foot to 78-foot curb-to-curb width and a 14-foot wide median. n addition, a 24-inch reclaimed water line would be constructed within the Camino Del Sur right-of-way; an 8-inch reclaimed water line would be constructed within Carmel Mountain Road. A 10-inch sewer line is also proposed within the Camino Del Sur right-of-way.

The undeveloped 41.34-acre project site is located in the north-central portion of the City of San Diego, immediately south of State Route 56 (SR-56), east of the planned extension of camino del Sur and west of Carmel Mountain Road. The parcel is designated Commercial Regional and Medium High Density Residential within the community plan. The site is zoned AR-1-1 zone (majority of site) and the CC-1-3 zone (northernmost tip), the Airport Land Use Compatibility Overlay Zone (MCAS Miramar), the Airport Influence Area (Review Area 2 - MCAS Miramar), and the MCAS Miramar Real Estate Disclosure Area. (LEGAL DESCRIPTION: Lots 4, 5, and 10, Map No. 15578). **The site is not included on any Government Code listing of hazardous waste sites.**

APPLICANT: Sea Breeze Properties, LLC

RECOMMENDED FINDING: Pursuant to Section 15060(d) of the CEQA Guidelines, it appears that the proposed project may result in significant environmental impacts in the following areas: **Land Use, Transportation/ Circulation and Parking, Biological Resources, Energy, Geologic Conditions, Greenhouse Gas Emissions, Historical Resources (archaeology), Hydrology, Noise, Paleontological Resources, Public Utilities, Water Quality, and Cumulative Effects.**

AVAILABILITY IN ALTERNATIVE FORMAT: To request the this Notice or the City's letter to the applicant detailing the required scope of work (EIR Scoping Letter) in alternative format, call the Development Services Department at (619) 446-5460 (800) 735-2929 (TEXT TELEPHONE).

ADDITIONAL INFORMATION: For environmental review information, contact Elizabeth Shearer-Nguyen at (619) 446-5369. The Scoping Letter and supporting documents may be reviewed, or purchased for the cost of reproduction, at the Fifth floor of the Development Services Department. **For information regarding public meetings/hearings on this project, contact the Project Manager, Jeff Peterson at (619) 446-5237.** This notice was published in the SAN DIEGO DAILY TRANSCRIPT and distributed on November 19, 2013.

Kerry Santoro
Deputy Director
Development Services Department

DISTRIBUTION: See Attached.

ATTACHMENTS: Figure 1: Project Vicinity Map
Figure 2: Aerial Map
Scoping Letter

DISTRIBUTION:

FEDERAL GOVERNMENT
U.S. Environmental Protection Agency (19)
U.S. Fish and Wildlife Service (23)
U.S. Army Corps of Engineers (26)

STATE OF CALIFORNIA
Caltrans District 11 (31)
California Department of Fish and Wildlife (32)
California Regional Water Quality Control Board, Region 9 (44)
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California Department of Transportation (51)
California Transportation Commission (51A)
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CITY OF SAN DIEGO
Mayor's Office (91)
Councilmember Lightner, District 1 (MS 10A)
Councilmember Harris, District 2 (MS 10A)
Councilmember Gloria, District 3 (MS 10A)
Councilmember Cole, District 4 (MS 10A)
Councilmember Kersey, District 5 (MS 10A)
Councilmember Zapf, District 6 (MS 10A)
Councilmember Sherman, District 7 (MS 10A)
Councilmember Alvarez, District 8 (MS 10A)
Councilmember Emerald, District 9 (MS 10A)
Development Services Department
    EAS
    Project Manager
Transportation Development - DSD (78)
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Fire and Life Safety Services (79)
Library Department - Government Documents (81)
Central Library (81A)
Rancho San Diego Branch Library (81BB)
Carmel Valley Brach Library (81F) Historical Resources Board (87)
Wetlands Advisory Board (91A)
Tom Tomlinson, Facilities Financing (93B)
Michael Pridemore, San Diego Police Department (MS776)
Larry Trame, San Diego Fire-Rescue (MS603)
City Attorney (93C)

OTHER ORGANIZATIONS AND INTERESTED INDIVIDUALS
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Poway Unified School District (124)
San Diego Unified School District (125)
Rancho Santa Ana Botonic Garden at Claremont (161)

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San Diego Audubon Society (167A)
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Save Our Heritage Organisation (214)
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San Diego County Archaeological Society (218)
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California Department of Parks & Recreation (378B)
Torrey Pines Associates (379)
Rancho de los Penasquitos Planning Board (380)
San Diego Gas & Electric (381)
Friends of Los Penasquitos Canyon Preserve (382)
Rancho Penasquitos Town Council (383)
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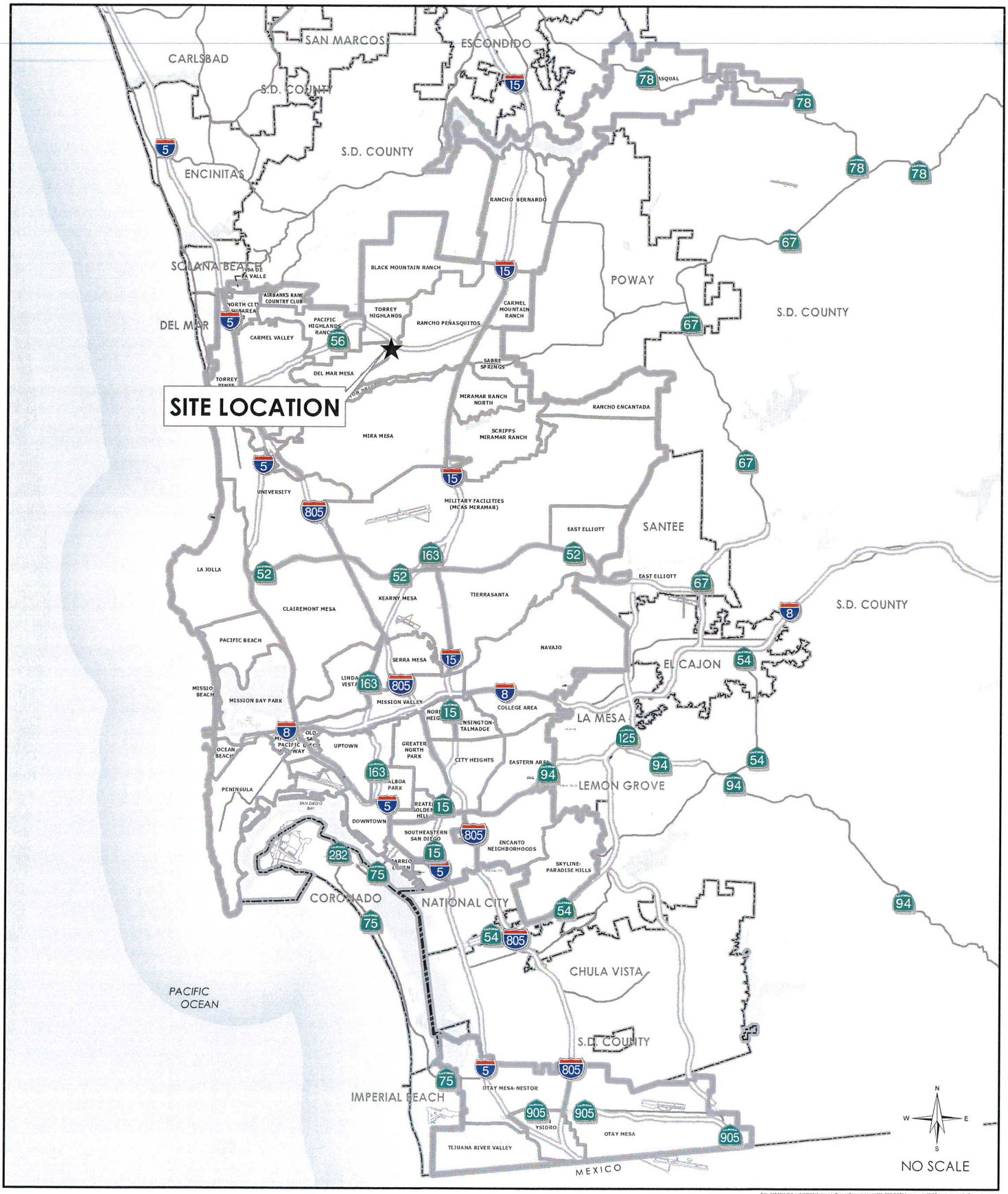
Los Penasquitos Canyon Preserve Citizens Advisory Committee (385)
Friends of Rose Canyon (386)
Torrey Highlands - Subarea IV (487)
Gary Levitt, Sea Breeze Properties, LLC, Applicant
Kim Baranek, Baranek Consulting, Consultant
Anna L. Colamussi-Yentile, Latitude 33 Planning & Engineering, Consultant



Vicinity Map

CITY OF SAN DIEGO • Planning and Neighborhood Restoration Department

Aerial Map

CITY OF SAN DIEGO • Planning and Neighborhood Restoration Department

SanGIS

THE CITY OF SAN DIEGO

July 18, 2014

Gary Levitt
Sea Breeze Properties, LLC
3525 Del Mar Heights Road # 246
San Diego, CA 92130

SUBJECT: **Scope of Work for Subsequent Environmental Impact Report for the Merge 56 Planned Development Permit/Site Development Permit/Vesting Tentative Map/Rezone project (Project Tracking No. 360009)**

Dear Mr. Levitt:

Pursuant to Section 15060(d) of the California Environmental Quality Act (CEQA), the Environmental Analysis Section (EAS) of the City's Development Services Department has determined that the proposed project may have significant effects on the environment, and the preparation of a Subsequent Environmental Impact Report (SEIR) is required.

The Merge 56 Planned Development Permit/Site Development Permit/Vesting Tentative Map/Rezone (Merge 56) project is a subset of a larger subdivision project entitled by the City of San Diego in 2005 and formerly referred to as the Rhodes Crossing project (Project No. 3230; SCH No. 2002121089). An off-site component of the Merge 56 project is public road improvements that were approved by the City, including Camino Ruiz North Roadway (LDR No. 40-0386; SCH No. 2000121031) and Camino Del Sur Project (LDR No. 41-0248; SCH NO. 2001121109). The name of Camino Ruiz North was changed to Camino Del Sur by City Council Resolution R-2003-709 on January 14, 2003.

Subsequent to approval of the Rhodes Crossing project and nearby public roads, several new vernal pools were identified within the right-of-way for the future Camino Del Sur- North. In addition, the project applicant has filed an application to modify proposed uses within Units 4, 5 and 10 of the Rhodes Crossing project, adjust project grading, and disturb two isolated vernal pools and a small drainage channel formerly proposed in open space lots. These changes to the

characteristics of the approved project proposed by the applicant and/or the circumstances surrounding the project require revisions to the existing entitlements and certified CEQA documents pursuant to Section 15162(a) of the State CEQA Guidelines. The SEIR should state where the previous documents are available and can be reviewed (consistent with Section 15162[d] of the State CEQA Guidelines).

The purpose of this letter is to identify the specific issues to be addressed in the SEIR. The SEIR shall be prepared in accordance with the attached "City of San Diego Technical Report and Environmental Impact Report Guidelines" (updated May 2005). The project issues to be discussed in the SEIR are outlined below. A Notice of Preparation will be distributed to the Responsible Agencies and others who may have an interest in the project. Scoping meetings are required by CEQA Section 21083.9(a)(2) for projects that may have statewide, regional or area-wide environmental impacts. The City's EAS staff has determined that this project meets this threshold. Prior to preparation of the SEIR, a public scoping meeting will be held at the Rancho Penasquitos Branch Library, located at 13330 Salmon River Road, San Diego, CA 92129. The meeting will be held on August 6, 2014 from 6:00PM to 8:00PM to gather input. Please note that depending upon the number of attendees the meeting could end earlier than 8:00PM.

Please note, changes or additions to the scope of work may be required as a result of input received in response to the Scoping Meeting and Notice of Preparation. In addition, the applicant may adjust the project over time and these changes would be disclosed in the SEIR.

The Project that shall be the subject of the SEIR is briefly described as follows:

Project Location: The Merge 56 project site consists of 41.34 acres of undeveloped land in the north-central portion of the City of San Diego (formerly identified as Units 4, 5 and 10 of the Rhodes Crossing project). The property is situated in the communities of Torrey Highlands and Rancho Peñasquitos, immediately adjacent to the State Route 56 (SR-56) right-of-way. Regional access to the site is from SR-56, Interstate 5 (I-5) and Interstate 15 (I-15); local access to the site is from the southern termini of Camino Del Sur and Carmel Mountain Road, as well as from the existing section of Camino Del Sur between Dormouse Road and Park Village Drive. The Merge 56 project consists of two components, the on-site mixed-use development proposal (including on-site road improvements) and off-site road improvements to complete undeveloped segments of Camino Del Sur and Carmel Mountain Road, Circulation Element roads. The off-site Camino Del Sur extension would be from its current terminus south of SR-56 to its intersection with Dormouse Road, immediately north of Park Village Drive. The existing paved portion of Carmel Mountain Road would be widened and extended south from Sundance Avenue to its planned intersection with Camino Del Sur. Both public roads front the Merge 56 project site and intersect at its southern project boundary. Right-of-way for both road extensions is predominantly undeveloped. The Multiple Habitat Planning Area (MHPA) is situated within or west of the rights-of-way for the road extensions but not within the proposed development site.

Project Description: The Merge 56 project involves a Community Plan Amendment (CPA) to amend the site's land use designation in the Torrey Highlands Subarea Plan from Commercial Regional (CR) and Medium High Density Residential (MHD) to Local Mixed Use (LMXU) to allow for a mix of commercial, professional, corporate, scientific/medical office, hotel uses, as well as varying residential land uses. A corresponding Rezone is proposed to modify underlying zoning from Agriculture (AR-1-1) to Community Commercial (CC-3-5) and Residential Small Lot (RX 1-2). The CPA was initiated by the Planning Commission in September 2013.

The project proposes to modify and reconfigure land uses approved for Units 4, 5 and 10 as part of the Rhodes Crossings project. Instead of constructing 273,855 square feet of self storage, 250,000 square feet of commercial and 242 multi-family residences, the Merge 56 project proposes approximately 525,000 square feet of commercial, office, theater and hotel uses and up to 242 residential dwelling units. The residential units would include a mix of housing types including multi-family (approximately 47 affordable units), townhomes (approximately 111 units), and single family (approximately 84 units). Commercial uses would occupy approximately 14 acres of the site, while multi-family residential uses would occupy approximately 6 acres and single-family residential development would occupy approximately 10.4 acres. Roads and slopes would occupy the balance of the development site. Revisions to the approved land uses and their configuration would require a number of permit amendments outlined below.

In addition to developing commercial, theater, office, hotel and residential uses, the applicant would construct underground utilities (i.e., sewer, water, electrical and storm drains/detention basins), private streets and half-width improvements for Camino Del Sur and Carmel Mountain Road along the frontage of the Merge 56 project site. Private streets would provide internal circulation and occupy approximately 1.4 acres of the site, while approximately 3.2 acres would be used for public road right-of-way. Parking to serve the on-site uses would be provided in several above-ground structures and various surface lots integrated among the various land uses.

Final grading and improvement plans would be concurrently processed for the off-site segments of Camino Del Sur and Carmel Mountain Road bordering the limits of Merge 56 project, as well as the southern extension of Camino Del Sur from its planned intersection with Carmel Mountain Road southerly approximately 0.5 mile to Dormouse Road in the neighboring Park Village area. Camino Del Sur and Carmel Mountain Road are capital improvement projects identified in the Torrey Highlands and Rancho Peñasquitos Public Facilities Financing Plans (PFFP). Camino Del Sur would be designed as a four to six-lane major roadway, including 98-foot to 142-foot wide right-of-way, with 78-foot to 112-foot curb-to- curb width and a 14-foot to 24-foot wide median; Carmel Mountain would be designed as a four-lane major

roadway, including a 92-foot to 98-foot wide right-of-way, with a 72-foot to 78-foot curb-to-curb width and a 14-foot wide median. Together, the on- and off-site roads would provide local access to the Merge 56 project, surrounding properties and local community. In addition, a 24-inch reclaimed water line would be constructed within the Camino Del Sur right-of-way; an 8-inch reclaimed water line would be constructed within Carmel Mountain Road. A 10-inch sewer line is also proposed within the Camino Del Sur right-of-way.

Discretionary Approvals: The above-described land use changes and improvements would require the following entitlements: Community Plan Amendment (CPA) to redesignate the site from Commercial Regional (CR) and Medium High Density Residential uses to Local Mixed Use (LMXU); a Rezone from AR-1-1 to CC-3-5 and RX-1-1; Planned Development Permit (PDP) to amend PDP No. 53203, for deviations from the zoning requirements in accordance with San Diego Municipal Code 126.0602(a)(1), to ensure consistency with the Torrey Highlands Subarea Plan as required in the plan; Site Development Permit (SDP) to amend SDP No. 53204 for development on a site that contains Environmentally Sensitive Lands (ESL), for ESL deviations, and for development on a site with historical resources (important archaeological site); a Conditional Use Permit (CUP) for a theater that's greater than 5,000 square feet in size; and a Vesting Tentative Map (VTM) to subdivide 3 lots into 88 lots (84 RX zoned lots, 2 CC zoned lots, one open space lot "Lot Z" and one lot for a private street "Lot AA").

EIR FORMAT/CONTENT REQUIREMENTS

The SEIR serves to inform governmental agencies and the public of a project's environmental impacts. Emphasis in the SEIR must be on identifying feasible solutions to environmental problems. The objective is not to simply describe and document an impact, but to actively create and suggest mitigation measures or project alternatives to substantially reduce significant adverse environmental impacts. The adequacy of the SEIR will depend greatly on the thoroughness of this effort.
The SEIR must be written in an objective, clear, and concise manner, in plain language. Each section/issue area of the EIR should provide a descriptive analysis of the project followed by a comprehensive evaluation of the issue area. Use graphics and tables to replace extensive word descriptions and to assist in clarification. Conclusions must be supported with quantitative, as well as qualitative information, to the extent feasible.

Prior to public review, Conclusions to be attached at the front of the draft SEIR will also need to be prepared. The Conclusions cannot be prepared until an approved draft has been submitted and accepted by the City. The SEIR shall include a title page including the Project Tracking System (PTS) number and the date of publication. The entire SEIR must be left justified and shall include a table of contents and an executive summary of the following sections:

I. INTRODUCTION

Introduce the purpose of the project with a brief discussion of the intended use and purpose of the SEIR. Discuss how the decision to prepare a SEIR, pursuant to CEQA Guideline Section 15162(a), was determined and how the SEIR may be used as the basis for subsequent approvals, as appropriate; and describe the parameters for such future use of the SEIR. This section shall describe and/or incorporate by reference any previously certified environmental documents that cover the project site including any EIRs. This section shall briefly describe areas where the project is in compliance or non-compliance with assumptions and mitigation contained in these previously certified documents. Additionally, this section shall provide a brief description of any other local, state and federal agencies that may be involved in the project review and/or any grant approvals.

II. ENVIRONMENTAL SETTING

Describe the precise location of the project with an emphasis on the physical features of the site and the surrounding area and present it on a detailed topographic map and a regional map. Provide a local and regional description of the environmental setting of the project. Describe any upcoming changes to the area and any cumulative changes that may relate to the project site. Include the existing and planned land uses in the vicinity, on-and off-site resources, the community plan area land use designation(s), whether or not the project is located within the MHPA, existing zoning, all utility easements and any required maintenance access, and any overlay zones within this section. Provide a recent aerial photo of the site and surrounding uses, and clearly identify the project location.

III. PROJECT DESCRIPTION

Per CEQA Guideline Section 15124, the SEIR shall include a discussion of the goals and objectives of the project, in terms of public benefit (increase in housing supply, employment centers, etc.). Project objectives will be critical in determining the appropriate alternatives for the project, which would avoid or substantially reduce potentially significant impacts. As stated in CEQA Section 15124 (b), "A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision makers in preparing findings or a statement of overriding consideration, if necessary. The statement of objectives should include the underlying purpose of the project." This section shall also provide a detailed discussion of all features of the project. Describe all the discretionary actions involved in the project. List and explain the requirements for permits or approvals from federal, state, and local agencies. Describe the proposed project's components, including the commercial, residential and office uses, on- and off-site circulation improvements,

landscaping concepts, and utility improvements. Project phasing also should be discussed in this section. This discussion shall address the whole of the project.

IV. HISTORY OF PROJECT CHANGES

This section of the SEIR shall outline the history of the project and any physical changes that have been made to the project in response to environmental concerns identified during the review of the project.

V. ENVIRONMENTAL IMPACT

This section shall analyze those environmental categories having a potential for adverse environmental impacts because of the project's effect on the existing conditions and or modifications to the prior certified CEQA documents. Explain why the SEIR meets the requirements for subsequent analysis under Section 15162 of the State CEQA Guidelines, which requires that changes to the project that may result in significant impacts and that were not evaluated and disclosed in the previous CEQA documents be reviewed. The SEIR must include a complete discussion of the existing conditions, thresholds, impact analysis, significance, and mitigation for all the environmental issue sections. The SEIR must represent the independent analysis of the Lead Agency. The City's current CEQA Significance Determination Thresholds (2011) shall be used to establish significant effects unless otherwise directed by the City.

In general, the SEIR shall discuss all potential direct and indirect impacts associated with each environmental issue area listed below. Lastly, the SEIR should summarize each required technical study or survey report within each respective issue section, and all requested technical reports must be included as the appendices to the SEIR and summarized in the text of the document.

In each environmental issue section, mitigation measures to avoid or substantially lessen impacts must be clearly identified and discussed. The ultimate outcome after mitigation should also be discussed (i.e., significant but mitigated, significant and unmitigated). If other potentially significant issue areas arise during detailed environmental investigation of the project, consultation with the Development Services Department is required to determine if these areas need to be added to the SEIR. As supplementary information is required, the SEIR may also need to be expanded.

Land Use

Issue 1: Would the proposal conflict with the environmental goals, objectives, or guidelines of the General/Community Plan in which it is located?

Issue 2: Would the proposal require a deviation or variance and the deviation or variance would in turn results in a physical impact on the environment?

Issue 3: Would the proposal conflict with the provisions of the City's Multiple Species Conservation Program (MSCP) Subarea Plan or other approved local, regional or state habitat conservation plan?

Issue 4: Would the proposal result in the exposure of people to noise levels which exceed the City's Noise Ordinance or are incompatible with the Noise Compatibility Guidelines (Table NE-3) in the Noise Element of the General Plan?

As indicated under Project Description, the proposed project includes the filing of a Community Plan Amendment and Rezone, and amendments to Planned Development Permit (PDP No. 53203), Site Development Permit (SDP No. 53204), Conditional Use Permit (CUP No. 53205), Vesting Tentative Map (VTM No. 7938), SDP No. 40-0386 (Camino Del Sur North /Carmel Mountain Road) and SDP No. 3278 (Camino Del Sur South).

The impacts of the land use changes must be disclosed in the SEIR. The SEIR shall also evaluate consistencies/ inconsistencies (including all deviations, variances, etc.) with local, state, and federal regulations (i.e., the City's General Plan, Torrey Highlands Subarea Plan, Rancho Peñasquitos Community Plan, and City of San Diego Land Development Code). If the project is found to be inconsistent with any adopted land use plans or their policies, the SEIR would disclose and analyze any physical effects that may result from the inconsistency that could be considered significantly adverse. Policy inconsistencies, if any, caused by project-related noise shall be summarized from the noise technical report referenced below.

The proposed commercial, hotel and/or office structures may approach the height limits of the proposed zoning. The bulk, scale and/or setbacks of any proposed structures that deviate from or exceed the development regulations in the Land Development Code should be discussed relative to other land uses in the surrounding communities. Potential deviations from the ESL or wetland buffer regulations in the Land Development Code should also be noted. If the project would result in physical impacts on the environment due to any deviations or variances, the physical impacts could be considered significantly adverse.

The site and off-site roads are located within and adjacent to the Multiple Habitat Planning area of the MSCP, therefore potential land use conflicts with the MSCP Subarea Plan could occur as it relates to compliance with the MSCP Land Use Adjacency Guidelines must be disclosed. The potential policy impacts shall be discussed in the Land Use section of the SEIR, as well as the Biological Resources section.

Transportation/Circulation/Parking

Issue 1: Would the proposal result in an increase in projected traffic which is substantial in relation to the existing traffic load and capacity of the street system?

Issue 2: Would the proposal result in the addition of a substantial amount of traffic to a congested freeway segment, interchange, or ramp?

Issue 3: Would the proposal have a substantial impact upon existing or planned transportation systems?

Issue 4: Would the proposal result in substantial alterations to present circulation movements including effects on existing public access areas?

Issue 5: Would the proposal conflict with adopted policies, plans or programs supporting alternative transportation modes?

Changes to planned land uses and buildout of those uses would increase traffic volumes and has the potential to result in direct and/or cumulative impacts on the surrounding local circulation network. Therefore, a traffic study must be prepared for this project to the satisfaction of the City Engineer analyzing the changes to the traffic characteristics of the proposed project, resulting from the land use changes. The traffic study would be required to analyze the expected trips from the proposed project and document any impacts on intersections, roadways and freeways. The traffic study shall include descriptions and graphics of the conditions during near-term and at project buildout. The traffic study would form the basis of the impact analysis for this section of the SEIR.

The SEIR shall present mitigation measures that are required to reduce significant impacts identified in the traffic study and discuss if those measures will mitigate impacts to below a level of significance. If the project results in traffic impacts, which cannot be mitigated to below a level of significance, the Alternatives section of the SEIR should include a project alternative that will avoid or further reduce traffic impacts.

The SEIR section shall also address the project's walkability, pedestrian linkages, bicycle connectivity and transit opportunities taking into consideration applicable policies encouraging alternative methods of travel.

Biological Resources

Issue 1: Would the proposal result in substantial adverse impacts, either directly or through habitat modifications, to any species identified as a candidate, sensitive or special

status species in the MSCP or other local or regional plans, policies or regulations, of by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS)?

Issue 2: Would the proposal result in a substantial adverse impacts on any Tier I, Tier II, Tier IIIA or Tier IIIB habitats as identified in the Biology Guidelines of the Land Development Code or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS?

Issue 3: Would the proposal result in a substantial adverse impact on wetlands (including, but not limited to, marsh, vernal pools, riparian areas, etc.) through direct removal, filling, hydrological interruption, or other means?

Issue 4: Would the proposal conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Conservation Community Plan (NCCP) or other approved local, regional or state habitat conservation plan, either within the MSCP plan area or in the surrounding region?

Issue 5: Would the proposal introduce a land use within an area adjacent to the Multiple Habitat Planning Area (MHPA) that would result in adverse edge effects?

Issue 6: Would the proposal introduce a land use within an area adjacent to the MHPA that would result in adverse edge effects?

Issue 7: Would the proposal result in a conflict with any local policies or ordinances protecting biological resources?

Issue 8: Would the proposal result in the introduction of invasive species of plants into a natural open space area?

The project site supports sensitive biological resources, including Tier I, II or III habitats, listed species, wetlands and vernal pools. The MHPA occurs adjacent to and within portions of the project site. The project will impact sensitive biological resources and has the potential to result in direct and/or cumulative impacts to adjacent biological resources in the MHPA. The site has been previously assessed for impacts to biological resources as part of the Rhodes Crossing and Camino Del Sur/Carmel Mountain Road projects. An updated biological resources technical report must be prepared to the satisfaction of City staff.

The biological resources technical report must incorporate the results of updated field surveys and identify all impacts to biological resources consistent with the ESL regulations, the Biology

Guidelines, and the MSCP Subarea Plan. The biological resources technical report would form the basis of the impact analysis for this section of the SEIR.

The SEIR shall present mitigation measures that are required to reduce significant impacts. Discuss if those measures will mitigate impacts to below a level of significance. If the project results in biological resources impacts, which cannot be mitigated to below a level of significance, the Alternatives section of the SEIR should include a project alternative that will avoid or further reduce biology impacts.

Evidence must be provided that all required agency (USFWS, CDFW) permits and authorizations have been acquired for impacts to sensitive species not covered by the MSCP.

Energy

Issue 1: Would construction and operation of the proposal result in the use of excessive amounts or electrical power?

Issue 2: Would the proposal result in the use of excessive amounts of fuel or other forms of energy (including natural gas, oil, etc.)?

Appendix F of the State CEQA Guidelines requires that potentially significant energy implications of a project shall be considered in an EIR to the extent relevant and applicable to the project. Particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy should be included in this section. The SEIR shall address the estimated energy use for the project and assess whether the project would generate a demand for energy (electricity and/or natural gas) that would exceed the planned capacity of the energy suppliers. A description of any energy and/or water saving project features would also be included in this section (with cross-references to the GHG emissions discussion, as appropriate). This section shall describe any proposed measures included as part of the project that would conserve energy and reduce energy consumption, and shall address all applicable issues described within Appendix F of the CEQA Guidelines.

Geologic Conditions

Issue 1: Would the proposal 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 an on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Issue 2: Would the proposal result in a substantial increase in wind or water erosion of soils, either on or off the site?

Issue 3: Would the proposal expose people or structures to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards?

The project site is located in geologic hazard categories 32, 51, 52 and 53 as indicated on the San Diego Seismic Safety Study maps. These categories indicate that the majority of the site is situated in "level mesa underlain by terrace deposits and bedrock" with a nominal risk to low risk. Other portions of the project area are categorized as "level to sloping terrain, unfavorable structure" with low to moderate risk. The site is mapped for "liquefaction, low potential, fluctuating groundwater, minor drainages." Geotechnical testing and analysis was conducted in conjunction with the Rhodes Crossing and Camino Del Sur/Carmel Mountain Road projects; an updated geotechnical investigation shall be prepared to re-address the revised project. The SEIR analysis shall be based on a review of available reports and maps showing potential geologic hazard areas and areas known where adverse soil conditions occur on site.

The SEIR shall discuss the potential for either short- or long-term erosion impacts to soils. Geological constraints on the project site, including groundshaking, ground failure, landslides, erosion, shallow groundwater and geologic instability, shall be addressed, as well as seismicity and seismic hazards due to faulting in the project area.

<u>Greenhouse Gas Emissions</u>

Issue 1: Would the proposal generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Issue 2: Would the proposal conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emission of GHGs?

The SEIR shall provide a description of the existing global climate change context in which climate change impacts are occurring and are expected to occur in the future; a summarization of the relevant state laws that address climate change; a description of relevant statewide and/or regional GHG inventories to which the project would contribute; a quantification of the project's direct and indirect GHG emissions and compare them to baseline conditions; a discussion of whether the project would enhance or impede the attainment of state GHG reduction targets and its relationship to local plans and policies; and a description of the cumulative, global climate change impacts to which the project would contribute. The projected GHG emissions with and without the project shall be provided and incorporated into a qualitative discussion of the significance of the emissions relative to global climate change. Sustainability measures and project design features shall be taken into consideration in the GHG analysis.

Historical Resources (archaeology)

Issue 1: Would the proposal result in an alteration, including the adverse physical or aesthetic effects and/or destruction of a prehistoric or historic building (including an architecturally significant building), structure, object or site?

Issue 2: Would the proposal result in any impact to existing religious or sacred uses within the potential impact area?

Issue 3: Would the proposal result in the disturbance of any human remains, including those interred outside of formal cemeteries?

Historical resources may potentially be directly or indirectly affected by project implementation and shall be discussed in this section of the SEIR. The site has been previously assessed for impacts to prehistoric resources as part of the Rhodes and Camino Del Sur/Carmel Mountain Road projects. An update to that prior report shall be prepared to determine if any new historical/archaeological resources may be located on or off site. The updated study shall also assess the current status of sites discovered as part of the prior analysis. If potentially significant impacts are identified, the SEIR shall identify requirements for archaeological monitoring during grading operations and specify mitigation requirements for any discoveries.

Hydrology/Water Quality

Issue 1: Would the proposal result in a substantial increase in impervious surfaces and associated increased runoff?

Issue 2: Would the proposal result in a substantial alteration to on- and off-site drainage patterns due to changes in runoff flow rates or volumes?

Issue 3: Would the proposal develop wholly or partially within the 100-year floodplain identified in the FEMA maps or impose flood hazards on other properties?

Anticipated changes to existing drainage patterns and runoff volumes should be addressed in the SEIR. Drainage and water quality impacts were previously assessed as part of the Rhodes Crossing and Camino Del Sur/Carmel Mountain Road projects. An updated hydrology study must be provided and measures to protect on-site and downstream properties from increased erosion and siltation must be identified. The SEIR shall address the project's potential for impacting the hydrologic conditions within the project area and downstream, and discuss site planning and drainage design techniques to reduce runoff volumes and velocities, if appropriate. The water quality analysis shall discuss the project's potential to cause sedimentation due to erosion, urban runoff carrying contaminants and direct discharges of

pollutants. Compliance with the City's Storm Water Standards is generally considered to preclude water quality impacts.

Noise

Issue 1: Would the proposal result in or create a significant increase in the existing ambient noise levels?

Issue 2: Would the proposal result in the exposure of people to future transportation noise levels which exceed standards established in the General Plan?

A noise technical report shall be prepared which shall consist of a comparison of the change in noise levels projected along affected roadways (as identified in the traffic study) resulting from project implementation. The noise technical report shall also address construction-related noise and commercial equipment noise impacts. This analysis and the discussion in the SEIR shall focus on noise sensitive receptors that would be subject to potentially significant exterior and interior noise impacts as a result of the proposed project and shall include a discussion of potential measures that could be utilized to reduce vehicular and equipment noise levels.

Paleontological Resources

Issue 1: Would the proposal require over 1,000 cubic yards of excavation in a high resource potential geologic deposit/formation/rock unit, or over 2,000 cubic yards of excavation in a moderate resource potential geologic deposit/formation/rock unit?

The SEIR should include a paleontological resources discussion that identifies the underlying formation(s) and the likelihood of uncovering paleontological resources during grading activities. The SEIR should identify the depth of cut (in feet) and amount of grading (in cubic yards) that would result from any grading activities. The project area is underlain by the following formations as discussed in the prior CEQA documents for Rhodes Crossing and Camino Del Sur/Carmel Mountain Road projects: Mission Valley, Stadium Conglomerate, Linda Vista and Torrey Sandstone. The formations are assigned a high to low sensitivity rating based on their resource potential. If the City's thresholds, stated above, are exceeded, specific conditions (monitoring and curation) would be required to mitigate impacts to a level below significance.

Public Utilities

Issue 1: Would the proposal result in a need for new systems, or require substantial alterations to existing utilities, the construction of which would create physical impacts with regard to the following: water and solid waste disposal?

Issue 2: Would the proposal result in the use of excessive amounts of water?

The SEIR shall provide a discussion of water supply and whether project build-out was considered in the 2010 Urban Water Management Plan; an identification of water uses, including commercial, office and residential demands; a determination of the water supply necessary to serve the demand of project; an identification of reasonably foreseeable water supply sources and alternative sources which would include anticipated dates of previously untapped sources becoming available; consultation with the City Water Department to determine its ability to serve the project; a determination of cumulative demands the project would place on projected water supply; and a comparison demand of project build-out with projected water supply from both short-term and long-term water sources and disclosure of impacts and/or deficits. A Water Study will be completed to determine if appropriate water facilities are available to serve the development. The analysis and conclusions of the studies shall be included in the SEIR. Additionally a Water Supply Assessment (WSA) will be completed to determine if appropriate water supplies are available to serve the project. The analysis and conclusion of a WSA shall be included in the SEIR.

The SEIR will include a discussion of the project's construction and operational effects on the City's ability to handle solid waste. According to Assembly Bill 341, the City is required to divert at least 75 percent of its solid waste from landfill disposal through source reduction, recycling, and composting by 2020. The proposed project meets the City's threshold of constructing 40,000 square feet or more of building space and therefore a Waste Management Plan must be prepared by the applicant, approved by the City's Environmental Services Department, and summarized in the SEIR. The plan must address recycling and solid waste disposal, for demolition, construction, and post-construction occupancy phases of the project.

VI. MANDATORY DISCUSSION AREAS

In accordance with CEQA Section 15126, the SEIR must include a discussion of the following issue areas:

A. Any significant environmental effects that cannot be avoided if the proposed project is implemented. Include impact threshold criteria used. Provide mitigation measures where appropriate; including triggers, details, responsible entities, and a monitoring and report schedule. Include a sentence on the significance of each impact area discussed, with effect of the proposed mitigation if appropriate. Do not include analysis in this sentence.

B. Any significant irreversible environmental changes that would result from the implementation of the proposed project.

C. Growth-inducing impacts of the proposed project. The Growth Inducement analysis should conclude: 1) how the project is directly and indirectly growth inducing (i.e., fostering economic or population growth by land use changes, construction of additional housing, etc.), and 2) if the subsequent consequences (i.e., impacts to existing infrastructure, requirement of new facilities, roadways, etc.) of the growth inducing project would create a significant and/or unavoidable impact, and provide for mitigation or avoidance. Address the potential for growth inducement through implementation of the proposed project; accelerated growth could further strain existing community facilities or encourage activities that could significantly affect the environment. This section need not conclude that growth-inducing impacts, if any, are significant unless the project would induce substantial growth or concentration of population that would lead to significant environmental impacts.

VII. CUMULATIVE EFFECTS

When this project is considered with other past, present, and reasonable foreseeable future projects in the project area, implementation could result in significant environmental changes, which are individually limited but cumulatively considerable. Therefore, in accordance with Section 15130 of the CEQA Guidelines, potential cumulative impacts must be discussed in a separate section of the SEIR. If required, this section would update the cumulative discussion contained in the certified CEQA documents.

VIII. EFFECTS NOT FOUND TO BE SIGNIFICANT

Provide a discussion of the environmental issue areas that were determined not to be significant or significant effects that would not be substantially more severe (pursuant to Section 15162 of the CEQA Guidelines) and describe the reasons for this determination. Mitigation measures from the certified or adopted CEQA documents that would still be relevant and applicable to the proposed project shall be cited in this section. For the Merge 56 project, including off-site roads, these effects include agricultural resources, air quality and odor, health and safety, mineral resources, public services and facilities, and visual quality/community character. If issues related to these areas or other potentially significant issues areas arise during the detailed environmental investigation of the project, consultation with EAS is recommended to determine if subsequent issues area discussion needs to be added to the SEIR. Additionally, as supplementary information is submitted (such as with the technical reports), the SEIR may need to be expanded to include these or other additional issue areas.

IX. ALTERNATIVES

The SEIR must place major attention on reasonable alternatives that avoid or mitigate the project's new significant impacts for the topics that are addressed in detail in the environmental impact analysis. These alternatives should be identified and discussed in detail and should

address all new significant impacts. The alternatives analysis should be conducted in sufficient detail to clearly assess the relative level of impacts and feasibility. See Section 15364 of the CEQA Guidelines for the CEQA definition of "feasible."

This section should provide a meaningful evaluation, analysis and comparison of alternatives impacts as compared to those of the proposed project (matrix format recommended). These alternatives should be addressed in detail and address all new significant impacts of the proposed project. The alternatives evaluation should be conducted in sufficient graphics, narrative and detail to clearly assess their relative impacts and feasibility.

Preceding the detailed alternatives analysis, provide a section entitled "Alternatives Considered but Rejected." This section should include a discussion of preliminary alternatives that were considered but not analyzed in detail. The reasons for rejection must be explained in detail and demonstrate to the public the analytical route followed in rejecting certain alternatives.

The analysis should consider the ability of each alternative to meet the project objectives while reducing significant environmental impacts. The following alternatives, at a minimum, must be considered:

A. No Project/Development Under Existing Plans

This alternative should describe an alternative that would develop the site in accordance with existing entitlements, zoning and/or existing land use plans. Describe any future development of the site that could occur. Discuss the environmental effects that could increase or decrease as a result of this alternative, such as land use and traffic.

B. No Project/No Development

This alternative would include no changes to the existing site conditions. The site would remain undeveloped and vacant. Describe any environmental effect changes that would occur if the site remained in its current state.

C. Reduced Development Alternative

If the traffic study shows a substantial increase in traffic volumes in the community as a result of build-out of the proposed project, a Reduced Development Alternative that reduces the overall traffic impacts should be presented with the Draft SEIR. Work with the City's EAS and Transportation Development staff to determine the development intensity that should be considered in this alternative.

If through the environmental analysis process, other alternatives become apparent which would mitigate potentially significant impacts; these alternatives must be discussed with EAS staff prior to including them in the SEIR. It is important to emphasize that the alternatives section of the SEIR should constitute a major part of the report. The timely processing of the environmental review will likely be dependent on the thoroughness of effort exhibited in the alternatives analysis.

X. MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

Mitigation measures should be clearly identified and discussed. A Mitigation, Monitoring and Reporting Program (MMRP) for each issue area with significant impacts is mandatory and projected effectiveness must be assessed (i.e., all or some CEQA impacts would be reduced to below a level of significance, etc.). The list of measures in the MMRP should include all new measures contained in the SEIR, as well as measures from the certified CEQA documents that are still relevant and applicable to the proposed project, as revised. At a minimum, the MMRP should identify: 1) the department responsible for the monitoring; 2) the monitoring and reporting schedule; and 3) the completion requirements. In addition to separate issue area mitigation discussions in the various topics of the SEIR, a consolidated, stand alone, verbatim, all issue area MMRP should also be included in the SEIR in a separate section and a duplicate separate copy must also be provided to EAS.

XI. REFERENCES

Material must be reasonably accessible. Use the most up-to-date possible and reference source document.

XII. INDIVIDUALS AND AGENCIES CONSULTED

List those consulted in preparation of SEIR. Seek out parties who would normally be expected to be a responsible agency or an interest in the project.

XIII. CERTIFICATION PAGE

Include City and Consulting staff members, titles and affiliations.

XIV. APPENDICES

Include the NOP, Scoping Meeting Notice and comments received on the NOP and at the Scoping Meeting (Scoping Meeting verbal transcript). Include all accepted technical studies.

In conclusion, prior to starting work on the SEIR, it is recommended that we meet with your staff to discuss this proposed scope of work and the environmental review process. Furthermore, if the project description changes, and/or supplementary information becomes available, the SEIR may need to be expanded to include additional issue areas which would be require consultation with EAS. Please contact Elizabeth Shearer-Nguyen, Senior Planner, at (619) 446-5369, if you have any questions regarding the CEQA analysis; or Jeff Peterson, Project Manager at (619) 446-5237, for general questions regarding the proposed project.

Sincerely,

Kerry Santoro
Deputy Director
Development Services Department

KS/les

cc: E. Shearer-Nguyen, Environmental Analysis Section
Environmental Project File
Jeff Peterson, Project Management Division
Kim Baranek, Baranek Consulting Group
Anna L. Colamussi-Yentile, Latitude 33 Planning & Engineering, Consultant

ENVIRONMENTAL IMPACT REPORT SCOPING MEETING

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August 6, 2014
San Diego, California

Reported by: Angie Schultz-Messenger, CSR No. 11742

APPEARANCES

FOR THE CITY OF SAN DIEGO DEVELOPMENT SERVICES:
ELIZABETH SHEARER-NGUYEN
1222 First Avenue
San Diego, California 92101
(619)446-5148
eshearernguyen@sandiego.gov

FOR LATITUDE 33 PLANNING & ENGINEERING:
ANNA COLAMUSSI-YENTILE
5355 Mira Sorrento Place
Suite 650
San Diego, California 92121
(858)751-0633
anna.colamussi@latitude33.com

ALSO PRESENT: JEFF PETERSON, CITY OF SAN DIEGO

San Diego, California
August 6, 2014

MS. SHEARER-NGUYEN: All right. Good evening, ladies and gentlemen. Welcome and thank you for attending. Welcome to the Environmental Impact Report scoping meeting for the Merge56 Planned Development Permit, Site Development Permit, Vesting Tentative Map and Rezone (Merge56) project. And from now on I'll just refer to it as the Merge56 project.

My name is Elizabeth Shearer-Nguyen. I'm the environmental analyst for the City of San Diego. Also in attendance is Jeff Peterson. He's the project manager for the project for the City as well.

This meeting is referred to as an Environmental Impact Report scoping meeting. A scoping meeting provides an opportunity for obtaining information about the scope and content of the environmental document. The information that is gathered tonight along with submitted comments provided during this 30-day public review period will be used to develop the scope and the content of the environmental document.

Therefore, I would ask you -- as I've told you earlier, if you would like to speak tonight, fill

out the comment forms that have been provided and to please include your name and mailing address. It's important that you also sign in and provide your address, and if you could print please. The purpose of that is once the draft goes out for public review it will ensure that you receive a copy of the draft environmental document.

As previously mentioned, this meeting has been scheduled to gather input prior to preparing the project's environmental document.

I, as the environmental review staff, am required by the City's Municipal Code to provide the public and decision-makers an independently prepared environmental document which discloses the impacts to the physical environment.

This information is used by the City's decision-maker as part of the deliberating process in approving or denying a project. The environmental document in and of itself does not recommend approval or denial of the project.

A few comments about the way the meeting will be conducted. First, a brief description of the project by the project applicant will take place, then we will open the meeting for public comment.

The meeting is designed to get as much

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public input as possible on areas that need to be addressed in the EIR in a time allocated for the meeting.

The entire meeting has been allocated from 6:00 to 8:00 p.m., two hours, and that's something that's set up by the State. It's a two-hour meeting only.

Pending the number of attendees or speakers, the meeting could end earlier than the noticed 8:00. But I have a feeling we'll go to 8:00.

Your verbal comments will be recorded; therefore, each speaker is asked to introduce themselves, state their address, and complete their comments within the allotted time. The allotted time will be three minutes.

Please refrain from trying to conduct -- please refrain from trying to conduct a debate on the merits of this project for this is not the purpose of today's meeting. I need to emphasize that the focus, again, is on the environmental impacts you believe need to be thoroughly analyzed in the EIR.

Lastly, Jeff here will be acting as the moderator and timekeeper for the duration of the meeting, and I respectfully request that you end your comments when notified by him.

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Thank you for your patience. I will now turn it over to Anna who will provide you with a brief description of the project.

MS. COLAMUSSI-YENTILE: Hi, everyone. My name is Anna Yentile. I'm with Latitude 33. We provided the planning and civil engineering for the proposed project, and we're representing the owner, Sea Breeze Properties.

And I have this up here. I know a lot of you were taking pictures of this. This is actually what was previously approved for this area. This is State Route 56. So the project is south of 56. This here is Camino del Sur, which does not exist today. There was a lot of questions that you guys had. And this was known as the Rose Crossing project. It included 11 planning areas that you see here. And the Merge56 project encompasses this triangle piece here and the Camino del Sur and Carmel Mountain Road connections.

These three areas, 6, 1 and 7, those are actually -- I don't know if they're currently owned by KB Home, but they are closer to their approvals. They're kind of in their grading approvals in the next two to three months is my understanding of that. The rest are not built yet.

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So the focus here is on this triangle piece again. And what the prior approvals were were what you can see from this exhibit here, is a big box-type environment. I think there was a plan for a Target, a grocery story, things like that, with parking lot and drive-through type retail uses.

And this here was the multifamily. It was 242 units and up to 525,000 square feet of commercial. And this here was the self-storage area. So I'm not sure if you guys are familiar with the prior approvals.

So the City has asked to us include the Camino del Sur and Carmel Mountain roadways in our Merge56 project description, so it is a part of our project description.

So what the proposal is -- and I kind of want to do this so you guys can get an idea what the Merge56 project entails here. And really what we're doing is proposing an amendment to the prior approvals. That was a vesting tentative map -- these are all City terminology -- planned development permit, site development permit, conditional use permit. So we're amending those permits and also doing a rezone and community planned amendment. Those are all the same types of permits that the prior

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approval has gone through.

Now we're amending it with the same square footage, the same number of dwelling units, but it's more reconfiguring. And the idea is to have more of an urbanist design, and what that really means is to make it more pedestrian friendly. And what we did to do that is having -- condensing the commercial and office uses into one area and providing parking structures rather than a parking lot. This allows us to propose more of a mix of uses of -- mix of uses together and also different types of housing units. Whereas before you had your multifamily, you now have townhomes, 111 townhomes, 81 single-family in this smaller triangular piece here, and 47 affordable units where the density occurs here. And then you'll see from the design we have two roundabouts there, which are meant to slow traffic down.

So that is the proposed project. I wanted to give that brief description so you guys understand the history and what the actual proposal is.

And I will hand it over to Liz for her to begin her scoping meeting.

MS. SHEARER-NGUYEN: Great. So, again, I'd like to -- there's some stragglers that have recently come in. So I'd like to reiterate if you can get an

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opportunity, please sign in. I would be most appreciative of that, so that way we can keep track of everybody who has attended.

Second of all, if you desire to speak during the comment period, please fill one of these out so that way we can call your name in order.

So what I'd like to do now is I'd like to open up to the public. Everybody will get three minutes to speak. There's some comments -- or speaker handouts that have been filled out. I would like you to come up to the front.

Again, I'd like to mention that to please state your name, first and last name and your address so that we can get it for the reporter.

Yes, sir?

UNIDENTIFIED SPEAKER: Is this information posted anywhere, this new map? I didn't see that in the map that was just shown, the original map.

MS. SHEARER-NGUYEN: No. The original map is not on the City's web page. It's just the current proposal that is in for review.

All right. So -- yes. If you would like to speak, please turn them in to Jeff Peterson here.

So the first person that -- if they would please come up is Rod Simmons.

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MR. SIMMONS: And do you need an address?

MS. SHEARER-NGUYEN: Yes.

MR. SIMMONS: So 13 --

MS. SHEARER-NGUYEN: Can you speak up, please.

MR. SIMMONS: 13211 Deron, D-e-r-o-n, Avenue, 92129.

So I'm Rod Simmons, past president of San Diego Mountain Bike Association. I've been an active trail advocate for the Del Mar Mesa Preserve area for going on over six years at this point.

Generally we will get a map of the plan in there approved by the City. Basically the preserve boundary is at -- where Camino del Sur will be on the west boundary of north 56, so I'm not going to speak as to the active development itself.

MS. SHEARER-NGUYEN: She's having problems hearing you.

MR. SIMMONS: But I do sit on the Penasquitos Citizens Advisory Committee. I'm chair of the Black Mountain Open Space Citizens Advisory Committee. So in terms of public access to open space and quality of -- and whatnot, I'm -- you know, that's where my head is at.

So I've read the document. I think it

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covers all of my concerns. I just want to reiterate my concerns in terms of the Camino del Sur road extension. The plan calls for filling Deer Canyon, which sort of alarms me. We have issues with -- this is a blue line stream area. So I see nothing within the plans that calls for any sort of drainage below that area. I see nothing for wildlife under the crossing. Obviously the footprint of the fill is going to impinge onto the boundaries of the preserve area. It will have some effect on the habitat within that preserve. Which don't go in there, folks. You're not supposed to.

Also there is a trail which egresses from that side to that area there, which -- where that egress will be severed, and we need to have some sort of accommodation for that trail to come in.

Also, from Darkwood Canyon here to this area there, there's actually going to be a trail that comes up to this area here that needs to be accommodated somewhere in the plan.

UNIDENTIFIED SPEAKER: Can you speak up, sir.

MR. SIMMONS: No one's ever accused me of being quiet before.

MS. SHEARER-NGUYEN: 30 seconds.

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MR. SIMMONS: I think that's pretty much it. So sedimentation, erosion, water management from the hard scape, these are all critical things that need to be addressed in terms of what happens to the canyon.

MS. SHEARER-NGUYEN: Thank you. All right. The next speaker, Ben Stone.

MR. STONE: Ben Stone, 7555 Linda Vista Road, Number 27, 92111.

My name is Ben stone. I'm on the -- I'm here as a private citizen tonight, but I'm on the San Diego Mountain Biking Association Advocacy Committee. And, you know, Rod kind of covered a lot of our concerns. But, you know, as a regular trail user out here, even though I live down in the City of San Diego, my biggest concern is what they're -- you know, just the issue of access here in tunnel 1, which is going to be part of a plan that will eventually be approved, hopefully, if it ever finishes out at the City of San Diego, and also eventually getting the Darkwood connector here to reach tunnel 1, which is going to get you to the all the other trail systems, and that one main -- Penasquitos Canyon is down there.

The way it looks right now and my understanding from the filling of the road, it's going to be really difficult to connect those trails the way

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it sits right now. So that's, you know, a lot of our biggest concerns. And I'm just a regular trail user who goes down -- I've been down in that canyon before, and I'd like to see access remain down there and, you know, corridors for the wildlife as well. Because if you spend time in that area, you'll see deer. There's reports of mountain lion out there. And, you know, as a local San Diego resident growing up here, I'd just like to see that, you know, continue to happen and have access. Thank you.

MS. SHEARER-NGUYEN: Great. Thank you.

Brian Eshelman. I apologize if I didn't pronounce it correctly.

MR. ESHELMAN: So it's 12336 Dormouse Road.

So my is Brian Eshelman. Our family lives off of Dormouse Road, obviously just north of Park Village. And I've spoken to -- out against the project to the Planning Commission. I'm here to speak out against it tonight. I know that the focus tonight is environmental concerns.

Focusing just on that, I think the quality of life in Park Village is going to be drastically different following this development, and I don't mean that in a positive way. I'm a long-time resident of San Diego, went to UCSD, grew up in Scripps Ranch in

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and around Mira Mesa area.

If you look at the traffic and just the general congestion around the Edwards Complex, it's a disaster. Now it has gotten worse over the last two years. And you're looking now on a weekend day, two or three cycles to go through the lights over there. The amount of traffic that's going to come through this area is negative to the community.

I'm all for convenience. My wife works just north of the 56, and we always complain when we go down Park Village and get on Black Mountain Road. I know it's a headache, especially in the morning. There's a lot of high schoolers going over to Westview and Carmel Mountain High. I appreciate that.

But in the big picture I think it's going to be a real negative in the amount of traffic and the general level of crime and the congestion this is going to bring to Park Village.

They're talking about the option -- I think it was four lanes with an option of six lanes going through there, and we -- our family uses the canyon often to hike. I just think it's going to be a negative for our quality of life. And I think a lot of people moved to Park Village and appreciated raising their families there.

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I don't think this is a good thing for us. The development, the extension, I don't think any of it is good for us. I mean, the ship's probably sailed on some of the development. But as much as we can limit and to spur the amount of -- the number of retailers going in there -- I mean, if we're talking about -- well, the comment was made, well, it's not a big deal, because the general outline's not changing, the footprint. But before it was storage units, a good portion, I think 50 percent. The traffic into and out of a storage facility is different than you're going to see in a multiplex with big-box retailers and the number of homes that they're talking about putting in there.

So I encourage everyone to think about that. And our family is strongly against it. So that's it.

MS. SHEARER-NGUYEN: Thank you.

I'd like to just remind everybody that we only have two hours allocated to this meeting, so if you could please refrain from clapping I'd really appreciate it. Thank you.

Jerry Morna.

MR. MORNA: Hi. Jerry Morna. 13154 Jane Court, 92129.

Yeah, I'm a Penasquitos long-time resident.

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And like everyone else, you know, when you're looking for a home in this area -- we chose Penasquitos for a reason. You know, I like having the library. I like being able to walk to the library. I like being able to walk to the canyon at dinnertime or after dinner. I like watching the balloons land in the fields over there. I like seeing the wildlife.

And so as part of the environmental impact, I'd like to make sure that we address also the children here in the community and their access to green space and our overall access to green space and the educational opportunities it allows that are -- that make our community different right now. I'd like to see those preserved. Thank you.

MS. SHEARER-NGUYEN: Thank you.

Elizabeth Penner.

MS. PENNER: 12758 Sundance Avenue.

My name is Elizabeth Penner. I've been in Rancho Penasquitos since 1985. And the first thing I want to say is when --

MS. SHEARER-NGUYEN: Can I ask you to speak up a little bit.

MS. PENNER: When the young lady talked about urbanist design, the thought came to me that Rancho Penasquitos, to the best of my knowledge, means

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ranch of little canyons, and I think that's kind of contradictory to go from that to urbanized kind of.

Environmental impact, traffic, increased exhaust into the atmosphere, increased weight of the cars on our roads, this plan, the commercial footage is written -- stuck in the long paper that they gave us, but just think about it. It's going from 250,000 square feet to 525,000 square feet. That is more than just rearranging. It's going from 242 residential units to 111 townhouses. Think of the height of townhouses and what that does for our visual effect of our community.

Like this gentleman said, the green aspect, the outdoor aspect. Camino del Sur someone else mentioned will be a four- to six-lane road, and Carmel Mountain Road will be a four-lane road. Again, traffic and safety of our children. I'm very strongly against this, and I ask for your support.

MS. SHEARER-NGUYEN: Thank you.

Tom Clark.

MR. CLARK: Tom Clark, 10059 Branford Road, 92129.

I just have two comments. One is about scoping, and the scoping issue is the community plan was amended and updated about six years ago, but this

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plan, Rose Crossing, has been around a long time. So the land use comment talks about conforming to a general community plan. I would like to see the scoping and the SDEIR address the project relative to the current community plan.

The second one is, I also chaired the Rancho Penasquitos Planning Board. There's several planning board members here tonight. This project that Sea Breeze is developing, the Merge56, has been to the planning board one time at the start of a very long process. It's going to take a year or two to go through the whole process. They will come back to the planning board probably several times to present to get their final approvals, whatever, denials, votes, to go on.

There's also a subcommittee that has been set up, and I don't know if -- John Becker just walked in. John Becker is the chair of that subcommittee, and we are just now setting up that subcommittee. And the subcommittee will be a formalized committee. It will have a public notice; it will be agendized; it will have minutes; it will have public speaking time. All that.

A lot of your comments that you're making tonight are appropriate for the subcommittee and the

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planning board that addresses the merits of the project. This is really for the EIR.

So anyway, I want to invite you to the planning board meeting at the Doubletree Resort. Or the subcommittee meetings. They'll probably be at the Doubletree if we can work it out that way. So you're welcome to come to those meetings. They will be noticed.

The e-mail for me rppb, Rancho Penasquitos Planning Board, dot chair@Gmail.com. Rppb.chair@gmail.com. Send me an e-mail, and I will send it on to our secretary. We will get you on the e-mail distribution list so when the notices go out for the meetings, you will have the agenda. You will know what's upcoming.

Some of you are probably already on that, but anybody is welcome to get on that, and you will be duly noted -- or noticed of meetings.

MS. SHEARER-NGUYEN: Thank you.

Richard M-a-t-u-s-o-w.

MR. MATUSOW: Richard Matusow, M-a-t-u-s-o-w. 7768 Goldfish Way.

All right. So we're here to talk about environmental impact. What I heard is that there's going to be approximately 240 new housing units in

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this. The City of San Diego considers the average household use of water 9 HCF per month. That would be over 2,000 HCF per month or almost 26,000 HCF a year. This is just for the housing.

Now, to put that all in terms that you'll better understand, that's over 19 million gallons of water per year. That doesn't count the commercial. Commercial is much higher users than single-family dwellings. The State is in an exceptional drought. San Diego right now is in severe drought, and we're getting close to exceptional.

If you want to talk environmental impact, I'd like to know where the City of San Diego is going to get an additional 19 million gallons of water per year for this development.

MS. SHEARER-NGUYEN: Thank you.

B-a-b-a-c, last name is T-e --

UNIDENTIFIED SPEAKER: You can skip that.

MS. SHEARER-NGUYEN: Are you sure? Oh, great.

Mary --

UNIDENTIFIED SPEAKER: I'll pass, too.

MS. SHEARER-NGUYEN: Okay. Great. Thank you.

Mary Fox.

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MS. FOX: 8004 Eclipse Road.
MR. PETERSON: Mary, before you start, is there anybody else in here who actually needs to fill out a speaker slip? Once you fill out the speaker slip you can actually provide it to me and we'll take you in order. Okay?
MS. SHEARER-NGUYEN: Again, I know there were some people that just came in. I'd like to remind everybody to please sign in, provide your name and address, and that way you can be put on the distribution for when the draft document goes out for public review.
MS. FOX: I would like to start with the positive. And for me, that little triangle, from what it was before, was approved, is better than it was before, because it's more family friendly and does not increase that many more units.
My concern and really a question for the EIR people is: I don't see how we can do an EIR for that triangle without considering all the new development that is happening in this area. And I think the EIR should encompass all the new development, because the meetings I've been to and the information I've seen, they're increasing the density in some of the other areas as well. And I don't think you can exclude that

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entire increase in your EIR without looking at the entire project.
MS. SHEARER-NGUYEN: Great. Thank you. Tammy Wilcox.
MS. WILCOX: I'm Tammy Wilcox. My address is 12794 Calle de Las Rosas.
I came totally neutral out of curiosity to see what was happening. I did not expect to speak, and I can't speak on everything that's been addressed.
These are the things that came to my mind as I heard people speaking: I like the idea of having a new complex with more businesses that are closer to where I live here in Penasquitos. I like the idea that it will offer more employment for students, especially our high school students that are having to go outside the Penasquitos area to look for work after school. I think about how far people drive now from Park Village to get to Westview, for example, and I know that they'll spend a lot less money on gas and time once this plan is in place. They will be a lot closer to Camino del Sur.
I've always felt like Park Village is a disaster waiting to happen if there's ever a fire or evacuation. There's no other outlet out of Park Village. That's all I have to say.

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MS. SHEARER-NGUYEN: Julie Adams.
MS. ADAMS: That was quick. Wow. Julie Adams. 12712 Rife Way.
I live pretty close to this project. I'm not coming based on whether it should go in or whether it shouldn't go in. I pretty much know it is going in.
My concern as a resident, as someone that enjoys the environment that we have out there -- we have something called the tunnels, which is a pristine, beautiful place to ride your bike. It's like no other place in the city, and it is right where that Camino del Sur bridge is going to go. Not even bridge. Canyon, filling in the canyon. That's a huge concern for me, because that canyon -- once you put that up, we will no longer have access to the east end of that tunnel to get into that whole Penasquitos area. And also I've seen deer in there, I've seen Bobcats, and I just question where those animals are going to. Are they going to go up and over the road?
And, of course, when you put that kind of -- when you fill in the canyon, now you've got a steep grade, all that water is going to go into that tunnel area, and there's four river crossings that will get completely eroded, and we will not be able to pass.

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It will become impassable and unusable.
It's a great recreational area for all of us, and I think filling in this canyon area is a horrendous idea. Right here. So we go in -- is this -- where are we?
MS. SHEARER-NGUYEN: This is 56.
MS. ADAMS: Okay. Right here. Right here. So by filling this in, we come in from -- this is all Penasquitos. We come, you know, through here and try to get in. This is -- you drop down into it, and it's almost like a little rabbit hole that you go into. You wouldn't know it's there. It's beautiful.
You put this bridge up here, all this water is going to go that way. First of all, all the animals that are in here, where are they going to go? I live over here. I have a bobcat that wanders my streets, so -- and I've seen them in the tunnel.
So anyway, with the -- with the slope like this, it's going to fill with water, and it's not going to be accessible for us. So that's my concern is this right here.
MS. SHEARER-NGUYEN: Thank you.
Toni. I'm sorry. I can't pronounce your last name.
Toni: That's all right. Neither can I.

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7795 Via Montebello.
I'm trying to visualize where this is going to connect. I currently live in Torrey Highlands by the Albertsons center. One of the major points of consideration I'm trying to visualize here, I see a number of major accidents at that intersection, Camino del Sur and 56 on-ramp. I'm talking severe accidents there. There have been -- yeah. And I also walk my dog down where the gas station is. I know you're familiar with the 56 and Black Mountain Road off-ramp where cyclists often almost get hit. I've almost been hit there. Now they've put up a sign to kind of warn people to look for cyclists and people walking by.
You're going to need something like that by Albertsons. As I walk my dog and step off that curb, I constantly have to make eye contact with drivers to make them aware there's pedestrians that come through there. I'm assuming you're going to have more high schoolers walking through that area. We want to make sure our children as well as our community is safe.
MS. SHEARER-NGUYEN: Great. Thank you.
Any other speakers that would like to speak and have not filled out a speaker form? Going once, twice. Okay.
Before I close the public comment period, I

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wanted to say: Is there anything else -- I'm ahead of myself here. Seeing none, I'm going to go ahead and close the public comment period.
This concludes the public environmental scoping meeting for the Merge56 project. Your input will be considered by City staff for use in the scope of the EIR and is included as part of the official record of the document.
Speakers and those individuals who submitted comments on the project will also be placed on the notification list for further environmental review actions related to this project.
I would also like to remind everyone that this is just the start of the environmental review process. There will be many other opportunities to provide comment on the environmental document and the project, such as during the public review of the draft environmental document and other public hearings associated with the project, as another gentleman mentioned earlier, going to the community group meetings as well.
There was one more thing I was going to suggest. Oh, if you are interested and have questions on the project in and of itself, I would suggest you contact Jeff Peterson. He can provide you help with

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project-related comments or questions.
Again, this closes the public comment period and concludes the scoping meeting, unless there is -- I'll give you one more opportunity if anybody didn't get an opportunity to speak.
UNIDENTIFIED SPEAKER: Where can we get a copy of the complete environmental impact assessment?
MS. SHEARER-NGUYEN: If you signed in and provided us with all your information, you will be sent a draft copy when it is distributed for public review, and that's why I keep emphasizing to please sign in, because that is the record showing that you received it, and you will get one when it gets distributed for public review.
Yes?
UNIDENTIFIED SPEAKER: Have any professional scientists and environmentalists been invited to look at the scope of this new development?
MS. SHEARER-NGUYEN: Yes. There's many technical studies that will be prepared.
UNIDENTIFIED SPEAKER: Are they unbiased or...
MS. SHEARER-NGUYEN: No. Everything that is submitted is reviewed by City staff, and it goes back and forth. And there's editing that occurs until City

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staff is satisfied and believes it represents the independent analysis.
UNIDENTIFIED SPEAKER: Who is the City staff?
MS. SHEARER-NGUYEN: That would be me.
UNIDENTIFIED SPEAKER: Do you work for anybody in particular?
MS. SHEARER-NGUYEN: I work for the City of San Diego.
UNIDENTIFIED SPEAKER: Is there any profit for the City of San Diego for this development?
MS. SHEARER-NGUYEN: No.
UNIDENTIFIED SPEAKER: Is from any profit for the developer?
MS. SHEARER-NGUYEN: Again, I work for a governmental agency, and that's -- I can just tell you I'm a governmental worker. I've been hired to analyze this project. That's my job.
Yes, sir?
UNIDENTIFIED SPEAKER: Is there anything else that we can do to -- other than just, you know, make comments and hope you guys listen to possibly change the direction of the project?
MS. SHEARER-NGUYEN: That's a tough one. I'll be honest and say I think the best thing is for

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you to attend meetings, be heard, go to your community group, go to the hearings. That's what I can tell you.

UNIDENTIFIED SPEAKER: One more question. When she brought up the traffic on -- at the intersection, my concern, having three high school students -- two gone through, one there now -- if you look at -- if you look at the entrance from Camino del Sur to 56 going east, that's been a problem since the beginning, and it's really dangerous. It merges very quickly. There was a biker killed because of that interchange.

So I want to know if this EIR looks at that widening of 56 and/or the traffic and the traffic onto 56 as part of that big picture, because we're adding even more stress on an intersection that I think is already dangerous.

MS. SHEARER-NGUYEN: What I would recommend is that you submit a formal letter or a comment letter identifying the issues that you believe should be analyzed in that document, and they will be taken all into consideration.

UNIDENTIFIED SPEAKER: So you have to ask y'all to do that? To me, I'm thinking y'all figure out whether the traffic -- what wants to be built

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there --

MS. SHEARER-NGUYEN: We do.

UNIDENTIFIED SPEAKER: Traffic can be sustainable for the area without us telling you to do that?

MS. SHEARER-NGUYEN: Again, the purpose of tonight's meeting is to get your input of what you believe should be issues. We take that into consideration along with City thresholds and such, and we do coordinate with different City staff, traffic, for instance, and they will coordinate and develop a traffic study and analyze various things.

UNIDENTIFIED SPEAKER: So is it possible that a traffic study could actually end up booting the whole project because this area won't be able to sustain --

MS. SHEARER-NGUYEN: I can't -- that's -- again --

MR. PETERSON: It's still within the traffic thresholds.

UNIDENTIFIED SPEAKER: That's already been determined?

UNIDENTIFIED SPEAKER: So isn't the purpose of this meeting, you know, to determine the environmental impact of what was proposed and approved

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and what is now?

MS. SHEARER-NGUYEN: No. It's what the current project is today.

UNIDENTIFIED SPEAKER: Which is this new design?

MS. SHEARER-NGUYEN: Correct, this new design.

UNIDENTIFIED SPEAKER: Okay. Is there going to be in your report anything that compares it to what we had previously thought was going to be there?

MS. SHEARER-NGUYEN: That will be taken into consideration, yes.

UNIDENTIFIED SPEAKER: Are you going to include that in your report, the difference between the first thing we got approved and what this is -- is going to be approved would be this?

MS. SHEARER-NGUYEN: There will be some level of analysis, correct, that looks at that.

UNIDENTIFIED SPEAKER: Just for point of reference, the gentleman just said this falls within the traffic parameters. So what are they?

MS. SHEARER-NGUYEN: I don't have that information here. You know, again, we're kind of getting off the track --

UNIDENTIFIED SPEAKER: No, we're not. He

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said it falls -- this is within the scope. He said it falls within the parameters -- or the original load metrics for traffic patterns. What are those? How many people can be put through Park Village and still be within limit? You just said it was still within limit. So what is the limit?

MR. BECKER: I'm John Becker, current vice chair of the Rancho Penasquitos Planning Board and also a Park Village resident for 20 years.

A lot of those have already been defined in the community plan.

UNIDENTIFIED SPEAKER: That's my question. I don't know what the community plan is. I'm happy to go research it. But off the top of your head, how many vehicles and people can you put through Park Village and still be within what you call the acceptable --

MR. BECKER: I believe that the community plan is about -- on Camino del Sur is around 10- to 12,000 trips through there.

UNIDENTIFIED SPEAKER: A day? You say that's acceptable for Park Village?

MR. BECKER: That's what the community plan --

UNIDENTIFIED SPEAKER: 10- to 12,000 cars

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through Park Village a day and that's accessible?
MS. SHEARER-NGUYEN: Excuse me. Those are the concerns you need to bring forward to the subcommittee --
UNIDENTIFIED SPEAKER: I'd like to know where I can go see the definition.
MR. PETERSON: These questions are getting into detail and merits of --
(Reporter interruption.)
MS. ADAMS: Julie Adams. I just wanted to say, first of all, I'm -- actually I've been a resident 30 years. I'm actually glad this road is going through. But what I don't like, again, is that -- I want to see some kind of access -- if they're going to fill it in, I'd like to see some kind of access through there, or a bridge. It's more open for the animals and people and all that, so...
MS. SHEARER-NGUYEN: All right.
UNIDENTIFIED SPEAKER: I have a question. It might be a little bit out of scope. But these permits, the change from a storage to a movie theater and a hotel or whatever it is, what happens if the businesses go out of business? Do they have to reapply for something else, or are we stuck with the movie theater forever?

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MS. SHEARER-NGUYEN: I think that if the change in use occurs, they would have to come back, depending on how the traffic is analyzed. It could be that the -- they could come in with something that doesn't exceed those ADTs that have been allocated for that site.
Again, at this point in time it's a little speculative to do that. I think what we need to focus on right now is the discussion on this project that's before us today.
UNIDENTIFIED SPEAKER: Just -- where would I get more information?
MS. SHEARER-NGUYEN: You know, there's -- it's getting a little bit of out of control, and I see people raising their hand. If you wanted to speak to the concerns and the purpose of this meeting IS with respect to the scoping meeting and scoping of the issues of the environmental, I really would suggest you fill this out. I will open up the public testimony.
Again, we're not here to discuss the merits of the project, because, again, this is a very specific type of meeting that is being held for this purpose. But, again, there's -- again, we're here only to gather information. It's an information

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gathering meeting.
UNIDENTIFIED SPEAKER: Let us give information.
MS. SHEARER-NGUYEN: So this closes the public testimony. Thank you.
MS. DOORLY: Kathleen Doorly, D-o-o-r-l-y, 8415 Rice Court.
My concern is the noise level of all those, I guess, 10- to 12,000 cars a day or hundred cars a day, the noise level that goes down into the canyon that meets up with the existing Camino del Sur and the base of the canyon. I live just up the canyon, and right now even dog barking goes straight up the canyon into our home. What is this road -- what kind of noise level is going to -- all the traffic going to create, and what will they do to eliminate as much noise as possible? That's my concern. Thanks.
There was one other thing. You can go back? The noise level of the traffic for the school at the base of the canyon, so that's going to impact classrooms and everything concerning the school, too. Thank you.
(The EIR scoping meeting concluded at 6:44 p.m.)

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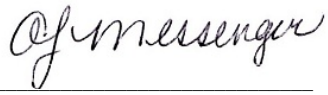
REPORTER'S CERTIFICATION

I, Angie Messenger, a certified shorthand reporter, in and for the State of California, Certificate No. 11742, do hereby certify:

That the foregoing proceedings were reported by me stenographically and later transcribed into typewriting under my direction; that the foregoing is a true record of the proceedings taken at that time.

IN WITNESS WHEREOF, I have subscribed my name this 18th day of August, 2014.



Angie Messenger, CSR No. 11742

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

Notice of Preparation

July 21, 2014

To: Reviewing Agencies

Re: Merge 56 Planned Development Permit/Site Development Permit/Vesting Tentative Map/Rezone
SCH# 2014071065

Attached for your review and comment is the Notice of Preparation (NOP) for the Merge 56 Planned Development Permit/Site Development Permit/Vesting Tentative Map/Rezone draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

E. Shearer-Nguyen
City of San Diego
1222 First Avenue, MS-501
San Diego, CA 92101

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

Document Details Report
State Clearinghouse Data Base

SCH# 2014071065
Project Title Merge 56 Planned Development Permit/Site Development Permit/Vesting Tentative Map/Rezone
Lead Agency San Diego, City of

Type NOP Notice of Preparation

Description Community Plan Amendment (CPA) to redesignate the site from Commercial Regional (CR) and Medium High Density Residential uses to Local Mixed Use (LMXU); a Rezone from AR-1-1 to CC-3-5 and RX-1-1; Planned Development Permit (PDP) to amend PDP No. 53203, for deviations from the zoning requirements in accordance with San Diego Municipal Code 126.0602(a)(1), to ensure consistency with the Torrey Highlands Subarea Plan as required in the plan; Site Development Permit (SDP) to amend SDP No. 53204 for development on a site that contains Environmentally Sensitive Lands (ESL), for ESL deviations, and for development on a site with historical resources (important archaeological site); a Conditional Use Permit (CUP) for a theater that's greater than 5,000 sf in size; and a Vesting Tentative Map (VTM) to subdivide 3 lots into 88 lots (84 RX zoned lots, 2 CC zoned lots, one open space lot "Lot Z" and one lot for a private street "Lot AA"), that would allow construction of approximately 525,000 sf of commercial, office, theater and hotel uses and 242 residential dwelling units. The residential units would include a mix of housing types including multi-family (approximately 47 affordable units), townhomes (approximately 111 units), and single family (approximately 84 units). The project would also construct underground utilities (i.e., sewer, water, electrical and storm drains/detention basins), private streets and half-width improvements for Camino Del Sur and Carmel Mountain Road along the frontage of the Merge 56 project site. Furthermore, the project would also construct associated site improvements.

Lead Agency Contact

Name E. Shearer-Nguyen
Agency City of San Diego
Phone 619 446 5369 **Fax**
email
Address 1222 First Avenue, MS-501
City San Diego **State** CA **Zip** 92101

Project Location

County San Diego
City San Diego
Region
Cross Streets Clairemont Mesa Boulevard and Ruffin Road
Lat / Long 32.953458° N / 117.151444° W
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways SR56, I-15, 5, SR-52
Airports MCAS Miramar
Railways
Waterways
Schools Various
Land Use AR-1-1 / Commercial Regional (CR) and Medium High Density Residential

---

Project Issues Archaeologic-Historic; Biological Resources; Drainage/Absorption; Geologic/Seismic; Noise; Public Services; Soil Erosion/Compaction/Grading; Solid Waste; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife; Landuse; Cumulative Effects; Other Issues

Document Details Report
State Clearinghouse Data Base

Reviewing Agencies	Resources Agency; Department of Conservation; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Wildlife, Region 5; Office of Emergency Services, California; Native American Heritage Commission; Caltrans, Division of Aeronautics; California Highway Patrol; Caltrans, District 11; Air Resources Board; Regional Water Quality Control Board, Region 9

Date Received	07/21/2014	***Start of Review***	07/21/2014	***End of Review***	08/19/2014

CMA

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SCH# 2014071065

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☐ **RWQCB 7**
Colorado River Basin Region (7)

☐ **RWQCB 8**
Santa Ana Region (8)

■ **RWQCB 9**
San Diego Region (9)

☐ **Other** _____

_____

_____

☐ _____
Conservancy

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

In Reply Refer To:
FWS-SDG-08B0401-14TA0521

AUG 19 2014

Ms. E. Shearer-Nguyen
City of San Diego
Development Services Center
1222 First Avenue, MS 501
San Diego, California 92101

Subject: Comments on the Notice of Preparation for a Subsequent Environmental Impact Report for the Merge 56 Project (SAP No. 24004023), City of San Diego, California.

Dear Ms. Shearer-Nguyen:

The U.S. Fish and Wildlife Service (Service) has reviewed the Notice of Preparation (NOP) dated July 21, 2014, for the proposed Subsequent Environmental Impact Report (SEIR) for the Merge 56 project in the City of San Diego (City), California. The comments and recommendations provided herein are based on the information provided in the NOP, our knowledge of sensitive and declining vegetation communities in the region, and our participation in the Multiple Species Conservation Program (MSCP) and the City's MSCP Subarea Plan (SAP).

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) of the Act. The City participates in the Service's HCP program by implementing its MSCP SAP.

The 41.43-acre Merge 56 project site is located in the north-central portion of the City, immediately south of State Route 56, east of the planned extension of Camino Del Sur and west of Carmel Mountain Road. The project is a subset of a larger subdivision project entitled by the City in 2005 and formerly referred to as the Rhodes Crossing project. The project proposes to modify and reconfigure land uses approved for Lots 4, 5 and 10 as part of the Rhodes Crossing project.

The Merge 56 project proposes approximately 525,000 square feet of commercial, office, theater and hotel uses and up to 242 residential dwelling units. The project would also construct half-width improvements for Camino Del Sur and Carmel Mountain Roads along the frontage of the Merge 56 project site, as well as extend Camino Del Sur to Doormouse Road in the neighboring Park Village area.

The project site supports sensitive biological resources including federally listed species and designated critical habitat, wetlands, and vernal pools. On September 17, 2012, the Service issued a biological opinion (FWS-SD-08B0401-12FC0578) to the U.S. Army Corps of Engineers, which addressed effects of the Rhodes Crossing project on the federally threatened coastal California gnatcatcher (*Polioptila californica californica*, gnatcatcher); and the federally endangered San Diego button-celery (*Eryngium aristulatum* var. *parishii*), San Diego mesa mint (*Pogogyne abramsii*), as well as San Diego fairy shrimp (*Branchinecta sandiegonesis*) and its designated critical habitat. In addition to the conservation strategy evaluated as part of the proposed action, the biological opinion identified a "Habitat Conservation Plan Strategy" that would improve the long-term conservation and ecosystem functions of the significant vernal pool resources in Parcel 30642002 (i.e., Development Area 2). For this strategy, the isolated vernal pools within the development areas would be impacted and Development Area 2 would be redesigned to connect Preserve Areas 6 and 7 to create a larger, contiguous preserve (Figure 1).

The project proponent of the Merge 56 Project has indicated a willingness to pursue a project alternative similar to the HCP Conservation Strategy. We would consider this alternative to be biologically superior to the approved Rhodes Crossing project and support a wetland deviation to the City's Environmentally Sensitive Lands regulations for this alternative. Therefore, we recommend that the SEIR include and analyze this alternative as the biologically superior alternative.

It is our understanding that a commitment was made during approval of the Rhodes Crossing project to include a bridge at the southern end of the extension of Camino Del Sur to maintain wildlife connectivity through this portion of the MSCP preserve. This bridge should be included and analyzed in the SEIR.

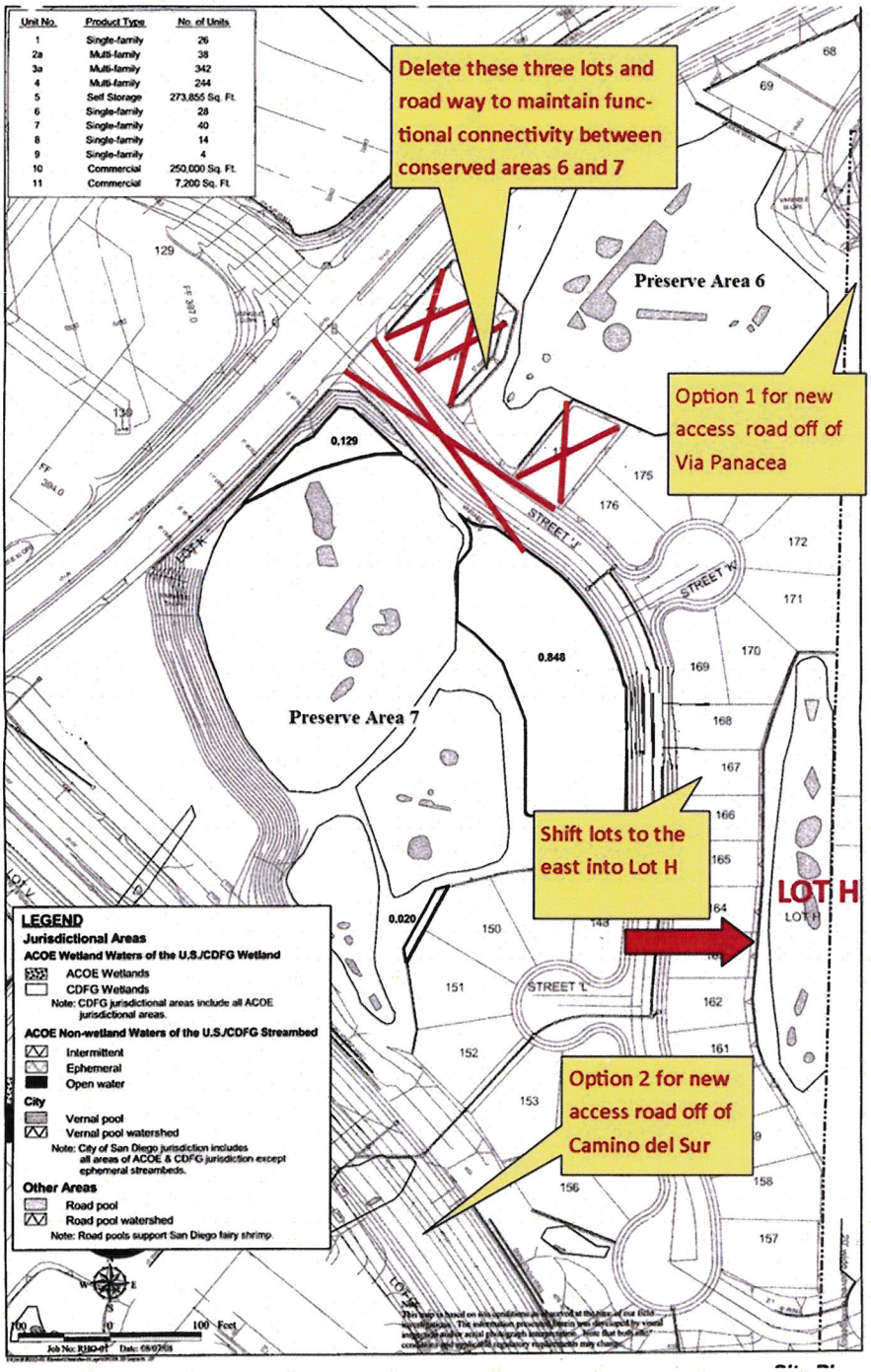
We appreciate the opportunity to comment on this NOP. If you have questions or comments regarding this letter please contact Patrick Gower at 760-431-9440 extension 352.

Sincerely,

Karen A. Goebel
Assistant Field Supervisor

cc:
Paul Schlitt, California Department of Fish and Wildlife

Figure 1: HCP Conservation Strategy



SATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Boulevard, Suite 100
West Sacramento, CA 95691
(916) 373-3715
Fax (916) 373-5471
Web Site www.nahc.ca.gov
Ds_nahc@pacbell.net
e-mail: ds_nahc@pacbell.net

July 30, 2014

Ms. E. Shearer-Nguyen
City of San Diego
1222 First Avenue, MS-501
San Diego, CA 92101

RE: SCH# 2014071065 CEQA Notice of Preparation; draft Environmental Impact Report (DEIR) for the **"Merge 56 Planned Development Permit / Site Development Permit / Vesting Tentative Map / Rezone"** project located in the City of San Diego, San Diego County, California

Dear Ms. Shearer-Nguyen:

The Native American Heritage Commission (NAHC) has reviewed the above-referenced environmental document.

The California Environmental Quality Act (CEQA) states that any project which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA guidelines 15064.5(b). To adequately comply with this provision and mitigate project-related impacts on archaeological resources, the Commission recommends the following actions be required:

Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, pursuant to California Environmental Quality Act (CEQA) §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities. Also, California Public Resources Code Section 21083.2 require documentation and analysis of archaeological items that meet the standard in Section 15064.5 (a)(b)(f).

We suggest that this (additional archaeological activity) be coordinated with the NAHC, if possible. The final report containing site forms, site significance, and mitigation measurers should be submitted immediately to the planning department. Any information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure pursuant

to California Government Code Section 6254.10.

A list of appropriate Native American Contacts for consultation concerning the project site has been provided and is attached to this letter to determine if the proposed active might impinge on any cultural resources.

California Government Code Section 65040.12(e) defines "environmental justice" to provide "fair treatment of People...with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations and policies." (The California Code is consistent with the Federal Executive Order 12898 regarding 'environmental justice.' Also, applicable to state agencies is Executive Order B-10-11 requires consultation with Native American tribes their elected officials and other representatives of tribal governments to provide meaningful input into the development of legislation, regulations, rules, and policies on matters that may affect tribal communities.

Lead agencies should consider first, avoidance for sacred and/or historical sites, pursuant to CEQA Guidelines 15370(a). Then if the project goes ahead, lead agencies include in their mitigation and monitoring plan provisions for the analysis and disposition of recovered artifacts, pursuant to California Public Resources Code Section 21083.2 in consultation with culturally affiliated Native Americans.

Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5(e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

Sincerely,

Gayle Totton
Program Analyst

CC: State Clearinghouse

Attachment: Native American Contacts list

Native American Contacts
San Diego County, California
July 30, 2014

La Posta Band of Mission Indians
Gwendolyn Parada, Chairperson
8 Crestwood Road Diegueno/Kumeyaay
Boulevard , CA 91905
gparada@lapostacasino.
(619) 478-2113
(619) 478-2125

Kumeyaay Cultural Historic Committee
Ron Christman
56 Viejas Grade Road Diegueno/Kumeyaay
Alpine , CA 92001
(619) 445-0385

Manzanita Band of Kumeyaay Nation
Leroy J. Elliott, Chairperson
P.O. Box 1302 Diegueno/Kumeyaay
Boulevard , CA 91905
ljbirdsinger@aol.com
(619) 766-4930
(619) 766-4957 Fax

Campo Band of Mission Indians
Ralph Goff, Chairperson
36190 Church Road, Suite 1 Diegueno/Kumeyaay
Campo , CA 91906
chairgoff@aol.com
(619) 478-9046
(619) 478-5818 Fax

Sycuan Band of the Kumeyaay Nation
Daniel Tucker, Chairperson
5459 Sycuan Road Diegueno/Kumeyaay
El Cajon , CA 92019
ssilva@sycuan-nsn.gov
(619) 445-2613
(619) 445-1927 Fax

Jamul Indian Village
Raymond Hunter, Chairperson
P.O. Box 612 Diegueno/Kumeyaay
Jamul , CA 91935
jamulrez@sctdv.net
(619) 669-4785

Viejas Band of Kumeyaay Indians
Anthony R. Pico, Chairperson
P.O. Box 908 Diegueno/Kumeyaay
Alpine , CA 91903
jhagen@viejas-nsn.gov
(619) 445-3810
(619) 445-5337 Fax

Kumeyaay Cultural Repatriation Committee
Steve Banegas, Spokesperson
1095 Barona Road Diegueno/Kumeyaay
Lakeside , CA 92040
sbenegas50@gmail.com
(619) 742-5587
(619) 443-0681 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list s only applicable for contacting locative Americans with regard to cultural resources for the proposed SCH#2014071077; CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the Merge 56 Development Permit / Site Development Permit / Vesting Tentative Map / Rezone Project; located in the Cities of Burbank and Palmdale; Los Angeles County, California.

Native American Contacts
San Diego County, California
July 30, 2014

Viejas Band of Kumeyaay Indians
ATTN: Julie Hagen, Cultural Resources
P.O. Box 908 Diegueno/Kumeyaay
Alpine , CA 91903
jhagen@viejas-nsn.gov
(619) 445-3810
(619) 445-5337

Inter-Tribal Cultural Resource Protection Council
Frank Brown, Coordinator
240 Brown Road Diegueno/Kumeyaay
Alpine , CA 91901
frbrown@viejas-nsn.gov
(619) 884-6437

Ewiiaapaayp Tribal Office
Will Micklin, Executive Director
4054 Willows Road Diegueno/Kumeyaay
Alpine , CA 91901
wmicklin@leaningrock.net
(619) 445-6315
(619) 445-9126 Fax

Kumeyaay Cultural Repatriation Committee
Bernice Paipa, Vice Spokesperson
P.O. 937 Diegueno/Kumeyaay
Boulevard , CA 91905
bernicepaipa@gmail.com

Iipay Nation of Santa Ysabel
Clint Linton, Director of Cultural Resources
P.O. Box 507 Diegueno/Kumeyaay
Santa Ysabel, CA 92070
cjlinton73@aol.com
(760) 803-5694

Kumeyaay Diegueno Land Conservancy
Mr. Kim Bactad, Executive Director
2 Kwaaypaay Court Diegueno/Kumeyaay
El Cajon , CA 91919
kimbactad@gmail.com
(619) 659-1008 Office
(619) 445-0238 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list s only applicable for contacting locative Americans with regard to cultural resources for the proposed SCH#2014071077; CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the Merge 56 Development Permit / Site Development Permit / Vesting Tentative Map / Rezone Project; located in the Cities of Burbank and Palmdale; Los Angeles County, California.

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

August 18, 2014

Ms. Elizabeth Shearer-Nguyen
City of San Diego
Development Services Department
1222 First Avenue, MS-501
San Diego, California 92101
DSDEAS@sandiego.gov

Subject: Comments on the Notice of Preparation of a Draft Environmental Impact Report for the Merge 56 Planned Development Permit/Site Development Permit/Vesting Tentative Map/Rezone (Project Number 360009; SCH No. 2014071065)

Dear Ms. Shearer-Nguyen:

The California Department of Fish and Wildlife (Department) has reviewed the above-referenced Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the Merge 56 Planned Development Permit/Site Development Permit/Vesting Tentative Map/Rezone, dated July 21, 2014. The following statements and comments have been prepared pursuant to the Department's authority as Trustee Agency with jurisdiction over natural resources affected by the project (California Environmental Quality Act [CEQA] Guidelines §15386) and pursuant to our authority as 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 (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 of San Diego (City) participates in the NCCP program by implementing its approved Multiple Species Conservation Program (MSCP) Subarea Plan (SAP).

According to the NOP, the subject project falls within a larger subdivision project approved by the City in 2005 (i.e., formally referred to as Rhodes Crossing; SCH# 2002121089). The current development proposal would modify land uses previously approved for Units 4, 5, and 10 of the Rhodes Crossing project. The development would include approximately 525,000 square feet of commercial, office, theater, and hotel uses and up to 242 residential dwelling units. The project site consists of 41.34 acres of undeveloped land in the north-central portion of the City of San Diego. The project discretionary approvals would include a community plan amendment to amend the site's existing land use designation in the Torrey Highlands Subarea Plan for commercial regional and medium high density residential to local mixed use to allow for a mix of commercial, professional, corporate, scientific/medical office, and hotel uses, as well as varying residential land uses. Additionally, a corresponding rezone is proposed to modify the underlying zoning. The property is located in the communities of Torrey Highlands and Rancho Peñasquitos, immediately adjacent to the State Route 56 right-of-way. Access to the site is from the southern termini of Camino Del Sur and Carmel Mountain Road, as well as from the existing section of Camino del Sur between Dormouse Road and Park Village Drive. In addition to the on-site mixed-use development (including on-site road improvements), the project also includes off-site road improvements to complete undeveloped segments of Camino del Sur and

Carmel Mountain Road. The City's Multi-Habitat Planning Area is situated within or west of the rights-of-way for the road extension but not within the proposed development site.

The Department offers the following comments and recommendations to assist the City in avoiding, minimizing, and adequately mitigating project-related impacts to biological resources.

Specific Comments

1. The proposed development is located directly east of the Del Mar Mesa Preserve. The ownership of Del Mar Mesa is split among private land holders and five public or non-profit land owners/managers: City of San Diego, County of Diego, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and a non-profit manager. Each of these entities has mandates that direct their management of open space preserves. The Department has met on prior occasions with the City to address the proliferation of illegal trails within the Del Mar Mesa Preserve, and to review potential environmentally-sensitive trail designs that would ensure the protection of sensitive biological resources while allowing appropriate passive uses on Del Mar Mesa.

   At our July 22, 2014 meeting with the City, local planning group members, and state representatives, the discussion included providing a secondary/additional east-west access route to Del Mar Mesa. The Department mentioned during the meeting that this access issue has been discussed as part of an ongoing collaborative effort with the City over the last five years, as part of development of the Del Mar Mesa Natural Resource Management Plan (NRMP) and related Mitigated Negative Declaration (MND) that was recently circulated for public review on March 20, 2014. Specifically, the U.S. Fish and Wildlife Service and Department jointly provided the following comment on the draft MND regarding this issue for the Del Mar Mesa Preserve:

   > "Figure 2 of the Draft MND shows a future potential trail across the Rhodes Crossing property, which appears to be located outside the boundaries of the NRMP. As discussed in our coordination efforts, if a second east-west access (one already is proposed as part of the NRMP on private lands and west through Deer Canyon) is desired in the future, the Wildlife Agencies will work with the City to determine the least impactive route for this additional east-west connection after the Rhodes Crossing development is far enough along so that redundant alignments do not result in additional direct or indirect impacts to this MHPA core resource area. Such a secondary east-west connection may or may not include access through the Department's Del Mar Mesa Ecological Reserve."

   To continue our ongoing partnership with the City to provide a workable access plan on Del Mar Mesa that focuses on avoiding/minimizing impacts to sensitive biological resources (in particular vernal pools), we recommend that the DEIR include an analysis of potential east-west connections across the Merge 56 property to appropriate points of access on Del Mar Mesa. Such an analysis will help determine if all or portions of any additional east-west access as discussed at our July 22, 2014 meeting may be available as part of this project. Since the destination for public access in this area for the City's NRMP is Del Mar Mesa, the analysis should include the use of roadways and internal site pathways that will serve the project site as through-access to the mesa from areas to the east, and not be limited to open space. For example, to provide additional east-west access from existing communities to

the east and south with the least amount of impact to biological resources, it may be more appropriate to provide a through-connection to the mesa with the Merge 56 project using the extension of Camino del Sur and Carmel Mountain Roads, internal site pathways, and along the margins of development areas 4, 5, and related open space. Other options discussed at the July 22, 2014 meeting included a potential southerly through-connection using Darkwood Canyon/ the extension of Camino del Sur and excess City right-of-way along Eclipse and Dormouse Roads.

2. The project description mentions two isolated vernal pools and a small drainage channel within the project footprint. The DEIR should provide a specific discussion on the conformance of the project with the City's ongoing Vernal Pool Habitat Conservation Plan, including any current discussion with the U.S. Fish and Wildlife Service.

3. The DEIR should accurately disclose the relationship of this project to the City's MSCP and the general planning policies and design guidelines (i.e., manner consistent with Section 1.4 of the County's SAP) that are required to be considered and to adhere to minimizing impacts to the maximum extent practicable. The direct, indirect and cumulative impact analysis should include figures of the designated preserve area that exist within and adjacent to the project boundaries, as well as address the current status and long-term management obligations associated with this area and any potential impacts to this area that may result from the proposed project.

4. The Department emphasizes that one of the purposes of CEQA is to "prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible" (CEQA Guideline, §15002 (a)(3); emphasis added). Because of the proximity of the project site to biological open space and associated sensitive species (e.g., vernal pools) and habitats that could be negatively affected or lost by the proposed project, the CEQA alternatives analysis for this project is extremely important. We are particularly interested in the DEIR describing a "range of reasonable alternatives to the project (particularly options to maximize open space), which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives," as required by Section 15126.6(a) of the CEQA Guideline. The discussion of alternatives are to include an "alternative [that] would impede to some degree the attainment of the project objectives, or would be more costly" (§15126.6[b] of the CEQA Guidelines). "The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making" (§15126.6[f] of the CEQA Guidelines). The Department will consider the alternatives analyzed in the context of their relative impacts on biological resources on both a local and regional level.

General Comments

1. To enable the Department to adequately review and comment on the proposed project from the standpoint of the protection of plants, fish and wildlife, we recommend the following information be included in the DEIR.

   a) The document should contain a complete discussion of the purpose and need for, and description of, the proposed project, including all staging areas and access routes to the construction and staging areas.

b) A range of feasible alternatives should be included to ensure that alternatives to the proposed project are fully considered and evaluated; the alternatives should avoid or otherwise minimize impacts to sensitive biological resources. Specific alternative locations should be evaluated in areas with lower resource sensitivity where appropriate.

Biological Resources within the Project's Area of Potential Effect

2. The document should provide a complete assessment of the flora and fauna within and adjacent to the project area, with particular emphasis upon identifying endangered, threatened, sensitive, and locally unique species and sensitive habitats. This should include a complete floral and faunal species compendium of the entire project site, undertaken at the appropriate time of year. The DEIR should include the following information.

   a) CEQA Guidelines, section 15125(c), specifies that knowledge on the regional setting is critical to an assessment of environmental impacts and that special emphasis should be placed on resources that are rare or unique to the region.

   b) A thorough assessment of rare plants and rare natural communities, following the Department's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (see: http://www.dfg.ca.gov/habcon/plant/) (hard copy available on request).

   c) A current inventory of the biological resources associated with each habitat type on site and within the area of potential effect. The Department's California Natural Diversity Database in Sacramento should be contacted at (916) 322-2493 or www.wildlife.ca.gov/biogeodata/ to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code.

   d) An inventory of rare, threatened, and endangered, and other sensitive species on site and within the area of potential effect. Species to be addressed should include all those which meet the CEQA definition (see CEQA Guidelines, §15380). This should include sensitive fish, wildlife, reptile, and amphibian species. Seasonal variations in use of the project area should also be addressed. Focused species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with the Department and the U.S. Fish and Wildlife Service.

Analyses of the Potential Project-Related Impacts on the Biological Resources

3. The DEIR should provide a thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts. This discussion should focus on maximizing avoidance, and minimizing impacts.

   a) A discussion of potential adverse impacts from lighting, noise, human activity, exotic species, and drainage should also be included. The latter subject should address: project-related changes on drainage patterns on and downstream of the project site; the

volume, velocity, and frequency of existing and post-project surface flows; polluted runoff; soil erosion and/or sedimentation in streams and water bodies; and post-project fate of runoff from the project site. The discussions should also address the proximity of the extraction activities to the water table, whether dewatering would be necessary, and the potential resulting impacts on the habitat, if any, supported by the groundwater. Mitigation measures proposed to alleviate such impacts should be included.

b) Project impacts should be analyzed relative to their indirect impacts on biological resources, including resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands. Impacts on, and maintenance of, wildlife corridor/ movement areas, including access to undisturbed habitats in adjacent areas, should be fully evaluated in the DEIR.

c) The zoning of areas for development projects or other uses that are nearby or adjacent to natural areas may inadvertently contribute to wildlife-human interactions. A discussion of possible conflicts and mitigation measures to reduce these conflicts should be included in the environmental document.

d) A cumulative effects analysis should be developed as described under CEQA Guidelines, section 15130. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

Mitigation for the Project-related Biological Impacts

4. The DEIR should include measures to fully avoid and otherwise protect Rare Natural Communities from project-related impacts. The Department considers these communities as threatened habitats having both regional and local significance.

5. The DEIR should include mitigation measures for adverse project-related impacts to sensitive plants, animals, and habitats. Mitigation measures should emphasize avoidance and reduction of project impacts. For unavoidable impacts, on-site habitat restoration or enhancement should be discussed in detail. If on-site mitigation is not feasible or would not be biologically viable and therefore not adequately mitigate the loss of biological functions and values, off-site mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed.

6. For proposed preservation and/or restoration, the DEIR should include measures to perpetually protect the targeted habitat values from direct and indirect negative impacts. The objective should be to offset the project-induced qualitative and quantitative losses of wildlife habitat values. Issues that should be addressed include restrictions on access, proposed land dedications, monitoring and management programs, control of illegal dumping, water pollution, increased human intrusion, etc.

   The Department recommends that measures be taken to avoid project impacts to nesting birds. Migratory nongame native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (Title 50, § 10.13, Code of Federal Regulations). Sections 3503, 3503.5, and 3513 of the California Fish and Game Code prohibit take of all birds and their active nests including raptors and other migratory

nongame birds (as listed under the Federal MBTA). Proposed project activities (including, but not limited to, staging and disturbances to native and nonnative vegetation, structures, and substrates) should occur outside of the avian breeding season which generally runs from February 1- September 1 (as early as January 1 for some raptors) to avoid take of birds or their eggs. If avoidance of the avian breeding season is not feasible, the Department recommends surveys by a qualified biologist with experience in conducting breeding bird surveys to detect protected native birds occurring in suitable nesting habitat that is to be disturbed and (as access to adjacent areas allows) any other such habitat within 300 feet of the disturbance area (within 500 feet for raptors). Project personnel, including all contractors working on site, should be instructed on the sensitivity of the area. Reductions in the nest buffer distance may be appropriate depending on the avian species involved, ambient levels of human activity, screening vegetation, or possibly other factors.

7. The Department generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare, threatened, or endangered species. Studies have shown that these efforts are experimental in nature and largely unsuccessful.

8. Plans for restoration and revegetation should be prepared by persons with expertise in southern California ecosystems and native plant revegetation techniques. Each plan should include, at a minimum: (a) the location of the mitigation site; (b) the plant species to be used, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.

We appreciate the opportunity to comment on the referenced NOP. Questions regarding this letter and further coordination on these issues should be directed to Paul Schlitt at (858) 637-5510 and paul.schlitt@wildlife.ca.gov.

Sincerely,

Gail K. Sevens
Environmental Program Manager
South Coast Region

ec: Scott Morgan, State Clearinghouse, Sacramento
Patrick Gower, U.S. Fish and Wildlife Service, Carlsbad

DEPARTMENT OF TRANSPORTATION
DISTRICT 11, DIVISION OF PLANNING
4050 TAYLOR ST, M.S. 240
SAN DIEGO, CA 92110
PHONE (619) 688-6960
FAX (619) 688-4299
TTY 711
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Serious drought.
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August 11, 2014

11-SD-56
PM 6.1
Merge 56 (Rhodes Crossing)
NOP / SCH #2014071065

Ms. Elizabeth Shearer-Nguyen
City of San Diego
1222 First Avenue, MS-501
San Diego, CA 92101

Dear Ms. Shearer-Nguyen:

The California Department of Transportation (Caltrans) appreciates the opportunity to review the Notice of Preparation (NOP) for the Merge 56 project (Rhodes Crossing) Draft Environmental Impact Report (DEIR) - SCH #2014071065. Caltrans has the following comments:

- The proposed Carmel Mountain Road overcrossing widening should accommodate the State Route 56 (SR-56) improvements and meet all design criteria (clearances, widths, etc.)

A traffic impact study (TIS) is necessary to determine this proposed project's near-term and long-term impacts to the State facilities – existing and proposed – and to propose appropriate mitigation measures. Please provide Caltrans a copy of the project TIS when it is available.

Any work performed within Caltrans right-of-way (R/W) will require discretionary review and approval by Caltrans and an encroachment permit will be required for any work within the Caltrans R/W prior to construction.

If you have any questions, please contact Leila Ibrahim of the Development Review branch at (619) 688-6802.

Sincerely,

JACOB ARMSTRONG, Branch Chief
Development Review Branch

San Diego County Archaeological Society, Inc.

Environmental Review Committee

26 July 2014

To: Ms. Elizabeth Shearer-Nguyen
Development Services Department
City of San Diego
1222 First Avenue, Mail Station 501
San Diego, California 92101

Subject: Notice of Preparation of a Draft Environmental Impact Report
Merge 56 Planned Development Permit, Site Development Permit,
Vesting Tentative Map, and Rezone
Project No. 360009

Dear Ms. Shearer-Nguyen:

Thank you for the Notice of Preparation for the subject project, received by this Society last week.

We are pleased to note the inclusion of historical resources in the list of subject areas to be addressed in the DEIR, and look forward to reviewing it during the upcoming public comment period. To that end, please include us in the distribution of the DEIR, and also provide us with a copy of the cultural resources technical report(s).

SDCAS appreciates being included in the City's environmental review process for this project.

Sincerely,

James W. Royle, Jr., Chairperson
Environmental Review Committee

cc: SDCAS President
File

P.O. Box 81106 San Diego, CA 92138-1106 (858) 538-0935

RINCON BAND OF LUISEÑO INDIANS

Culture Committee

1 W. Tribal Road · Valley Center, California 92082 ·
(760) 297-2621 or·(760) 297-2622 & Fax:(760) 749-8901

July 24, 2014

E. Shearer-Nguyen
The City of San Diego
1222 First Avenue, MS 501
San Diego, CA 92101

Re: Merge 56 Planned Development

Dear E. Shearer-Nguyen:

This letter is written on behalf of the Rincon Band of Luiseño Indians. Thank you for inviting us to submit comments on Merge 56 Planned Development. Rincon is submitting these comments concerning your projects potential impact on Luiseño cultural resources.

The Rincon Band has concerns for impacts to historic and cultural resources and the finding of items of significant cultural value that could be disturbed or destroyed and are considered culturally significant to the Luiseño people. This is to inform you, your identified location is not within the Luiseño Aboriginal Territory. In fact, your project falls within Kumeyaay Aboriginal Territory. We recommend that you locate a tribe within the project area to receive direction on how to handle any inadvertent findings according to their customs and traditions.

If you would like information on tribes within your project area, please contact the Native American Heritage Commission and they will assist with a referral. If for some reason you are unable to locate an interested tribe please notify our office at (760) 297-2635 and we will be happy to assist you in the matter.

Thank you for the opportunity to protect and preserve our cultural assets.

Sincerely,

Rose Duro
Rincon Culture Committee Chairman

California Native Plant Society

San Diego Chapter of the California Native Plant Society
P O Box 121390
San Diego CA 92112-1390
info@cnpssd.org | www.cnpssd.org

August 5, 2014

Ms. Elizabeth Shearer-Nguyen
Environmental Planner
City of San Diego Development Services Center
1222 First Avenue, MS 501, San Diego, CA 92101
DSDEAS@sandiego.gov
RE: Comment on Merge 56 Planned Development Permit/Site Development Permit/Vesting Tentative Map/Rezone Project Number 360009

Dear Ms. Shearer-Nguyen,

I am writing as a resident of the Torrey Highlands neighborhood of Rancho Peñasquitos, as the conservation chair for the San Diego Chapter of the California Native Plant Society ("CNPSSD"), as a PhD plant ecologist, and as a San Diego City Parks volunteer for the last three years who has tended the Del Mar Mesa Preserve ("Preserve") and knows it better than most. In all of these roles, I am very concerned about the proposed Merge 56 Project ("Project"), and I appreciate the opportunity to respond to the Notice of Preparation ("NOP").. In this letter, I want to add information to the Notice of Preparation, suggest an additional important area of impact, discuss the frame for cumulative impacts, and suggest two additional project alternatives that would be usefully be considered.

1. Additional Information

1.A Impact analysis must include impacts to Del Mar Mesa Preserve.

So far as I can tell from the NOP, the primary area of analysis is the Merge 56 property and the footprint for the proposed roads from previous EIRs. This misses major impacts to the Preserve, which is immediately west of the Project and is impacted by the southern extension of Camino Del Sur on Preserve lands. The Project impacts the Preserve in at least five ways.

First, at the northern end of the Camino Del Sur extension, half of the road would run on the Preserve itself, on property which was purchased by the city as a filled mitigation bank in 2014, to the best of my knowledge. This part of the Preserve was identified by City Parks as an area in which trails were to be closed due to the number of sensitive and listed species present.[1] It appears that the proposed project will impact a filled mitigation bank as well as sensitive plant species and sensitive animal species habitat.

Second, the Preserve is also immediately downstream of the Project, as the perennial Deer Creek flows off the Project site and onto the Preserve. Since the Preserve lands where Deer

[1] Miller, Betsy. 2014. Biological Resources Assessmnet for the Carmel Mountain and Del Mar Mesa Natural Resource Management Plan Project, San Diego, California. Prepared by City of San Diego, Parks and Recreation Department, Open Space Division. 202 C Street, MS 5D, San Diego, CA 92101.

Creek flows were, to my knowledge, set aside as a mitigation bank, and since the area is dominated by sensitive species such as the CDFW list 1B Nuttall's scrub oak (*Quercus dumosa*), upstream hydrology changes and introduction of invasive species will generate downstream impacts. Indeed, stormwater runoff has carried at least two invasive species into the Preserve already. More importantly, increased runoff into Deer Creek (which serves as the flood control channel for much of Torrey Highlands) has already incised the Deer Creek streambed and carried trash into the Preserve. Deer Creek itself is a perennial stream only because of upstream runoff from development, and increased development will only add to the flow.

Third, the Preserve is penetrated, by my count, by seven unauthorized trails along the eastern edge. Unauthorized trail building led to closure of the Preserve five years ago, and the eastern end of the Preserve (southwest of the Project) was subsequently identified as the most biologically rich area,. Trails were excluded from this area as a result. As described below, this closed area contains a species found nowhere else in California, although it is not on any sensitive list. The proposed development will exacerbate unauthorized access to the Preserve, resulting in increased disturbance. Since the unauthorized trails already impact vernal pools and endangered species habitat on City Parks, CDFW, and USFWS-owned lands, and since unauthorized activities have included camp fires, a marijuana grow, and kids (presumably) using fire crackers to blow up old paint cans on cryptogamic crust near vernal pools, this is a non-trivial issue. The SEIR needs to analyze the how the Project will increase unauthorized access to the Preserve, and propose measures to mitigate impacts to the extent practicable.

Fourth, the Preserve is home to at least one lichen species, *Catillaria glauconigrans*, that is found nowhere else in California (see attachment 1 at the end of this letter). It is not on any sensitive species list, and until it was found in the Preserve in 2013, it was thought to have been extirpated from California. In general, lichens are sensitive to air pollution, and development will increase air pollution. *C. glauconigrans* is not the only sensitive lichen in the Preserve, and all of them could be harmed by air pollution from the road and development. It would be a shame if this development, small as it is, resulted in extirpating a species from California. The SEIR should contain air quality impacts from the proposed Project.

Fifth, state regulations specify that wild vegetation should be managed at least 100 feet from a building. Given that the Preserve was purchased as a mitigation, its continued and undisturbed existence should be given priority. All project buildings should be set back at least 100 feet from the edge of the Preserve, to provide an area for appropriate fire clearance. If this is not considered feasible, the impacts for fire clearance on the Preserve must be analyzed and mitigated.

Sixth, since climate change impacts are part of the SEIR, I strongly suggest that the greenhouse benefits of the Preserve be calculated. This provides a quantitative standard by which to quantify Project impacts on the Preserve.

1.B. Sensitive species in the Project Area

I have seen and heard California Gnatcatchers (*Polioptila californica*) in the Project area every year for the last three years while doing volunteer work on the Preserve. Up to date Gnatcatcher protocols need to be performed as part of the SEIR, since the last ones were performed at the latest in 2006.

Additionally, all the scrub oaks observable in the Project area appear to be Nuttall's scrub oak, which as noted above, is a CDFW list 1B species. Since the Preserve is the biggest remaining patch of Nuttall's scrub oak remaining in existence and was purchased as mitigation

for destruction of scrub oak habitat elsewhere, I strongly suggest that the Project proponents find ways to preserve the scrub oaks on the Project site, and not state (as in the previous EIR) that their removal is an acceptable impact.

1.C. Deer Creek Hydrology

The 2000 Camino Ruiz North Project EIR (a predecessor to the current Project) includes no jurisdictional delineation (JD) for the wetlands of Deer Creek. According to older residents who have seen the area since the 1980s, Deer Creek went from an intermittent to a perennial stream approximately ten years ago. This is backed up by evidence on the creek's floodplain, where upland plants such as large broom baccharis (*Baccharis sarothroides*) are dying at the edge of wetlands and being supplanted by cattails (*Typha domingensis*). This demonstrates that the cattails, an obligate wetland species, are younger than the shrubs. The status of the dying broom baccharis strongly suggests that the wetlands are expanding. Whatever the water source, Deer Creek has been flowing year-round since before 2008, when I started hiking regularly across the creek. I have never seen it dry. As of August 5, 2014, the creek is 12 inches deep at the eastern edge of the Preserve, where the proposed fill for Camino Del Sur will be placed. Deer Creek flows through the entire Preserve, mostly under a canopy of Nuttall's scrub oaks. Stream level rose by at least two feet during the last 2014 rain storm (pictures are available on request), and can be expected to rise still more during an El Niño rain year.

I have found no previous delineation of Deer Creek, presumably because it was an intermittent stream in 2000 when the last delineation was created and was therefore ignored. Since it is obviously now a perennial stream with wetlands, Mr. Joe Thompson (a professional wetland scientist) and I (a certified wetland delineator) performed a preliminary wetland jurisdictional delineation on April 12, 2014 (attachment 2 at the end). The delineation showed that Deer Creek has an ordinary high water line, a defined bed and bank (Figure 1, next page), hydric soils, subsurface soil water, and is bounded in places by cattails, which are obligate wetland plants, and willows. The water features mapped include the main channel running approximately east to west. On the western end, there is an intermittent north-south stream channel carved by runoff from the storm drain that drains Camino Del Sur, which is also mapped (Figure 1).

West of the wetland, Deer Creek flows under a canopy of Nuttall's scrub oaks until it reaches a reservoir on the western side of the Preserve. In breaks among the oaks there are more small wetland patches. The tallest scrub oaks all grow within 100 feet of the stream. East and upstream of the mapped wetland, cattails line the stream on the Project site until it passes under Highway 56.

My understanding is that filling in a wetland may require a Section 401 permit from the Army Corps of Engineers, along with a 404 permit from the Regional Water Quality Control Board and a Streambed alteration agreement from CDFW. It is not clear that any jurisdictional delineation currently describes the wetland conditions now.

The Army Corps of Engineers allows reliance on an approved JDs for only five years.[2] The last JD on Del Mar Mesa I have been able to document was performed in 2000, and did not include Deer Creek.[3] All JDs should be performed again. The change in Deer Creek's hydrology argues that runoff as increased throughout the Mesa.

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[2] United States Army Corps of Engineers, 2008. Regulatory Guidance Letter 08-02.

[3] City of San Diego Planning and Development Review Dept. Land Development Review Division. 2000. Mitigated negative declaration: Camino Ruiz North Roadway.

The 2000 site development permits for the extension of Camino Del Sur specifies that the channel of Deer Creek shall be filled (roughly within the yellow lines), with a culvert to contain the Creek. This may have made sense when the project was first proposed in the 1990s, but if it is implemented now, it will bury the wetland we delineated (Figure 1). In addition to requiring a rebuild of the existing Camino Del Sur storm drain (Figure 1), it will have negative consequences both to the road and to the Preserve downstream.

Figure 1. Preliminary jurisdictional delineation for Deer Creek based on surveys performed April 12, 2014. **North is to the left**. The wetland features extend on the main channel of Deer Creek north above the blue outline drawn, to where they cross under highway 56.

2. Additional Impact: Fire and Public Safety

The fire danger arises from two factors: mitigating for the presence of California Gnatcatchers in the project area and the insufficiency of existing regulations to prevent fires on construction sites, as demonstrated by the May 13, 2014 Bernardo Fire, which was started by construction equipment approximately four miles north of the proposed Project.

A standard mitigation practice for the presence of California Gnatcatchers in a project area is to only allow construction after the Gnatcatcher breeding season, or between August 15 and February 15. In normal years, this time frame coincides with peak Santa Ana winds, Red Flag events, and the fires that cause the vast proportion of property damage.

Unfortunately, as the Bernardo Fire demonstrated, routine fire prevention practices are inadequate during strong Santa Ana winds, and fires started can be catastrophic. The construction company that started the Bernardo fire did everything by the book and still started a wildfire.

These two factors together mean that the proposed Project substantially increases the risk of fire on Del Mar Mesa. If normal practices are followed, construction will take place during the most dangerous fire season with inadequate fire protection.

Given that the southward extension of Camino Del Sur is intended to provide a fire evacuation route for both Park Village and Carmel Mountain Road, it would be counterproductive in the extreme for the proposed Project to burn down either of these communities by accidentally starting a wildfire. This says nothing of the damage to the Preserve, which contains the largest remnant of unburned, old growth chaparral left in southern California. Losing that due to human carelessness would be a major loss to the entire region.

The Project's fire impacts must be quantified and mitigated. One simple suggestion is to give construction managers and biological monitors the ability to halt construction during Red Flag events or other unsafe conditions, without incurring any financial or other penalty for delaying construction.

3. Cumulative impacts

In the previous Camino Del Sur EIR, cumulative impacts were justified because they were deemed to have been analyzed in the original planning documents produced during the 1990s, before anything was built in Park Village or Del Mar Mesa.

It is now over 20 years later. As demonstrated by the now-perennial Deer Creek, environmental conditions have changed. Camino Ruiz will no longer be built across Rancho Penasquitos Preserve, and people impacted by the Project have lived in the area for up to 20 years in Park Village. The Del Mar Mesa Preserve exists, development will no longer take place on that property, and thanks to fires and development throughout southern California, it is the biggest stand of old growth chaparral left in southern California and the biggest group of vernal pools left on City of San Diego land.

Cumulative impacts must be assessed based on current conditions, land uses, and on current and proposed projects adjacent to the Project. The old planning documents are outdated and should not be referenced as in any way analyzing current conditions, nor as proposing proper mitigations for the cumulative impacts of the current project.

4. Project Alternatives

Before describing other project alternatives, I have to point out that the NOP's proposed alternative A "development under existing plans," may not be legally viable. Existing plans are based, in part, on expired wetland jurisdictional delineations, and it is likely that agencies will require substantial additions to the old plan to accommodate Deer Creek's changed hydrology. Additionally, in (I believe) 2007, the developer entered into a deal with two environmental groups, the Endangered Habitats League and Center for Biological Diversity, to build a wildlife undercrossing under Camino Del Sur. This undercrossing is vitally necessary to connect the Preserve to a wildlife corridor in Darkwood Canyon. While the developer and the groups both stand by the deal, the paper record appears to show that the City tried to unilaterally nullify it in the previous iteration of the plan. While I cannot speak for any of the parties to the previous agreement, I do hope that the agreement is upheld. However, that agreement is not (to my knowledge) embodied in the existing plans.

Alternative A should be re-examined and abandoned unless it is actually feasible. The southern extension of Camino Del Sur needs to contain two structures: a properly-sized culvert or bridge to accommodate Deer Creek at the northern end, and a wildlife undercrossing to

Darkwood Canyon at the southern end. This is a matter of both public safety and meeting the developer's and City's legal and regulatory requirements.

Additionally, I see two other feasible project alternatives that have not been discussed.

4.A: Reduced Camino Del Sur southern extension

The idea here is to only extend Camino Del Sur far enough north to connect up to Carmel Mountain Road. This would provide two exits for both Park Village and Carmel Mountain Road in case of fire, thus fulfilling the City mandate for two exits from each community. Additionally, this configuration would avoid the hydrologic complexities of bridging Deer Creek. More importantly, it would keep from building the road on top of Preserve lands, and thus substantially decrease the City's mitigation burden for building the road. This configuration would almost certainly decrease the commercial viability of the proposed Project, and it would also require the wildlife underpass to Darkwood Canyon. Still, it appears feasible. I suggest that this alternative be explicitly modeled, separate from the general "reduced project alternative," because it is the simplest way to meet the City's mandates and still allow some development in the Project.

4.B: Two-lane Camino Del Sur southern extension

So far as I can tell, the Camino Del Sur southern extension is a four-lane road because it was originally planned to be a northern extension of Camino Ruiz from Mira Mesa. That extension will not happen. Given that the width of the road is a major factor in its impacts, I have to question whether a four-lane road is necessary, or whether a two-lane road would handle the traffic volume. Since traffic impacts on human safety were sufficient to cause the previous Camino Del Sur EIR to propose adding three stop lights on the one mile stretch to reduce traffic speeds, and since the proposed road width substantially impacts the Preserve, I strongly suggest that a two-lane southern extension be explicitly considered as an option.

Thank you for taking my comments. Please keep me informed on this and all projects in Torrey Highlands and on Del Mar Mesa, and please send me copies of all public notices and documents related to these projects.

Sincerely,

Frank Landis, PhD
Conservation Chair
California Native Plant Society, San Diego Chapter
Home address: 7885 Via Montebello #5
San Diego, CA 92129 310-883-8569,
franklandis03@yahoo.com

Attachments:

1. Letter from Dr. Kerry Knudsen on Preserve lichens
2. Jurisdictional delineation for Deer Creek at the proposed Camino Del Sur Crossing

Attachment 1:

April 9, 2014

Dear Frank Landis,

The Del Mar Mesa is in Pacific Plate Lichen Bioregion. This region extends from Point Reyes to the end of Baja California along the coast and includes the California islands and has over 100 endemic species of lichens, many of which are rare. The lichen flora of Del Mar Mesa contains over 35 species of lichens typical of this bioregion, growing on soil, rock, bark and wood. It has some of the best preserved biological soil crusts in the county, containing *Texosporium sancti-jacobi*, a rare species recognized by CNDDB and CNPS as a species of special concern and originally described from the San Diego area. On *Quercus dumosa*, a tree restricted to the south coast, we collected *Catillaria glauconigrans*, a lichen not collected in California since 1900. We have not completed our survey of the maritime chaparral at Del Mar Mesa but it is hoped we will discover on the property a species originally collected in San Diego in 19th century on maritime chaparral, *Bacidia jacobi,* and only known from a collection at Harvard.

Kerry Knudsen

Kerry Knudsen, Lichen Curator
The Herbarium
Department of Botany & Plant Sciences
2117 Batchelor Hall
University of California
Riverside, CA 92521-0124.
Knudsen@ucr.edu kerryknudsen999@gmail.com
951-8273601 (herbarium)
951-2000725 (cell)

(Attachment 2) WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Del Mar Mesa, Deer Creek City/County: San Diego, San Diego Sampling Date: April 12, 2014

Applicant/Owner: State: CA Sampling Point: 1A

Investigator(s): Joe Thompson, Frank Landis Section, Township, Range: S13 T14S R3W Landform (hillslope, terrace, etc.): canyon bottom

Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): Arid West (C) Lat: 32.956139° Long: 117.152722° Datum:

Soil Map Unit Name: Olivenhain cobbly loam, 9 to 30 percent slopes NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** **Yes X No**
Hydric Soil Present?	Yes X No	
Wetland Hydrology Present?	Yes X No	

Remarks:
This plot paired with 1B, which is outside of wetland.
Perennial stream within 20' of sample site. Data recorded only within plot. Soil core taken at plot center, at Lat/Long recorded above. Tree plot semicircle on south side of plot center

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' semicircle)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix gooddingii*	50	Y	FACW
2.			
3.			
4.			
	50 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5' circle)			
1. Baccharis sarothroides	5	N	**FACU**
2.			
3.			
	5 = Total Cover		
Herb Stratum (Plot size: 5' circle)			
1. unknown festucoid grass (not flowering, no ID)	75	Y	
2. Apium graveolens	40	Y	NOL
3. Typha domingensis	15	Y	OBL
4. Helmithotheca echioides	1	N	**FACU**
5. Ambrosia psilostachys	1	N	FACU
6.			
7.			
8.			
	132 = Total Cover		
Woody Vine Stratum (Plot size: Plot size: 30' semicircle)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 25 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 15%	x 1 =	0.15
FACW species 90%	x 2 =	0.45
FAC species 0%	x 3 =	0.00
FACU species 7%	x 4 =	0.28
UPL species 0%	x 5 =	0.00
Column Totals: 112% (A)		88 (B)

Prevalence Index = B/A = 0.78

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes X No**

Remarks: 1. "unknown festucoid grass" does not have any flowering structures and is not identifiable at this time. It only grows within the floodplain, but it is not counted here, because numerous grass species grow in the area.
2. NOL=Not on list, but Apium graveolens grows within or next to OHWL of Deer Creek. Counted as FACW here.
3. Baccharis sarothroides are old, dying or dead, with cattails growing up around them. Evidence suggests they are remnants of past hydrological conditions, and wetland is expanding. Deer Creek has flowed continuously since before 2009 (based on experience of Frank Landis)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/2	40	5 YR 11/6	20	C	M	Sandy Clay Loam	
0-8			10 YR 4/2	20	D	M	Sandy Clay Loam	
8-18+	G2 5B	100					Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
_X_ Hydrogen Sulfide (A4)
___ Stratified Layers (A5) (**LRR C**)
___ 1 cm Muck (A9) (**LRR D**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
Sandy Redox (S5)
Stripped Matrix (S6)
Loamy Mucky Mineral (F1)
Loamy Gleyed Matrix (F2)
Depleted Matrix (F3)
Redox Dark Surface (F6)
Depleted Dark Surface (F7)
Redox Depressions (F8)
Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

1 cm Muck (A9) (**LRR C**)
2 cm Muck (A10) (**LRR B**)
Reduced Vertic (F18)
Red Parent Material (TF2)
Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _X_ No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
_X_ High Water Table (A2)
_X_ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
Salt Crust (B11)
Biotic Crust (B12)
Aquatic Invertebrates (B13)
_X_ Hydrogen Sulfide Odor (C1)
Oxidized Rhizospheres along Living Roots (C3)
_X_ Presence of Reduced Iron (C4)
Recent Iron Reduction in Tilled Soils (C6)
Thin Muck Surface (C7)
Other (Explain in Remarks)

Secondary Indicators (2 or more required)

Water Marks (B1) (**Riverine**)
Sediment Deposits (B2) (**Riverine**)
Drift Deposits (B3) (**Riverine**)
Drainage Patterns (B10)
Dry-Season Water Table (C2)
Crayfish Burrows (C8)
Saturation Visible on Aerial Imagery (C9)
Shallow Aquitard (D3)
_X_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes_____ No__X__ Depth (inches): _____
Water Table Present? Yes __X__ No_____ Depth (inches): 6
Saturation Present? (includes capillary fringe) Yes__X__ No_____ Depth (inches): 0

Wetland Hydrology Present? Yes __X__ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

This plot paired with 1B, which is outside of wetland.
Perennial stream within 20' of sample site. Data recorded only within plot. Soil core taken at plot center, at Lat/Long recorded above. Tree plot semicircle on south side of plot center. Road at

Wetland delineated as of April 11, 2/14. Streets at top of picture are Camino Del Sur and Torrey Santa Fe Road. **In this picture, North is up.** The main body of wetland runs east-west, splitting upstream. Stream channel lined with cattails extends to east. Western end is where stream goes under canopy of *Quercus dumosa* and is end of this wetland. North-south channel on western side is an intermittent channel carved by runoff from the stormwater drain at northern end of stream. .

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Del Mar Mesa, Deer Creek City/County: San Diego, San Diego Sampling Date: April 12, 2014

Applicant/Owner: State: CA Sampling Point: 1B

Investigator(s): Joe Thompson, Frank Landis Section, Township, Range: S13 T14S R3W

Landform (hillslope, terrace, etc.): canyon bottom Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): Arid West (C) Lat: 32.956204° Long: 117.152730° Datum:

Soil Map Unit Name: Olivenhain cobbly loam, 9 to 30 percent slopes NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes No X	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes No X	
Wetland Hydrology Present?	Yes No X	

Remarks:
This plot paired with 1A, which is outside of wetland. This samples adjacent upland vegetation outside the wetland

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: Plot size: 30' semicircle)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5' circle)			
1. *Opuntia littoralis*	25	Y	
2. *Baccharis saothroides*	10		
3. *Isocoma menziesii*	30	Y	
4. *Artemisia californica*	5		
5.			
	70 = Total Cover		
Herb Stratum (Plot size: 5' circle)			
1. *Stipa Lepida*	5		
2.			
3.			
4.			
5.			
	5 = Total Cover		
Woody Vine Stratum (Plot size:)			
1. None			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 95 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: (A)

Total Number of Dominant Species Across All Strata: (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	FAC
species	x 3 =	
FACU species	x 4 =	UPL
species	x 5 =	
Column Totals: (A)	(B)	

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No X

Remarks:

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	7.5 YR 3/2	1000					Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- 1 cm Muck (A9) (**LRR C**)
- 2 cm Muck (A10) (**LRR B**)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes_____No __X__

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (**Riverine**)
- Sediment Deposits (B2) (**Riverine**)
- Drift Deposits (B3) (**Riverine**)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes_____No __X__Depth (inches): _____

Water Table Present? Yes_____No __X__Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes_____No __X__Depth (inches): _____

Wetland Hydrology Present? Yes_____No __X__

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Merge 56 Planned Development PermitSite Development PermitVesting Tentative MapRezone Project Number

From: Frank Landis <franklandis03@yahoo.com>
Sent: Tuesday, August 5, 2014 1:02 PM
To: DSD EAS
Cc: Greg Suba; Thomas Oberbauer; Richard Halsey; Jim Peugh; Rebecca Schwartz; Mollie Bigger; Richard Miller; Van Collinsworth; Michael Beck; Kerry Knudsen; Erik Basil
Subject: Comment on Merge 56 Planned Development Permit/Site Development Permit/Vesting Tentative Map/Rezone Project Number 360009
Attachments: CNPSSD Landis Merge 56 NOP Comments 20140805.pdf

Dear Ms. Shearer-Nguyen,

I am writing as a resident of the Torrey Highlands neighborhood of Rancho Peñasquitos, as the conservation chair for the San Diego Chapter of the California Native Plant Society, as a PhD plant ecologist, and as a San Diego City Parks volunteer for the last three years who has tended the Del Mar Mesa Preserve and knows it better than most. In all of these roles, I am very concerned about the proposed Merge 56 Project, and I appreciate the opportunity to respond to the Notice of Preparation. In this letter, I want to add information to the Notice of Preparation, suggest an additional important area of impact, discuss the frame for cumulative impacts, and suggest two additional project alternatives that would be usefully be considered.

My comment letter is attached.Thank you for taking my comments.

Please keep me informed on this and all projects in Torrey Highlands and on Del Mar Mesa, and please send me copies of all public notices and documents related to these projects.

Sincerely

Frank Landis, PhD
Conservation Chair, CNPSSD

; Planned Development PermitSite Development PermitVesting Tentative MapRezone. Project number 360(

benefits. Instead of
spending money unnecessarily only to bring about danger, traffic, noise, and disturbance to the
neighborhood and the canyon, this money could be put into much better use to more needy
areas.

I suggest this segment not be connected.

I didn't go to the Aug 6 hearing meeting so this comment was not communicated before.

Thanks very much for your considerations.

Sincerely,

Charles Shen (858-207-8038)
12304 Darkwood Rd.
San Diego, CA 92129

; Planned Development PermitSite Development PermitVesting Tentative MapRezone. Project number 360(

From: Qiang Shen <shenqiang@hotmail.com>
Sent: Saturday, August 9, 2014 12:45 PM
To: DSD EAS
Subject: Merge56 Planned Development Permit/Site Development Permit/Vesting Tentative Map/Rezone. Project number: 360009

To :
Kerry Santoro,
Deputy Director
Development Services Department
City of San Diego
To:
Gary Levitt
Sea Breeze Properties, LLC
Subject: Comments regarding the preparation of SEIR of following project:
Project: Merge56 Planned Development Permit/Site Development Permit/Vesting Tentative
Map/Rezone.
Project number: 360009

Dear Mrs. Santoro and Mr. Levitt:

As a long-time resident in Park Village, I would like to express my concern and objection to one
of the off-site segments of the aforementioned project, southern extension of Camino Del Sur
from its planned intersection with Carmel Mountain Road southerly approximately 0.5mile to
Dormouse Road in Park Village area.

My concerns are as follows:

The road cuts through canyon that will disturb the existing habitat of the Los Penasquitos
canyon; In addition, the Park Village Elementary school is right along the Camino Del Sur, the
increased traffic volume and higher speed due to the long slope of the road significantly
increase the danger to K-6 children going to and from the school. Thirdly, the noise generated
by the traffic echoes along the canyon and brings about significant disturbances and discomfort
to the neighborhood living around the canyon.

People in Park Village have lived without this road for over 25 years, and there is no issue with
that. The connection of this segment of Camino Del Sur serves no additional

Truesdall_Merge 56 NOP.txt

From: Patrick Truesdell <patrick.truesdell@gmail.com>
Sent: Monday, August 4, 2014 9:39 PM
To: DSD EAS
Subject: 360009. Merge 56

I live near this proposed project. I commute daily on the 56. The 56 already is too small for the
traffic volume with virtually pure gridlock from black mtn to the 5. What are the plans for
widening the 56 and adding ramps for the 5 north transition? The 56 cannot handle more traffic
in its current state, and this development would greatly increase the traffic on the 56. Sincerely,
Patrick truesdell. 8457 hovenweep ct, San Diego, ca

APPENDIX B

Traffic Impact Analysis

LINSCOTT LAW & GREENSPAN engineers

TRAFFIC IMPACT ANALYSIS

MERGE 56

San Diego, California
January 14, 2016

LLG Ref. 3-13-2255

Prepared by:

Cara Hilgesen
Senior Transportation Planner

Chris Mendiara
Associate Principal

Under the Supervisor of:

John P. Keating
Principal

Linscott, Law & Greenspan, Engineers
4542 Ruffner Street
Suite 100
San Diego, CA 92111
858.300.8800 T
858.300.8810 F
www.llgengineers.com

EXECUTIVE SUMMARY

The Merge 56 Development Project is a subset of a larger subdivision project entitled by the City of San Diego in 2005 and formerly referred to as the Rhodes Crossing project. The Merge 56 Development Project involves a Community Plan Amendment (CPA) to amend the site's land use designation in the Torrey Highlands Subarea Plan from Commercial Regional (CR) and Medium High Density Residential (MHD) to Local Mixed Use (LMXU) to allow for a mix of commercial, professional, corporate, scientific/medical office, hotel uses, as well as varying residential land uses. A corresponding rezone is proposed to modify underlying zoning from Agriculture (AR-1-1) to Community Commercial (CC-3-5) and Residential Small Lot (RX 1-2). A CPA to the Torrey Highlands Subarea Plan and Rancho Peñasquitos Community Plan is also required to reclassify two Circulation Element Roads: Camino Del Sur and Carmel Mountain Road. The CPA was initiated by the Planning Commission in September 2013. Initiation of a second CPA is not needed, as the current CPA is being expanded to cover changes to both the roadway classifications and land uses. Per City long-range planning staff, a General Plan Amendment (GPA) initiation is not required as the GPA is included as part of the CPA.

The Project applicant proposes to modify and reconfigure land uses approved for Units 4, 5 and 10 as part of the Rhodes Crossing project. Instead of constructing 273,855 square feet of self-storage, 250,000 square feet of commercial and 242 multi-family residences, the Merge 56 Project proposes 525,000 square feet of commercial, office, theater and hotel uses, and 242 residential dwelling units. The total Project is calculated to generate 19,468 ADT with 806 inbound / 386 outbound trips during the AM peak hour and 929 inbound / 1,166 outbound trips during the PM peak hour at the Project driveways. The 19,468 ADT is slightly less than the previously entitled project of 19,500 ADT. The Proposed Project does result in increased peak hour trips due to the change in primary land uses from the original entitlement (self-storage) to office and retail.

The SANDAG Series 12 Year 2035 traffic model was utilized to obtain a Select Zone Assignment (SZA) for the purposes of estimating trip distribution and ultimately the study area. In total, the study area includes twenty-two (22) off-site intersections, twenty (20) street segments, four (4) freeway mainlines segments, and six (6) ramp meter locations. Analysis was also provided for eight (8) internal roadway/Project access intersections.

Near-term conditions include two development projects that had active applications with the City of San Diego at issuance of the Notice of Preparation on July 21, 2014 for the Subsequent Environmental Impact Report (Kilroy office developments and an approved KB homes residential project, the latter of which were Units 1, 6 & 7 of the original Rhodes Crossing Project). Minimum improvements to Camino Del Sur and Carmel Mountain Road to provide basic access to these two projects were assumed in the near-term as appropriate. It is anticipated that these two projects would be completed by opening day of the proposed Project in Year 2017.

Buildout conditions do not assume the widening of State Route 56 to six lanes, or the widening of Black Mountain Road to six lanes from Twin Trails Drive to the Community Plan Boundary as neither improvement is currently funded by Year 2035. As previously mentioned, the Project lies within Units 4, 5 and 10 of the entitled Rhodes Crossing project area. As a part of the phasing plan for the construction of the complete Rhodes Crossing project, it was agreed upon by all property owners of Rhodes Crossing that the streets would be constructed prior to the complete development of the land uses. The Project is currently updating the approved *Public Facilities Phasing Plan for Rhodes Crossing Final Map,* prepared and revised by Latitude 33 Planning and Engineering, to identify Merge 56 (Units 4, 5 & 10) as responsible for the full width improvements to construct Camino Del Sur and Carmel Mountain Road in their entirety.

It should be noted that the Black Mountain Road segment from Twin Trails Drive to the Community Plan boundary just north of Mercy Road is in the process of being downgraded in the Rancho Peñasquitos Community Plan to maintain its current configuration as a Four-Lane Major Arterial. A Community Plan Amendment (CPA) to the Rancho Peñasquitos Community Plan to downgrade this roadway classification was initiated on February 27, 2014 by Black Mountain Ranch and is expected to go before City Council in 2016, based on information provided by the consultant completing the work.

The results of the capacity analyses for the street system show no direct Project impacts, and twelve (12) cumulative impacts in either the fully funded Torrey Highlands or Rancho Peñasquitos planning areas. Six of the twelve impacted locations have Torrey Highlands Public Facilities Financing Plan (PFFP) projects associated with them. These are related to improvements to SR 56 which are scheduled to occur after the Project is completed. As such, despite payment of Facilities Benefit Assessment (FBA) fees to these improvements, the cumulative impacts will remain significant and unmitigated until the SR 56 improvements occur. Five (5) cumulative impacts occur in the Rancho Peñasquitos planning area, and relate to the proposed downgrade described above. These may be considered "significant and unmitigated" if the planned reclassification of Black Mountain Road from six to four lanes currently under assessment is approved. If the reclassification does not occur, the Project will be responsible to pay a fair share towards the unfunded cost of the improvement, to the satisfaction of the City Engineer. The twelfth location (restriping of the Carmel Mountain Road/Black Mountain Road intersection), is not a PFFP project and will be mitigated by the Project prior to issuance of the first building permit.

Table ES–1, shows a summary of the significant impacts and mitigation measures which were determined in this analysis. Full details on the Project mitigation measures are provided in *Section 18.3* of this report.

TABLE ES–1
ANALYSIS SUMMARY
SIGNIFICANT IMPACTS & MITIGATION MEASURES

Significant Impacts	Impact Type	Mitigation Measures [3]	Mitigated to Below a Level of Significance?
Intersections			
TRA-1. Intersection #6: Camino Del Sur/ SR 56 WB Ramps	Cumulative	Payment of FBA fees to the fully funded Torrey Highlands FBA; Project No. T-1.3. Project No. T-1.3 plans to construct the northbound to westbound loop on-ramp.	No [1]
TRA-2. Intersection #7: Camino Del Sur/ SR 56 EB Ramps	Cumulative	Payment of FBA fees to the fully funded Torrey Highlands FBA; Project No. T-1.3. Project No. T-1.3 plans to construct the southbound to eastbound loop on-ramp.	No [1]
TRA-3. Intersection #14: Carmel Mountain Road/ Black Mountain Road	Cumulative	Restripe the northbound approach to provide an additional northbound left-turn lane within the existing curb-to-curb width mirroring the geometry of the southbound approach. Restripe the northbound receiving lanes and red curb an additional 160 feet north of Carmel Mountain Road, to the satisfaction of the City Engineer.	Yes
TRA-4. Intersection #19: Black Mountain Road/ SR 56 WB Ramps	Cumulative	Payment of a 17.7% fair share contribution toward the unfunded portion of Rancho Peñasquitos Project No. T-2D (corresponding Black Mountain Ranch Project No. T-57, Pacific Highlands Ranch PFFP Project No. T-11.1) to widen Black Mountain Road to restripe the temporary striping on the Black Mountain Road overpass to provide 3 thru lanes in the northbound direction, to the satisfaction of the City Engineer.	Potentially No [2]
TRA-5. Intersection #20: Black Mountain Road/ SR 56 EB Ramps	Cumulative	Payment of a 25.2% fair share contribution toward the unfunded portion of Rancho Peñasquitos Project No. T-2D (corresponding Black Mountain Ranch Project No. T-57, Pacific Highlands Ranch PFFP Project No. T-11.1) to widen Black Mountain Road to restripe the temporary striping on the Black Mountain Road overpass to provide 3 thru lanes in the northbound direction, to the satisfaction of the City Engineer.	Potentially No [2]
(Continued on Next Page)			

TABLE ES–1
ANALYSIS SUMMARY
SIGNIFICANT IMPACTS & MITIGATION MEASURES

Significant Impacts	Impact Type	Mitigation Measures [3]	Mitigated to Below a Level of Significance?
(Continued from Previous Page)			
TRA-6. Intersection #21: Black Mountain Road/ Park Village Road	Cumulative	Payment of a 36.1% fair share contribution toward the unfunded portion of Rancho Peñasquitos Project No. T-2D (corresponding Black Mountain Ranch Project No. T-57, Pacific Highlands Ranch PFFP Project No. T-11.1) to widen Black Mountain Road to its ultimate classification as a Six-Lane Primary Arterial, to the satisfaction of the City Engineer.	Potentially No [2]
Street Segments			
TRA-7. Segment #11: Black Mountain Road: SR 56 EB Ramps to Park Village Road	Cumulative	Payment of a 35.9% fair share contribution toward the unfunded portion of Rancho Peñasquitos Project No. T-2D (corresponding Black Mountain Ranch Project No. T-57, Pacific Highlands Ranch PFFP Project No. T-11.1) to widen Black Mountain Road to its ultimate classification as a Six-Lane Primary Arterial, to the satisfaction of the City Engineer.	Potentially No [2]
TRA-8. Segment #12: Black Mountain Road: Park Village Road to Mercy Road	Cumulative	Payment of a 37.4% fair share contribution toward the unfunded portion of Rancho Peñasquitos Project No. T-2D (corresponding Black Mountain Ranch Project No. T-57, Pacific Highlands Ranch PFFP Project No. T-11.1) to widen Black Mountain Road to its ultimate classification as a Six-Lane Primary Arterial, to the satisfaction of the City Engineer.	Potentially No [2]
Freeway Mainline Segments			
TRA-9 thru TRA-12. Mainlines #1,2: SR 56: Carmel Valley Road to Camino Del Sur, eastbound and westbound mainlines	Cumulative	Payment of FBA fees to the fully funded Torrey Highlands FBA; Project No. T-1.2B. Project No. T-1.2B plans to expand SR 56 to six lanes from Interstate 5 to Interstate 15.	No [1]

Footnotes:

1. The timing in the SANDAG RTP does not contemplate completion of the SR 56 widening until Year 2040 (after the cumulative impacts occur in Year 2035) and SR 56 is within Caltrans' jurisdiction. Because neither the City nor the applicant can assure the completion of these improvements in a timely manner, the impacts would remain significant and not fully mitigated.
2. A Community Plan Amendment (CPA) to the Rancho Peñasquitos Community Plan to downgrade the classification of Black Mountain Road from six lanes to four was initiated on February 27, 2014 by Black Mountain Ranch and is expected to go before City Council in 2016. Should the CPA be approved, the Project would not be required to make the fair share contribution and this cumulative impact would remain significant and unmitigated.
3. Payment of the highest 37.4% fair share of the unfunded portion of the most recent Fiscal Year 2014 Rancho Peñasquitos PFFP Project No. T-2D would mitigate all impacts TRA-4 through TRA-8. Currently, the unfunded portion of Rancho Peñasquitos PFFP Project No. T-2D is $6,398,439, and 37.4% would be $2,393,017.

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TRAFFIC IMPACT ANALYSIS

MERGE 56

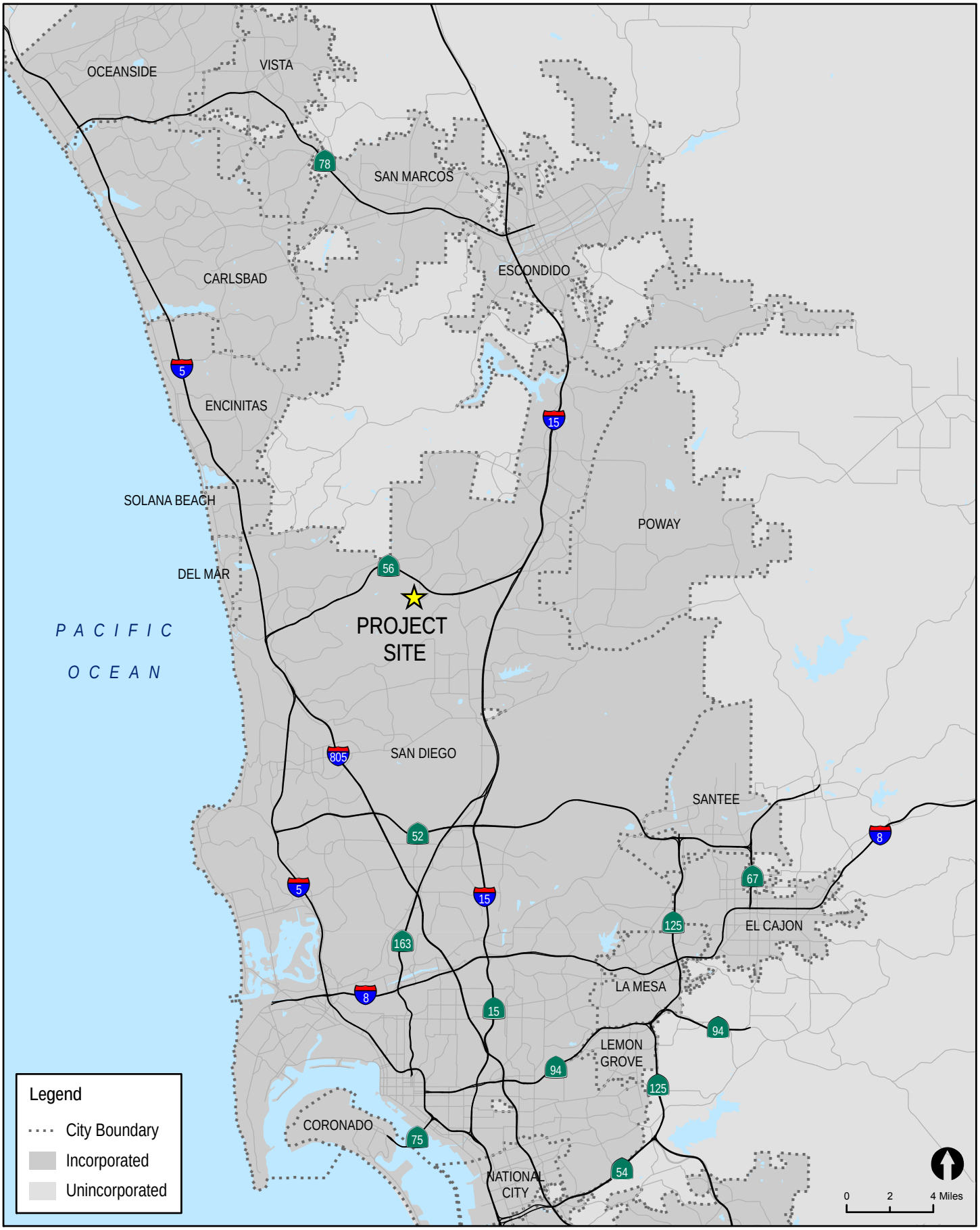
San Diego, California
January 14, 2016

1.0 INTRODUCTION

The following traffic study has been prepared to determine and evaluate the traffic impacts on the local circulation system due to the development of the proposed Merge 56 Project, hereby referred to as the "Project." The Project is a mixed-use development consisting of up to 525,000 SF of commercial, office, theater and hotel uses plus 242 residential dwelling units, including single-family, affordable housing, and townhome units. The site is located east of the planned extension of Camino Del Sur, south of State Route 56 in the City of San Diego. ***Figure 1–1*** shows the Project vicinity, and ***Figure 1–2*** is a more detailed Project area map.

The traffic analysis presented in this report includes the following:

- Project Description
- Existing Conditions Discussion
- Study Area, Analysis Approach & Methodology
- Significance Criteria
- Analysis of Existing Conditions
- Project Conditions Discussion
- Trip Generation, Distribution & Assignment
- Analysis of Existing + Project Scenario
- Near-Term Conditions Discussion
- Analysis of Near-Term Scenarios
- Year 2035 Conditions Discussion
- Analysis of Year 2035 Scenarios
- Access Assessment, Roundabouts, On-Site Circulation
- Network Development and Advantages to Community Circulation
- Parking Summary
- Transportation Demand Management
- Project Design Features, Significance of Impacts & Mitigation Measures



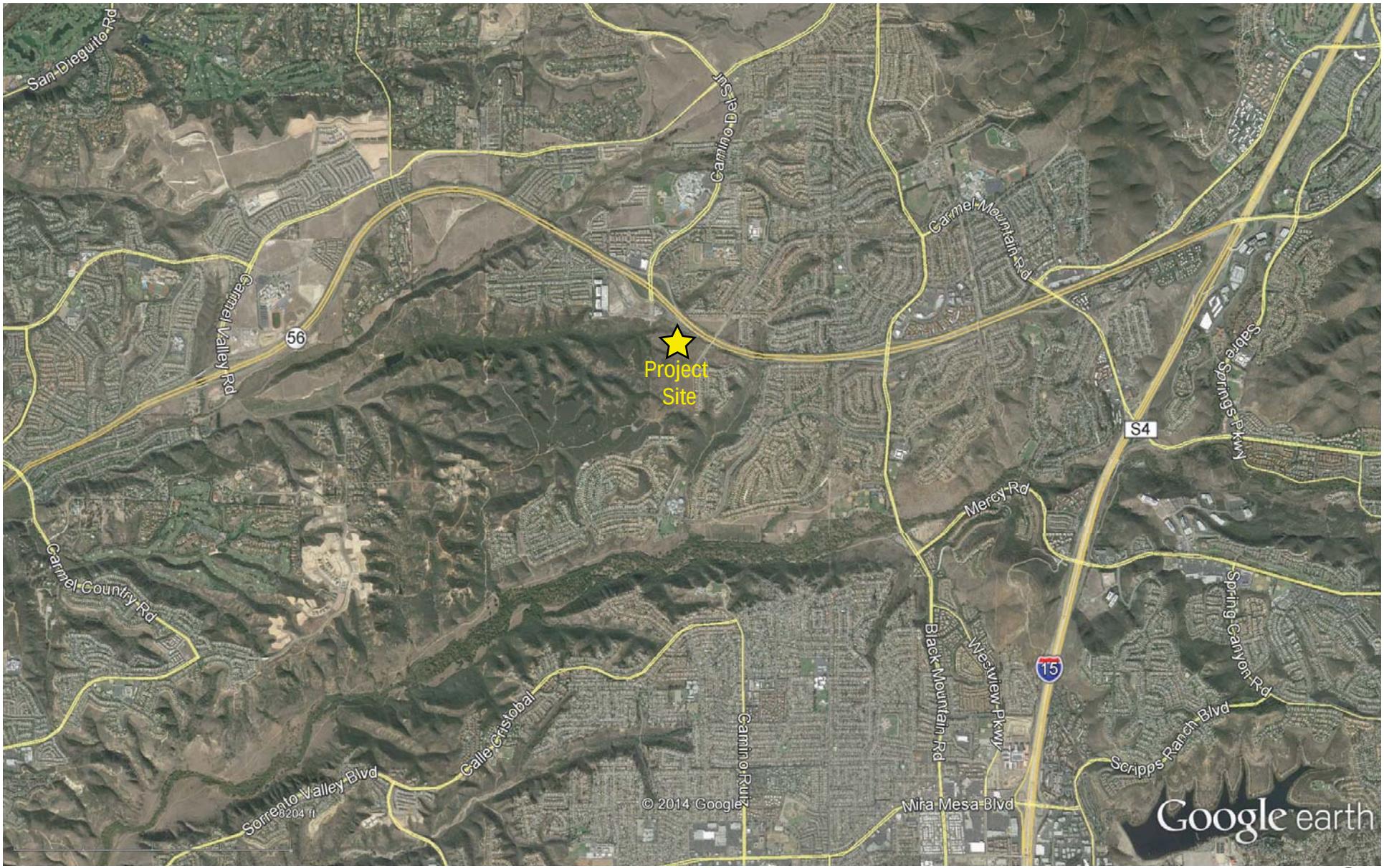
LINSCOTT LAW & GREENSPAN engineers

N:\2255\Figures
Date: 08/12/14

Figure 1-1

Vicinity Map

MERGE 56



LINSCOTT LAW & GREENSPAN engineers

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Date: 08/18/14

Figure 1-2

Project Area Map

MERGE 56

2.0 PROJECT DESCRIPTION

2.1 Project Location

The Project is located east of the planned extension of Camino Del Sur, west of planned extension of Carmel Mountain Road, and south of SR 56 in the City of San Diego. The site is located within the Torrey Highlands Community Plan area. The Project study area also includes roadways within the Rancho Peñasquitos Community Plan area.

2.2 Project Description

The Merge 56 Development Project is a subset of a larger subdivision project entitled by the City of San Diego in 2005 and formerly referred to as the Rhodes Crossing project (Project No. 3230; SCH No. 2002121089). The Merge 56 Development Project involves a Community Plan Amendment (CPA) to amend the site's land use designation in the Torrey Highlands Subarea Plan from Commercial Regional (CR) and Medium High Density Residential (MHD) to Local Mixed Use (LMXU) to allow for a mix of commercial, professional, corporate, scientific/medical office, hotel uses, as well as varying residential land uses. A corresponding rezone is proposed to modify underlying zoning from Agriculture (AR-1-1) to Community Commercial (CC-3-5) and Residential Small Lot (RX 1-2). A CPA to the Torrey Highlands Subarea Plan and Rancho Peñasquitos Community Plan is also required to reclassify two Circulation Element Roads: Camino Del Sur and Carmel Mountain Road. The CPA was initiated by the Planning Commission in September 2013. Initiation of a second CPA is not needed for the roadway reclassifications, as the current CPA is being expanded to cover changes to both the roadway classifications and land uses. Per City long-range planning staff, a General Plan Amendment (GPA) initiation is not required as the GPA is included as part of the CPA process.

The Project applicant proposes to modify and reconfigure land uses approved for Units 4, 5 and 10 as part of the Rhodes Crossings project. Instead of constructing 273,855 square feet of self-storage, 250,000 square feet of commercial, and 242 multi-family residences, the Merge 56 Project proposes 525,000 square feet of commercial, office, theater and hotel uses, and 242 residential dwelling units. The residential units would include a mix of housing types including multi-family (approximately 47 affordable units), townhomes (approximately 111 units), and single family (approximately 84 units). Commercial uses would occupy approximately 14 acres of the site, while multi-family residential uses would occupy approximately 6 acres and single-family residential development would occupy approximately 10.4 acres. Roads and slopes would occupy the balance of the development site. Revisions to the approved land uses and their configuration would require a number of permit amendments outlined below.

The above-described land use changes and the planned roadway improvements discussed in the section below would require amendments to the following permits obtained for the Rhodes Crossing project: Planned Development Permit (PDP No. 53203), Site Development Permit (SDP No. 53204), Conditional Use Permit (CUP No. 53205), and Vesting Tentative Map (VTM No. 7938). The applicant also proposes amendments to SDP No. 40-0386 for Camino Del Sur North and Carmel Mountain Road and an amendment to SDP No. 41-0248 for Camino Del Sur South. The SDPs would

allow impacts to Environmental Sensitive Lands (ESL) on the Merge 56 property, as well as within the right-of-ways for Camino Del Sur and Carmel Mountain Road.

2.3 Planned Improvements

As discussed above, the Project site is located south of SR 56 and bound by the future extension of Camino Del Sur to the west and Carmel Mountain Road to the east. The Project is currently updating the approved *Public Facilities Phasing Plan* for the Rhodes Crossing Final Map prepared and revised by Latitude 33 Planning and Engineering, as part of the entitlement process to identify Merge 56 (Units 4, 5 and 10) as responsible for the full width improvements to construct Camino Del Sur and Carmel Mountain Road in their entirety. The revised Rhodes Crossing Phasing Plan has been submitted with the tentative map to be included as part of the City's PTS review for the Project. In addition to developing commercial, theater, office, hotel and residential uses, the applicant would construct underground utilities (i.e., sewer, water, electrical and storm drains/detention basins), private streets and full-width improvements for Camino Del Sur and Carmel Mountain Road along the frontage of the Merge 56 property. Private streets would provide internal circulation and occupy approximately 1.4 acres of the site, while approximately 3.2 acres would be used for public road right-of-way. Private Drive 'M' would serve as a horizontal spine road for the site providing primary access to all on-site land uses. Parking to serve the on-site uses would be provided in several above-ground structures and various surface lots integrated among the various land uses.

Final grading and improvement plans would be concurrently processed for the off-site segments of Camino Del Sur and Carmel Mountain Road bordering the limits of Merge 56 Project, as well as the southern extension of Camino Del Sur from its planned intersection with Carmel Mountain Road southerly approximately 0.5 mile to Dormouse Road in the neighboring Park Village area. Camino Del Sur and Carmel Mountain Road are capital improvement projects identified in the *Torrey Highlands* and *Rancho Peñasquitos Public Facilities Financing Plans* (PFFP) as 100% subdivider responsibility.

Camino Del Sur from Torrey Santa Fe Road to Private Drive 'M' would be designed as a Four-Lane Major Arterial with intersection enhancements, including 129-foot to 137-foot wide right-of-way, with 99-foot curb-to-curb width and a 24-foot wide median; from Private Drive 'M' to Carmel Mountain Road it would be a Four-Lane Major Arterial with 113-foot to 116-foot wide right-of-way, 78-foot to 86-foot curb-to-curb width and 16-foot to 24-foot wide median; and from Carmel Mountain Road to north of Dormouse Road it would be a Two-Lane Modified Collector with right-of-way between 70 and 103 feet, curb-to-curb width between 50 feet and 78 feet and median width between 10 feet and 14 feet. Bike lanes will be provided on all sections of Camino Del Sur within the study area and curbside parking will be prohibited. In addition, a five-foot decomposed granite (DG) running path is proposed connecting the existing trail to Del Mar Mesa Preserve in the west to Darkwood Canyon in the east. The path will start just south of Torrey Santa Fe Road on the west side of Camino Del Sur, cross at the Carmel Mountain Road intersection to the east side of the roadway, and continue south to the proposed connection with Darkwood Canyon.

Carmel Mountain would be designed as a Two-Lane Modified Collector, including a 74-foot wide right-of-way, with a 54-foot curb-to-curb width and a 14-foot wide median. Bike lanes will be provided on Carmel Mountain Road within the study area and curbside parking will be prohibited.

Together, the on- and off-site roads would provide local access to the Merge 56 Project, surrounding properties and local community. The two PFFP roadways would be connected by Private Drive 'M' through the proposed development.

The following summarizes the off-site network improvements proposed by the Project.

Street Segments

- Camino Del Sur – Construct Camino Del Sur from Torrey Santa Fe Road to Private Drive 'M' as a Four-Lane Major Arterial with intersection enhancements providing for an LOS E capacity of 45,000 ADT. South of Private Drive 'M' to Carmel Mountain Road, construct Camino Del Sur as a Four-Lane Major Arterial with an LOS E capacity of 40,000 ADT. From Carmel Mountain Road to the existing terminus north of Dormouse Road, construct Camino Del Sur as a Two-Lane Modified Collector with raised center median providing for an LOS E capacity of 15,000 ADT. Bike lanes will be provided on all sections of Camino Del Sur within the study area and curbside parking will be prohibited.

  Signalize the intersection of Camino Del Sur at Dormouse Road. (*Torrey Highlands PFFP Project No. T3-1.A, T3-1.B and 3-2.A and 3-2.B; Rancho Peñasquitos PFFP Project No. T-4B*). *Section 15.4.2* provides a more detailed discussion of the Camino Del Sur/ Dormouse Road intersection operations and signal warrant analysis.

- Carmel Mountain Road – Construct Carmel Mountain Road from SR 56 to Camino Del Sur as a Two-Lane Modified Collector with a raised center median providing for an LOS E capacity of 15,000 ADT. Bike lanes will be provided on Carmel Mountain Road within the study area and curbside parking will be prohibited. (*Torrey Highlands PFFP Project No. T-5.1 and T-5.2; Rancho Peñasquitos PFFP Project No. T-5B*). Note: Installation of a traffic signal at Carmel Mountain Road and Sedorus Street, per the original Rhodes Crossing plan, will be completed by KB Homes with the construction of Units 1, 6 and 7.

Appendix A contains excerpts from the sourced PFFPs.

Intersections

- Camino Del Sur/ Torrey Santa Fe Road Intersection – Construct the south leg of this signalized intersection. (*Torrey Highlands PFFP Project No. T3-1.A, T3-1.B and 3-2.A and 3-2.B*)
- Camino Del Sur/ Carmel Mountain Road – Construct this intersection and install a traffic signal. (*Rancho Peñasquitos PFFP Project No. T-15*)
- Camino Del Sur/ Dormouse Road – Install a traffic signal and improve the northbound and southbound approaches at the intersection to provide one (1) southbound thru lane and one (1) dedicated southbound right-turn lane, and in the northbound direction provide

one (1) northbound left-turn lane and one (1) through lane. (*Torrey Highlands PFFP Project No. T3-1.A and 3-2.A; Rancho Peñasquitos PFFP Project No. T-4B*).

Project Access

The main access to the Project will be provided via a signalized intersection on Camino Del Sur and at a roundabout on Carmel Mountain Road connecting to the proposed Private Drive 'M' which runs east-west through the site.

In addition, right-in/right-out only driveways will connect Camino Del Sur to Private Drive 'T' running along the northerly Project boundary and will connect Camino Del Sur to Private Drive 'N', located south of the main Project access at Private Drive 'M'. No access other than the Private Drive 'M' roundabout is proposed along Carmel Mountain Road.

Full details on the proposed access roadways including an operations analysis are included in *Section 14.0* of this report.

Figure 2–1 shows the conceptual site plan. ***Figure 2–2*** shows the northern portion of the Project site in more detail. ***Figure 2–3*** shows a map of the study area.

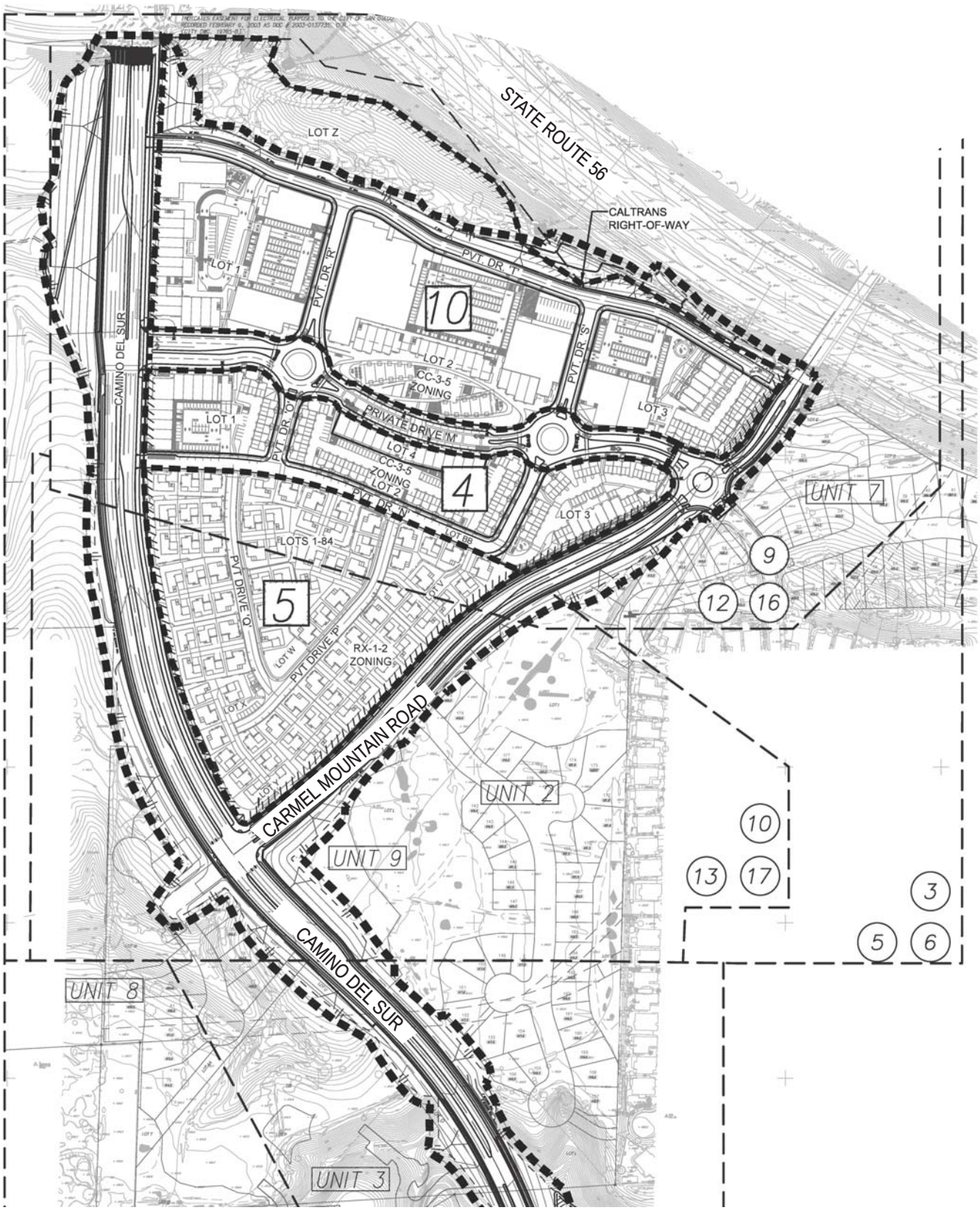

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Figure 2-1

Project Site Plan

Full Plan View

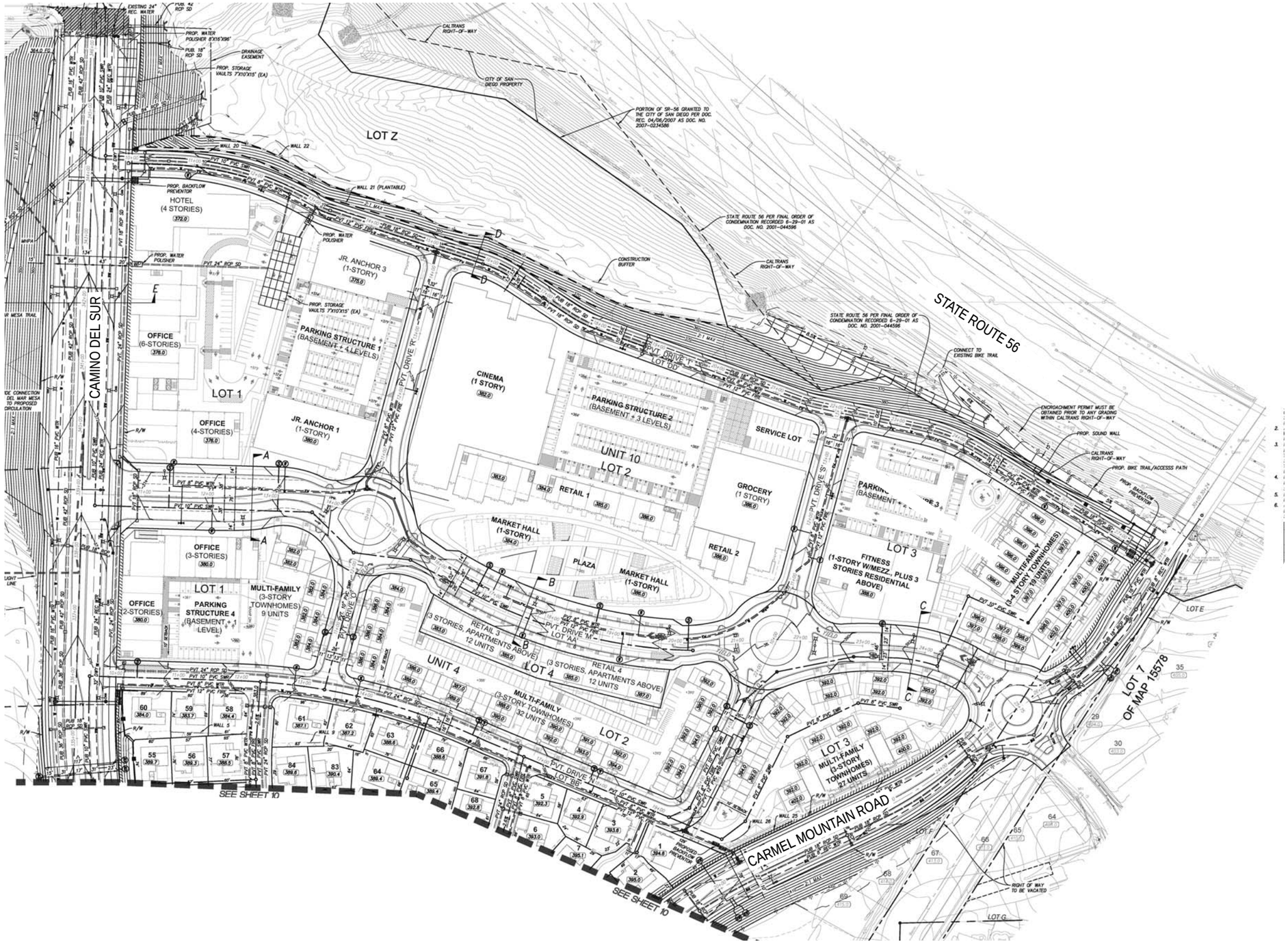

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Figure 2-2

Project Site Plan

Northern Portion

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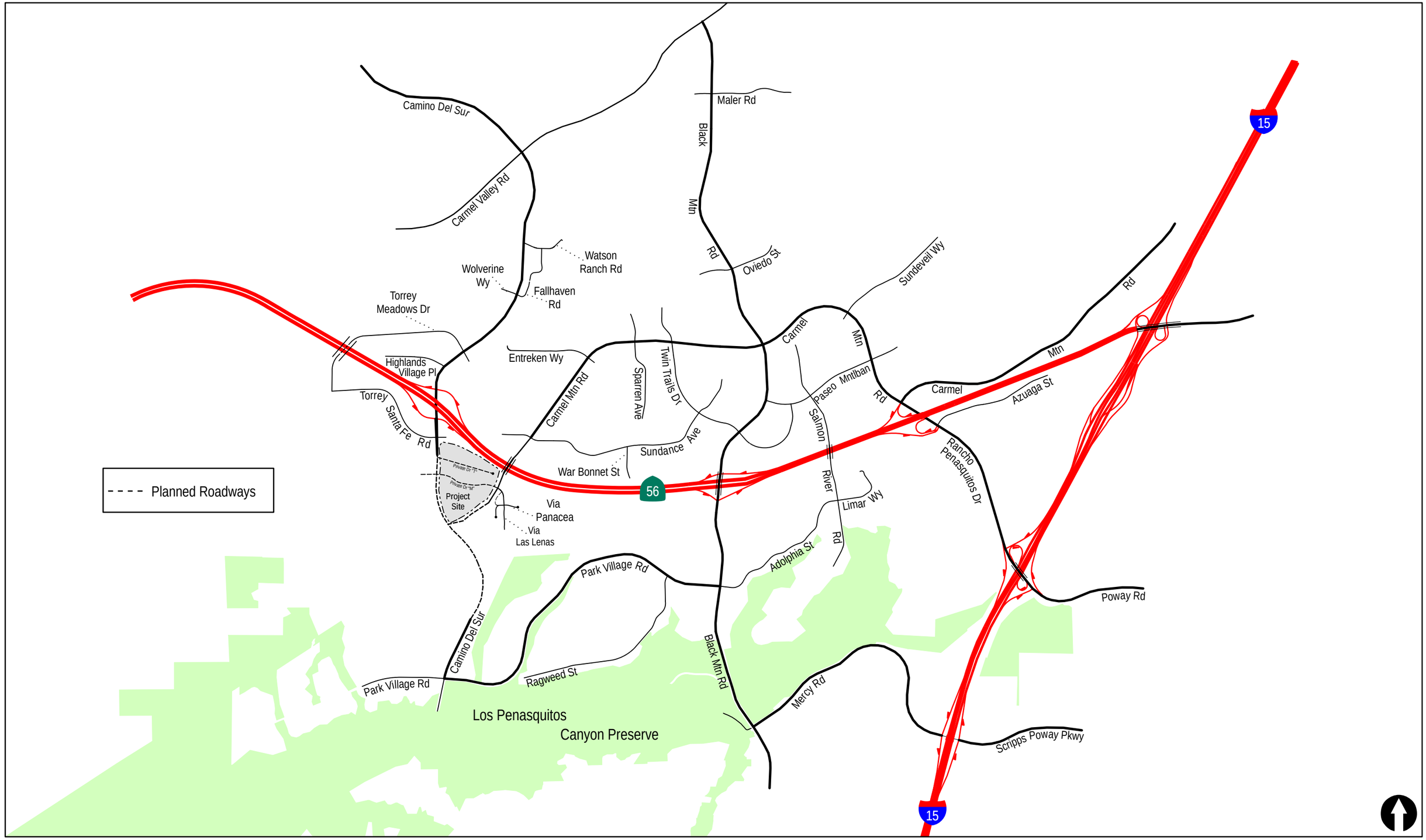

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Figure 2-3

Study Area Map

MERGE 56

3.0 EXISTING CONDITIONS

The principal roadways in the Project study area are described briefly below. Roadway classification was determined from a review of the *City of San Diego Street Design Manual* and field observations. ***Figure 3–1*** illustrates the existing transportation conditions.

3.1 Existing Street Network

State Route 56 (SR 56) is an east/west four-lane freeway between Interstate 5 and Interstate 15 providing two travel lanes in each direction. SR 56 is planned to be widened to six lanes in the future, however, funding is not yet identified for this improvement and the widening is not programmed in the SANDAG Regional Transportation Plan until Year 2040.

Camino Del Sur is classified as a Six-Lane Major Road on the Torrey Highlands Community Plan from Carmel Valley Road to its current terminus at Torrey Santa Fe Drive. From Carmel Valley Road to Highlands Village Place it is built as a four-lane divided roadway. From Highlands Village Place to the SR 56 Westbound Ramps, additional lanes are provided for turning movements at the Carmel Valley Road intersections with Highlands Village Place and the Westbound Ramps increasing the capacity along this portion of the roadway. Between the SR 56 Ramps the roadway provides three travel lanes in the southbound direction and two northbound. From the SR 56 Eastbound Ramps to its current terminus at Torrey Santa Fe Road, this brief 350-foot segment provides two northbound lanes with an auxiliary right-turn lane onto eastbound SR 56 and in the southbound direction provides one channelized turn lane onto Torrey Santa Fe Road and one into the gas station to the east. The roadway has a reserved paved width to stripe additional lanes meeting the standards for a Six-Lane Major Arterial along the segment from Carmel Valley Road to Torrey Santa Fe Road. The posted speed limit is 45 mph. Parking is not permitted, there are no bus stops located along the roadway, and bike lanes are provided.

As mentioned, Camino Del Sur currently terminates at Torrey Santa Fe Road. According to the Rancho Peñasquitos Community Plan, Camino Del Sur is planned to be connected to just north of Dormouse Road as a Four-Lane Major Road. As part of the Project, Camino Del Sur will be constructed as a Four-Lane Major Road with intersection enhancements from Torrey Santa Fe Road to the Project access (Private Drive 'M') with lanes to accommodate turn lanes at Private Drive 'M' into the Project site and the adjacent Kilroy site proposed to the west. (More information on the cumulative Kilroy development is provided in *Section 10.0*). South of Private Drive 'M', it is proposed to be constructed to Four-Lane Major Road standards connecting to Carmel Mountain Road. From Carmel Mountain Road to the existing terminus just north of Dormouse Road the roadway is proposed to be constructed as a Two-Lane Modified Collector with a 10 to 14-foot raised center median, not as proposed per the *Torrey Highlands PFFP Project No. T3-1.A, T3-1.B and 3-2.A and 3-2.B,* as well as *Rancho Peñasquitos Public PFFP Project No. T-4B.* The Project is seeking a CPA to downgrade Camino Del Sur to two lanes based on revised buildout traffic volumes that no longer justify the need for a four-lane roadway. *Appendix A* contains excerpts from the sourced PFFPs.

Carmel Mountain Road is classified as a Four-Lane Major Road in the Torrey Highlands Community Plan from Via Panacea to Sundance Avenue and currently built as a two-lane undivided roadway. Bike lanes are not provided and curbside parking is not permitted. No posted speed limit was observed along this section of the roadway. From Sundance Avenue to Paseo Montalban, it is classified and currently built as a Four-Lane Major Road on the Rancho Peñasquitos Community Plan. The posted speed limit is 40 mph. Parking is not permitted and bike lanes are provided. Bus stops are located intermittently along Carmel Mountain Road north of Rancho Peñasquitos Boulevard.

Carmel Mountain Road originates south of SR 56 at Via Panacea within the Project area. According to the Torrey Highlands Community Plan, Carmel Mountain Road is planned to be connected to the future extension of Camino Del Sur as a Four-Lane Major Road. As part of the Project, Carmel Mountain Road will be constructed as a Two-Lane Modified Collector with a 14-foot raised center median from SR 56 to Camino Del Sur, not as proposed per the *Torrey Highlands PFFP Project No. T-5.2*, and the corresponding *Rancho Peñasquitos PFFP Project No. T-5B*. The Project is seeking a CPA to downgrade the roadway to two lanes based on revised buildout traffic volumes that no longer justify the need for a four-lane roadway. The intersection of Carmel Mountain Road at Camino Del Sur is proposed to be signalized by the Project per the *Rancho Peñasquitos PFFP Project No. T-15*. *Appendix A* contains excerpts from the sourced PFFPs.

Black Mountain Road is classified as a Four-Lane Major Road in the Rancho Peñasquitos Community Plan from Carmel Valley Road to Twin Trails Drive. The roadway is classified as a Six-Lane Primary Arterial from Twin Trails Drive south to the Community Plan boundary. The widening of this portion of Black Mountain Road is identified as *Rancho Peñasquitos PFFP Project No. T-5B,* and corresponding *Black Mountain PFFP Project No. T-57 and Pacific Highlands Ranch PFFP Project No. T-11.1*. It is currently built as a four-lane divided roadway for its entirety. The posted speed limit ranges between 40-45 mph. Parking is not permitted, there are no bus stops located along the roadway, and bike lanes are provided.

The Black Mountain Road segment from Twin Trails Drive to the Community Plan boundary just north of Mercy Road is in the process of being downgraded on the Rancho Peñasquitos Community Plan to maintain its current configuration as a Four-Lane Major Road. A Community Plan Amendment (CPA) to the Rancho Peñasquitos Community Plan to downgrade this roadway classification was initiated on February 27, 2014 by Black Mountain Ranch and is expected to go before City Council in 2016 based on information provided by KOA Corporation, the consultant preparing the analysis for the City. If this downgrade is approved, the identified Project impacts to this segment would be considered significant and unmitigated.

Sundance Avenue is an unclassified roadway in the Rancho Peñasquitos Community Plan. It is currently built as a two-lane undivided roadway measuring 40-feet from curb-to-curb and providing curbside parking along both sides of the roadway. Residential roadways that primarily serve the residences located along them as feeder roads to the adjacent residential communities are not typically analyzed using the volume-to-capacity method. However, there have been concerns in the past over the use of Sundance Avenue as a cut-through roadway between Carmel Mountain Road

and Black Mountain Road. Therefore, this report provides an LOS analysis of the road as a "Two-Lane Collector" with a LOS E capacity of 8,000 ADT. Traffic along the roadway is controlled by several stop-signs that have effectively reduced the amount of cut-through traffic from Black Mountain Road to Carmel Mountain Road (existing traffic counted = 1,880 ADT). There are currently no bus stops or bike lanes along the roadway and the posted speed limit is 25 mph.

Park Village Road is classified and currently built as a Four-Lane Major Road in the Rancho Peñasquitos Community Plan. The posted speed limit is 45 mph. Parking is not permitted and bike lanes are provided.

Mercy Road from Black Mountain Road to I-15 is classified and currently built as a Four-Lane Major Road in the Mira Mesa Community Plan. Curbside parking is not permitted and bike lanes are provided. The posted speed limit is 50 mph.

3.2 Existing Bicycle Network

Based on a review of the City of San Diego *Bicycle Master Plan* (July 2013) and field observations, there are existing Class II bike lanes provided on the entire length of most study area roadways including: Camino Del Sur, Black Mountain Road, and Park Village Road. There are no bike lanes provided on Sundance Avenue. On Carmel Mountain Road, Class II bike lanes are provided, with the exception of the segments of the roadway south of Sundance Avenue (western intersection) and from Paseo Montalban to Rancho Peñasquitos Boulevard, which is designated as a Class III bike route.

The SR 56 Bike Path is a Class I separated bikeway that runs between I-5 and I-15 adjacent to and south of SR 56.

The *Bicycle Master Plan* also proposes Class II or III bikeways on the portions of Carmel Mountain Road and Camino Del Sur in the Project vicinity that are not yet constructed. A detailed discussion of the bicycle infrastructure improvements proposed by the Project is contained in *Section 14.3.2.*

3.3 Existing Transit Conditions

Based on the most recent information from the San Diego Metropolitan Transit System (MTS) website, the following transit conditions are noted.

Route 20 travels between the Del Lago Transit Station in Escondido and downtown San Diego. In the study area, Route 20 serves only the Carmel Mountain Road / Peñasquitos Drive intersection within the study area. Service is Monday through Sunday with peak hour frequencies of around 15 minutes and off-peak frequencies between 30 and 60 minutes.

No other public transit serves the 92129 zip code encompassing the study area.

3.4 Existing Pedestrian Conditions

Based on field observations, contiguous and non-contiguous sidewalks are generally provided on all study area street segments. A detailed discussion of the pedestrian improvements proposed by the Project is contained in *Section 14.3.2.*

3.5 Existing Traffic Volumes

Existing AM and PM peak hour traffic volumes at key area intersections and 24-hour street segment counts were collected on Wednesday and Thursday, May 28th and 29th of the year 2014 when local schools were in session. ***Table 3–1*** shows the existing street segment Average Daily Traffic (ADT) volumes in the Project area. ***Figure 3–2*** shows the existing AM/PM peak hour turning movement volumes and ADTs.

The peak hour traffic volumes at the freeway ramps were derived from the ramp peak hour intersection turning movement counts conducted by LLG. Ramp volumes were validated against those provided directly by Caltrans and from the Caltrans Performance Measurement System (PeMS). Freeway ADT volumes were taken from the most recent Caltrans Traffic Census data, year 2013.

Appendix B contains the manual count sheets for intersections and street segments and the freeway volumes taken from Caltrans records.

TABLE 3–1
EXISTING TRAFFIC VOLUMES

Street Segments	ADT [a]
Camino Del Sur	
1. Carmel Valley Rd to Watson Ranch Rd	17,730
2. Wolverine Way to Torrey Meadows Dr	20,710
3. Highlands Village Pl to SR 56 WB Ramps	25,920
4. Torrey Santa Fe Rd to Project Drwy	DNE
5. Project Drwy to Carmel Mountain Rd	DNE
6. Carmel Mountain Rd to Park Village Rd	DNE
Black Mountain Road	
7. Carmel Valley Rd to Maler Rd	12,300
8. Oviedo St to Carmel Mountain Rd	18,960
9. Carmel Mountain Rd to Paseo Montalban	14,740
10. Twin Trails Dr to SR 56 WB Ramps	33,490
11. SR 56 EB Ramps to Park Village Rd	35,440
12. Park Village Rd to Mercy Rd	30,380
Carmel Mountain Road	
13. Camino Del Sur to Via Las Lenas	DNE
14. Via Las Lenas to Sundance Ave	1,240
15. Entreken Way to Sparren Ave	6,810
16. Twin Trails Dr to Black Mountain Rd	8,320
Sundance Avenue	
17. Carmel Mountain Rd to War Bonnet St	1,880
Park Village Road	
18. Camino Del Sur to Ragweed St	8,430
19. Ragweed St to Black Mountain Rd	17,550
Mercy Road	
20. Black Mountain Rd to I-15 SB Ramps	19,850
Freeway Mainline Segments	**ADT**
State Route 56	
1. Carmel Valley Rd to Camino Del Sur	65,000
2. Camino Del Sur to Black Mountain Road	72,000
3. Black Mountain Rd to Ranch Peñasquitos Blvd	76,000
4. Rancho Peñasquitos Blvd to I-15	71,000

Source: Street segment counts commissioned by LLG Engineers in May 2014. Freeway segment ADT from Caltrans Traffic Census, 2013.

Footnotes:

a. Average Daily Traffic Volumes.

General Notes:

1. DNE – Does Not Exist

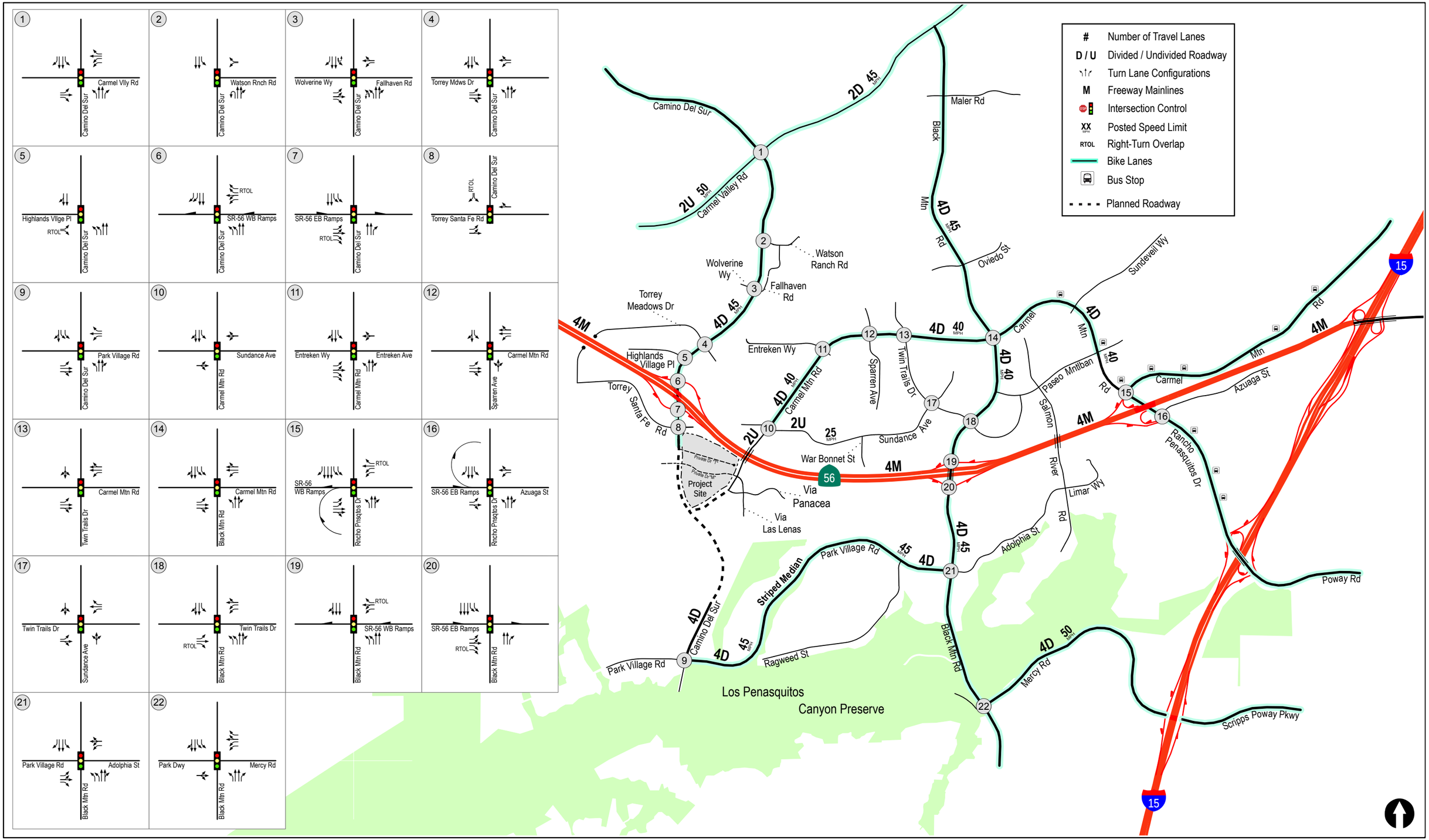

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Figure 3-1

Existing Conditions Diagram

MERGE 56

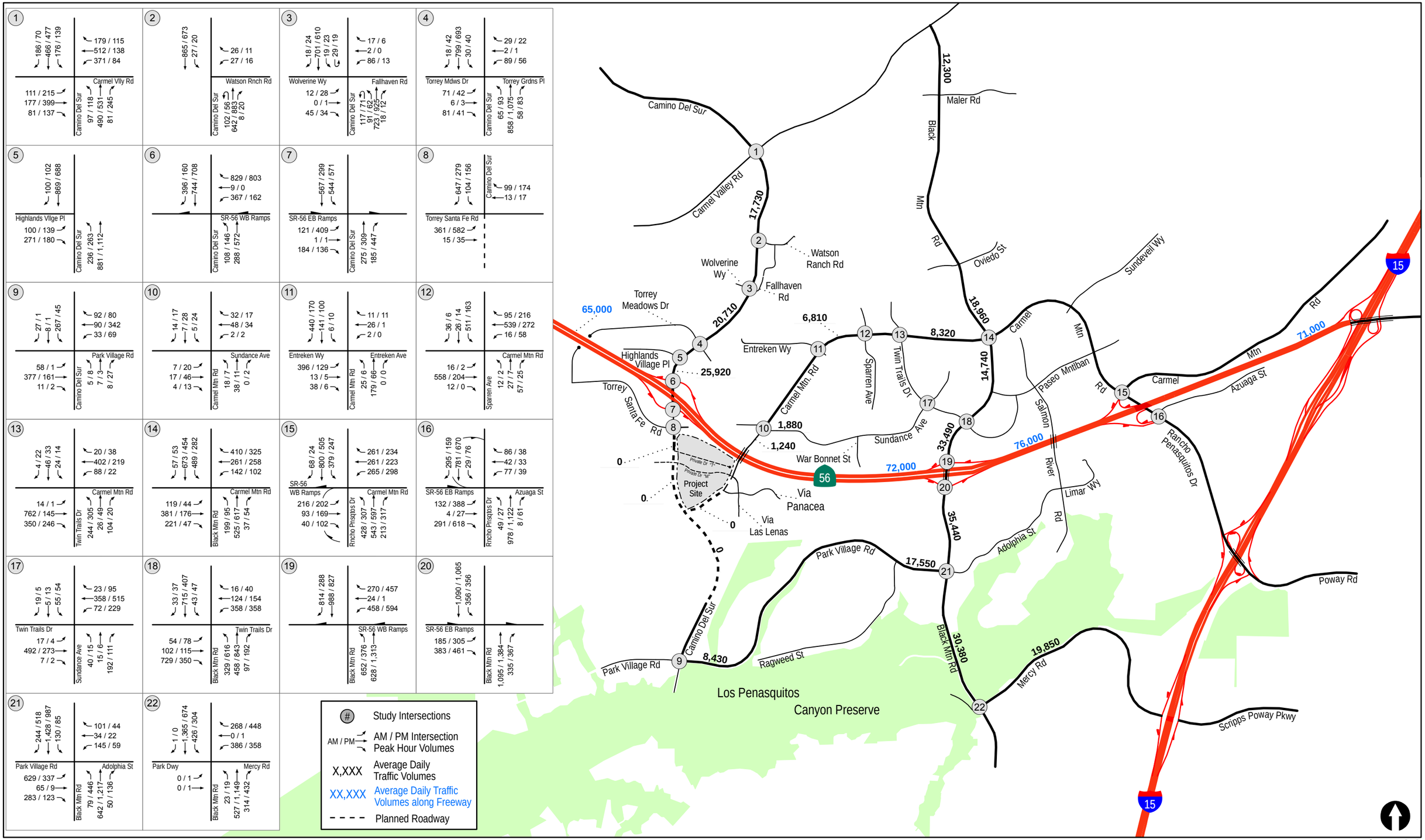

Figure 3-2

Existing Traffic Volumes

MERGE 56

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4.0 STUDY AREA, ANALYSIS APPROACH AND METHODOLOGY

4.1 Study Area

The study area was based on the criteria identified in the City of San Diego *Traffic Impact Study Manual*, July 1998. Based on these criteria, the traffic study shall evaluate all adjacent intersections plus the first major signalized intersection in each direction of the site. In addition, the study area must include "all regionally significant arterial system segments and intersections, including mainline freeway locations, and on/off ramp intersections, where the project will add 50 or more peak hour trips in either direction to the adjacent street traffic."

Using the above criteria, the Project study area includes the following locations:

Intersections

1. Camino Del Sur / Carmel Valley Road
2. Camino Del Sur / Watson Ranch Road
3. Camino Del Sur / Wolverine Way / Fallhaven Road
4. Camino Del Sur / Torrey Meadows Drive
5. Camino Del Sur / Highlands Village Place
6. Camino Del Sur / SR 56 Westbound Ramps
7. Camino Del Sur / SR 56 Eastbound Ramps
8. Camino Del Sur / Torrey Santa Fe Road
9. Camino Del Sur / Park Village Road
10. Carmel Mountain Road / Sundance Avenue
11. Carmel Mountain Road / Entreken Way
12. Carmel Mountain Road / Sparren Avenue
13. Carmel Mountain Road / Twin Trails Drive
14. Carmel Mountain Road / Black Mountain Road
15. Carmel Mountain Road / SR 56 Westbound Ramps
16. Carmel Mountain Road / SR 56 Eastbound Ramps
17. Sundance Avenue / Twin Trails Drive
18. Black Mountain Road / Twin Trails Drive
19. Black Mountain Road / SR 56 Westbound Ramps
20. Black Mountain Road / SR 56 Eastbound Ramps
21. Black Mountain Road / Park Village Road
22. Black Mountain Road / Mercy Road

Street Segments

Camino Del Sur

1. Carmel Valley Road to Watson Ranch Rd
2. Wolverine Way to Torrey Meadows Drive
3. Highlands Village Place to SR 56 Westbound Ramps
4. Torrey Santa Fe Road to Project Driveway *(Planned Roadway)*
5. Project Driveway to Carmel Mountain Road *(Planned Roadway)*
6. Carmel Mountain Road to Park Village Road *(Planned Roadway)*

Black Mountain Road

7. Carmel Mountain Road to Maler Road
8. Oviedo Street to Carmel Mountain Road
9. Carmel Mountain Road to Paseo Montalban
10. Twin Trails Drive to SR 56 Westbound Ramps
11. SR 56 Eastbound Ramps to Park Village Road
12. Park Village Road to Mercy Road

Carmel Mountain Road

13. Camino Del Sur to Via Las Lenas *(Planned Roadway)*
14. Via Las Lenas to Sundance Avenue
15. Entreken Way to Sparren Avenue
16. Twin Trails Drive to Black Mountain Road

Sundance Avenue

17. Carmel Mountain Road to War Bonnet Street

Park Village Road

18. Camino Del Sur to Ragweed Street
19. Ragweed Street to Black Mountain Road

Mercy Road

20. Black Mountain Road to I-15 Southbound Ramps

Freeway Mainline Segments

State Route 56

1. Carmel Valley Road to Camino Del Sur
2. Camino Del Sur to Black Mountain Road
3. Black Mountain Road to Rancho Peñasquitos Boulevard
4. Rancho Peñasquitos Boulevard to I-15

Freeway Ramp Meter Locations

State Route 56

1. Camino Del Sur – Westbound On-Ramp (AM peak hour)
2. Camino Del Sur – Eastbound On-Ramp (PM peak hour)
3. Black Mountain Road – Westbound On-Ramp (AM peak hour)
4. Black Mountain Road – Eastbound On-Ramp (PM peak hour)
5. Rancho Peñasquitos Boulevard – Westbound On-Ramp (AM peak hour)
6. Rancho Peñasquitos Boulevard – Eastbound On-Ramp (PM peak hour)

Future Access Intersections

A. Camino Del Sur/ Private Drive 'T'
B. Camino Del Sur/ Private Drive 'M'/Kilroy Access
C. Camino Del Sur/ Private Drive 'N'
D. Camino Del Sur/ Carmel Mountain Road
E. Carmel Mountain Road/ Via Las Lenas/ Private Drive 'M'
F. Private Drive 'M'/ Private Drive 'R' (Westerly Roundabout)
G. Private Drive 'M'/ Private Drive 'S' (Middle Roundabout)

4.2 Analysis Approach

Table 4–1 shows the analyses performed in each of the scenarios to determine the potential impacts to the road network.

TABLE 4–1
ANALYSIS SCENARIOS

Scenario	Analysis Performed
Existing & Near-Term Conditions	
Existing Existing + Project Existing + Cumulative Projects Existing + Cumulative Projects + Project	Peak Hour Intersection Analysis Daily Street Segment Analysis Peak Hour Freeway Mainline Analysis Peak Hour Ramp Meter Analysis
Long-Term Condition	
Year 2035 Without Project Year 2035 With Project	Peak Hour Intersection Analysis Daily Street Segment Analysis Peak Hour Freeway Mainline Analysis Peak Hour Ramp Meter Analysis

*Existing freeway mainline segment analysis corresponding to ramp meter analysis provided in *Appendix D.* See *Section 4.3.4* for more information.

As discussed in *Section 2.0*, several changes to the roadway network are planned for the future. ***Table 4–2*** summarizes the analysis scenarios and street network conditions for each scenario analyzed. Further details on the network conditions for the scenarios analyzed are provided in their corresponding sections of this report.

TABLE 4–2
ROADWAY NETWORK SCENARIOS

Planned Roadway Network	Scenario					
	Existing	**Existing + Project**	**Existing + Cumulative Projects**	**Existing + Cumulative Projects + Project**	**Year 2035 Without Project**	**Year 2035 With Project**
Freeway Segments						
State Route 56: Six Lanes	Not Completed	Not Completed	Not Completed	Not Completed	Not Completed	Not Completed
Roadway Segments						
Camino Del Sur (Torrey Santa Fe Road to Dormouse Road)	Does Not Exist	Fully Constructed	Partially Constructed for Kilroy Access	Fully Constructed	Fully Constructed	Fully Constructed
Carmel Mountain Road	Does Not Exist	Fully Constructed	Does Not Exist	Fully Constructed	Fully Constructed	Fully Constructed
Torrey Meadows Drive Overcrossing	Does Not Exist	Does Not Exist	Does Not Exist	Does Not Exist	Fully Constructed	Fully Constructed
Private Drive 'M' and Private Drive 'T'	Does Not Exist	Fully Constructed	Does Not Exist	Fully Constructed	Does Not Exist	Fully Constructed
Intersections						
Camino Del Sur/ SR 56 Loop Ramps	Not Completed	Not Completed	Not Completed	Not Completed	Not Completed	Not Completed
Camino Del Sur/ Carmel Mountain Road	Does Not Exist	"tee" Intersection	Does Not Exist	"tee" Intersection	4th Approach Added	4th Approach Added
Camino Del Sur/ Private Drive 'T'	Does Not Exist	Fully Constructed	Does Not Exist	Fully Constructed	Does Not Exist	Fully Constructed
Camino Del Sur/ Private Drive 'M'/Kilroy Access	Does Not Exist	"tee" Intersection for Merge 56 Access	"tee" Intersection for Kilroy Access	Fully Constructed	"tee" Intersection for Kilroy Access	Fully Constructed
Carmel Mountain Road/ Via Las Lenas/ Private Drive 'M'	"tee" intersection for Via Las Lenas	Fully Constructed	"tee" intersection for Via Las Lenas	Fully Constructed	"tee" intersection for Via Las Lenas	Fully Constructed
Camino Del Sur / Private Drive 'N'	Does Not Exist	Fully Constructed	Does Not Exist	Fully Constructed	Does Not Exist	Fully Constructed

General Notes:

1. Camino Del Sur network condition represents the planned extension from its current terminus at Torrey Santa Fe Road to its southerly connection just north of Dormouse Road.
2. Carmel Mountain Road network condition represents the planned extension from its current terminus at Via Panacea to Camino Del Sur.
3. Torrey Meadows Drive Overcrossing network condition represents the connection of Torrey Meadows Drive over SR 56 to Torrey Santa Fe Road. It is not included in the "Near-Term" conditions since these scenarios represents the effects of Project and cumulative traffic and network improvements on the existing street network at the time of data collection (May 2014).
4. Private Drive 'M' is a proposed on-site Project roadway that will experience cut-through traffic between Camino Del Sur and Carmel Mountain Road.
5. Further details on the Kilroy Access intersection are provided in *Section 10.0* of this report.
6. "Fully Constructed" represents construction of roadways to their current Community Plan classification. ("Fully Constructed" for Camino Del Sur from Private Drive 'M' to just north of Dormouse Road and for Carmel Mountain Road from SR 56 to Camino Del Sur represents the proposed Community Plan Amendment classification.)
7. The 4th leg of the Camino Del Sur/ Carmel Mountain Road intersection will be constructed by Unit 8 of the original Rhodes Crossing VTM.

4.3 Methodology

Level of Service (LOS) is the term used to denote the different operating conditions that occur on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. Level of Service provides an index to the operational qualities of a roadway segment or an intersection. Level of Service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Level of Service designation is reported differently for signalized, unsignalized intersections, and roadway segments, as described below.

4.3.1 *Intersections*

Signalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay was determined utilizing the methodology found in Chapter 18 of the *2010 Highway Capacity Manual (HCM),* with the assistance of the *Synchro* (version 8) computer software. The delay values (represented in seconds) were qualified with a corresponding intersection LOS. City of San Diego and Caltrans location-specific signal timing information such as minimum greens, cycle lengths, splits for the freeway interchanges and real-time peak hour field observations were included in the analysis, where available.

Unsignalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay and LOS was determined based upon the procedures found in Chapter 19 and 20 of the *2010 HCM,* with the assistance of the *Synchro* (version 8) computer software.

Roundabout intersections were analyzed under AM and PM peak hour conditions along Private Drive 'M'. Average vehicle delay and LOS was determined based upon the procedures found in Chapter 21 of the *2010 HCM,* with the assistance of the *aaSIDRA INTERSECTION* computer software.

4.3.2 *Street Segments*

Street segment ultimate classifications were taken from the Torrey Highlands and Rancho Peñasquitos Community Plan Circulation Elements. Street segment analysis is based upon the comparison of daily traffic volumes (ADTs) to the City of San Diego's *Roadway Classification, Level of Service, and ADT Table*. This table provides segment capacities for different street classifications, based on traffic volumes and roadway characteristics. A copy of the individual Community Plan Circulation Element maps and the City of San Diego roadway classification table are attached in ***Appendix C***.

4.3.3 *Freeway Mainline Segments*

Level of Service analysis is based on the procedure developed by Caltrans District 11 based on methods described in the *HCM*. The procedure involves comparing the peak hour volume of the mainline segment to the theoretical capacity of the roadway (V/C). V/C ratios are then compared to V/C thresholds to determine the LOS of each segment.

4.3.4 *Freeway Ramp Meters*

Ramp delays and queues were calculated using a calculated delay and queue methodology. For determining the high occupancy vehicle (HOV) rate at on-ramps, a review of Caltrans PeMS data at SR 56 on-ramps identified an average carpool rate of 15% at the Carmel Valley Road westbound on-ramp. This ramp was selected due to a 100% "healthy" sensor reading for the most recent available data. Therefore, a 15% HOV percentage was applied to the ramp meter analysis.The calculated delay and queue approach is based solely on the specific time intervals at which the ramp meter is programmed to release traffic entering the freeway. The calculated delay and queue approach generally tends to produce unrealistic queue lengths and delays. The results are theoretical and based on the most restrictive (rate code F) ramp meter rate. Furthermore, the fixed rate approach does not take into account driver behavior and trip diversion due to high ramp meter delays.

As a City standard of practice, ramp meter observations were conducted at the SR 56 interchanges with Camino Del Sur, Black Mountain Road, and Rancho Peñasquitos Boulevard. The data was collected in June 2015 during typical commuter peak periods. However, since the observations were conducted during the summer season, they may not accurately reflect school traffic that typically traverses this corridor. In order to account for the atypical conditions, a seasonal adjustment factor was applied to the observed data. According to the Caltrans *Highway Performance Monitoring System (PeMS): Instructions for Updates Including the HPMS Monitoring System*, April 2007, which is a program used by Caltrans which defines the standards for data collection, seasonal urban factors generally vary by less than 10%. However, a 15% growth factor was added to the summer counts to provide for a conservative increase. The maximum demand and queues were observed for the single-occupancy vehicle (SOV) lanes and are provided for the existing analyses.

The purpose of the observations is to help understand the operations and calibrate the existing ramp meter analysis. The standard, non-calibrated ramp meter analysis tends to produce unrealistic results using the most restrictive discharge rates. The long-term analysis remains non-calibrated since it is difficult to predict future operations based on existing performance.

Based on the City of San Diego analysis criteria, the following on-ramps have been analyzed in this report:

1. Camino Del Sur to Westbound SR 56 – AM peak hour
2. Camino Del Sur to Eastbound SR 56 – PM peak hour
3. Black Mountain Road to Westbound SR 56 – AM peak hour
4. Black Mountain Road to Eastbound SR 56 – PM peak hour
5. Rancho Peñasquitos Boulevard to Westbound SR 56 – AM peak hour
6. Rancho Peñasquitos Boulevard to Eastbound SR 56 – PM peak hour

Appendix D contains a copy of the existing ramp meter rates and 15% HOV calculation obtained from Caltrans.

5.0 SIGNIFICANCE CRITERIA

According to the City of San Diego's *Significance Determination Thresholds* report dated January 2007, a project is considered to have a significant impact if the new project traffic has decreased the operations of surrounding roadways by a City defined threshold. For projects deemed complete on or after January 1, 2011, the City defined threshold by roadway type or intersection is shown in ***Table 5–1***.

The impact is designated either a "direct" or "cumulative" impact. According to the City's *Significance Determination Thresholds* report,

> "*Direct* traffic impacts are those projected to occur at the time a proposed development becomes operational, including other developments not presently operational but which are anticipated to be operational at that time (near term)."
>
> "*Cumulative* traffic impacts are those projected to occur at some point after a proposed development becomes operational, such as during subsequent phases of a project and when additional proposed developments in the area become operational (short-term cumulative) or when affected community plan area reaches full planned Year 2035 (long-term cumulative)."
>
> "It is possible that a project's near term (direct) impacts may be reduced in the long term, as future projects develop and provide additional roadway improvements (for instance, through implementation of traffic phasing plans). In such a case, the project may have direct impacts but not contribute considerably to a cumulative impact."
>
> "For intersections and roadway segments affected by a project, LOS D or better is considered acceptable under both direct and cumulative conditions."

If the project exceeds the thresholds in *Table 5–1*, then the project may be considered to have a significant "direct" or "cumulative" project impact. A significant impact can also occur if a project causes the LOS to degrade from D to E, even if the allowable increases in *Table 5–1* are not exceeded. A feasible mitigation measure will need to be identified to return the impact within the City thresholds, or the impact will be considered significant and unmitigated.

Caltrans currently does not have significance criteria for ramp meter analyses. Therefore, analyses performed at these locations are technically informational at best. However, the City of San Diego has indicated that an impact to a ramp meter is a factor of the mainline operations. When Project traffic results in an increase in the delay at a ramp meter greater than 2.0 minutes for LOS E operating freeway mainline segments and greater than 1.0 minute for LOS F operating freeway mainline segments, a significant ramp meter impact is identified.

TABLE 5–1
CITY OF SAN DIEGO
TRAFFIC IMPACT SIGNIFICANT THRESHOLDS

Level of Service with Project [b]	Allowable Increase Due to Project Impacts [a]					
	Freeways		Roadway Segments		Intersections	Ramp Metering
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.)	Delay (min.)
E	0.010	1.0	0.02	1.0	2.0	2.0 [c]
F	0.005	0.5	0.01	0.5	1.0	1.0 [c]

Footnotes:

a. If a proposed project's traffic causes the values shown in the table to be exceeded, the impacts are determined to be significant. The project applicant shall then identify feasible improvements (within the Traffic Impact Study) that will restore/and maintain the traffic facility at an acceptable LOS. If the LOS with the proposed project becomes unacceptable (see note b), or if the project adds a significant amount of peak-hour trips to cause any traffic queues to exceed on- or off-ramp storage capacities, the project applicant shall be responsible for mitigating the project's direct significant and/or cumulatively considerable traffic impacts.

b. All LOS measurements are based upon Highway Capacity Manual procedures for peak-hour conditions. However, V/C ratios for roadway segments are estimated on an ADT/24-hour traffic volume basis (using Table 2 of the City's Traffic Impact Study Manual). The acceptable LOS for freeways, roadways, and intersections is generally "D" ("C" for undeveloped locations). For metered freeway ramps, LOS does not apply. However, ramp meter delays above 15 minutes are considered excessive.

c. The allowable increase in delay at a ramp meter with more than 15 minutes delay and freeway LOS E (upstream) is 2 minutes. The allowable increase in delay at a ramp meter with more than 15 minutes delay and freeway LOS F (upstream) is 1 minute.

General Notes:

1. Delay = Average control delay per vehicle measured in seconds for intersections, or minutes for ramp meters.
2. LOS = Level of Service
3. V/C = Volume to Capacity Ratio (capacity at LOS E should be used)
4. Speed = Arterial speed measured in miles per hour for Congestion Management Program (CMP) analyses

6.0 ANALYSIS OF EXISTING CONDITIONS

The analysis of existing conditions includes the assessment of the study area intersections and street segments.

6.1 Peak Hour Intersection Operations

Table 6–1 summarizes the Existing intersection operations. As seen in *Table 6*–1, the following study area intersections are calculated to currently operate at LOS E or F under Existing conditions:

- Intersection #3. Camino Del Sur/ Wolverine Way – LOS E (AM peak hour)
- Intersection #15. Carmel Mountain Rd / SR 56 WB Ramps – LOS E (AM peak hour)
- Intersection #16. Carmel Mountain Rd / SR 56 EB Ramps – LOS E (PM peak hour)
- Intersection #17. Sundance Ave / Twin Trails Dr – LOS E (AM peak hour)
- Intersection #18. Black Mountain Rd / Twin Trails Dr – LOS E (AM peak hour)
- Intersection #19. Black Mountain Rd / SR 56 WB Ramps – LOS F (AM peak hour)
- Intersection #20. Black Mountain Rd / SR 56 EB Ramps – LOS E/E (AM/PM peak hours)
- Intersection #21. Black Mountain Rd / Park Village Rd – LOS E/E (AM/PM peak hour)

Appendix E contains the Existing peak hour intersection calculation worksheets.

6.2 Daily Street Segment Operations

Table 6–2 summarizes the Existing roadway segment operations. As seen in *Table 6–2*, the following study area segments are calculated to currently operate at LOS E or F under Existing conditions:

- Segment #11. Black Mountain Rd from SR 56 EB Ramps to Park Village Rd – LOS E

6.3 Peak Hour Freeway Mainline Operations

Table 6–3 summarizes the Existing freeway mainline segment operations. As seen in *Table 6–3*, all study area freeway mainline segments are calculated to currently operate at LOS D or better under Existing conditions.

It should be noted field observations indicate that there is reoccurring congestion in the westbound direction during the AM commute period and in the eastbound direction during the PM commute period. This is believed to be due to the bottleneck at the bridge over Darkwood Canyon and capacity constraints west of Carmel Valley Road. This is reflected as LOS D conditions in the analysis.

6.4 Peak Hour Freeway Ramp Meter Operations

Table 6–4 summarizes the Existing operations of the on-ramp meter using the fixed rate analysis methodology and the observed queues/delays. The fixed rate approach generally tends to produce unrealistic queue lengths and delays. The results are theoretical and based on the most restrictive

ramp meter rate. Because ramp meter rates are not constant, even within the peak hours, the analysis was conducted using the most restrictive meter rates. The meter rates dynamically adjust based on the level of traffic on the freeway mainlines. Furthermore, the fixed rate approach does not take into account driver behavior such as "ramp shopping" or trip diversion.

To account for this, queuing observations were conducted to calibrate the analysis and best reflect current operations. As seen in *Table 6–4*, there is no delay calculated at any of the study area on-ramps under Existing conditions. The observed queuing validates the calculations that no excess demand and thus, excessive queues and delays occur at the study area on-ramps.

TABLE 6–1
EXISTING INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing	
			Delay [a]	LOS [b]
1. Carmel Valley Road / Camino Del Sur	Signal	AM PM	34.5 34.0	C C
2. Camino Del Sur / Watson Ranch Road	Signal	AM PM	20.7 8.0	C A
3. Camino Del Sur / Wolverine Way	Signal	AM PM	62.1 20.8	E C
4. Camino Del Sur / Torrey Meadows Drive	Signal	AM PM	22.4 15.7	C B
5. Camino Del Sur / Highlands Village Place	Signal	AM PM	20.8 18.4	C B
6. Camino Del Sur / SR 56 WB Ramps	Signal	AM PM	20.8 22.5	C C
7. Camino Del Sur / SR 56 EB Ramps	Signal	AM PM	24.8 33.4	C C
8. Camino Del Sur / Torrey Santa Fe Road	Signal	AM PM	10.4 15.9	B B
9. Camino Del Sur / Park Village Road	Signal	AM PM	28.4 22.5	C C
10. Carmel Mountain Road / Sundance Avenue	Signal	AM PM	21.5 23.1	C C
11. Carmel Mountain Road / Entreken Way	Signal	AM PM	23.8 13.8	C B
12. Carmel Mountain Road / Sparren Avenue	Signal	AM PM	29.5 16.6	C B
13. Carmel Mountain Road / Twin Trails Drive	Signal	AM PM	35.5 17.8	D B

(Continued on Next Page)

TABLE 6–1
EXISTING INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing	
			Delay [a]	LOS [b]
(Continued from Previous Page)				
14. Carmel Mountain Road / Black Mountain Road	Signal	AM PM	47.3 36.4	D D
15. Carmel Mountain Road / SR 56 WB Ramps	Signal	AM PM	55.6 49.5	E D
16. Carmel Mountain Road / SR 56 EB Ramps	Signal	AM PM	34.5 56.7	C E
17. Sundance Avenue / Twin Trails Drive	AWSC [c]	AM PM	39.0 26.2	E D
18. Black Mountain Road / Twin Trails Drive	Signal	AM PM	56.7 34.1	E C
19. Black Mountain Road / SR 56 WB Ramps	Signal	AM PM	82.4 38.4	F D
20. Black Mountain Road / SR 56 EB Ramps	Signal	AM PM	56.1 55.7	E E
21. Black Mountain Road / Park Village Road	Signal	AM PM	58.1 59.3	E E
22. Black Mountain Road / Mercy Road	Signal	AM PM	16.9 22.3	B C

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service
c. All-Way Stop Controlled intersection. Average intersection delay reported.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 6–2
EXISTING STREET SEGMENT OPERATIONS

Street Segment	Capacity (LOS E) [a]	ADT [b]	LOS [c]	V/C [d]
Camino Del Sur				
1. Carmel Valley Rd to Watson Ranch Rd	40,000	17,730	B	0.443
2. Wolverine Way to Torrey Meadows Dr	40,000	20,710	B	0.518
3. Highlands Village Pl to SR 56 WB Ramps	40,000	25,920	C	0.648
4. Torrey Santa Fe Rd to Project Drwy	DNE	—	—	—
5. Project Drwy to Carmel Mountain Rd	DNE	—	—	—
6. Carmel Mountain Rd to Park Village Rd	DNE	—	—	—
Black Mountain Road				
7. Carmel Valley Rd to Maler Rd	40,000	12,300	A	0.308
8. Oviedo St to Carmel Mountain Rd	40,000	18,960	B	0.474
9. Carmel Mountain Rd to Paseo Montalban	40,000	14,740	A	0.369
10. Twin Trails Dr to SR 56 WB Ramps	40,000	33,490	D	0.837
11. SR 56 EB Ramps to Park Village Rd	40,000	35,440	E	0.886
12. Park Village Rd to Mercy Rd	40,000	30,380	D	0.760
Carmel Mountain Road				
13. Camino Del Sur to Via Las Lenas	DNE	—	—	—
14. Via Las Lenas to Sundance Ave	10,000	1,240	A	0.124
15. Entreken Way to Sparren Ave	40,000	6,810	A	0.170
16. Twin Trails Dr to Black Mountain Rd	40,000	8,320	A	0.208
Sundance Avenue [e]				
17. Carmel Mountain Rd to War Bonnet St	8,000	1,880	A	0.235
Park Village Road				
18. Camino Del Sur to Ragweed St	40,000	8,430	A	0.211
19. Ragweed St to Black Mountain Rd	40,000	17,550	B	0.439
Mercy Road				
20. Black Mountain Rd to I-15 SB Ramps	40,000	19,850	B	0.496

Footnotes:

a. Capacities based on City of San Diego Roadway Classification & LOS table *(See Appendix C).*
b. Average Daily Traffic Volumes
c. Level of Service
d. Volume to Capacity ratio
e. Sundance Avenue is currently built to two-lane Collector standards with a 40' curb-to-curb width providing an LOS E capacity of 8,000 ADT.

General Notes:

1. DNE = Does Not Exist

TABLE 6–3
EXISTING FREEWAY MAINLINE OPERATIONS

Freeway Segment	Dir	# of Lanes [a]	Hourly Capacity [b]	Volume [c]	Peak Hour Volume [d]		V/C [e]		LOS [f]	
					AM	PM	AM	PM	AM	PM
State Route 56										
1. Carmel Valley Rd to	EB	2M	4,000	65,000	2,884	2,808	0.721	0.702	C	C
Camino Del Sur	WB	2M	4,000		3,490	1,485	0.873	0.371	D	A
2. Camino Del Sur to	EB	2M	4,000	72,000	1,623	3,218	0.406	0.805	A	D
Black Mountain Rd	WB	2M	4,000		2,829	1,813	0.707	0.453	C	B
3. Black Mountain Rd to	EB	3M	6,000	76,000	2,267	3,058	0.378	0.510	A	B
Rancho Peñasquitos Blvd	WB	2M+1A	5,200		3,170	1,720	0.610	0.331	B	A
4. Rancho Peñasquitos Blvd	EB	2M	4,000	71,000	2,284	2,750	0.571	0.688	B	C
to I-15	WB	2M	4,000		2,842	2,349	0.711	0.587	C	B

Footnotes:

a. Lane geometry taken from PeMS lane configurations at corresponding postmile.
b. Capacity calculated at 2000 vehicles per hour (vph) per lane (pcphpl) for mainline lanes and 1200 vph for auxiliary lanes, from *Caltrans Guide for the Preparation of Traffic Impact Studies, Dec 2002.*
c. Existing ADT volumes taken from most recent 2013 Caltrans traffic volumes.
d. Peak hour volumes taken from most recent 2014 PeMS traffic volumes.
e. V/C = (Peak Hour Volume/Hourly Capacity)
f. LOS = Level of Service

General Note:

1. M = Mainline
2. A = Auxiliary

TABLE 6–4
EXISTING RAMP METER ANALYSIS – FIXED RATE

Location	Peak Hour [a]	Existing							Observed [e]		
		Volume		Peak Hour Demand (D) [b]	Meter Rate [c]	Excess Demand (E) (veh)	Delay (min)	Queue (ft)[d]	Available Storage (ft) [f]	Maximum SOV Queue (ft)	Maximum Delay (min/sec)
		SOV	HOV								
SR 56 / Camino Del Sur Interchange											
1. Camino Del Sur to SR 56 WB (2 SOV+1 HOV)	AM	436	77	218	680	0	0	0	1400	200	00:26
2. Camino Del Sur to SR 56 EB (2 SOV+1 HOV)	PM	866	153	433	800	0	0	0	1220	320	00:35
SR 56 / Black Mountain Road Interchange											
3. Black Mountain Rd to SR 56 WB (2 SOV+1 HOV)	AM	1267	224	633	765	0	0	0	1900	230	00:37
4. Black Mountain Rd to SR 56 EB (2 SOV+1 HOV)	PM	615	108	307	910	0	0	0	1200	150	00:26
SR 56 / Rancho Peñasquitos Blvd Interchange											
5. Rancho Peñasquitos Blvd to SR 56 WB (1 SOV)	AM	757	—	757	800	0	0	0	730	320	00:56
6. Rancho Peñasquitos Blvd to SR 56 EB (2 SOV)	PM	219	—	110	450	0	0	0	920	60	00:12

Footnotes:

a. Selected peak hour based on period when ramp meter is operating.
b. Peak hour demand in vehicles/hour/lane for SOV and HOV lanes.
c. Most restrictive meter rates obtained from Caltrans. *Appendix D* provides the Caltrans meter rate data.
d. Queue calculated assuming vehicle length of 25 feet.
e. Field observations conducted on Tuesday Jun 16, 2015 to verify accuracy of calculated queue lengths. SOV observed queues increased by a 15% seasonal adjustment factor.
f. Available storage represents total storage available in all SOV lanes.

General Notes:

1. SOV = Single Occupancy Vehicle, HOV = High Occupancy Vehicle
2. Lane utilization factor accounted for in peak hour demand calculation. (Assumed 15% for HOV).

7.0 PROJECT CONDITIONS

7.1 Network Conditions

As discussed in *Section 2.3* of this report, several network changes are proposed with the Project. As part of the Project, Camino Del Sur will be extended south of its current terminus at Torrey Santa Fe Road connecting to its existing southerly connection just north of Dormouse Road. Carmel Mountain Road will also be extended by realigning the existing portion from Via Las Lenas to Via Panacea and connecting to the proposed Camino Del Sur extension.

Camino Del Sur is proposed to be constructed as a Four-Lane Major Arterial with intersection enhancements from Torrey Santa Fe Road to the proposed Private Drive 'M' access road to accommodate turn lanes at Private Drive 'M' and at the adjacent Kilroy site proposed to the west. South of Private Drive 'M', Camino Del Sur is proposed to be constructed as a Four-Lane Major Arterial to Carmel Mountain Road. From Carmel Mountain Road south to the existing southerly connection north of Dormouse Road, Camino Del Sur is proposed a Two-Lane Modified Collector. Bike lanes will be provided on all sections of Camino Del Sur within the study area and curbside parking will be prohibited.

Carmel Mountain Road is proposed as a Two-Lane Modified Collector from its current terminus at Via Panacea (south of SR 56) to Camino Del Sur. This improvement will include the provision of bike lanes and sidewalks on the SR 56 overpass. In addition, bike lanes will be provided on Carmel Mountain Road within the study area and curbside parking will be prohibited.

Details on the proposed network improvements to the Project access locations are provided later on in this report in *Section 14.1.1*.

Table 4–2 in *Section 4.2* provided earlier in this report details the network conditions assumed for each scenario analyzed. ***Table 7–1*** provides a summary of the Existing and Existing + Project network conditions. ***Figure 7–1*** depicts the Existing + Project conditions diagram.

TABLE 7–1
EXISTING + PROJECT ROADWAY NETWORK CONDITIONS

Planned Roadway Network	Scenario	
	Existing	Existing + Project
Camino Del Sur	Does Not Exist	Fully Constructed
Carmel Mountain Road	Does Not Exist	Fully Constructed
Torrey Meadows Drive Overcrossing	Does Not Exist	Does Not Exist

General Notes:

1. Camino Del Sur network condition represents the planned extension from its current terminus at Torrey Santa Fe Road to its southerly connection just north of Park Village Road.
2. Carmel Mountain Road network condition represents the planned extension from its current terminus just south of Via Las Lenas to Camino Del Sur.
3. Torrey Meadows Drive Overcrossing network condition represents the connection of Torrey Meadows Drive over SR 56 to Torrey Santa Fe Road. It is not included in the "Existing + Project" condition since this scenario represents the effects of Project traffic and Project network improvements on the existing street network at the time of data collection (May 2014).
4. "Fully Constructed" represents construction of roadways to their current Community Plan classification. ("Fully Constructed" for Camino Del Sur from Private Drive 'M' to just north of Dormouse Road and for Carmel Mountain Road from SR 56 to Camino Del Sur represents the proposed Community Plan Amendment classification.)

7.2 Traffic Volumes

The connections of Camino Del Sur and Carmel Mountain Road provide a vital link in the Rancho Peñasquitos street network. These roadways provide a more direct route for trips destined to/from SR 56 from Carmel Valley Road, Park Village Road, and Carmel Mountain Road, reducing the number of trips along Park Village Road, Black Mountain Road, Sundance Avenue and Carmel Mountain Road.

With the connection of these roadways and the more direct access to SR 56 at the Camino Del Sur interchange, it would be expected that drivers in the area would alter their travel patterns along study area roadways. In order to account for these changes in traffic volumes, a portion of the residential trips from the communities north and south of SR 56 between Camino Del Sur and Black Mountain Road were rerouted from the Black Mountain Road interchange to Camino Del Sur.

Northern Residential Community (Twin Trails)

Of the many residences along Carmel Mountain Road from its current terminus just south of Sundance Avenue near SR 56 and to Black Mountain Road in the east and along Sundance Avenue, it was assumed that approximately 35% of existing trips would reroute from the Black Mountain Road interchange to the Camino Del Sur interchange, reducing the number of trips along Carmel Mountain Road and Sundance Avenue toward the east and Black Mountain Road. These trips would travel along the southwest portion of Carmel Mountain Road over SR 56 and use the proposed Private Drive 'M' access road to reach the Camino Del Sur interchange.

Due to the current development of the Twin Trails community, vehicular access to Camino Del Sur is restricted by a finger canyon just west of Russett Leaf Lane and no local roadways east of this canyon connect to Camino Del Sur between SR 56 and Carmel Valley Road. In order to reach any of

the land uses along Camino Del Sur and/or SR 56, Twin Trails traffic must currently travel via Black Mountain Road to SR 56 in the south or via Black Mountain Road to Carmel Valley Road in the north. A review of the SANDAG Year 2035 model indicates that approximately 4,700 ADT from the Twin Trails community would travel on Carmel Mountain Road south of Sundance Avenue using Private Drive M to reach the Camino Del Sur/ SR 56 interchange with the completion of the roadway network while approximately 8,300 ADT would remain on Carmel Mountain Road using Black Mountain Road to/from SR 56. For the total trips assumed to be entering/exiting Twin Trails (13,000 ADT), the 4,700 ADT using Carmel Mountain Road to Private Drive M to the Camino Del Sur/ SR 56 interchange account for approximately 35% of the total trips. It was therefore determined that approximately 35% of existing area traffic would reroute to Private Drive M with the completion of the Project roadways.

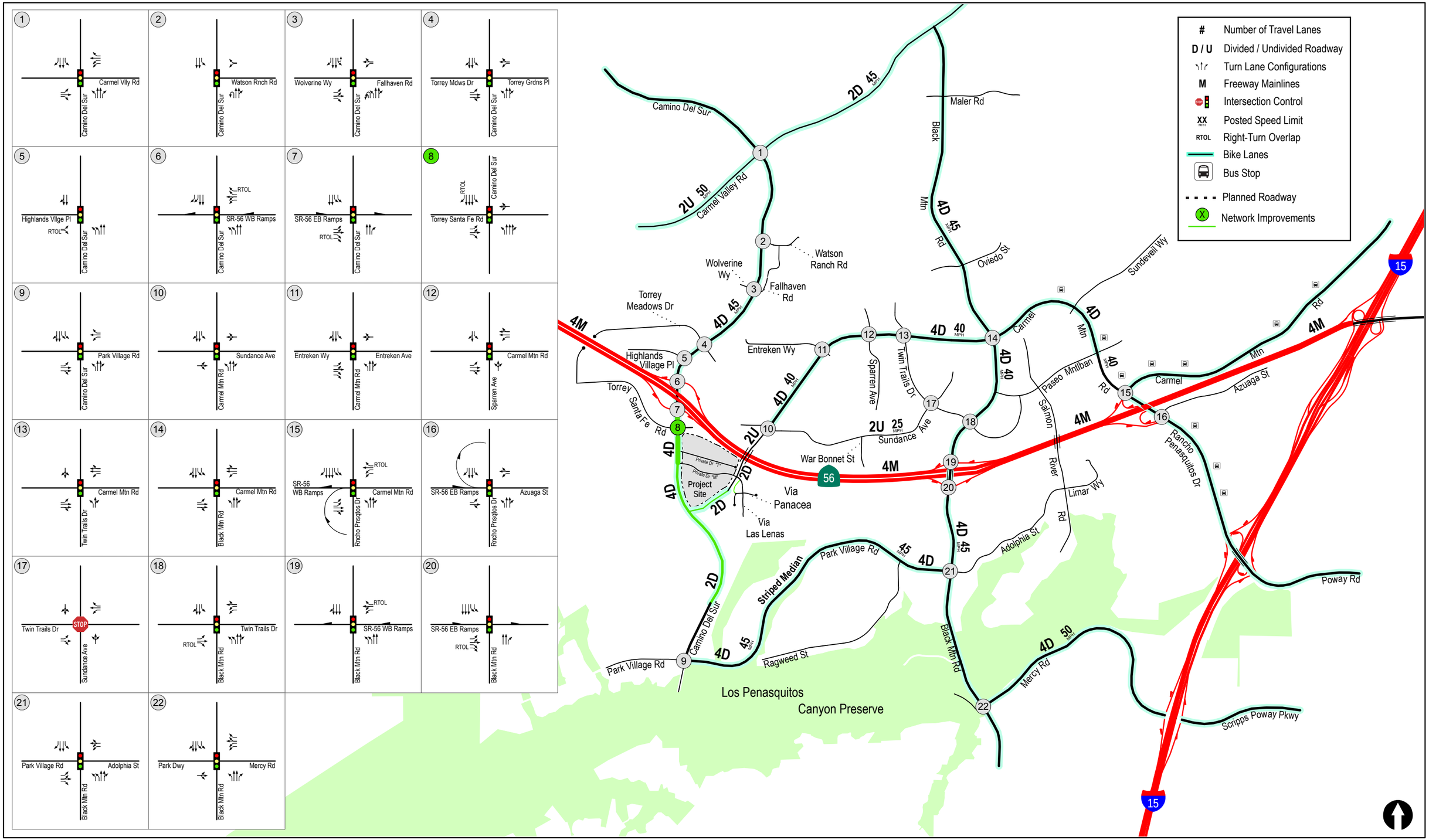
As a result of this change in travel patterns, existing traffic volumes were rerouted through the Project site, using proposed Private Drive 'M' as a cut-through street.

Southern Residential Community (Park Village)
Of the many residences along Park Village Road taking access to SR 56 via Black Mountain Road, it was assumed that approximately 25% of existing trips would reroute from the Black Mountain Road interchange to the Camino Del Sur interchange, reducing the number of trips along Park Village Road to the east and Black Mountain Road.

A review of the SANDAG Year 2035 traffic model with the completion of Camino Del Sur and Carmel Mountain Road indicates that approximately 8,400 ADT from the Park Village community would travel on the new Camino Del Sur connection to/from SR 56 north and approximately 15,800 ADT would travel on Black Mountain Road to/from SR 56. For the total trips assumed to be entering/exiting Park Village (24,200 ADT), the 8,400 ADT using Camino Del Sur account for approximately 35% of the total trips. Since 1,500 ADT of the 8,400 ADT assigned to Camino Del Sur South are Project-generated, the 35% reroute was reduced to 25% for use as the baseline assumption in the analysis.

Appendix F Figure A$_1$ illustrates the Rerouted Existing traffic volumes with the construction of Camino Del Sur and Carmel Mountain Road for the study area.

Figure 7–2 shows the Existing + Rerouted Existing Traffic Volumes.



LINSCOTT LAW & GREENSPAN engineers

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Date: 06/23/15

Figure 7-1

Existing + Project Conditions Diagram

MERGE 56

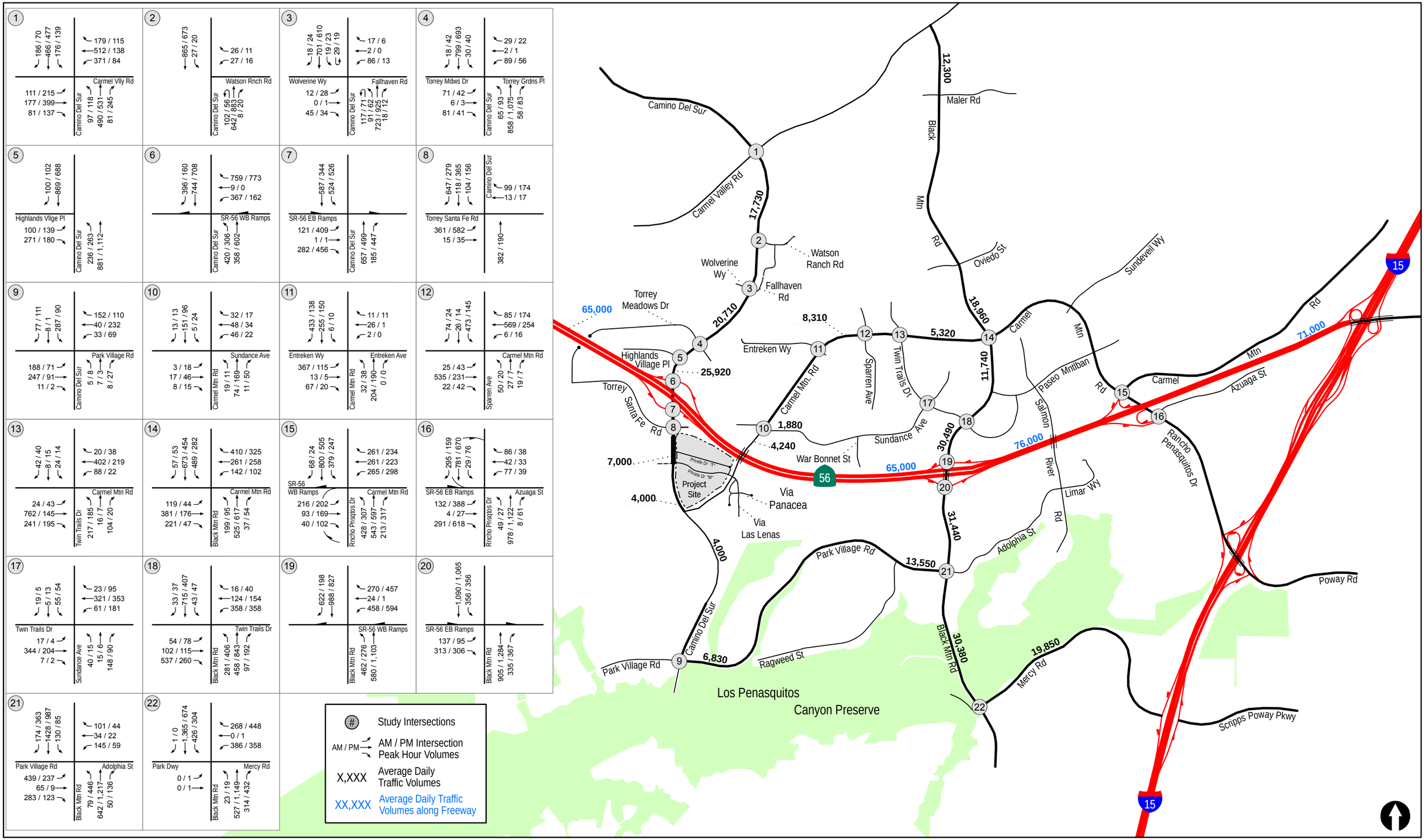

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Figure 7-2

Existing + Rerouted Existing Traffic Volumes

8.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

8.1 Trip Generation

Trip generation estimates for the proposed development were calculated using published City of San Diego trip rates. As mentioned in *Section 2.0*, the site is currently entitled for 525,000 SF of commercial uses and 242 residential units which as approved resulted in 19,500 collective driveway ADT. The Project as proposed will continue to include commercial uses, including a drug store, cinema, hotel, and community shopping center (fitness, grocery and market hall uses). Standard commercial office uses are also proposed. The final sizes and locations of these uses on the site are to be determined, but their sum shall not exceed the entitled 525,000 SF/ 19,500 ADT.

The 242 total residential dwelling units proposed includes 84 single family units, 47 affordable units, and 111 townhomes. These units may be either for-sale or rental units.

Table 8–1 tabulates the total Project traffic generation. The total Project is calculated to generate 19,468 ADT with 806 inbound / 386 outbound trips during the AM peak hour and 929 inbound / 1,166 outbound trips during the PM peak hour at the Project driveways.

As compared to the previously entitled project of 19,500 ADT, the Proposed Project is slightly lower with 19,468 ADT. The Proposed Project does result in increased peak hour trips due to the change in primary land uses from the original entitlement (self-storage) to office and retail. The currently proposed office/retail uses generate higher peak hour trips than the entitled self-storage, especially during the AM peak hour. However, this increase in peak hour trips will generally be complementary to the existing street network, as most existing AM peak hour trips are residential trips heading *away* from the planning area to a work destination. By contrast, the proposed office/retail uses will attract trips from outside *into* the planning area. Because of their counterflow nature, these trips will take advantage of underutilized capacity on the roadway system.

8.2 Trip Distribution/Assignment

The SANDAG Series 12 Year 2035 traffic model was utilized to obtain a Select Zone Assignment (SZA) for the purposes of estimating trip distribution and ultimately the study area. Two zones in the SANDAG base model were modified to represent a) the Proposed Project (TAZ 4683), and b) the adjacent Kilroy proposed office project (TAZ 4684). In addition, the Project zone was modified to include the proposed Private Drive 'M', which is the private drive proposed to provide primary internal circulation to the site (in lieu of centroid connectors). The Project was coded into TAZ 4683 as an iteration of a mix of proposed land uses.

The Year 2035 street network includes SR 56 as four lane facility (two eastbound, two westbound lanes), and Black Mountain Road as a Six-Lane Primary Arterial from just south of Park Village Road to its transition to Kearny Villa Road, though this widening is not fully funded. SR 56 improvements from four-to-six lanes are not currently funded, and not programmed in the Regional Transportation Plan until 2040. According to the Rancho Peñasquitos Community Plan, Black Mountain Road is classified as a Six-Lane Primary Arterial starting from Twin Trails Drive to the

southern community plan boundary. However, since Black Mountain Road is in the process of being reclassified to remain a Four-Lane Major Arterial, it was therefore assumed to be four lanes in Year 2035. In addition, since the six-lane classified segment of Black Mountain Road south of Park Village Road is currently unfunded, this segment was also assumed to remain four lanes in Year 2035.

It is believed that the SZA traffic model overstates potential trips on Park Village Road between the Project and Black Mountain Road at 14%. It would be expected that the majority of those trips (9%) would utilize SR 56 to travel between the site and Black Mountain Road. This discrepancy is likely due to future forecast volumes on SR 56 as a four-lane facility.

Similarly, the model forecasts 10% of traffic on Black Mountain Road south of Mercy Road. Again, given that the site's highest-generating land uses (office and retail) are freeway-oriented trips and the Project site is immediately adjacent to SR 56, this distribution appears to be overstated. A higher-than-expected percentage is also forecasted on Camino Del Sur north of SR 56 (from the Santaluz area). Primary trips to these cordons would be much less (resulting in lower threshold than 4%) if pass-by and diverted-link trip reductions were accounted for.

Appendix G provides a graphic depicting the original distribution generated by the SZA model and a marked-up version showing the overall proposed Project trip distribution with the rerouted changes discussed above. The primary changes to the SZA are listed below:

- 10% oriented to the south on Camino Del Sur to Black Mountain Road via Park Village Road rerouted via SR 56 to Black Mountain Road
- 6% oriented to I-15 via Black Mountain Road south of Mercy Road rerouted to the east via Mercy Road to I-15
- 2% oriented to Black Mountain Road via Carmel Mountain Road on the north side of SR 56 rerouted to Twin Trails Drive

Figures 8–1a and 8–1b depict the trip distribution in the Project area and access detail, respectively. ***Figures 8–2a and 8–2b*** show the Project assignment traffic volumes for the study area and access detail, respectively.

Project traffic volumes were added to the Existing + Existing Rerouted baseline volumes to represent Existing + Project conditions. ***Figure 8–3*** shows the Existing + Project traffic volumes for the study area locations.

A separate assessment of the Project access is included later on in this report. Graphics depicting the "Plus Project" traffic volumes at access intersections is provided in *Section 14.0.*

TABLE 8–1
PROJECT TRIP GENERATION

Land Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour					PM Peak Hour				
		Rate [a]	Volume	% of ADT [a]	In:Out Split [a]	Volume In	Volume Out	Volume Total	% of ADT [a]	In:Out Split [a]	Volume In	Volume Out	Volume Total
Retail – Drug Store	15,000 SF	90/KSF [b]	1,350	4%	6:4	32	22	54	10%	5:5	68	67	135
Retail – Unnamed	9,000 SF	100/KSF	900	19%	5:5	86	85	171	18%	5:5	81	81	162
Retail – Cinema	45,453 SF	80/KSF	3,636	0.3%	9:1	10	1	11	8%	7:3	204	87	291
Hotel [c]	120 rooms	8/room	960	5%	6:4	29	19	48	7%	6:4	40	27	67
Retail – Community Shopping Center													
Fitness	21,885 SF	—	—	—	—	—	—	—	—	—	—	—	—
Grocery	29,573 SF	—	—	—	—	—	—	—	—	—	—	—	—
Market Hall	10,564 SF	—	—	—	—	—	—	—	—	—	—	—	—
Other Retail	39,262 SF	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal Community Shopping Center	*101,284 SF*	*70/KSF*	*7,090*	*3%*	*6:4*	*128*	*85*	*213*	*10%*	*5:5*	*355*	*354*	*709*
Subtotal Retail + Hotel	***161,737 SF***	— —	***13,936***	—	—	***285***	***212***	***272***	—	—	***748***	***616***	***1,364***
Office	296,263 SF	[d]	3,838	15%	9:1	518	58	576	15%	1:9	58	518	576
Mixed Use Reduction (3% ADT, 5% AM, 4% PM)			(115)	—	—	(26)	(3)	(29)	—	—	(2)	(21)	(23)
Subtotal Office (with Mixed Use Reduction)			***3,722***	—	—	***492***	***55***	***547***	—	—	***56***	***497***	***553***
Residential													
Single Family	84 DU [e]	10/DU	840	8%	2:8	13	54	67	10%	7:3	59	25	84
Affordable Units	47 DU	6/DU	282	8%	2:8	5	18	23	9%	7:3	18	7	25
Townhomes	111 DU	8/DU	888	8%	2:8	14	57	71	10%	7:3	62	27	89
Subtotal Residential	*242 DU*	— —	*2,010*	—	—	*32*	*129*	161	—	—	*139*	*59*	*198*
Mixed Use Reduction (10% ADT, 8% AM, 10% PM)			(201)	—	—	(3)	(10)	(13)	—	—	(14)	(6)	(20)
Subtotal Residential (with Mixed Use Reduction)			***1,809***	—	—	***29***	***119***	***148***	—	—	***125***	***53***	***178***
Total Project			**19,468**	**—**	**—**	**806**	**386**	**1,192**	**—**	**—**	**929**	**1,166**	**2,095**

Footnotes:
a. Rates are based on City of San Diego's Trip Generation Rate Summary Table.
b. KSF – 1,000 Square Feet
c. Proposed Hotel to be 54,000 square feet
d. $\text{Ln}(T) = 0.756\ \text{Ln}(x) + 3.95$; where x is the Gross Floor Area in KSF
e. DU – Dwelling Unit

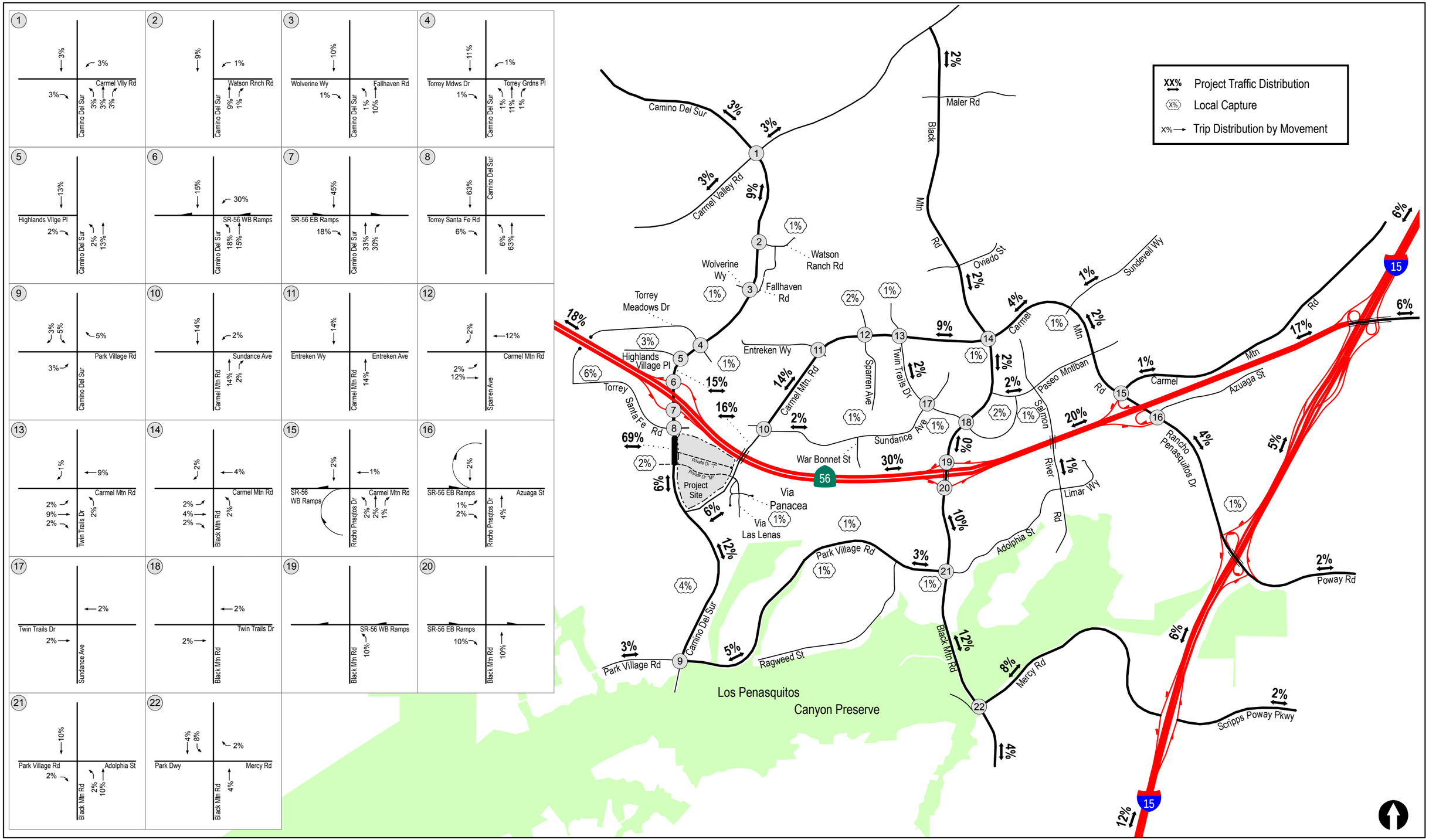

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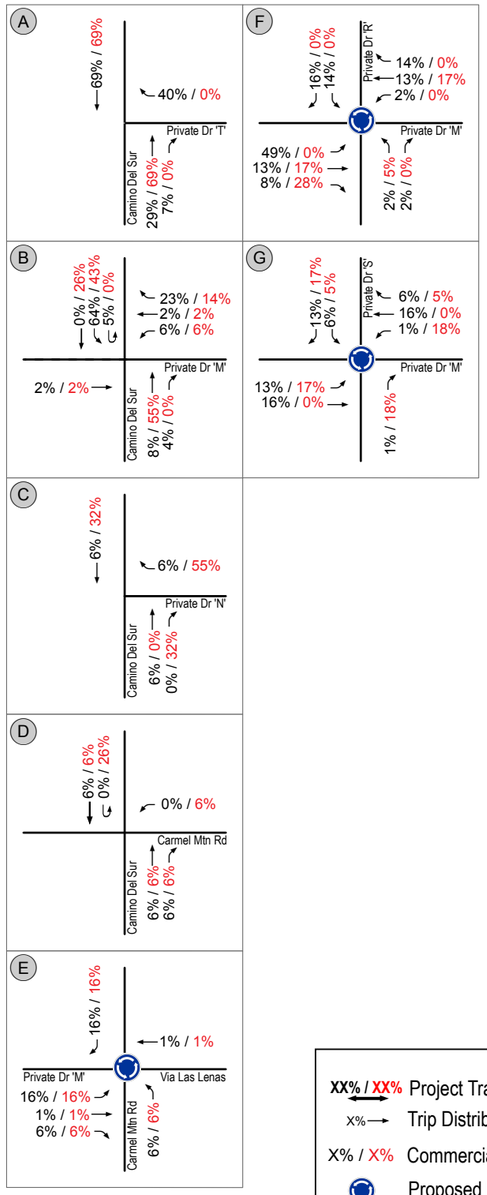
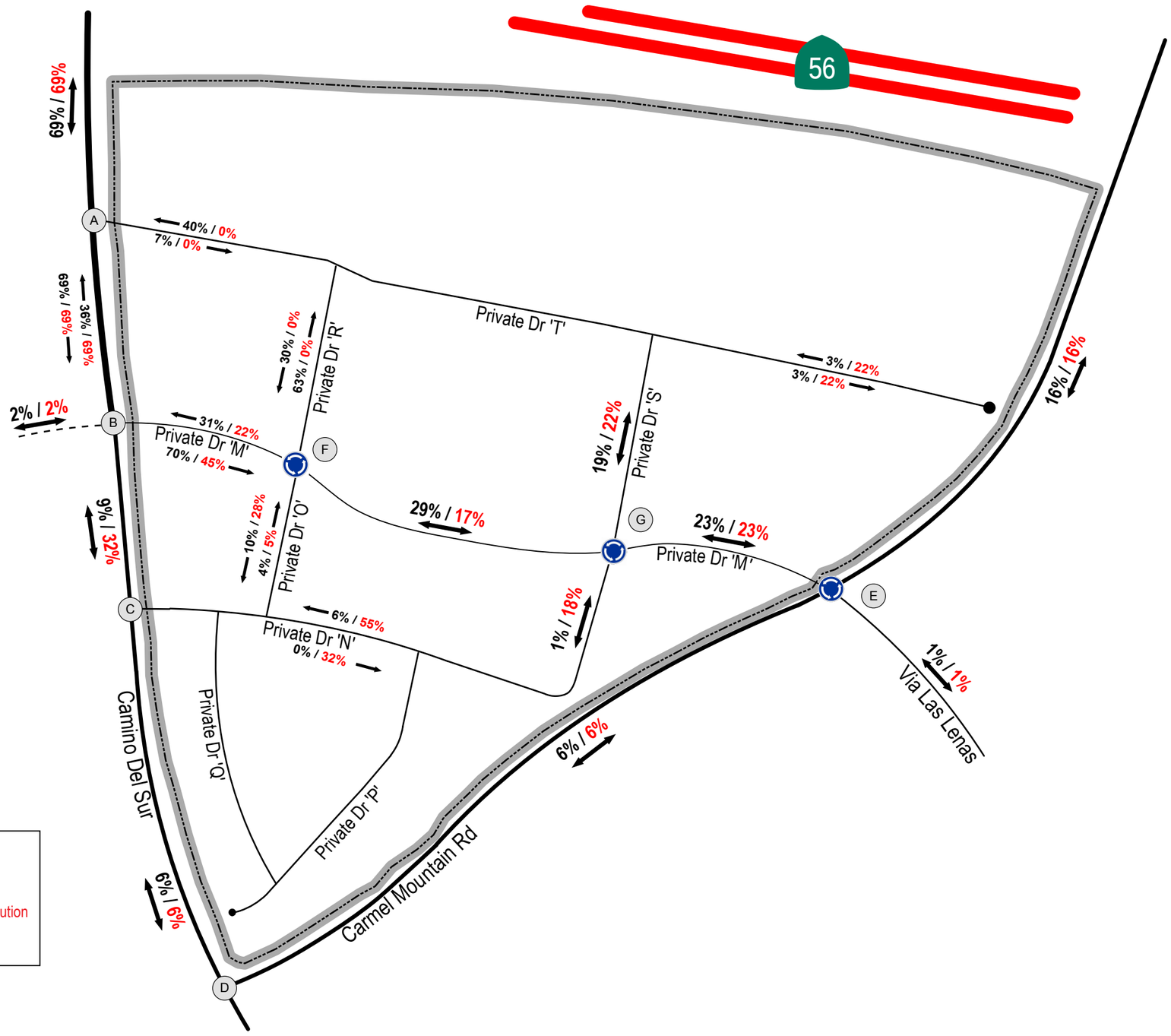
Figure 8-1a

Project Trip Distribution

MERGE 56





XX% / XX% Project Traffic Distribution

X% → Trip Distribution by Movement

X% / X% Commercial Distribution / Residential Distribution

Proposed Roundabouts

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Figure 8-1b

Project Traffic Distribution
(Project Access)

MERGE 56

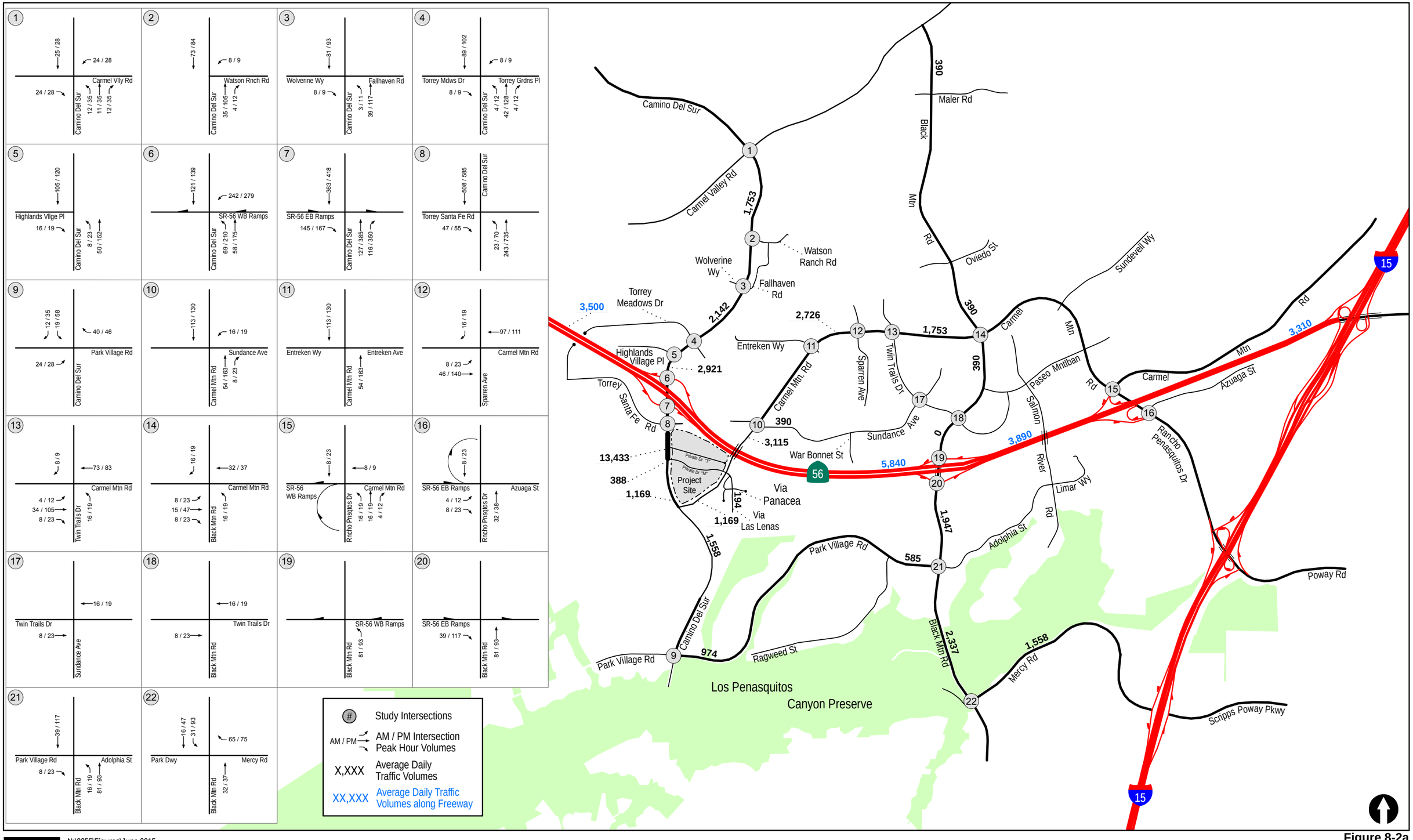

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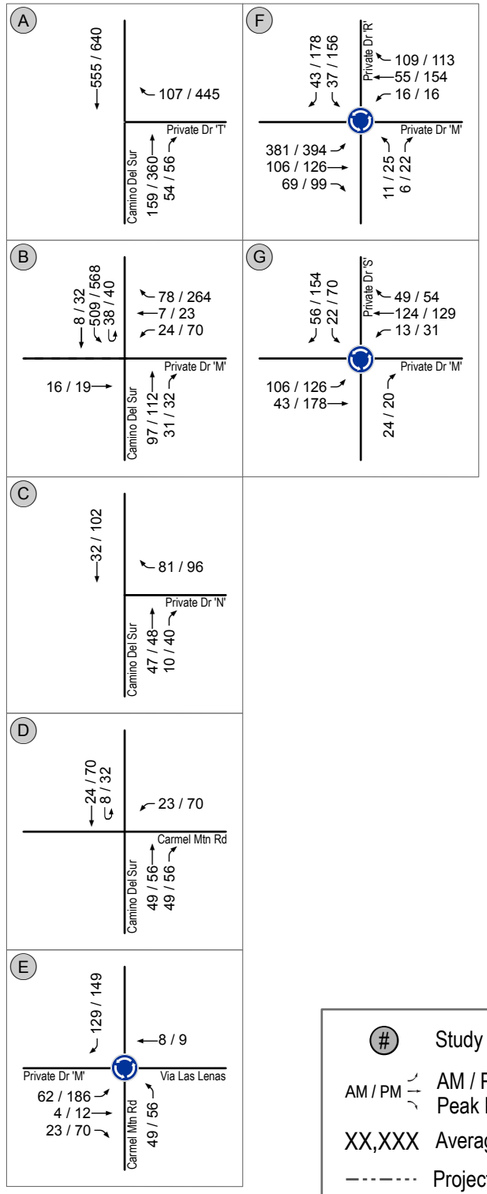
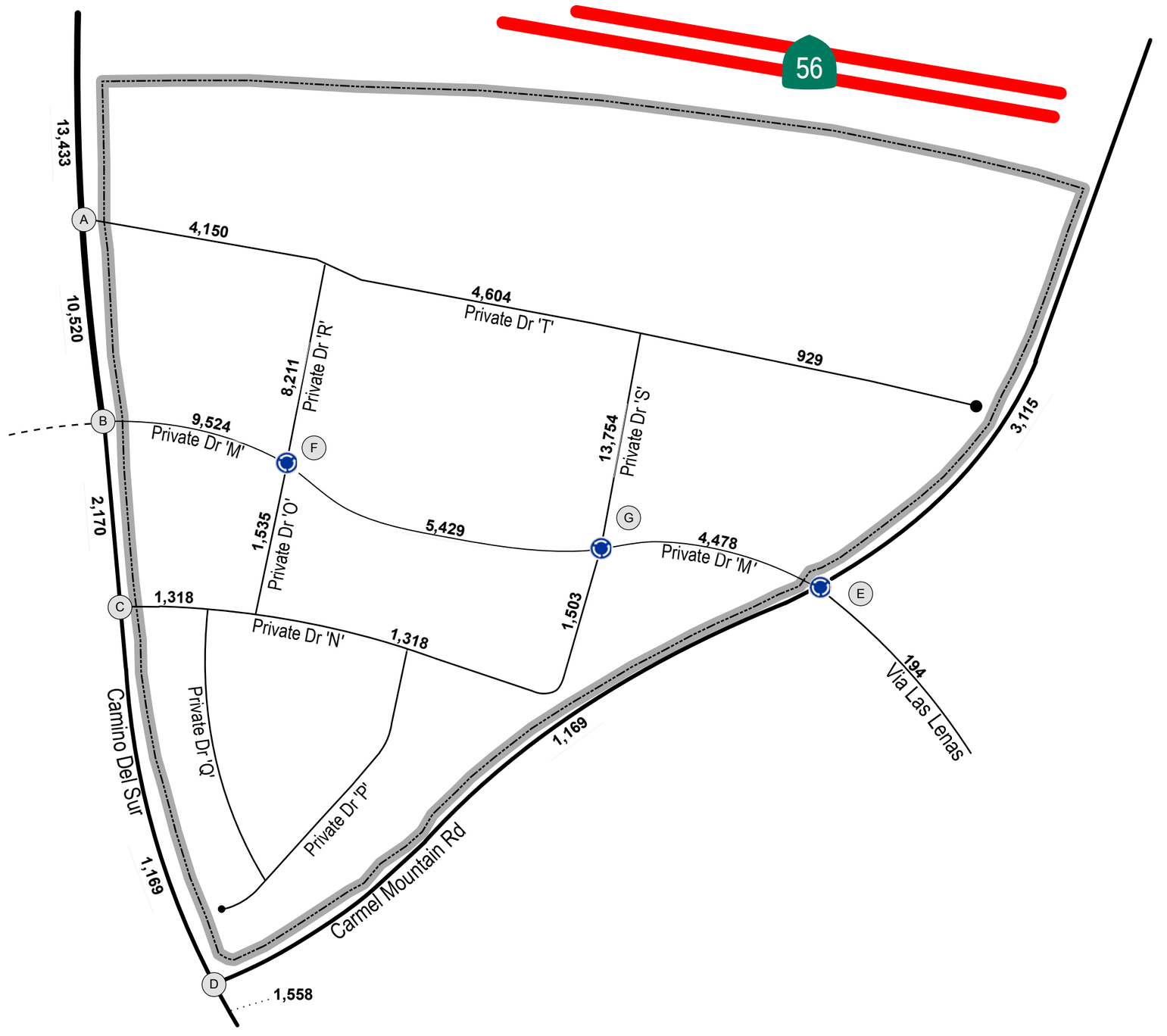
Figure 8-2a

Project Traffic Volumes

MERGE 56





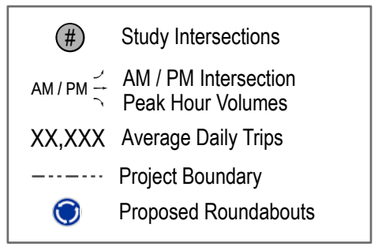


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Figure 8-2b

Project Traffic Volumes (Project Access)

MERGE 56

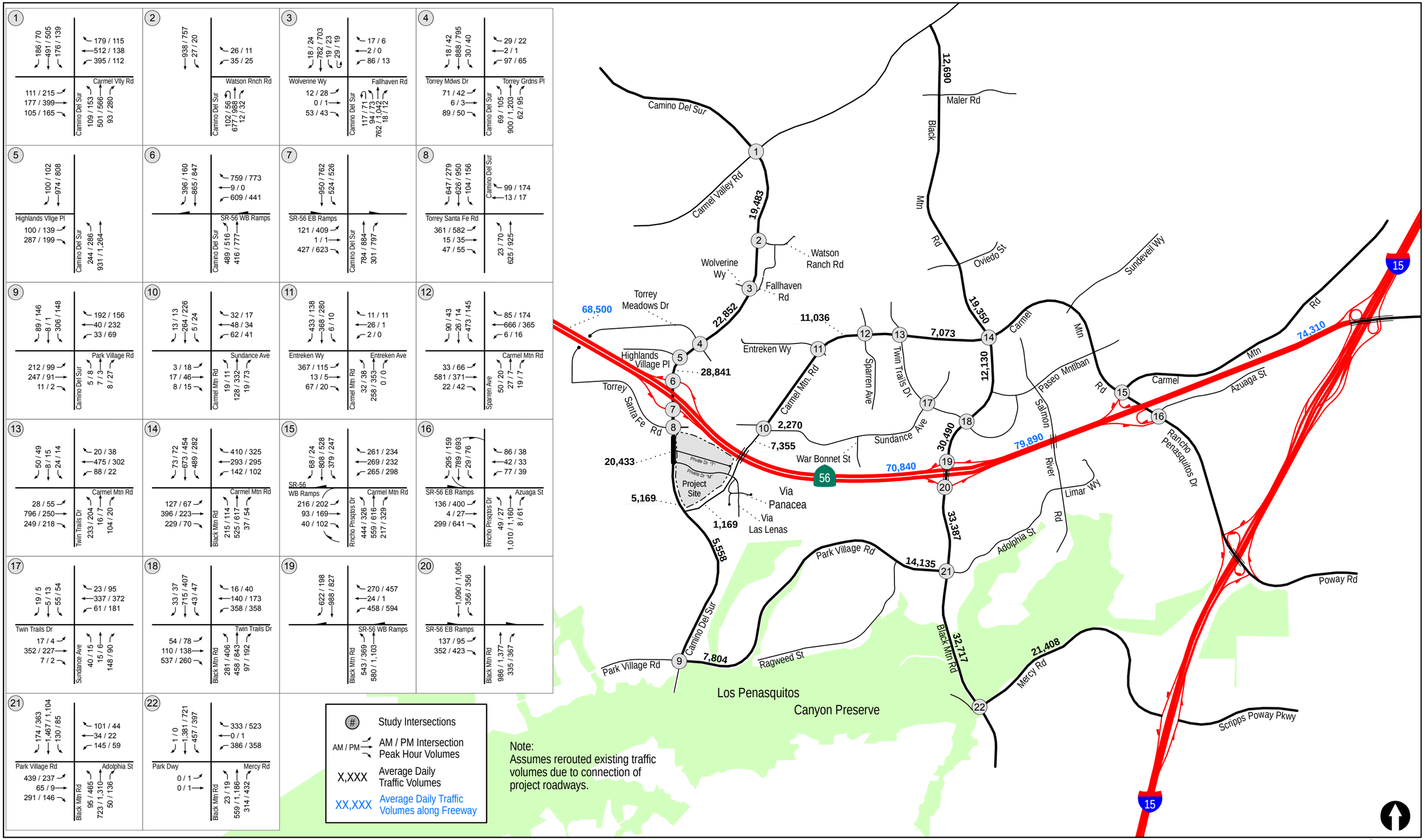

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Figure 8-3

Existing + Project Traffic Volumes

9.0 ANALYSIS OF EXISTING + PROJECT SCENARIO

The following section presents the analysis of Existing + Project study area locations. The Existing + Project condition represents the effect of Project traffic on the existing street network, at the time of traffic data collection (May 2014) without assuming either additional cumulative projects or additional road improvements in the baseline condition. However, since the Project is proposing to construct new roadways that will provide access to the site and beyond, the Existing + Rerouted Existing traffic volumes were used in the Existing + Project analysis. A separate assessment of the access locations is provided in *Section 14.1.3* later on in this report.

It should be noted that LOS operations at several study area locations improve under "Plus Project" conditions with the connection of Camino Del Sur, Carmel Mountain Road and Private Drive 'M' providing a more direct route to SR 56. *Sections 7.2 and 15.0* provide a detailed discussion on the rerouting of traffic volumes with the planned road network.

9.1 Peak Hour Intersection Operations

Table 9–1 summarizes the Existing + Project intersections operations. As seen in *Table 9–1*, the following study area intersections are calculated to operate at LOS E or F with the addition of Project traffic:

- Intersection #3. Camino Del Sur/ Wolverine Way – LOS E (AM peak hour)
- Intersection #15. Carmel Mountain Rd / SR 56 WB Ramps – LOS E (AM peak hour)
- Intersection #16. Carmel Mountain Rd / SR 56 EB Ramps – LOS E (PM peak hour)
- Intersection #21. Black Mountain Rd / Park Village Rd – LOS E/E (AM/PM peak hour)

Based on City of San Diego significance criteria, **no significant direct impacts** were calculated with the addition of Project traffic since the Project-induced change in delay is less than 2.0 seconds for LOS E operating intersections.

Appendix H contains the Existing + Project intersection analysis worksheets.

9.2 Daily Street Segment Operations

Table 9–2 summarizes the Existing + Project street segment operations. As seen in *Table 9–2*, with the addition of Project traffic, all study area street segments are calculated to continue to operate at LOS D or better.

Based on City of San Diego significance criteria, **no significant direct impacts** were calculated with the addition of Project traffic.

9.3 Peak Hour Freeway Segment Operations

Table 9–3 shows the volume/capacity freeway segment analyses for the Existing + Project freeway operations. As seen in *Table 9–3*, with the addition of Project traffic, the study area freeway

mainline segments are calculated to continue to operate at LOS D or better during both the AM and PM peak hours.

No significant direct impacts were calculated with the addition of Project traffic on the freeway segments.

9.4 Peak Hour Freeway Ramp Meter Operations

Table 9–4 summarizes the Existing + Project operations of the on-ramp meter using the fixed rate analysis methodology. As seen in *Table 9–4*, there is no delay calculated at any of the study area on-ramps with the addition of Project traffic.

TABLE 9–1
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Δ [c] Delay	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
1. Carmel Valley Rd / Camino Del Sur	Signal	AM	34.5	C	36.6	D	2.1	No
		PM	34.0	C	35.1	D	1.1	
2. Camino Del Sur / Watson Ranch Rd	Signal	AM	20.7	C	21.5	C	0.8	No
		PM	8.0	A	8.3	A	0.3	
3. Camino Del Sur / Wolverine Way	Signal	AM	62.1	E	62.1	E	0.0	No
		PM	20.8	C	24.0	C	3.2	
4. Camino Del Sur / Torrey Meadows Dr	Signal	AM	22.4	C	23.1	C	0.7	No
		PM	15.7	B	20.7	C	5.0	
5. Camino Del Sur / Highlands Village Pl	Signal	AM	20.8	C	20.9	C	0.1	No
		PM	18.4	B	18.6	B	0.2	
6. Camino Del Sur / SR 56 WB Ramps	Signal	AM	20.8	C	28.3	C	7.5	No
		PM	22.5	C	29.1	C	6.6	
7. Camino Del Sur / SR 56 EB Ramps	Signal	AM	24.8	C	24.9	C	0.1	No
		PM	33.4	C	37.4	C	4.0	
8. Camino Del Sur / Torrey Santa Fe Rd	Signal	AM	10.4	B	19.7	B	9.3	No
		PM	15.9	B	30.2	C	14.3	
9. Camino Del Sur / Park Village Rd	Signal	AM	28.4	C	30.3	C	1.9	No
		PM	22.5	C	25.1	C	2.6	
10. Carmel Mountain Rd / Sundance Ave	Signal	AM	21.5	C	12.7	B	(8.8)	No
		PM	23.1	C	11.5	B	(11.6)	
11. Carmel Mountain Rd / Entreken Way	Signal	AM	23.8	C	24.2	C	0.4	No
		PM	13.8	B	12.1	B	(1.7)	

(Continued on Next Page)

TABLE 9–1
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Δ [c] Delay	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
(Continued from Previous Page)								
12. Carmel Mountain Rd / Sparren Ave	Signal	AM	29.5	C	27.5	C	(2.0)	No
		PM	16.6	B	27.3	C	10.7	
13. Carmel Mountain Rd / Twin Trails Dr	Signal	AM	35.5	D	29.8	C	(5.7)	No
		PM	17.8	B	19.4	B	1.6	
14. Carmel Mountain Rd / Black Mountain Rd	Signal	AM	47.3	D	48.9	D	1.6	No
		PM	36.4	D	37.9	D	1.5	
15. Carmel Mountain Rd / SR 56 WB Ramps	Signal	AM	55.6	E	56.1	E	0.5	No
		PM	49.5	D	50.4	D	0.9	
16. Carmel Mountain Rd / SR 56 EB Ramps	Signal	AM	34.5	C	35.7	D	1.2	No
		PM	56.7	E	58.1	E	1.4	
17. Sundance Ave / Twin Trails Dr	AWSC [d]	AM	39.0	E	20.6	C	(18.4)	No
		PM	26.2	D	14.2	B	(12.0)	
18. Black Mountain Rd / Twin Trails Dr	Signal	AM	56.7	E	42.9	D	(13.8)	No
		PM	34.1	C	33.9	C	(0.2)	
19. Black Mountain Rd / SR 56 WB Ramps	Signal	AM	82.4	F	48.3	D	(34.1)	No
		PM	38.4	D	37.6	D	(0.8)	
20. Black Mountain Rd / SR 56 EB Ramps	Signal	AM	56.1	E	46.4	D	(9.7)	No
		PM	55.7	E	31.1	C	(24.6)	
21. Black Mountain Rd / Park Village Rd	Signal	AM	58.1	E	50.7	D	(7.4)	No
		PM	59.3	E	57.3	E	(2.0)	
22. Black Mountain Rd / Mercy Rd	Signal	AM	16.9	B	17.4	B	0.5	No
		PM	22.3	C	29.4	C	7.1	

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service
c. Δ denotes the increase in delay due to Project.
d. All-Way Stop Controlled intersection. Average intersection delay reported.

General Notes:

1. Sig = Significant impact, yes or no.
2. Improvement in delay due to rerouting of existing traffic with connection of Camino Del Sur and Carmel Mountain Road and onsite Project roadways connecting to the SR 56 / Camino Del Sur interchange.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 9–2
EXISTING + PROJECT STREET SEGMENT OPERATIONS

Street Segment	Existing Capacity (LOS E) [a]	Planned Capacity (LOS E) [a]	Existing			Existing + Project			Project Volumes	Δ [e] V/C	Sig?
			ADT [b]	LOS [c]	V/C [d]	ADT	LOS	V/C			
Camino Del Sur											
1. Carmel Valley Rd to Watson Ranch Rd	40,000	40,000	17,730	B	0.443	19,483	B	0.487	1,753	0.044	No
2. Wolverine Way to Torrey Meadows Dr	40,000	40,000	20,710	B	0.518	22,852	C	0.571	2,142	0.053	No
3. Highland Village Pl to SR 56 WB Ramps	40,000	40,000	25,920	C	0.648	28,841	C	0.721	2,921	0.073	No
4. Torrey Santa Fe Rd to Project Drwy	DNE	45,000 [f]	—	—	—	20,433	B	0.409	13,433	—	No
5. Project Drwy to Carmel Mountain Rd	DNE	40,000	—	—	—	5,169	A	0.129	1,169	—	No
6. Carmel Mountain Rd to Park Village Rd	DNE	15,000 [g]	—	—	—	5,558	B	0.371	1,558	—	No
Black Mountain Road											
7. Carmel Valley Rd to Maler Rd	40,000	40,000	12,300	A	0.308	12,690	A	0.317	390	0.009	No
8. Oviedo St to Carmel Mountain Rd	40,000	40,000	18,960	B	0.474	19,350	B	0.484	390	0.010	No
9. Carmel Mountain Rd to Paseo Montalban	40,000	40,000	14,740	A	0.369	12,130	A	0.303	390	(0.066)	No
10. Twin Trails Dr to SR 56 WB Ramps	40,000	40,000	33,490	D	0.837	30,490	D	0.762	0	(0.075)	No
11. SR 56 EB Ramps to Park Village Rd	40,000	40,000	35,440	E	0.886	33,387	D	0.835	1,947	(0.051)	No
12. Park Village Rd to Mercy Rd	40,000	40,000	30,380	D	0.760	32,717	D	0.818	2,337	0.058	No
Carmel Mountain Road											
13. Camino Del Sur to Via Las Lenas	DNE	15,000 [g]	—	—	—	1,169	A	0.078	1,169	—	—
14. Via Las Lenas to Sundance Ave	10,000	10,000 [g]	1,240	A	0.124	7,355	C	0.736	3,115	0.612	No
15. Entreken Way to Sparren Ave	40,000	40,000	6,810	A	0.170	11,036	A	0.276	2,726	0.106	No
16. Twin Trails Dr to Black Mountain Rd	40,000	40,000	8,320	A	0.208	7,073	A	0.177	1,753	(0.031)	No
Sundance Avenue											
17. Carmel Mountain Rd to War Bonnet St	8,000 [h]	8,000 [h]	1,880	A	0.235	2,270	A	0.284	390	0.049	No

(Continued on Next Page)

TABLE 9–2
EXISTING + PROJECT STREET SEGMENT OPERATIONS

Street Segment	Existing Capacity (LOS E) [a]	Planned Capacity (LOS E) [a]	Existing			Existing + Project			Project Volumes	Δ [e] V/C	Sig?
			ADT [b]	LOS [c]	V/C [d]	ADT	LOS	V/C			
(Continued from Previous Page)											
Park Village Road											
18. Camino Del Sur to Ragweed St	40,000	40,000	8,430	A	0.211	7,804	A	0.195	974	(0.016)	No
19. Ragweed St to Black Mountain Road	40,000	40,000	17,550	B	0.439	14,135	A	0.353	585	(0.086)	No
Mercy Road											
20. Black Mountain Rd to I-15 SB Ramps	40,000	40,000	19,850	B	0.496	21,408	C	0.535	1,558	0.039	No

Footnotes:

a. Capacities based on City of San Diego's Roadway Classification & LOS table (See *Appendix C*).
b. Average Daily Traffic
c. Level of Service
d. Volume to Capacity ratio
e. Δ denotes a Project-induced increase in the Volume to Capacity ratio
f. Camino Del Sur from Torrey Santa Fe Road to the Project access is proposed to be a Four-Lane Major Arterial with intersection enhancements providing for an LOS E capacity of 45,000 ADT.
g. The "Planned Capacity" shown reflects the changes to the Community Plan roadway classifications/capacities proposed by the Project. The Project proposes a CPA to downgrade these roadways from Four-Lane Major Arterials with a 40,000 ADT capacity to a Two-Lane Modified Collector with a raised center median with an LOS E capacity of 15,000 ADT. The portion of Carmel Mountain Road north of SR 56 to Sundance would remain an undivided two-lane road with an LOS E capacity of 10,000 ADT.
h. Sundance Avenue is currently built to two-lane Collector standards with a 40' curb-to-curb width providing an LOS E capacity of 8,000 ADT

General Notes:

1. Sig = Significant impact, yes or no.
2. Improvement in V/C due to rerouting of existing traffic with connection of Camino Del Sur and Carmel Mountain Road and onsite Project roadways connecting to the SR 56 / Camino Del Sur interchange.

TABLE 9–3
EXISTING + PROJECT FREEWAY SEGMENT OPERATIONS

State Route 56 Freeway Segment	Dir.	# of Lanes [a]	Hourly Capacity [b]	Existing						Project Volumes		Existing + Project						Δ V/C [f]		Sig?
				Volume [c]		V/C [d]		LOS [e]				Volume		V/C		LOS				
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	
1. Carmel Valley Rd to Camino Del Sur	EB	2M	4,000	2,884	2,808	0.721	0.702	C	C	145	167	3,029	2,975	0.757	0.744	C	C	0.036	0.042	No
	WB	2M	4,000	3,490	1,485	0.873	0.371	D	A	69	210	3,559	1,695	0.890	0.424	D	B	0.017	0.053	No
2. Camino Del Sur to Black Mountain Rd	EB	2M	4,000	1,623	3,218	0.406	0.805	A	D	116	350	1,621	3,203	0.405	0.801	A	D	(0.001)	(0.004)	No
	WB	2M	4,000	2,829	1,813	0.707	0.453	C	B	242	279	2,689	1,902	0.672	0.476	C	B	(0.035)	0.022	No
3. Black Mountain Rd to Rancho Peñasquitos Blvd	EB	3M	6,000	2,267	3,058	0.378	0.510	A	B	77	233	2,344	3,291	0.391	0.549	A	B	0.013	0.039	No
	WB	2M+1A	5,200	3,170	1,720	0.610	0.331	B	A	161	186	3,331	1,906	0.641	0.367	C	A	0.031	0.036	No
4. Rancho Peñasquitos Blvd to I-15	EB	2M	4,000	2,284	2,750	0.571	0.688	B	C	65	198	2,349	2,948	0.587	0.737	B	C	0.016	0.050	No
	WB	2M	4,000	2,842	2,349	0.711	0.587	C	B	137	158	2,979	2,507	0.745	0.627	C	C	0.034	0.040	No

Footnotes:

a. Lane geometry taken from PeMS lane configurations at corresponding postmile.
b. Capacity calculated at 2000 vehicles per hour (vph) per mainline lane (pcphpl) and 1200 vph per lane for auxiliary lane from *Caltrans Guide for the Preparation of Traffic Impact Studies, Dec. 2002.*
c. Existing volume taken from PeMS peak hour data (2014).
d. V/C = (Peak Hour Volume/Hourly Capacity)
e. Level of Service
f. "Δ" denotes the Project-induced increase in V/C. Per City Guidelines, a significant impact occurs when the V/C is increased by 0.01 for LOS E or 0.005 for LOS F.

LOS	V/C
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

General Note:

1. M = Mainline
2. A = Auxiliary
3. Sig? = Significant impact, yes or no.
4. Improvement in V/C due to rerouting of existing traffic with connection of Camino Del Sur and Carmel Mountain Road and onsite Project roadways connecting to the SR 56 / Camino Del Sur interchange.

TABLE 9–4
EXISTING + PROJECT RAMP METER ANALYSIS – FIXED RATE

Location	Peak Hour [a]	Volume		Peak Hour Demand (D) [b]	Meter Rate [c]	Excess Demand (E) (veh)	Delay (min)	Queue (ft) [d]	Sig?
		SOV	HOV						
1. **Camino Del Sur to SR 56 WB (2 SOV+1 HOV)**									
Existing	AM	436	77	218	680	0	0	0	—
Existing + Project	AM	760	134	380	680	0	0	0	—
Project Increase	*AM*	324	57	162	—	—	0	0	*No*
2. **Camino Del Sur to SR 56 EB (2 SOV+1 HOV)**									
Existing	PM	866	153	433	800	0	0	0	—
Existing + Project	PM	1125	199	563	800	0	0	0	—
Project Increase	*PM*	259	46	130	—	—	0	0	*No*
3. **Black Mountain Road to SR 56 WB (2 SOV+1 HOV)**									
Existing	AM	1267	224	633	765	0	0	0	—
Existing + Project	AM	1011	178	505	765	0	0	0	—
Project Increase	*AM*	(256)	(46)	(128)	—	—	0	0	*No*
4. **Black Mountain Road to SR 56 EB (2 SOV+1 HOV)**									
Existing	PM	615	108	307	910	0	0	0	—
Existing + Project	PM	615	108	307	910	0	0	0	—
Project Increase	*PM*	0	0	0	—	—	0	0	*No*
5. **Rancho Peñasquitos Boulevard to SR 56 WB (1 SOV)**									
Existing	AM	757	—	757	800	0	0	0	—
Existing + Project	AM	781	—	781	800	0	0	0	—
Project Increase	*AM*	24	—	24	—	—	0	0	*No*
6. **Rancho Peñasquitos Boulevard to SR 56 EB (2 SOV)**									
Existing	PM	219	—	110	450	0	0	0	—
Existing + Project	PM	219	—	110	450	0	0	0	—
Project Increase	*PM*	0	—	0	—	—	0	0	*No*

***Footnotes**:*

a. Selected peak hour based on period when ramp meter is operating.
b. Peak hour demand in vehicles/hour/lane for SOV and HOV lanes.
c. Meter rates obtained from Caltrans. *Appendix D* contains the Caltrans meter rate data.
d. Queue calculated assuming vehicle length of 25 feet.

General Notes:

1. Sig? = Significant impact, yes or no.
2. SOV – Single Occupancy Vehicle, HOV – High Occupancy Vehicle.
3. Lane utilization factor accounted for in peak hour demand calculation. (Assumed 15% for HOV per Caltrans data provided in *Appendix D*).
4. Improvement in demand due to rerouting of existing traffic with connection of Camino Del Sur and Carmel Mountain Road and onsite Project roadways connecting to the SR 56 / Camino Del Sur interchange.

10.0 NEAR-TERM CONDITIONS

Cumulative projects are other projects in the study area that are expected to be constructed and occupied between the date of existing data collection (May 2014) and the time of the Project's expected opening day in Year 2017, thus adding traffic to the local circulation system. LLG consulted with City of San Diego staff to identify relevant, pending cumulative projects in the study area that could be constructed and generating traffic in the Project vicinity. Based on information received from City staff, two (2) cumulative development projects are planned for the area for the near-term condition. The following is a brief description of each of the cumulative projects. ***Table 10–1*** provides a summary of the cumulative project trip generation summary. ***Figure 10–1*** depicts the Cumulative Projects Location Map.

10.1 Description of Cumulative Projects

1. **Kilroy Development** (now currently processing through the City as "The Preserve at Torrey Highlands") proposes to develop 450,000 SF of commercial office space with parking structures south of Torrey Santa Fe Road and west of future Camino Del Sur. The property is currently approved to construct a 1,200-seat church with a Kindergarten through eighth grade school. The project would be required to construct Camino Del Sur south of Torrey Santa Fe Road if completed prior to the proposed Merge 56 Project. It proposes to provide one signalized access intersection directly across from the proposed Project Private Drive 'M' access roadway as well as one signalized "tee" intersection south of Private Drive 'M' along Camino Del Sur. Access for this development project is being coordinated with the Merge 56 applicant. The project requires a Community Plan Amendment and currently has an application into the City as of September 19, 2013. The proposed Kilroy project was included in both the near-term and long-term analysis. The project is calculated to generate approximately 5,260 net ADT with 616 inbound and 68 outbound net trips in the AM peak hour, and 147 inbound and 589 outbound net trips in the PM peak hour. *Trip distribution and assignment taken from a SANDAG Series 12 Year 2035 Select Zone Assignment prepared for a custom zone assigned to Kilroy.*

2. **KB Homes** proposes to develop 94 single-family homes along the existing two-lane portion of Carmel Mountain Road south of Sundance Drive and north of Via Las Lenas, north and south of SR 56. The project is calculated to generate approximately 597 net ADT with 14 inbound and 19 outbound net trips in the AM peak hour, and 33 inbound and 19 outbound net trips in the PM peak hour. The proposed KB Homes project representing Units 1, 6 and 7 of the original Rhodes Crossing VTM was included in both the near-term and long-term analysis. *Trip generation was calculated manually using City of San Diego trip generation rates and trip distribution and assignment was conducted using professional engineering judgment.*

It should be noted that the "Rhodes/Grus Investment" site is located across Camino Del Sur to west and south of the Project. This project corresponds to land use changes for Units 3 and 8 of the original Rhodes Crossing VTM. The land uses permitted for these lots are 14 single-family

dwelling units and 342 multifamily dwelling units, respectively. A CPA to the Rancho Peñasquitos Community Plan was filed on November 7, 2013 to redesignate 26 acres from Low Density Residential and Open Space to Medium-High Density Residential allowing for multi-family residential development between 22 to 45 dwelling units per acre. This could increase the development potential to between 575 and 1,177 multifamily dwelling units. No development application has been filed, so this is not considered a near-term cumulative project. The effects of the CPA were, however, included in the Year 2035 analysis. Additional details on the long-term traffic assumptions for the Rhodes/Grus CPA are included in *Section 12.2* of this report.

TABLE 10–1
CUMULATIVE DEVELOPMENT PROJECTS SUMMARY

No.	Name	Project	ADT [a]	AM		PM		Status
				In	Out	In	Out	
1	Kilroy Development	450 KSF Commercial Office	5,260	616	68	147	589	CPA Initiated September 2013
2	KB Homes	94 Single-Family Homes	940	15	57	66	28	Approved – Currently Grading
Total Cumulative Projects			**6,200**	**601**	**125**	**213**	**617**	–

Footnotes:

a. Average daily traffic.

10.2 Network Conditions

Improvements to the roadway system would be necessary with the proposed development of the near-term cumulative projects. As mentioned in *Section 10.1*, the Kilroy Development is proposed along Camino Del Sur just south of Torrey Santa Fe Road. As part of the Kilroy project, Camino Del Sur would be partially constructed as a two-lane roadway from Torrey Santa Fe Road to its southerly access intersection. For the KB Homes project, access intersections would be constructed along the existing portion of Carmel Mountain Road south of Sundance Avenue; however, Carmel Mountain Road would not extend beyond its current terminus. ***Table 10–2*** provides a summary for the near-term roadway network conditions.

TABLE 10–2
NEAR-TERM ROADWAY NETWORK CONDITIONS

Planned Roadway Network	Scenario	
	Existing + Cumulative Projects	**Existing + Cumulative Projects + Project**
Camino Del Sur	Partially Constructed for Kilroy Access	Fully Constructed
Carmel Mountain Road	Does Not Exist	Fully Constructed
Torrey Meadows Drive Overcrossing	Does Not Exist	Does Not Exist

General Notes:

1. Camino Del Sur network condition represents the planned extension from its current terminus at Torrey Santa Fe Road to its southerly connection just north of Park Village Road.
2. Carmel Mountain Road network condition represents the planned extension from its current terminus just south of Via Las Lenas to Camino Del Sur.
3. Torrey Meadows Drive Overcrossing network condition represents the connection of Torrey Meadows Drive over SR 56 to Torrey Santa Fe Road.
4. "Fully Constructed" represents construction of roadways to their current Community Plan classification. ("Fully Constructed" for Camino Del Sur from Private Drive 'M' to just north of Dormouse Road and for Carmel Mountain Road from SR 56 to Camino Del Sur represents the proposed Community Plan Amendment classification.)

Figure 10–2 shows the Cumulative Projects Conditions Diagram.

10.3 Traffic Volumes

Cumulative project traffic was assigned to the street system under two conditions: 1) No Project Network (no Camino Del Sur, Carmel Mountain Road, and Private Drive 'M') and 2) With Project Network (with Camino Del Sur, Carmel Mountain Road, and Private Drive 'M'). The first condition was used as the baseline for the Cumulative projects-only traffic assignment and in the Existing + Cumulative Projects traffic volumes. ***Figure 10–3*** depicts the Cumulative Projects traffic volumes and ***Figure 10–4*** depicts the Existing + Cumulative Projects traffic volumes.

For the "Plus Project" conditions, cumulative project traffic was rerouted with the Project-proposed construction of Camino Del Sur, Carmel Mountain Road, and Private Drive 'M' as identified in the second condition listed above. *Appendix F* ***Figure C_1*** depicts the rerouting of cumulative project trips within the study area.

Figure 10–5 shows the Existing + Cumulative Projects volumes with both the rerouted existing and rerouted cumulative projects traffic volumes within the study area.

Appendix I contains the individual cumulative projects assignment sheets both with and without rerouting due to the planned connection of Camino Del Sur and Carmel Mountain Road.

Project traffic was then added to this scenario to develop the Existing + Cumulative Projects + Project traffic volumes (accounting for the rerouted trips). ***Figure 10–6*** shows the Existing + Cumulative Projects + Project traffic volumes for the study area locations.

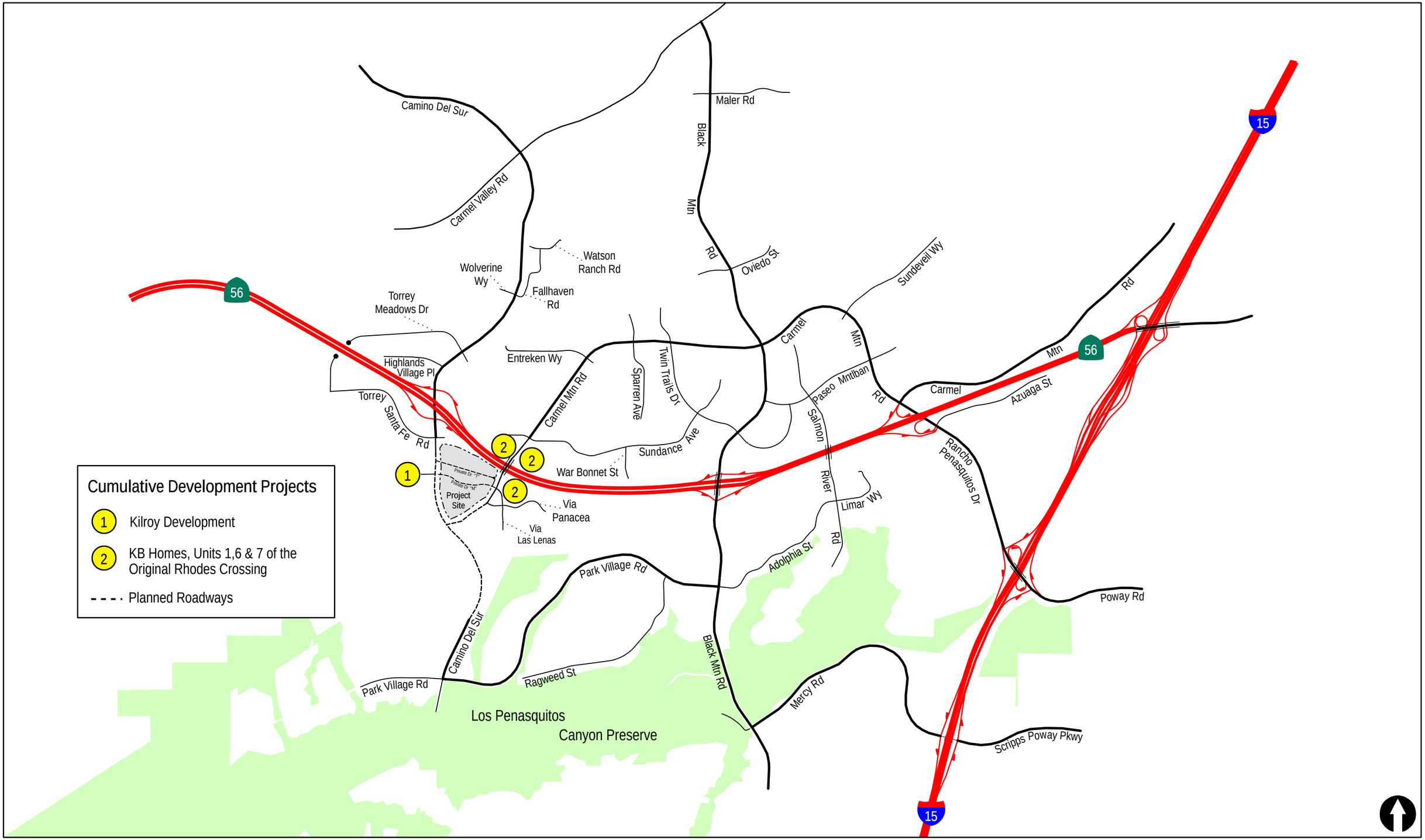

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Figure 10-1

Cumulative Projects Location Map

MERGE 56

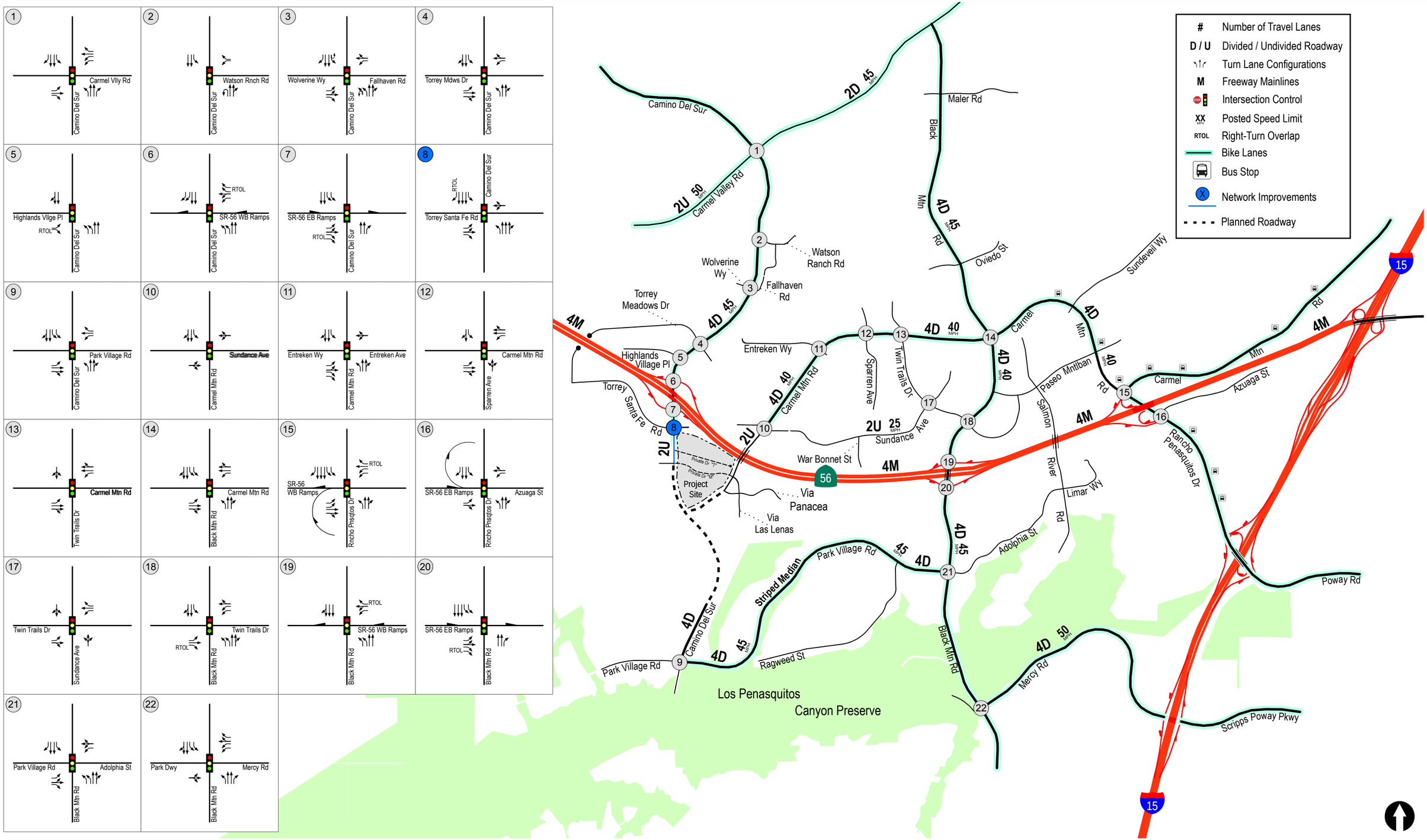

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Figure 10-2

Cumulative Projects Conditions Diagram

MERGE 56

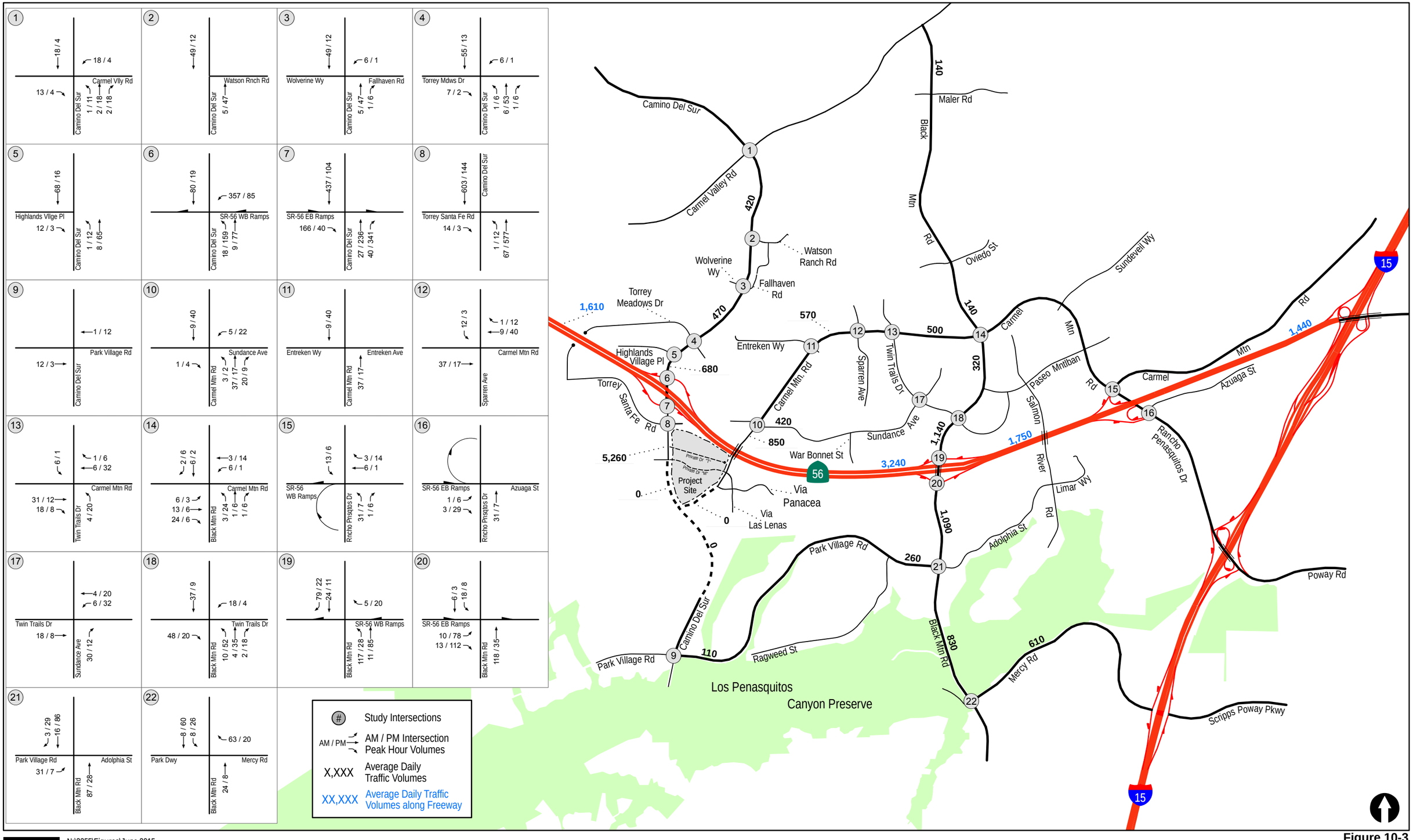

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Figure 10-3

Cumulative Projects Traffic Volumes

MERGE 56

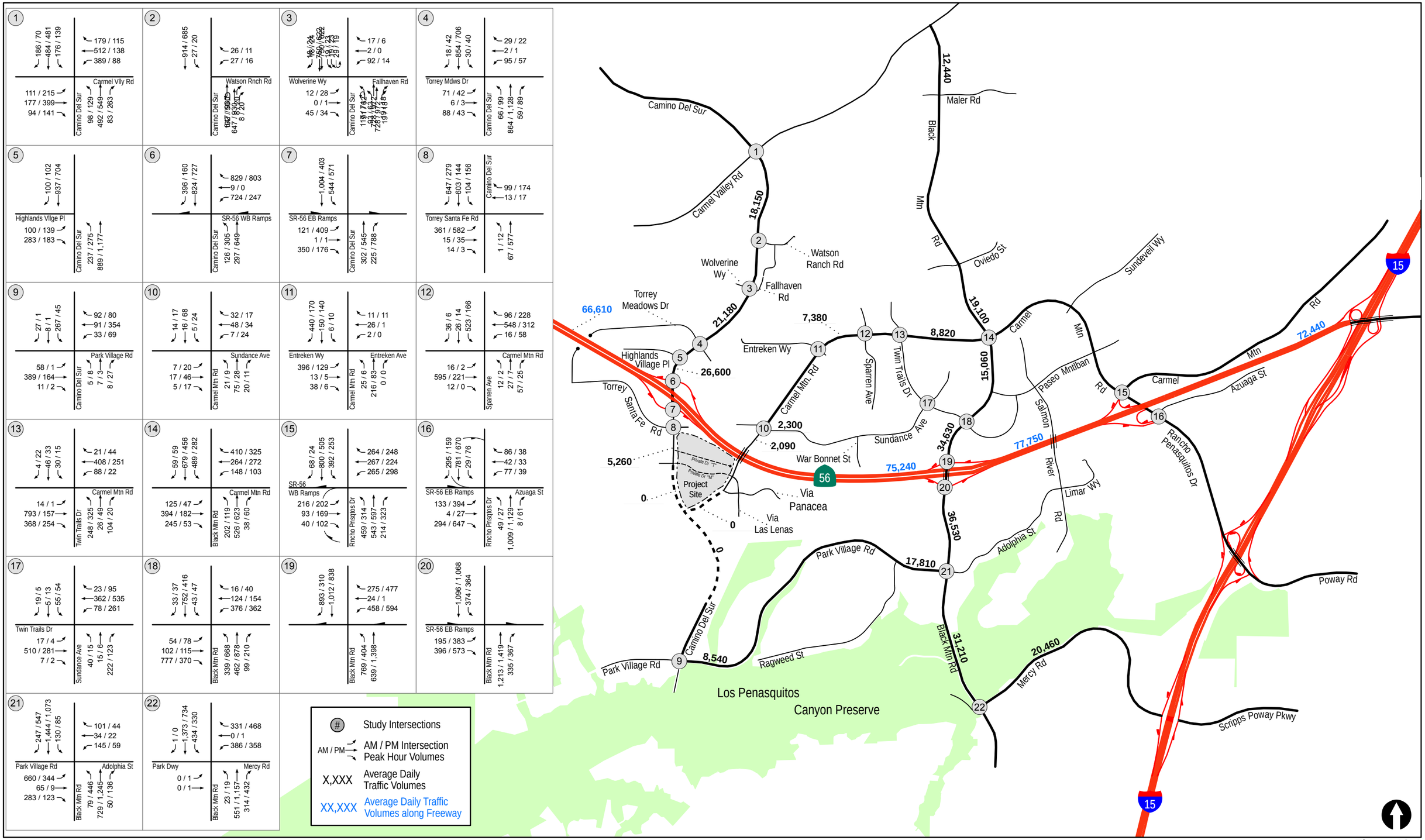

Figure 10-4

Existing + Cumulative Projects Traffic Volumes

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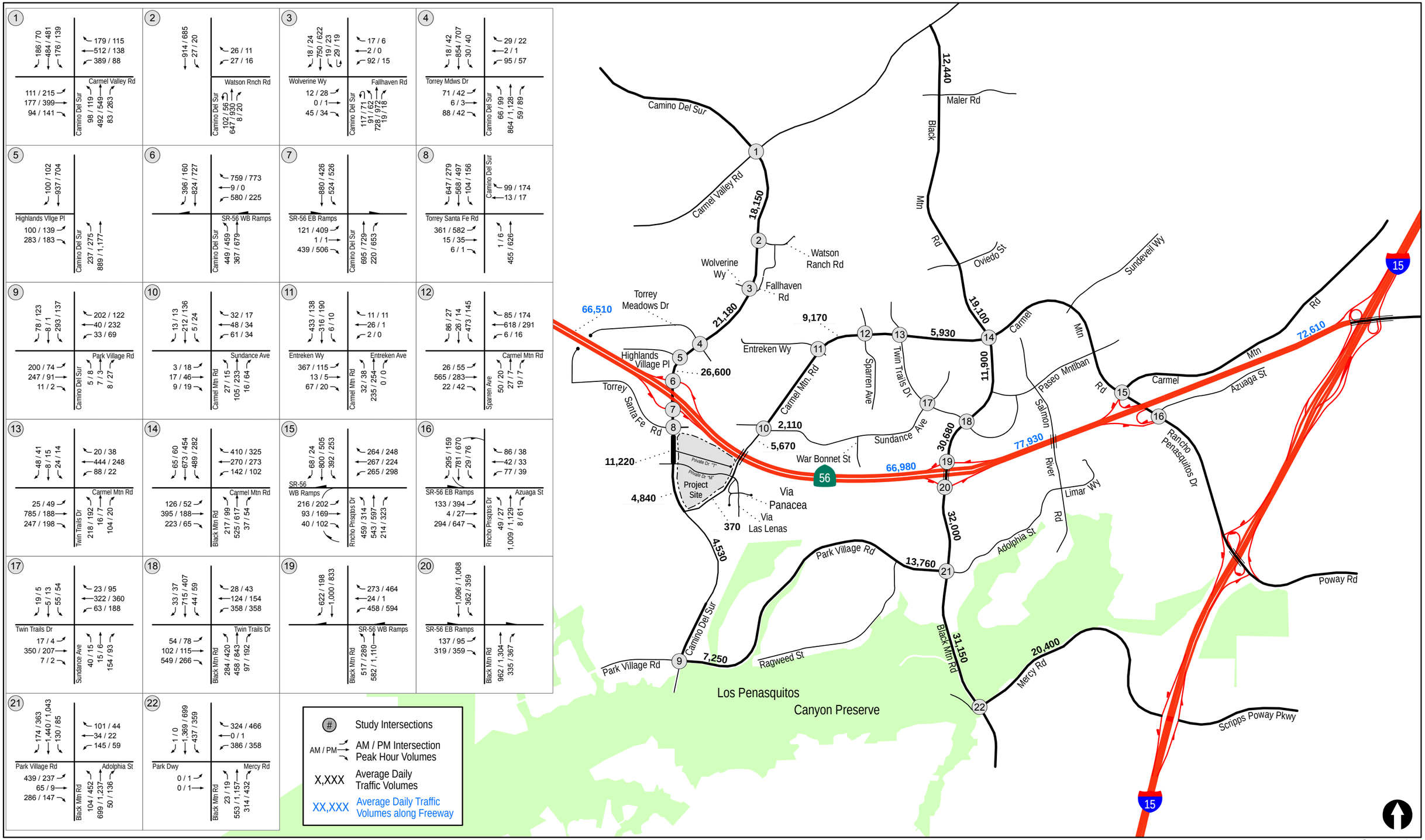

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Figure 10-5

Rerouted Existing + Rerouted Cumulative Projects Traffic Volumes

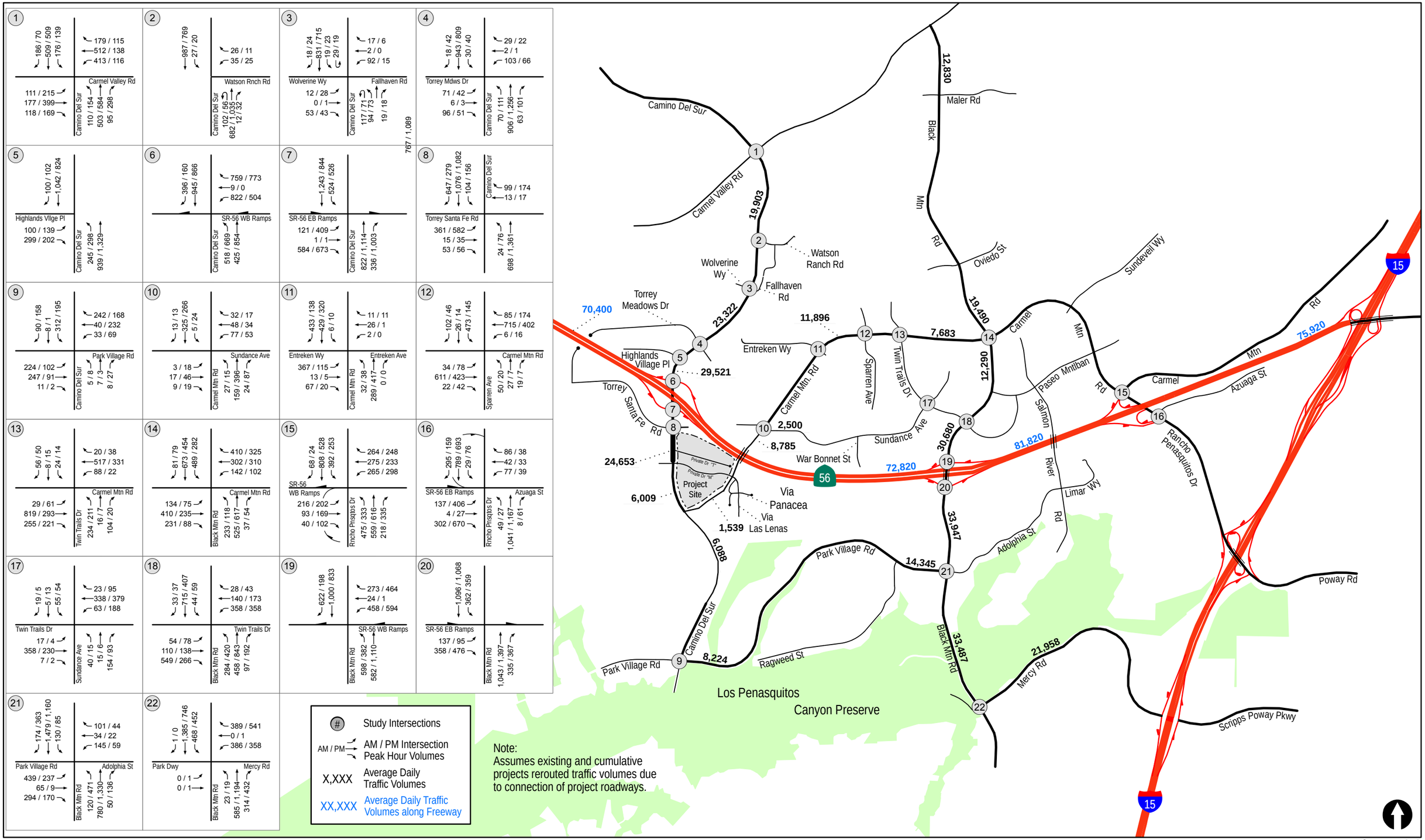

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Figure 10-6

Existing + Cumulative Projects + Project Traffic Volumes

11.0 ANALYSIS OF NEAR-TERM SCENARIOS

The Existing + Cumulative Projects scenario is an assessment of the impact of ambient growth due to cumulative development projects within the general study area in relation to the existing conditions. The Existing + Cumulative Projects + Project scenario is an assessment of the impact of the total Project in relation to the near-term baseline condition. These analyses include intersection, street segment, ramp meter, and freeway mainline operations.

11.1 Existing + Cumulative Projects

11.1.1 *Peak Hour Intersection Operations*

Table 11–1 summarizes the Existing + Cumulative Projects intersection operations. As seen in *Table 11–1*, the following study area intersections are calculated to operate at LOS E or F under Existing + Cumulative Projects conditions:

- Intersection #3. Camino Del Sur/ Wolverine Way – LOS E (AM peak hour)
- Intersection #15. Carmel Mountain Rd / SR 56 WB Ramps – LOS E (AM peak hour)
- Intersection #16. Carmel Mountain Rd / SR 56 EB Ramps – LOS E (PM peak hour)
- Intersection #17. Sundance Ave / Twin Trails Dr – LOS E (AM peak hour)
- Intersection #18. Black Mountain Rd / Twin Trails Dr – LOS E (AM peak hour)
- Intersection #19. Black Mountain Rd / SR 56 WB Ramps – LOS F (AM peak hour)
- Intersection #20. Black Mountain Rd / SR 56 EB Ramps – LOS E/F (AM/PM peak hours)
- Intersection #21. Black Mountain Rd / Park Village Rd – LOS E/E (AM/PM peak hour)

Appendix J contains the Existing + Cumulative Projects peak hour intersection calculation worksheets.

11.1.2 *Daily Street Segment Operations*

Table 11–2 summarizes the Existing + Cumulative Projects street operations. As seen in *Table 11–2*, the following study area street segments are calculated to operate at LOS E or F under Existing + Cumulative Projects conditions:

- Segment #11. Black Mountain Rd from SR 56 EB Ramps to Park Village Rd – LOS E

11.1.3 *Peak Hour Freeway Mainline Operations*

Table 11–3 shows that the study area freeway mainline segments are calculated to operate at LOS D or better under Existing + Cumulative Projects conditions.

11.1.4 *Peak Hour Freeway Ramp Meter Operations*

Table 11–4 summarizes the operations of the on-ramp meter using the fixed rate analysis methodology with the addition of cumulative projects traffic. As seen in *Table 11–4*, there is no delay calculated for any of the study area on-ramps under Existing + Cumulative Projects conditions.

11.2 Existing + Cumulative Projects + Project

It should be noted that LOS operations at several study area intersections improve under "Plus Project" conditions with the connection of Camino Del Sur, Carmel Mountain Road and Private Drive 'M' providing a more direct route to SR 56. *Sections 7.2 and 15.0* provide a detailed discussion on the rerouting of traffic volumes with the planned road network.

A separate assessment of the access locations is provided in *Section 14.1.3* later on in this report.

11.2.1 *Peak Hour Intersection Operations*

Table 11–1 summarizes the Existing + Cumulative Projects + Project intersection operations. As seen in *Table 11–1*, the following study area intersections are calculated to operate at LOS E or F conditions with the addition of Project traffic:

- Intersection #3. Camino Del Sur/ Wolverine Way – LOS E (AM peak hour)
- Intersection #15. Carmel Mountain Rd / SR 56 WB Ramps – LOS E (AM peak hour)
- Intersection #16. Carmel Mountain Rd / SR 56 EB Ramps – LOS E (PM peak hour)
- Intersection #21. Black Mountain Rd / Park Village Rd – LOS E (PM peak hour)

Based on City of San Diego significance criteria, **no significant direct impacts** were calculated with the addition of Project traffic at study area locations.

Appendix K contains the Existing + Cumulative Projects + Project peak hour intersection calculation worksheets.

11.2.2 *Daily Street Segment Operations*

Table 11–2 summarizes the Existing + Cumulative Projects + Project street segment operations. As seen in *Table 11–2*, all study area street segments are calculated to operate at LOS D or better with the addition of Project traffic:

11.2.3 *Peak Hour Freeway Mainline Operations*

Table 11–3 shows that the study area freeway mainline segments are calculated to operate at LOS D or better with the addition of Project traffic to the Existing + Cumulative Projects condition.

Based on City of San Diego significance criteria, **no significant impacts** were calculated with the addition of Project traffic at study area freeway mainline segments.

11.2.4 *Peak Hour Freeway Ramp Meter Operations*

Ramp Meter #5. Rancho Peñasquitos Boulevard to SR-56 Westbound:
Using the most restrictive fixed rate analysis method, the addition of Project traffic to the Existing + Cumulative Projects condition is calculated to create delay at this ramp of 1.4 minutes during the AM peak hour with a calculated queue length of 475 feet. No delay is calculated at any other ramp meter location. *Table 11–4* summarizes the operations of the on-ramp meter.

Based on City of San Diego significance criteria, **no significant impacts** were calculated with the addition of Project traffic at study area ramp meter locations.

TABLE 11–1
NEAR-TERM INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing + Cumulative Projects		Existing + Cumulative Projects + Project		Δ [c] Delay	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
1. Carmel Valley Rd / Camino Del Sur	Signal	AM	34.6	C	36.9	D	2.3	No
		PM	34.0	C	35.4	D	1.4	
2. Camino Del Sur / Watson Ranch Rd	Signal	AM	21.0	C	22.0	C	1.0	No
		PM	8.0	A	8.2	A	0.2	
3. Camino Del Sur / Wolverine Way	Signal	AM	64.8	E	65.7	E	0.9	No
		PM	20.8	C	24.0	C	3.2	
4. Camino Del Sur / Torrey Meadows Dr	Signal	AM	22.9	C	23.6	C	0.7	No
		PM	17.2	B	21.3	C	4.1	
5. Camino Del Sur / Highlands Village Pl	Signal	AM	21.2	C	21.5	C	0.3	No
		PM	18.4	B	18.7	B	0.3	
6. Camino Del Sur / SR 56 WB Ramps	Signal	AM	23.4	C	34.2	C	10.8	No
		PM	24.9	C	34.7	C	9.8	
7. Camino Del Sur / SR 56 EB Ramps	Signal	AM	23.6	C	27.8	C	4.2	No
		PM	38.7	D	45.7	D	7.0	
8. Camino Del Sur / Torrey Santa Fe Rd	Signal	AM	17.6	B	20.3	C	2.7	No
		PM	30.4	C	40.2	D	9.8	
9. Camino Del Sur / Park Village Rd	Signal	AM	28.5	C	30.8	C	2.3	No
		PM	22.8	C	25.6	C	2.8	
10. Carmel Mountain Rd / Sundance Ave	Signal	AM	18.2	B	14.5	B	(3.7)	No
		PM	21.2	C	11.5	B	(9.7)	

(Continued on Next Page)

TABLE 11–1
NEAR-TERM INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing + Cumulative Projects		Existing + Cumulative Projects + Project		Δ [c] Delay	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
(Continued from Previous Page)								
11. Carmel Mountain Rd / Entreken Way	Signal	AM	23.6	C	24.5	C	0.9	No
		PM	13.1	B	11.7	B	(1.4)	
12. Carmel Mountain Rd / Sparren Ave	Signal	AM	30.7	C	28.1	C	(2.6)	No
		PM	16.6	B	30.3	C	13.7	
13. Carmel Mountain Rd / Twin Trails Dr	Signal	AM	42.9	D	32.5	C	(10.4)	No
		PM	18.3	B	20.7	C	2.4	
14. Carmel Mountain Rd / Black Mountain Rd	Signal	AM	48.3	D	50.5	D	2.2	No
		PM	37.6	D	38.8	D	1.2	
15. Carmel Mountain Rd / SR 56 WB Ramps	Signal	AM	56.7	E	57.6	E	0.9	No
		PM	49.6	D	50.6	D	1.0	
16. Carmel Mountain Rd / SR 56 EB Ramps	Signal	AM	35.5	D	37.0	D	1.5	No
		PM	61.0	E	62.6	E	1.6	
17. Sundance Ave / Twin Trails Dr	AWSC [d]	AM	40.6	E	21.4	C	(19.2)	No
		PM	31.0	D	14.5	B	(16.5)	
18. Black Mountain Rd / Twin Trails Dr	Signal	AM	65.5	E	43.3	D	(22.2)	No
		PM	34.6	C	34.3	C	(0.3)	
19. Black Mountain Rd / SR 56 WB Ramps	Signal	AM	111.0	F	52.1	D	(58.9)	No
		PM	39.8	D	37.9	D	(1.9)	
20. Black Mountain Rd / SR 56 EB Ramps	Signal	AM	71.2	E	49.0	D	(22.2)	No
		PM	82.4	F	32.0	C	(50.4)	
21. Black Mountain Rd / Park Village Rd	Signal	AM	61.2	E	54.1	D	(7.1)	No
		PM	60.8	E	59.2	E	(1.6)	
22. Black Mountain Rd / Mercy Rd	Signal	AM	17.2	B	17.7	B	0.5	No
		PM	23.4	C	37.0	D	13.6	

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service
c. Δ denotes the increase in delay due to Project.
d. All-Way Stop Controlled intersection. Average intersection delay reported.

General Notes:

1. Sig = Significant impact, yes or no.
2. Improvement in delay due to rerouting of existing traffic with connection of Camino Del Sur and Carmel Mountain Road and onsite Project roadways connecting to the SR 56 / Camino Del Sur interchange.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 11–2
NEAR-TERM STREET SEGMENT OPERATIONS

Street Segment	Existing Capacity (LOS E) [a]	Planned Capacity (LOS E) [a]	Existing + Cumulative Projects			Existing + Cumulative Projects + Project			Project Volumes	Δ [e] V/C	Sig?
			ADT [b]	LOS [c]	V/C [d]	ADT	LOS	V/C			
Camino Del Sur											
1. Carmel Valley Rd to Watson Ranch Rd	40,000	40,000	18,150	B	0.454	19,903	B	0.498	1,753	0.044	No
2. Wolverine Way to Torrey Meadows Dr	40,000	40,000	21,180	C	0.530	23,322	C	0.583	2,142	0.053	No
3. Highland Village Pl to SR 56 WB Ramps	40,000	40,000	26,600	C	0.665	29,521	C	0.738	2,921	0.073	No
4. Torrey Santa Fe Rd to Project Drwy	DNE	10,000/ 45,000 [f]	5,260	B	0.526	24,653	B	0.547	13,433	0.022	No
5. Project Drwy to Carmel Mountain Rd	DNE	40,000	—	—	—	6,009	A	0.150	1,169	—	No
6. Carmel Mountain Rd to Park Village Rd	DNE	15,000 [g]	—	—	—	6,088	B	0.406	1,558	—	No
Black Mountain Road											
7. Carmel Valley Rd to Maler Rd	40,000	40,000	12,440	A	0.311	12,830	A	0.321	390	0.010	No
8. Oviedo St to Carmel Mountain Rd	40,000	40,000	19,100	B	0.478	19,490	B	0.487	390	0.009	No
9. Carmel Mountain Rd to Paseo Montalban	40,000	40,000	15,060	B	0.377	12,290	A	0.307	390	(0.070)	No
10. Twin Trails Dr to SR 56 WB Ramps	40,000	40,000	34,630	D	0.866	30,680	D	0.767	0	(0.099)	No
11. SR 56 EB Ramps to Park Village Rd	40,000	40,000	36,530	E	0.913	33,947	D	0.849	1,947	(0.064)	No
12. Park Village Rd to Mercy Rd	40,000	40,000	31,210	D	0.780	33,487	D	0.837	2,337	0.057	No
Carmel Mountain Road											
13. Camino Del Sur to Via Las Lenas	DNE	15,000 [g]	—	—	—	1,539	A	0.103	1,169	—	No
14. Via Las Lenas to Sundance Ave	10,000	10,000 [g]	2,090	A	0.209	8,785	D	0.879	3,115	0.670	No
15. Entreken Way to Sparren Ave	40,000	40,000	7,380	A	0.185	11,896	A	0.297	2,726	0.112	No
16. Twin Trails Dr to Black Mountain Rd	40,000	40,000	8,820	A	0.221	7,683	A	0.192	1,753	(0.029)	No
Sundance Avenue											
17. Carmel Mountain Rd to War Bonnet St	8,000 [h]	8,000	2,300	A	0.288	2,500	A	0.313	390	0.025	No

Continued on Next Page

TABLE 11–2
NEAR-TERM STREET SEGMENT OPERATIONS

Street Segment	Existing Capacity (LOS E) [a]	Planned Capacity (LOS E) [a]	Existing + Cumulative Projects			Existing + Cumulative Projects + Project			Project Volumes	Δ [e] V/C	Sig?
			ADT [b]	LOS [c]	V/C [d]	ADT	LOS	V/C			
Continued from Previous Page											
Park Village Road											
18. Camino Del Sur to Ragweed St	40,000	40,000	8,540	A	0.214	8,244	A	0.206	974	(0.008)	No
19. Ragweed St to Black Mountain Road	40,000	40,000	17,810	B	0.445	14,345	A	0.359	585	(0.086)	No
Mercy Road											
20. Black Mountain Rd to I-15 SB Ramps	40,000	40,000	20,460	B	0.512	21,958	C	0.549	1,558	0.037	No

Footnotes:

a. Capacities based on City of San Diego's Roadway Classification & LOS table *(See Appendix C).*
b. Average Daily Traffic
c. Level of Service
d. Volume to Capacity ratio
e. Δ denotes a Project-induced increase in the Volume to Capacity ratio
f. Camino Del Sur from Torrey Santa Fe Road to the Project access built as a two-lane roadway under Existing + Cumulative Project conditions providing access to the Kilroy project. With the completion of the proposed Project, this roadway is assumed to be a Four-Lane Major Arterial with intersection enhancements providing for an LOS E capacity of 45,000 ADT.
g. The "Planned Capacity" shown reflects the changes to the Community Plan roadway classifications/capacities proposed by the Project. The Project proposes a CPA to downgrade these roadways from Four-Lane Major Arterials with a 40,000 ADT capacity to a Two-Lane Modified Collector with a raised center median with an LOS E capacity of 15,000 ADT. The portion of Carmel Mountain Road north of SR 56 to Sundance would remain an undivided two-lane road with an LOS E capacity of 10,000 ADT.
h. Sundance Avenue is currently built to two-lane Collector standards with a 40' curb-to-curb width providing an LOS E capacity of 8,000 ADT

General Notes:

1. Sig = Significant impact, yes or no.
2. Improvement in V/C due to rerouting of existing traffic with connection of Camino Del Sur and Carmel Mountain Road and onsite Project roadways connecting to the SR 56 / Camino Del Sur interchange.

TABLE 11–3
NEAR-TERM FREEWAY SEGMENT OPERATIONS

State Route 56 Freeway Segment	Dir	# of Lanes [a]	Hourly Capacity [b]	Existing + Cumulative Projects						Project Volumes		Existing + Cumulative Projects + Project						Δ V/C [f]		Sig?
				Volume [c]		V/C [d]		LOS [e]				Volume		V/C		LOS				
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	
1. Carmel Valley Rd to Camino Del Sur	EB	2M	4,000	3,053	2,861	0.763	0.715	C	C	145	167	3,186	3,025	0.797	0.756	C	C	0.034	0.041	No
	WB	2M	4,000	3,520	1,650	0.880	0.413	D	B	69	210	3,588	1,848	0.897	0.462	D	B	0.017	0.049	No
2. Camino Del Sur to Black Mountain Rd	EB	2M	4,000	1,666	3,572	0.417	0.893	B	D	116	350	1,662	3,356	0.416	0.839	B	D	(0.001)	(0.054)	No
	WB	2M	4,000	3,198	1,904	0.800	0.476	C	B	242	279	2,902	1,965	0.726	0.491	C	B	(0.074)	0.015	No
3. Black Mountain Rd to Rancho Peñasquitos Blvd	EB	3M	6,000	2,305	3,230	0.384	0.538	A	B	77	233	2,385	3,353	0.398	0.559	A	B	0.013	0.021	No
	WB	2M+1A	5,200	3,348	1,781	0.644	0.343	C	A	161	186	3,492	1,963	0.672	0.378	C	A	0.028	0.035	No
4. East of Rancho Peñasquitos Blvd	EB	2M	4,000	2,318	2,887	0.580	0.722	B	C	65	198	2,386	2,975	0.597	0.744	B	C	0.017	0.022	No
	WB	2M	4,000	2,983	2,402	0.746	0.601	C	B	137	158	3,103	2,556	0.776	0.639	C	C	0.030	0.038	No

Footnotes:

a. Lane geometry taken from PeMS lane configurations at corresponding postmile.

b. Capacity calculated at 2000 vehicles per hour (vph) per mainline lane (pcphpl) and 1200 vph per lane for auxiliary lane from *Caltrans Guide for the Preparation of Traffic Impact Studies, Dec. 2002.*

c. Existing volume taken from PeMS peak hour data (2014).

d. V/C = (Peak Hour Volume/Hourly Capacity)

e. LOS = Level of Service

f. "Δ" denotes the Project-induced increase in V/C. Per City Guidelines, a significant impact occurs when the V/C is increased by 0.01 for LOS E or 0.005 for LOS F.

LOS	V/C
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

General Note:

1. Sig? = Significant impact, yes or no.
2. M = Mainline
3. A = Auxiliary
4. Improvement in V/C due to rerouting of existing traffic with connection of Camino Del Sur and Carmel Mountain Road and onsite Project roadways connecting to the SR 56 / Camino Del Sur interchange.

TABLE 11–4
NEAR-TERM RAMP METER ANALYSIS – FIXED RATE

Location	Peak Hour [a]	Volume		Peak Hour Demand (D) [b]	Meter Rate [c]	Excess Demand (E) (veh)	Delay (min)	Queue (ft) [d]	Sig?
		SOV	HOV						
1. **Camino Del Sur to SR 56 WB (2 SOV+1 HOV)**									
Existing + Cumulative Projects	AM	451	80	226	680	0	0	0	—
Existing + Cumulative Projects + Project	AM	785	138	392	680	0	0	0	—
Project Increase	*AM*	334	58	166	—	—	0	0	*No*
2. **Camino Del Sur to SR 56 EB (2 SOV+1 HOV)**									
Existing + Cumulative Projects	PM	1156	204	578	800	0	0	0	—
Existing + Cumulative Projects + Project	PM	1301	230	650	800	0	0	0	—
Project Increase	*PM*	145	26	72	—	—	0	0	*No*
3. **Black Mountain Road to SR 56 WB (2 SOV+1 HOV)**									
Existing + Cumulative Projects	AM	1433	253	717	765	0	0	0	—
Existing + Cumulative Projects + Project	AM	1057	187	529	765	0	0	0	—
Project Increase	*AM*	(376)	(66)	(188)	—	—	0	0	*No*
4. **Black Mountain Road to SR 56 EB (2 SOV+1 HOV)**									
Existing + Cumulative Projects	PM	621	110	311	910	0	0	0	—
Existing + Cumulative Projects + Project	PM	617	109	309	910	0	0	0	—
Project Increase	*PM*	(4)	(1)	(2)	—	—	0	0	*No*
5. **Rancho Peñasquitos Boulevard to SR 56 WB (1 SOV)**									
Existing + Cumulative Projects	AM	794	—	794	800	0	0	0	—
Existing + Cumulative Projects + Project	AM	818	—	818	800	19	1.4	475	—
Project Increase	*AM*	24	—	24	—	—	1.4	475	*No*
6. **Rancho Peñasquitos Boulevard to SR 56 EB (2 SOV)**									
Existing + Cumulative Projects	PM	219	—	110	450	0	0	0	—
Existing + Cumulative Projects + Project	PM	219	—	110	450	0	0	0	—
Project Increase	*PM*	0	—	0	—	—	0	0	*No*

Footnotes:

a. Selected peak hour based on period when ramp meter is operating.
b. Peak hour demand in vehicles/hour/lane for SOV and HOV lanes.
c. Meter rates obtained from Caltrans. *Appendix D* provides the Caltrans meter rate data.
d. Queue calculated assuming vehicle length of 25 feet.

General Notes:

1. Sig = Significant impact, yes or no.
2. SOV – Single Occupancy Vehicle, HOV – High Occupancy Vehicle.
3. Lane utilization factor accounted for in peak hour demand calculation. (Assumed 15% for HOV).
4. Improvement in demand due to rerouting of existing traffic with connection of Camino Del Sur and Carmel Mountain Road and onsite Project roadways connecting to the SR 56 / Camino Del Sur interchange.

12.0 YEAR 2035 AND YEAR 2050 CONDITIONS

The SANDAG 2050 Regional Transportation Plan (RTP) was adopted by the Board of Directors on October 28, 2011. In developing the RTP, the "Series 12" traffic forecast model series was prepared. The forecast model is completed in two stages. During the first stage, SANDAG produces a region-wide forecast based on existing demographic and economic trends. During the second stage, a sub-regional forecast is developed by working with local jurisdictions to understand existing and General Plan land use plans (including Community Plans). These land use plans then become an input to a sub-regional forecast model that uses data on existing development, future land use plans, proximity to existing job centers, past development patterns, and travel times to predict where growth is likely to occur in the future.

12.1 Network Conditions

As discussed in the trip distribution/assignment section of this report, *Section 8.2*, an SZA was obtained for the proposed Project TAZ using the Year 2035 traffic model. The Year 2035 street network includes SR 56 as four lane facility (two eastbound, two westbound lanes), and Black Mountain Road as a Six-Lane Primary Arterial from just south of Park Village Road to its transition to Kearny Villa Road. SR 56 improvements to six lanes are not currently funded, and not programmed in the Regional Transportation Plan until 2040. According to the Rancho Peñasquitos Community Plan, Black Mountain Road is classified as a Six-Lane Primary Arterial starting from Twin Trails Drive. The Black Mountain Road segment from Twin Trails Drive to the Community Plan boundary just north of Mercy Road is in the process of being downgraded on the Rancho Peñasquitos Community Plan to maintain its current configuration as a Four-Lane Major Arterial. An amendment to the Rancho Peñasquitos Community Plan to downgrade this roadway classification is in progress by Black Mountain Ranch and anticipated to go before City Council in 2016, based on information provided by the consultant currently preparing that study.

The Torrey Meadows Drive Overcrossing is an infrastructure project in the City of San Diego *Torrey Highlands PFFP. Project No. T-9* is currently in the design stage (approximately 65% PS&E) and is estimated to be completed by early 2019 based on information provided by the City's Public Works Department. This two-lane connection will provide access to the neighborhood park, elementary and high schools, and the local mixed use zone for the properties south of SR 56. In addition, its purpose is to help alleviate traffic at the Camino Del Sur interchange. As the completion date for infrastructure project is approximate, this roadway connection was assumed to be completed in the long-term analysis only.

Other improvements are planned in the vicinity of the study area including the widening of Camino Del Sur to six lanes from SR 56 to Carmel Valley Road *(Torrey Highlands PFFP Project No. T-2.2)* and loop ramps at the Camino Del Sur/ SR 56 interchange *(Torrey Highlands PFFP Project No. T-1.3)*. However, since these PFFP projects are either not fully funded and/or the timeline for funding is currently unknown, they were not assumed in the Year 2035 conditions. *Appendix A* contains excerpts from the PFFPs.

As previously mentioned, the Project lies within Units 4, 5 and 10 of the entitled Rhodes Crossing VTM project area. As a part of the current phasing plan for the construction of the complete Rhodes Crossing project, the extension of Camino Del Sur and Carmel Mountain Road improvements are required, and are assigned to occur with Merge 56. The Project has submitted an updated Rhodes Crossing Phasing Plan to identify Merge 56 (Units 4, 5 and 10) as responsible for the full width improvements to construct Camino Del Sur and Carmel Mountain Road in their entirety. It could be possible that were Merge 56 not to develop prior to Year 2035, the phased improvements associated with it would not be constructed.

With respect to the comparative analysis at Year 2035, construction of Camino Del Sur and Carmel Mountain Road with Units 4, 5 and 10 fundamentally redistributes both existing and other projects' volumes throughout the area by providing access to SR 56 via Camino Del Sur to the Twin Trails neighborhood to the east. Furthermore, the connection of Camino Del Sur to Park Village Drive creates an additional north-south corridor within the area further redistributing traffic between the Rancho Peñasquitos and Torrey Highlands communities.

Given the magnitude of the redistribution associated with these Project-related improvements, comparison of a "Year 2035 With Project" network to a "Year 2035 Without Project" network would not yield meaningful and accurate results. Therefore, the baseline network was assumed to include the "Year 2035 With Project" improvements to provide an equal basis of comparison. This includes a redistribution of background traffic in the "Year 2035 Without Project" scenario.

Table 4–2 in *Section 4.2* provided earlier in this report details the network conditions assumed for each scenario analyzed. ***Table 12–1*** provides a summary for the Year 2035 roadway network conditions.

TABLE 12–1
YEAR 2035 ROADWAY NETWORK CONDITIONS

Planned Roadway Network	Scenario	
	Year 2035 Without Project	Year 2035 With Project
SR 56: Six-Lanes	Not Completed	Not Completed
Camino Del Sur	Fully Constructed	Fully Constructed
Carmel Mountain Road	Fully Constructed	Fully Constructed
Torrey Meadows Drive Overcrossing	Fully Constructed	Fully Constructed
Camino Del Sur/ SR 56 Interchange Loop Ramps	Not Completed	Not Completed

General Notes:

1. The "Without Project" network assumes improvements within the Rhodes Crossing site related to development of the Merge 56 Project to allow for a meaningful comparison of Without and With Project traffic impacts. See discussion in *Section 12.1* above.
2. Camino Del Sur network condition represents the planned extension from its current terminus at Torrey Santa Fe Road to its southerly connection just north of Park Village Road. The model was run assuming 4-lanes per the PFFP, not 2-lanes as proposed. This provides a conservative analysis as the 4-lane network does not artificially constrain demand.
3. Carmel Mountain Road network condition represents the planned extension from its current terminus just south of Via Las Lenas to Camino Del Sur, including the realignment of the existing portion from Via Las Lenas to Via Panacea. The model was run assuming 4-lanes per the PFFP, not 2-lanes as proposed. This provides a conservative analysis as the 4-lane network does not artificially constrain demand.
4. Torrey Meadows Drive Overcrossing network condition represents the connection of Torrey Meadows Drive over SR 56 to Torrey Santa Fe Road.
5. "Fully Constructed" represents construction of roadways to their current Community Plan classification. ("Fully Constructed" for Camino Del Sur from Private Drive 'M' to just north of Dormouse Road and for Carmel Mountain Road from SR 56 to Camino Del Sur represents the proposed Community Plan Amendment classification.)

Table 12–2 provides the specific Community Plan roadway classifications for study area street segments and the assumed capacity used in the Year 2035 analysis. ***Figure 12–1*** shows the Year 2035 Conditions Diagram.

Appendix C contains the Community Plan Circulation Element excerpts.

TABLE 12–2
YEAR 2035 ROADWAY CLASSIFICATIONS

Street Segment	Currently Built As	Community Planning Area	Community Plan Classification	Assumed in Year 2035 Analysis
Camino Del Sur				
1. Carmel Valley Rd to Watson Ranch Rd	4-Ln Divided	Torrey Highlands	6-Ln Major	4-Ln Major
2. Wolverine Way to Torrey Meadows Dr	4-Ln Divided	Torrey Highlands	6-Ln Major	4-Ln Major
3. Highlands Village Pl to SR 56 WB Ramps	4-Ln Divided	Torrey Highlands	6-Ln Major	4-Ln Major
4. Torrey Santa Fe Rd to Project Drwy	DNE	Torrey Highlands	4-Ln Major	4-Ln Major [a]
5. Project Drwy to Carmel Mountain Rd	DNE	Rancho Peñasquitos	4-Ln Major	4-Ln Major [a]
6. Carmel Mountain Rd to Park Village Rd	DNE	Rancho Peñasquitos	4-Ln Major	2–Ln Modified Collector [a]
Black Mountain Road				
7. Carmel Valley Rd to Maler Rd	4-Ln Divided	Rancho Peñasquitos	4-Ln Major	4-Ln Major
8. Oviedo St to Carmel Mountain Rd	4-Ln Divided	Rancho Peñasquitos	4-Ln Major	4-Ln Major
9. Carmel Mountain Rd to Paseo Montalban	4-Ln Divided	Rancho Peñasquitos	4-Ln Major	4-Ln Major
10. Twin Trails Dr to SR 56 WB Ramps	4-Ln Divided	Rancho Peñasquitos	6-Ln Primary Arterial	4-Ln Major [b]
11. SR 56 EB Ramps to Park Village Rd	4-Ln Divided	Rancho Peñasquitos	6-Ln Primary Arterial	4-Ln Major [b]
12. Park Village Rd to Mercy Rd	4-Ln Divided	Rancho Peñasquitos / Mira Mesa	6-Ln Primary Arterial	4-Ln Major [b]
Carmel Mountain Road				
13. Camino Del Sur to Via Las Lenas	DNE	Torrey Highlands	4-Ln Major	2–Ln Modified Collector [a]
14. Via Las Lenas to Sundance Ave	2-Ln Undivided	Torrey Highlands	4-Ln Major	2–Ln Collector [a]
15. Entreken Way to Sparren Ave	4-Ln Divided	Rancho Peñasquitos	4-Ln Major	4-Ln Major
16. Twin Trails Dr to Black Mountain Rd	4-Ln Divided	Rancho Peñasquitos	4-Ln Major	4-Ln Major

(Continued on Next Page)

TABLE 12–2
YEAR 2035 ROADWAY CLASSIFICATIONS

Street Segment	Currently Built As	Community Planning Area	Community Plan Classification	Assumed in Year 2035 Analysis
(Continued from Previous Page)				
Sundance Avenue				
17. Carmel Mountain Rd to War Bonnet St	2-Ln Undivided	Rancho Peñasquitos	Unclassified (2-Ln Undivided)	Unclassified (2-Ln Undivided)
Park Village Road				
18. Camino Del Sur to Ragweed St	4-Ln Divided	Rancho Peñasquitos	4-Ln Major	4-Ln Major
19. Ragweed St to Black Mountain Rd	4-Ln Divided	Rancho Peñasquitos	4-Ln Major	4-Ln Major
Mercy Road				
20. Black Mountain Rd to I-15 SB Ramps	4-Ln Divided	Mira Mesa	4-Ln Major	4-Ln Major

Footnotes:

a. Bike lanes will be provided along the Project constructed roadways. Parking will be prohibited.
b. An amendment to the Rancho Peñasquitos Community Plan to downgrade this roadway classification is in progress by Black Mountain Ranch and anticipated to go before City Council in 2016.

General Notes:

1. DNE = Does not exist

12.2 Traffic Volumes

As discussed in *Section 12.1*, an SZA was run for the Year 2035 conditions. According to the original approved Rhodes Crossing VTM, the following land uses are permitted within Units 1 through 13:

Units 1, 6, 7 (KB Homes) = 96 Residential Units
Units 4, 5, 10 (Merge 56) = 525,000 SF Commercial/Office, 242 Residential Units
Units 2, 3, 8, 9, 11, 12, 13 (Rhodes/Grus) = 398 Residential Units, 7,200 SF Commercial/Retail

The TAZs in the SANDAG model representing the original Rhodes Crossing VTM are TAZ 1827 for Units 1, 6 & 7; TAZ 4683 for Units 4, 5, & 10; and TAZ 1812 for Units 2, 3, 8, 9, 11. Units 12 and 13 are designated open space. The SZA model run for the Project analysis was customized to include the Merge 56 Project in addition to the CPA for the diocese project (Kilroy – TAZ 4684). Kilroy development initiated the CPA on September 19, 2013 to construct 450,000 SF of commercial office instead of the church/school uses currently permitted (details on the Kilroy CPA are provided earlier in this report in *Section 10.1*).

In addition to the land uses noted above, a CPA was initiated for the Rhodes/Grus units in November 2013. This CPA corresponds to land use changes for Units 3 and 8 of the original Rhodes Crossing VTM. The land uses permitted for these lots are 14 single-family dwelling units and 342 multi-family dwelling units, respectively. The CPA proposes to redesignate 26 acres from Low Density Residential and Open Space to Medium-High Density Residential allowing for multi-family residential development between 22 to 45 dwelling units per acre. This could increase the development potential to between 575 and 1,177 multifamily dwelling units.

A review of the Year 2035 traffic model was conducted to determine if all proposed land uses and CPAs within Units 1 through 13, and the diocese property were properly accounted for in the forecast traffic volumes. ***Table 12–3*** summarizes the findings of this comparison.

TABLE 12–3
SANDAG SERIES 12 TRAFFIC MODEL COMPARISON

Location	Approved		Proposed		SANDAG Model Run	
					TAZ	ADT
	Land Use	ADT	Land Use	ADT		Year 2035
KB Homes Units 1, 6, 7	94 DU	940	94 DU	940	1827	1,527
Merge 56 Units 4, 5, 10	525KSF Commercial/Office 242 DU	19,500	525KSF Commercial/Office 242 DU	19,500	4683	19,500
Rhodes/Grus Units 2, 3, 8, 9, 11, 12, 13	398 DU 7.2KSF Commercial/Retail Open Space	3,580	575 to 1,177 DU 7.2KSF Commercial/Retail Open Space	7,060	1812	7,592
Diocese/Kilroy CPA	1,200 seat church K-8 School	450 [a]	450KSF Office	5,260	4684	5,260
Total	**–**	**24,470**	**–**	**32,760**	**–**	**33,880**
Additional ADT included in Traffic Model (SANDAG – Proposed)						**1,120**

Footnotes:

a. The 450 ADT shown for the diocese property under approved conditions uses the trips generated by the SANDAG Series 12 model for 7.7 acres of "church" land use.

General Notes:

1. Units 1, 6, 7 use the City rate of 10 trips/DU in the "Approved" and "Proposed" ADT calculations.
2. Units 4, 5, 10 use the trip generation calculations from *Table 7–1* of this report.
3. Units 2, 3, 8, 9, 11, 12, 13 use a mix of 8 trips/DU and 10 trips/DU for the mix of residential types in the "Approved" ADT calculations. For the "Proposed" calculations, the City rate of 6 trips/DU is used for densities of ≥ 20 DU/acre. The specialty rate of 40 trips/KSF is used for the commercial/retail.

As shown in the table above, the ADT generated by the SANDAG Year 2035 model exceeds the actual amount of traffic that would be anticipated with the proposed land use assumptions for the CPAs associated with Units 1 through 13 of the original Rhodes Crossing VTM and the diocese/Kilroy CPA. Therefore, it can be concluded that the traffic model effectively accounts for CPA-related growth by these properties in additional to ambient growth that could occur in the immediate vicinity (1,120 ADT). The balance of regional development throughYear 2035 was also included. *Appendix G* contains these land use summaries for the TAZs comprising the overall Rhodes Crossing project and adjacent diocese/Kilroy site.

Since the model included the land uses for the proposed Project, the ADT generated by the SZA represented the "Plus Project" conditions for Year 2035. In order to derive Year 2035 traffic volumes without the Project, the following steps were taken. First, the Project assignment was subtracted from the forecast traffic volumes and adjusted for the changes in Project distribution along roadways noted in *Section 8.2* (Park Village Road, Black Mountain Road, Carmel Mountain Road). Once the Year 2035 Without Project ADTs were finalized, the peak hour intersection volumes were forecasted.

The model-generated peak hour volumes are not considered accurate as the primary purpose of the model is to forecast ADTs and not predict volumes on an hourly basis. Therefore, the peak hour

turning movement volumes at an intersection were estimated from future ADT volumes using the relationship between existing peak hour turning movements and the existing ADT volumes. In this case, the existing with existing rerouted traffic volumes was used in the forecast to account for the connections of Camino Del Sur and Carmel Mountain Road. The general relationship between ADTs and peak hour volumes (e.g., peak-hour percentage and directional factors) are assumed to continue in the future.

Once the ADTs and peak hour volumes were forecasted, the Project assignment was added to the Year 2035 traffic volumes to arrive at Year 2035 With Project traffic volumes.

Figure 12–2 depicts the Year 2035 Without Project traffic volumes. ***Figure 12–3*** depicts the Year 2035 With Project traffic volumes for the study area.

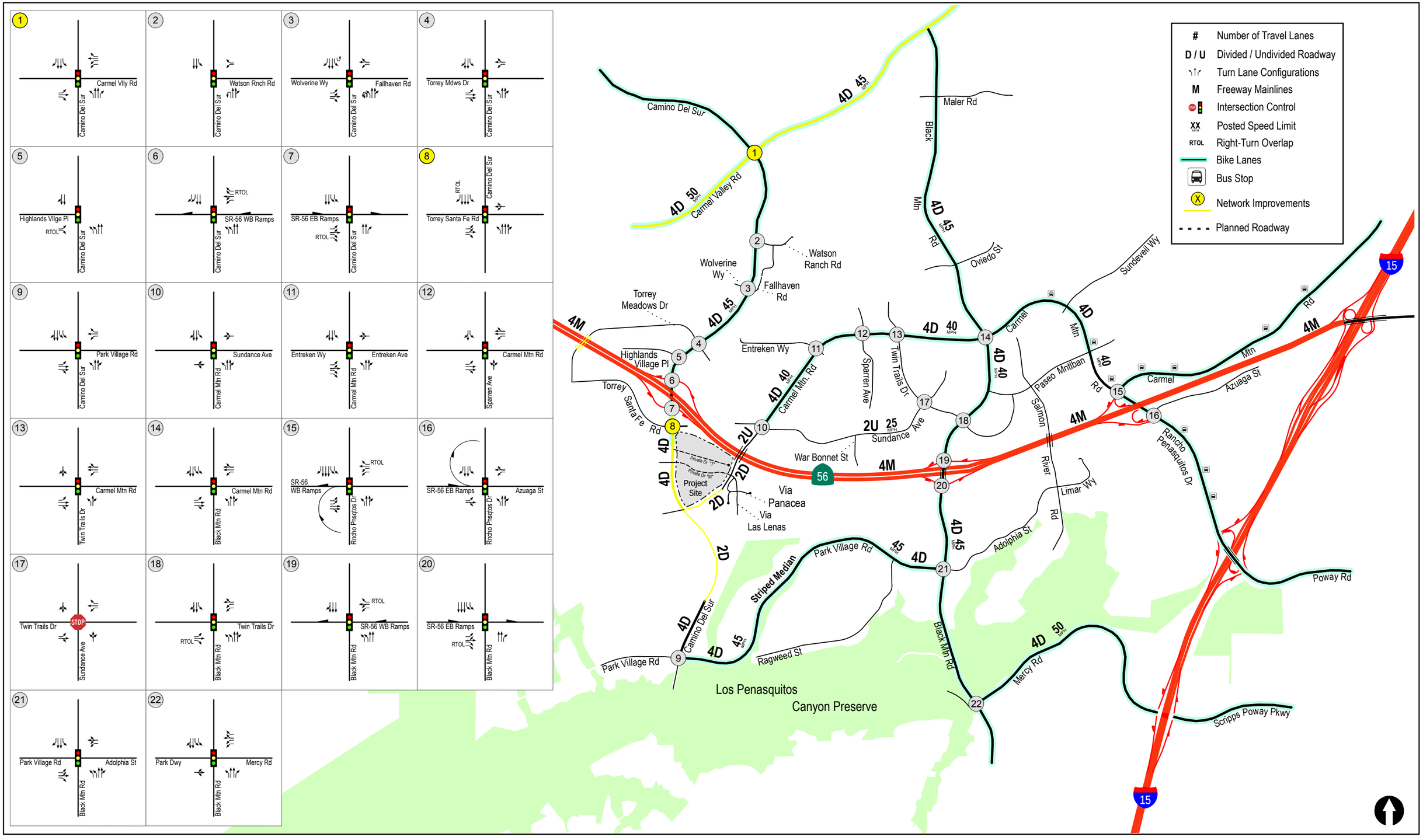
Appendix L contains the Year 2035 traffic volume forecasts.

12.3 Proposed Community Plan Amendment – Roadway Reclassifications

As discussed in *Section 3.1*, the Project is proposing a CPA to reclassify sections of both Camino Del Sur and Carmel Mountain Road from Four Lane Major Arterial standards to Two Lane Modified Collector standards. These proposed reclassifications are due to the low buildout traffic volumes (< 9,000 ADT) forecasted by the current SANDAG Series 12 traffic model (Year 2035). It is acknowledged that Year 2035 is an interim year, but the areas of Torrey Highlands and Rancho Peñasquitos are nearly built-out, and no substantive growth other than Rhodes Crossing and the neighboring diocese parcel (including the potential CPAs) is expected that would affect volumes on Camino Del Sur and Carmel Mountain Road where downgrades are proposed. To confirm that the Year 2035 volumes and accompanying analyses do represent actual buildout operations, LLG conducted a second traffic model run for Year 2050 utilizing identical land uses for the Merge 56 Project and adjoining Rhodes Crossing and diocese land uses, and identical roadway network assumptions (except for SR 56, which is six lanes at 2050). The model used buildout land uses for the balance of the region. Essentially, all Project-related volumes and improvements were held constant to determine how much, if any, regional growth would affect the study area between 2035 and 2050. If volumes were shown to be consistent, then it could be concluded that the Year 2035 analysis presented is effectively identical to Year 2050 (area buildout) analysis.

In both modeling scenarios, the subject segments of Camino Del Sur and Carmel Mountain Road were run using the current two-lane classification. This was done to ensure that the model would not reroute trips away from these roadways if it determined they were constrained. By using this conservative approach, all of the latent demand for these roadways is captured and presented. The Year 2050 model showed identical traffic volumes on these roadways as compared to 2035, thus validating the 2035 analysis results that show Two-Lane Modified Collector classifications will be sufficient to accommodate buildout traffic.

Appendix G also contains the Year 2035 and Year 2050 traffic volume forecasts from the SANDAG SZAs.



LINSCOTT LAW & GREENSPAN engineers

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Date: 06/23/15

Figure 12-1

Year 2035 Conditions Diagram

MERGE 56

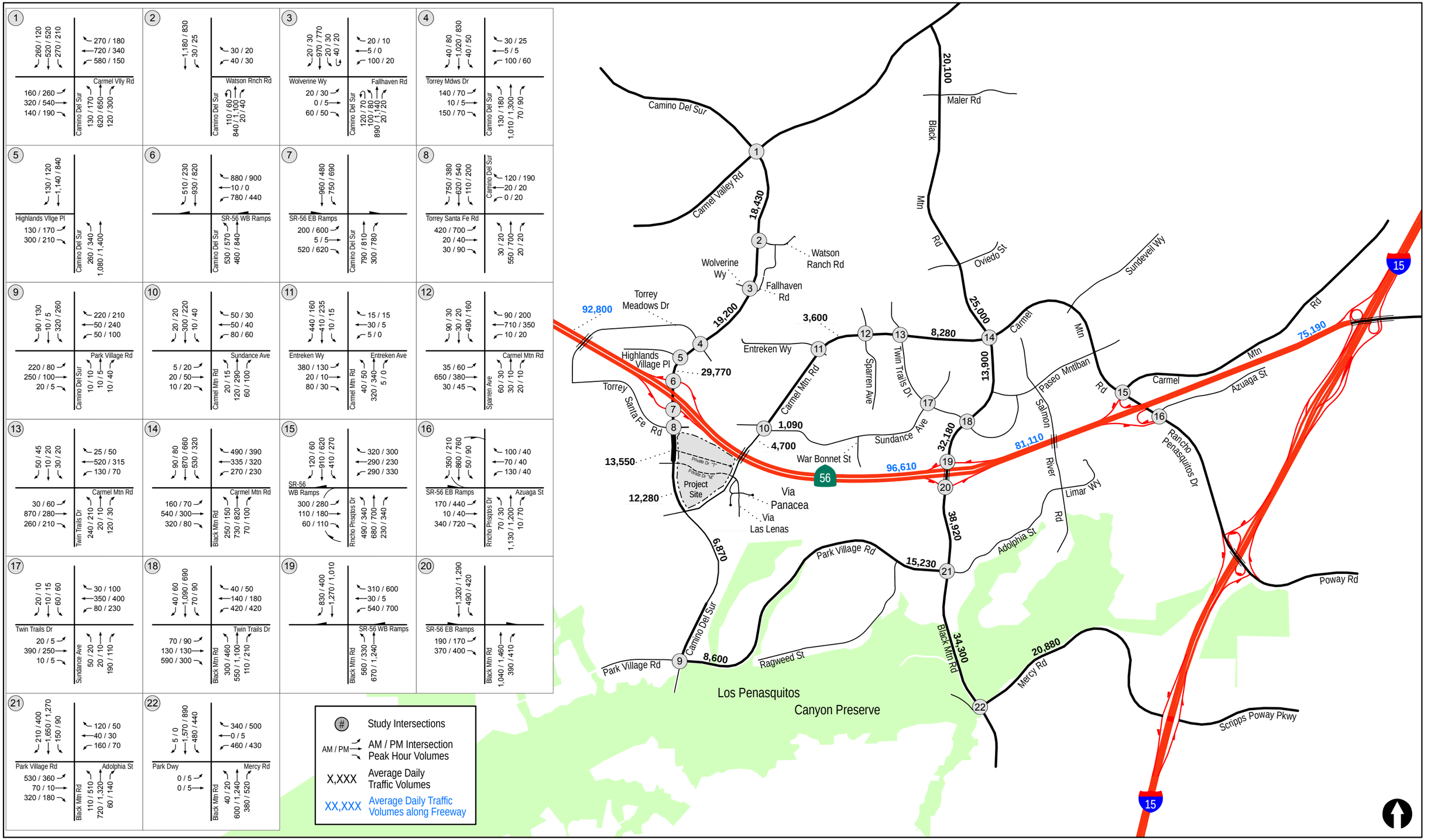

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Figure 12-2

Year 2035 Without Project Traffic Volumes

MERGE 56

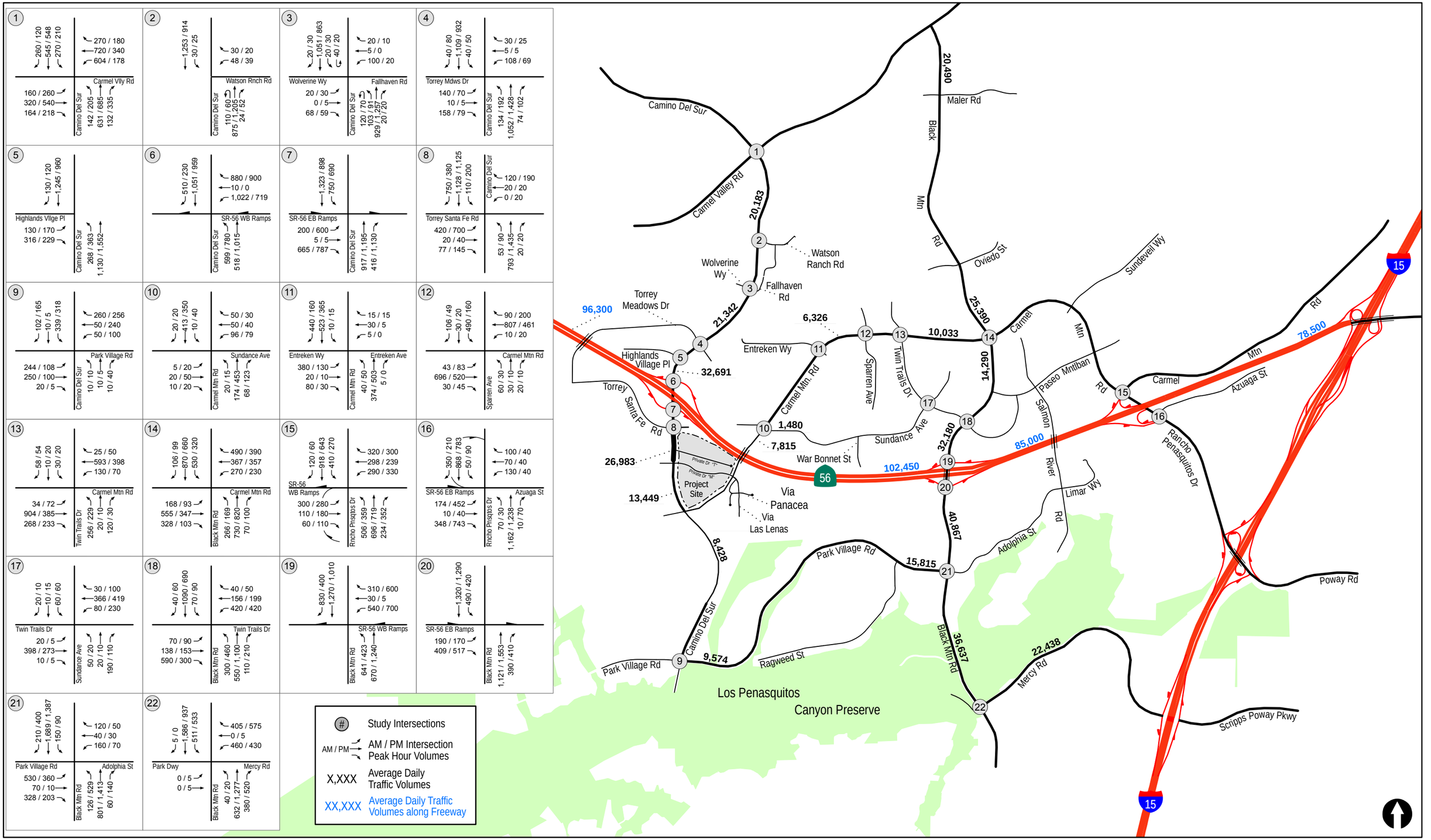

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Figure 12-3

Year 2035 With Project Traffic Volumes

MERGE 56

13.0 ANALYSIS OF YEAR 2035 AND YEAR 2050 SCENARIOS

The following is a summary of the Year 2035 operations, which also represent area buildout (Year 2050) based on the congruency of the 2035 and 2050 traffic model results discussed previously in *Section 12.0*.

13.1 Year 2035 Without Project

13.1.1 *Peak Hour Intersection Operations*

Table 13–1 summarizes the Year 2035 Without Project intersection operations. As seen in *Table 13–1*, the following study area intersections are calculated to operate at LOS E or F under Year 2035 Without Project conditions:

- Intersection #3. Camino Del Sur/ Wolverine Way – LOS E (AM peak hour)
- Intersection #14. Carmel Mountain Road / Black Mountain Road – LOS F/E (AM/PM peak hours)
- Intersection #15. Carmel Mountain Rd / SR 56 WB Ramps – LOS E (AM peak hour)
- Intersection #16. Carmel Mountain Rd / SR 56 EB Ramps – LOS F (PM peak hour)
- Intersection #18. Black Mountain Rd / Twin Trails Dr – LOS E (AM peak hour)
- Intersection #19. Black Mountain Rd / SR 56 WB Ramps – LOS F (AM peak hour)
- Intersection #20. Black Mountain Rd / SR 56 EB Ramps – LOS E (AM peak hour)
- Intersection #21. Black Mountain Rd / Park Village Rd – LOS F/F (AM/PM peak hours)

Appendix M contains the Year 2035 Without Project peak hour intersection calculation worksheets.

13.1.2 *Daily Street Segment Operations*

Table 13–2 summarizes the Year 2035 Without Project street segment operations. As seen in *Table 13–2*, the following study area street segments are calculated to operate at LOS E or F under Year 2035 Without Project conditions:

- Segment #11. Black Mountain Rd from SR 56 EB Ramps to Park Village Rd – LOS E

13.1.3 *Peak Hour Freeway Mainline Operations*

Table 13–3 summarizes the Year 2035 Without Project freeway mainline segment operations. As seen in *Table 13–3*, the following study area freeway mainline segments are calculated to operate at LOS E or F under Year 2035 Without Project conditions:

- Mainline #1. SR 56 from Carmel Valley Rd to Camino Del Sur: Eastbound LOS F(0) – AM/PM peak hours
- Mainline #1. SR 56 from Carmel Valley Rd to Camino Del Sur: Westbound LOS F(0) – AM peak hour
- Mainline #2. SR 56 from Camino Del Sur to Black Mountain Rd: Eastbound LOS F(0) – PM peak hour

- Mainline #2. SR 56 from Camino Del Sur to Black Mountain Rd: Westbound LOS E – AM peak hour

13.1.4 *Peak Hour Freeway Ramp Meter Operations*

Ramp Meter #5. Rancho Peñasquitos Boulevard to SR-56 Westbound:
Using the most restrictive fixed rate analysis method, under Year 2035 conditions, a delay of 7.5 minutes is projected at this ramp during the AM peak hour with a calculated queue length of 2,500 feet. No delay is calculated at any other ramp meter location. ***Table 13–4*** summarizes the operations of the on-ramp meter.

13.2 Year 2035 With Project

13.2.1 *Peak Hour Intersection Operations*

Table 13–1 summarizes the Year 2035 With Project intersection operations. As seen in *Table 13–1*, the following study area intersections are calculated to operate at LOS E or F conditions with the addition of Project traffic:

- Intersection #3. Camino Del Sur / Wolverine Way – LOS E (AM peak hour)
- **Intersection #6. Camino Del Sur / SR 56 WB Ramps – LOS E (PM peak hour)**
- **Intersection #7. Camino Del Sur / SR 56 EB Ramps – LOS F (PM peak hour)**
- **Intersection #14. Carmel Mountain Rd / Black Mountain Rd – LOS F/E (AM/PM peak hours)**
- Intersection #15. Carmel Mountain Rd / SR 56 WB Ramps – LOS E (AM peak hour)
- Intersection #16. Carmel Mountain Rd / SR 56 EB Ramps – LOS F (PM peak hour)
- Intersection #18. Black Mountain Rd / Twin Trails Dr – LOS F (AM peak hour)
- **Intersection #19. Black Mountain Rd / SR 56 WB Ramps – LOS F (AM peak hour)**
- **Intersection #20. Black Mountain Rd / SR 56 EB Ramps – LOS E (AM peak hours)**
- **Intersection #21. Black Mountain Rd / Park Village Rd – LOS E/F (AM/PM peak hour)**

Based on City of San Diego significance criteria, **six (6) significant cumulative impacts** were calculated with the addition of Project traffic at the intersections **bolded** and underlined above since the Project-induced change in delay is greater than 2.0 seconds for LOS E operating intersections and greater than 1.0 seconds for LOS F operating intersections.

It should be noted that a CPA is in progress to downgrade Black Mountain Road from Twin Trails Drive to the Community Plan boundary to remain at its current classification as a Four-Lane Major Arterial. If this downgrade is approved, LOS E/F operations along this section of Black Mountain Road would be considered significant and unmitigated.

Appendix N contains the Year 2035 With Project peak hour intersection calculation worksheets.

13.2.2 *Daily Segment Operations*

Table 13–2 summarizes the Year 2035 With Project street segment operations. As seen in *Table 13–2*, the following study area street segments are calculated to operate at LOS E or F conditions with the addition of Project traffic:

- **Segment #11. Black Mountain Rd from SR 56 EB Ramps to Park Village Rd – LOS F**
- **Segment #12. Black Mountain Rd from Park Village Rd to Mercy Rd – LOS E**

Based on City of San Diego significance criteria, **two (2) significant cumulative impacts** were calculated with the addition of Project traffic at study area street segments since the Project-induced change in V/C is greater than 0.02 for LOS E operating street segments and greater than 0.01 for LOS F operating street segments.

It should be noted that a CPA is in progress to downgrade Black Mountain Road from Twin Trails Drive to the Community Plan boundary to remain at its current classification as a Four-Lane Major Arterial. If this downgrade is approved, LOS E/F operations along this section of Black Mountain Road would be considered significant and unmitigated.

13.2.3 *Peak Hour Freeway Mainline Operations*

Table 13–3 summarizes the Year 2035 With Project freeway mainline segment operations. As seen in *Table 13–3*, the following study area freeway mainline segments are calculated to operate at LOS E or F conditions with the addition of Project:

- **Mainline #1. SR 56 from Carmel Valley Rd to Camino Del Sur: Eastbound LOS F(0) – AM/PM peak hours**
- **Mainline #1. SR 56 from Carmel Valley Rd to Camino Del Sur: Westbound LOS F(0) – AM peak hour**
- **Mainline #2. SR 56 from Camino Del Sur to Black Mountain Rd: Eastbound LOS F(0) – PM peak hour**
- **Mainline #2. SR 56 from Camino Del Sur to Black Mountain Rd: Westbound LOS E – AM peak hour**

Based on City of San Diego significance criteria, **four (4) significant cumulative impacts** were calculated with the addition of Project traffic at study area freeway mainline segments since the Project-induced change in V/C is greater than 0.01 for LOS E operating freeway segments and greater than 0.005 for LOS F operating freeway segments.

13.2.4 *Peak Hour Freeway Ramp Meter Operations*

Ramp Meter #5. Rancho Peñasquitos Boulevard to SR-56 Westbound:

Using the most restrictive fixed rate analysis method, the addition of Project traffic to the Year 2035 condition is calculated to add delay at this ramp of 1.8 minutes during the AM peak hour with an additional queue length calculated at 600 feet. The total delay is therefore calculated at 9.3 minutes and the total queue at 3,100 feet. Per the City of San Diego significance criteria, **no significant**

impact is calculated. No delay is calculated at any other ramp meter location. *Table 13–4* summarizes the operations of the on-ramp meter.

TABLE 13–1
YEAR 2035 INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2035 Without Project		Year 2035 With Project		Δ [c] Delay	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
1. Carmel Valley Rd / Camino Del Sur	Signal	AM	52.1	D	54.2	D	2.1	No
		PM	39.4	D	41.7	D	2.3	
2. Camino Del Sur / Watson Ranch Rd	Signal	AM	26.0	C	29.5	C	3.5	No
		PM	9.4	A	9.7	A	0.3	
3. Camino Del Sur / Wolverine Way	Signal	AM	55.6	E	57.0	E	1.4	No
		PM	27.1	C	29.5	C	2.4	
4. Camino Del Sur / Torrey Meadows Dr	Signal	AM	28.5	C	29.4	C	0.9	No
		PM	24.7	C	26.1	C	1.4	
5. Camino Del Sur / Highlands Village Pl	Signal	AM	22.4	C	23.3	C	0.9	No
		PM	20.7	C	21.3	C	0.6	
6. Camino Del Sur / SR 56 WB Ramps	Signal	AM	33.5	C	52.8	D	19.3	**Yes**
		PM	38.7	D	69.2	**E**	**30.5**	
7. Camino Del Sur / SR 56 EB Ramps	Signal	AM	29.8	C	41.2	D	11.4	**Yes**
		PM	45.4	D	81.6	**F**	**36.2**	
8. Camino Del Sur / Torrey Santa Fe Rd	Signal	AM	21.5	C	24.6	C	3.1	No
		PM	38.1	D	44.7	D	6.6	
9. Camino Del Sur / Park Village Rd	Signal	AM	30.8	C	32.0	C	1.2	No
		PM	26.4	C	31.0	C	4.6	
10. Carmel Mountain Rd / Sundance Ave	Signal	AM	13.8	B	13.3	B	(0.5)	No
		PM	12.2	B	12.4	B	0.2	
11. Carmel Mountain Rd / Entreken Way	Signal	AM	27.8	C	28.7	C	0.9	No
		PM	14.2	B	13.1	B	(1.1)	
12. Carmel Mountain Rd / Sparren Ave	Signal	AM	28.2	C	33.0	C	4.8	No
		PM	27.0	C	28.9	C	1.9	
13. Carmel Mountain Rd / Twin Trails Dr	Signal	AM	47.4	D	52.6	D	5.2	No
		PM	23.8	C	27.5	C	3.7	

(Continued on Next Page)

TABLE 13–1
YEAR 2035 INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2035 Without Project		Year 2035 With Project		Δ [c] Delay	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
(Continued from Previous Page)								
14. Carmel Mountain Rd / Black Mountain Rd	Signal	AM	82.2	F	**86.9**	**F**	**4.7**	**Yes**
		PM	57.0	E	57.8	E	0.8	
15. Carmel Mountain Rd / SR 56 WB Ramps	Signal	AM	63.3	E	65.2	E	1.9	No
		PM	51.6	D	52.1	D	0.5	
16. Carmel Mountain Rd / SR 56 EB Ramps	Signal	AM	50.0	D	53.0	D	3.0	No
		PM	75.6	F[f]	76.3	F[f]	0.7	
17. Sundance Ave / Twin Trails Dr	AWSC [d]	AM	31.2	D	34.3	D	3.1	No
		PM	17.0	C	18.6	C	1.6	
18. Black Mountain Rd / Twin Trails Dr	Signal	AM	79.9	E	80.2	F	0.3	No
		PM	41.6	D	42.9	D	1.3	
19. Black Mountain Rd / SR 56 WB Ramps	Signal	AM	>100.0	F	**>100.0**	**F**	**>1.0**	**Yes [e]**
		PM	44.0	D	47.4	D	3.4	
20. Black Mountain Rd / SR 56 EB Ramps	Signal	AM	63.8	E	**68.7**	**E**	**4.9**	**Yes [e]**
		PM	41.0	D	49.4	D	8.4	
21. Black Mountain Rd / Park Village Rd	Signal	AM	76.3	E	**82.6**	**F**	**6.3**	**Yes [e]**
		PM	86.3	F	**>100.0**	**F**	**>1.0**	
22. Black Mountain Rd / Mercy Rd	Signal	AM	20.2	C	20.6	C	0.4	No
		PM	33.6	C	49.9	D	16.3	

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service
c. Δ denotes the increase in delay due to Project.
d. AWSC – All Way Stop Controlled intersection. Average intersection delay reported
e. If Black Mountain Road from Twin Trails Drive to the Community Plan boundary is downgraded to remain four lanes, impacts to this LOS E/F segment would be considered l significant and unmitigated.
f. Level of Service F is not acceptable for intersection approaches except for side streets on an interconnected arterial system. The prevailing standard of practice is that for LOS F at any approach, the intersection should be considered to be LOS F, even if the average intersection delay is less than LOS F thresholds.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

General Notes:

1. Sig = Significant impact, yes or no.
2. **Bold** typeface and shading represents a significant impact.

TABLE 13–2
YEAR 2035 STREET SEGMENT OPERATIONS

Street Segment	Community Plan Capacity [a]	Existing/ Assumed Capacity (LOS E) [a]	Year 2035 Without Project			Year 2035 With Project			Project Volumes	Δ [e] V/C	Sig?
			ADT [b]	LOS [c]	V/C [d]	ADT	LOS	V/C			
Camino Del Sur											
1. Carmel Valley Rd to Watson Ranch Rd	50,000	40,000	18,430	B	0.461	20,183	B	0.505	1,753	0.044	No
2. Wolverine Way to Torrey Meadows Dr	50,000	40,000	19,200	B	0.480	21,342	C	0.534	2,142	0.054	No
3. Highlands Village Pl to SR 56 WB Ramps	50,000	40,000	29,770	C	0.744	32,691	D	0.817	2,921	0.073	No
4. Torrey Santa Fe Rd to Project Drwy	40,000	45,000 [f]	13,550	A	0.339	26,983	C	0.600	13,433	0.261	No
5. Project Drwy to Carmel Mountain Rd	40,000	40,000	12,280	A	0.307	13,449	A	0.336	1,169	0.029	No
6. Carmel Mountain Rd to Park Village Rd	40,000	15,000 [g]	6,870	B	0.458	8,428	C	0.562	1,558	0.104	No
Black Mountain Road											
7. Carmel Valley Rd to Maler Rd	40,000	40,000	20,100	B	0.503	20,490	B	0.512	390	0.009	No
8. Oviedo St to Carmel Mountain Rd	40,000	40,000	25,000	C	0.625	25,390	C	0.635	390	0.010	No
9. Carmel Mountain Rd to Paseo Montalban	40,000	40,000	13,900	A	0.348	14,290	A	0.357	390	0.009	No
10. Twin Trails Dr to SR 56 WB Ramps	60,000	40,000	32,180	D	0.805	32,180	D	0.805	0	0.000	No
11. SR 56 EB Ramps to Park Village Rd	60,000	40,000	38,920	E	0.973	**40,867**	**F**	**1.022**	**1,947**	**0.049**	**Yes [h]**
12. Park Village Rd to Mercy Rd	60,000	40,000	34,300	D	0.858	**36,637**	**E**	**0.916**	**2,337**	**0.058**	**Yes [h]**
Carmel Mountain Road											
13. Camino Del Sur to Via Las Lenas	40,000	15,000 [g]	5,500	B	0.367	6,669	C	0.445	1,169	0.078	No
14. Via Las Lenas to Sundance Ave	40,000	10,000 [g]	4,700	B	0.470	7,815	D	0.782	3,115	0.312	No
15. Entreken Way to Sparren Ave	40,000	40,000	3,600	A	0.090	6,326	A	0.158	2,726	0.068	No
16. Twin Trails Dr to Black Mountain Rd	40,000	40,000	8,280	A	0.207	10,033	A	0.251	1,753	0.044	No

(Continued on Next Page)

TABLE 13–2
YEAR 2035 STREET SEGMENT OPERATIONS

Street Segment	Community Plan Capacity [a]	Existing/ Assumed Capacity (LOS E) [a]	Year 2035 Without Project			Year 2035 With Project			Project Volumes	Δ [e] V/C	Sig?
			ADT [b]	LOS [c]	V/C [d]	ADT	LOS	V/C			
(Continued from Previous Page)											
Sundance Avenue											
17. Carmel Mountain Rd to War Bonnet St	8,000 [i]	8,000	1,090	A	0.136	1,480	A	0.185	390	0.049	No
Park Village Road											
18. Camino Del Sur to Ragweed St	40,000	40,000	8,600	A	0.215	9,574	A	0.239	974	0.024	No
19. Ragweed St to Black Mountain Rd	40,000	40,000	15,230	B	0.381	15,815	B	0.395	585	0.014	No
Mercy Road											
20. Black Mountain Rd to I-15 SB Ramps	40,000	40,000	20,880	B	0.522	22,438	C	0.561	1,558	0.039	No

Footnotes:

a. Capacities based on City of San Diego's Roadway Classification & LOS table (See *Appendix C*). Existing capacities used in the street segment analysis except where changes are proposed as part of the Project.
b. Average Daily Traffic
c. Level of Service
d. Volume to Capacity ratio
e. Δ denotes a Project-induced increase in the Volume to Capacity ratio
f. Camino Del Sur from Torrey Santa Fe Road to the Project access built as a two-lane roadway under Existing + Cumulative Project conditions providing access to the Kilroy project. With the completion of the proposed Project, this roadway is assumed to be a Four-Lane Major Arterial with intersection enhancements providing for an LOS E capacity of 45,000 ADT
g. The "Planned Capacity" shown reflects the changes to the Community Plan roadway classifications/capacities proposed by the Project. The Project proposes a CPA to downgrade these roadways from Four-Lane Major Arterials with a 40,000 ADT capacity to a Two-Lane Modified Collector with a raised center median with an LOS E capacity of 15,000 ADT. The portion of Carmel Mountain Road north of SR 56 to Sundance would remain an undivided two-lane road with an LOS E capacity of 10,000 ADT.
h. If Black Mountain Road from Twin Trails Drive to the Community Plan boundary is downgraded to remain four lanes, impacts to this LOS E/F segment would be considered significant and unmitigated.
i. Sundance Avenue is currently built to two-lane Collector standards with a 40' curb-to-curb width providing an LOS E capacity of 8,000 ADT

General Notes:

1. Sig = Significant impact, yes or no.
2. **Bold** typeface and shading represents a significant impact.

TABLE 13–3
YEAR 2035 FREEWAY SEGMENT OPERATIONS

State Route 56 Freeway Segment	Dir.	# of Lanes [a]	Hourly Capacity [b]	Year 2305 Without Project						Year 2305 With Project						Δ V/C [f]		Sig?
				Volume [c]		V/C [d]		LOS [e]		Volume		V/C		LOS				
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	
Carmel Valley Rd to Camino Del Sur	EB	2M	4,000	4,117	4,009	1.029	1.002	F(0)	F(0)	**4,262**	**4,176**	**1.066**	**1.044**	**F(0)**	**F(0)**	**0.036**	**0.042**	**Yes**
	WB	2M	4,000	4,983	2,120	1.246	0.530	F(0)	B	**5,052**	2,330	**1.263**	0.583	**F(1)**	B	0.017	**0.053**	**Yes**
Camino Del Sur to Black Mountain Rd	EB	2M	4,000	2,148	4,259	0.537	1.065	B	F(0)	2,264	**4,609**	0.566	**1.152**	B	**F(0)**	0.029	**0.087**	**Yes**
	WB	2M	4,000	3,744	2,399	0.936	0.600	E	B	**3,986**	2,678	**0.997**	0.670	**E**	C	**0.061**	0.070	**Yes**
Black Mountain Rd to Rancho Peñasquitos Blvd	EB	3M	6,000	2,519	3,398	0.403	0.544	A	B	2,596	3,631	0.416	0.583	B	B	0.013	0.039	No
	WB	2M+1A	5,200	3,522	1,911	0.677	0.368	C	A	3,683	2,097	0.708	0.403	C	A	0.031	0.036	No
Rancho Peñasquitos Blvd to I-15	EB	2M	4,000	2,525	3,041	0.631	0.760	C	C	2,590	3,239	0.648	0.810	C	D	0.016	0.050	No
	WB	2M	4,000	3,142	2,597	0.786	0.649	C	C	3,279	2,755	0.820	0.689	D	C	0.034	0.040	No

Footnotes:

a. Lane geometry taken from PeMS lane configurations at corresponding postmile.
b. Capacity calculated at 2000 vehicles per hour (vph) per mainline lane (pcphpl) and 1200 vph per lane for auxiliary lane from *Caltrans Guide for the Preparation of Traffic Impact Studies, Dec. 2002.*
c. Peak hour volumes taken from PeMS peak hour data (2014) and grown against SANDAG Series 12 forecast volumes to reach Year 2035 conditions.
d. V/C = (Peak Hour Volume/Hourly Capacity)
e. LOS = Level of Service
f. "Δ" denotes the Project-induced increase in V/C. Per City Guidelines, a significant impact occurs when the V/C is increased by 0.01 for LOS E or 0.005 for LOS F.

LOS	V/C
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

General Note:

1. Sig? = Significant impact, yes or no.
2. **Bold** typeface and shading represents a significant impact.
3. M = Mainline
4. A = Auxiliary

TABLE 13–4
YEAR 2035 RAMP METER ANALYSIS – FIXED RATE

Location	Peak Hour [a]	Volume		Peak Hour Demand (D) [b]	Meter Rate [c]	Excess Demand (E) (veh)	Delay (min)	Queue (ft) [d]	Sig?
		SOV	HOV						
1. **Camino Del Sur to SR 56 WB (2 SOV+1 HOV)**									
Year 2035 Without Project	AM	893	158	446	680	0	0	0	—
Year 2035 With Project	AM	951	168	476	680	0	0	0	—
Project Increase	*AM*	58	10	30	—	—	0	0	*No*
2. **Camino Del Sur to SR 56 EB (2 SOV+1 HOV)**									
Year 2035 Without Project	PM	1254	221	627	800	0	0	0	—
Year 2035 With Project	PM	1551	274	776	800	0	0	0	—
Project Increase	*PM*	297	53	149	—	—	0	0	*No*
3. **Black Mountain Road to SR 56 WB (2 SOV+1 HOV)**									
Year 2035 Without Project	AM	1207	213	604	765	0	0	0	—
Year 2035 With Project	AM	1276	225	638	765	0	0	0	—
Project Increase	*AM*	69	12	34	—	—	0	0	*No*
4. **Black Mountain Road to SR 56 EB (2 SOV+1 HOV)**									
Year 2035 Without Project	PM	706	125	353	910	0	0	0	—
Year 2035 With Project	PM	706	125	353	910	0	0	0	—
Project Increase	*PM*	0	0	0	—	—	0	0	*No*
5. **Rancho Peñasquitos Boulevard to SR 56 WB (1 SOV)**									
Year 2035 Without Project	AM	900	—	900	800	100	7.5	2,500	—
Year 2035 With Project	AM	924	—	924	800	124	9.3	3,100	—
Project Increase	*AM*	24	—	24	—	—	1.8	600	*No*
6. **Rancho Peñasquitos Boulevard to SR 56 EB (2 SOV)**									
Year 2035 Without Project	PM	280	—	140	450	0	0	0	—
Year 2035 With Project	PM	280	—	140	450	0	0	0	—
Project Increase	*PM*	0	—	0	—	—	0	0	*No*

Footnotes:

a. Selected peak hour based on period when ramp meter is operating.
b. Peak hour demand in vehicles/hour/lane for SOV and HOV lanes.
c. Meter rates obtained from Caltrans. *Appendix D* provides the Caltrans meter rate data.
d. Queue calculated assuming vehicle length of 25 feet.

General Notes:

1. Sig = Significant impact, yes or no.
2. SOV – Single Occupancy Vehicle, HOV – High Occupancy Vehicle.
3. Lane utilization factor accounted for in peak hour demand calculation. (Assumed 15% for HOV).

14.0 ACCESS ASSESSMENT, ROUNDABOUTS, AND ON-SITE CIRCULATION

This section provides a detailed assessment of the Project access roads. The scenarios analyzed are the "Plus Project" conditions for existing, near-term, and Year 2035 conditions.

14.1 Access Assessment

14.1.1 *Network Conditions*

As discussed earlier in this report, several network improvements are proposed by the Project in the immediate vicinity of the site. Camino Del Sur and Carmel Mountain Road will be fully constructed and border the site to the east, west, and south. Signalized intersections are proposed at the primary Project access locations of Camino Del Sur and Carmel Mountain Road connecting to the future Project spine road (Private Drive 'M'). Private Drive 'T' is proposed along the northerly boundary of the site and will provide restricted access via minor street stop-controlled right-turn only movements at Camino Del Sur. A second right-in/right-out access point serving residential uses on the southern portion of the site will be provided at Camino Del Sur and Private Drive 'N'.

Table 14–1 provides a summary for the access roadway network conditions.

Figure 14–1 shows the Existing + Project and Existing + Cumulative Projects + Project Conditions Diagram for the Project access locations**.**

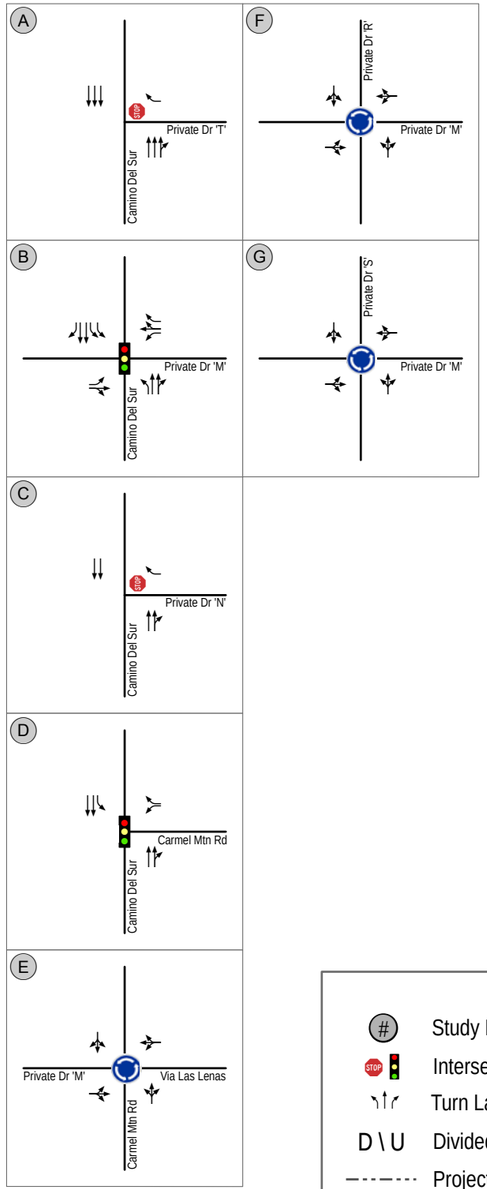
Figure 14–2 shows the Conditions Diagram for the Year 2035 With Project scenarios for the Project access locations.

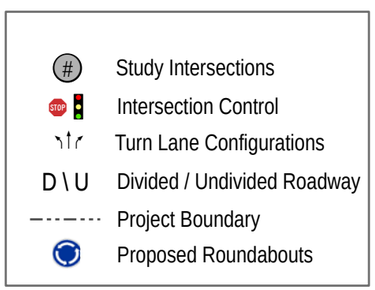
TABLE 14–1
ACCESS ROADWAY NETWORK SCENARIOS

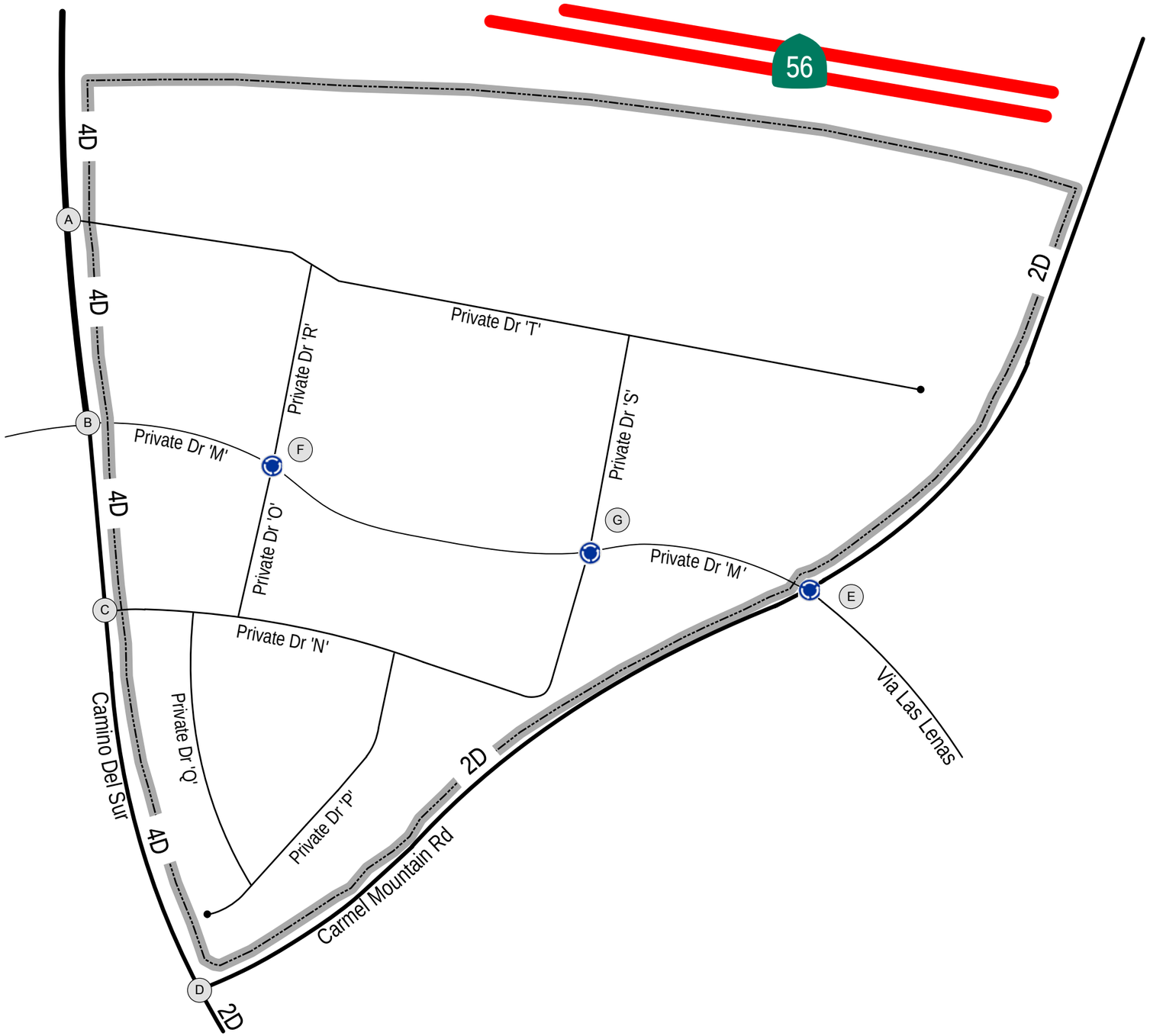
Planned Roadway Network	Scenario					
	Existing	**Existing + Project**	**Existing + Cumulative Projects**	**Existing + Cumulative Projects + Project**	**Year 2035 Without Project**	**Year 2035 With Project**
Camino Del Sur	Does Not Exist	Fully Constructed	Partially Constructed for Kilroy Access	Fully Constructed	Fully Constructed	Fully Constructed
Carmel Mountain Road	Does Not Exist	Fully Constructed	Does Not Exist	Fully Constructed	Fully Constructed	Fully Constructed
Camino Del Sur/ Private Drive 'T'	Does Not Exist	Fully Constructed	Does Not Exist	Fully Constructed	Does Not Exist	Fully Constructed
Camino Del Sur/ Private Drive 'M'/Kilroy Access	Does Not Exist	"tee" Intersection for Merge 56 Access	"tee" Intersection for Kilroy Access	Fully Constructed	"tee" Intersection for Kilroy Access	Fully Constructed
Camino Del Sur/ Private Drive 'N'	Does Not Exist	Fully Constructed	Does Not Exist	Fully Constructed	Does Not Exist	Fully Constructed
Camino Del Sur/ Carmel Mountain Road	Does Not Exist	"tee" Intersection	Does Not Exist	"tee" Intersection	4th Approach Added	4th Approach Added
Carmel Mountain Road/ Via Las Lenas/ Private Drive 'M'	"tee" intersection for Via Las Lenas	Fully Constructed	"tee" intersection for Via Las Lenas	Fully Constructed	"tee" intersection for Via Las Lenas	Fully Constructed
On-Site Roadways						
Private Drive 'M', Private Drive 'T', Private Drive 'N', Private Drive 'O'	Does Not Exist	Fully Constructed	Does Not Exist	Fully Constructed	Does Not Exist	Fully Constructed
Private Drive 'M'/ Westerly Roundabout	Does Not Exist	Fully Constructed	Does Not Exist	Fully Constructed	Does Not Exist	Fully Constructed
Private Drive 'M'/ Easterly Roundabout	Does Not Exist	Fully Constructed	"Does Not Exist	Fully Constructed	Does Not Exist	Fully Constructed

General Notes:

1. Camino Del Sur network condition represents the planned extension from its current terminus at Torrey Santa Fe Road to its southerly connection just north of Dormouse Road as a proposed 2-Lane Modified Collector.
2. Carmel Mountain Road network condition represents the planned extension from its current terminus just south of Via Las Lenas to Camino Del Sur as a proposed 2-Lane Modified Collector.
3. Torrey Meadows Drive Overcrossing network condition represents the connection of Torrey Meadows Drive over SR 56 to Torrey Santa Fe Road. It is not included in the "Existing + Project condition since this scenario represents the effects of Project traffic and Project network improvements on the existing street network at the time of data collection (May 2014).
4. Private Drive 'M' is a proposed on-site Project roadway that will experience cut-through traffic between Camino Del Sur and Carmel Mountain Road.
5. "Fully Constructed" represents construction of roadways to their current Community Plan classification. ("Fully Constructed" for Camino Del Sur from Private Drive 'M' to just north of Dormouse Road and for Carmel Mountain Road from SR 56 to Camino Del Sur represents the proposed Community Plan Amendment classification.)







LINSCOTT LAW & GREENSPAN engineers

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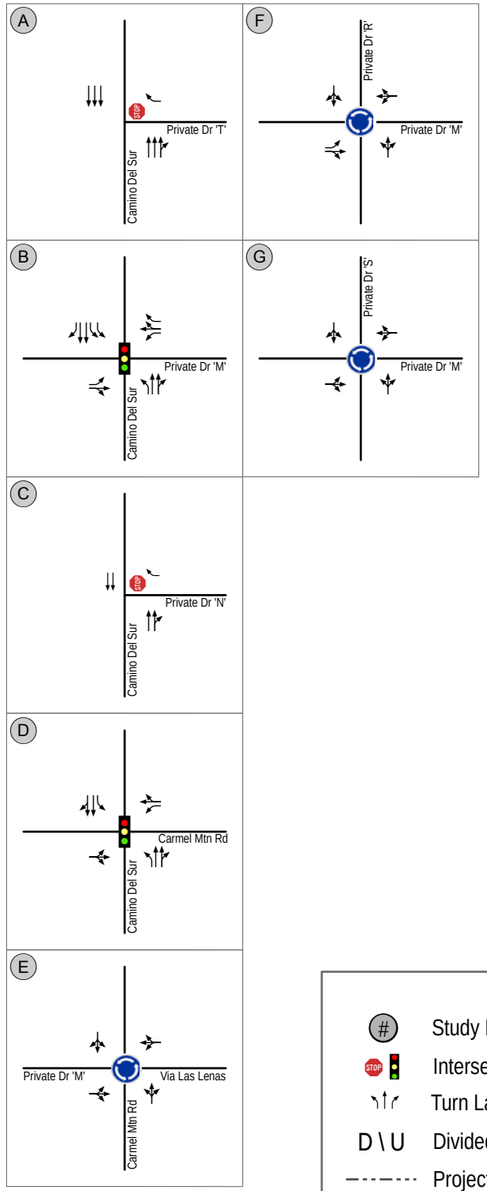
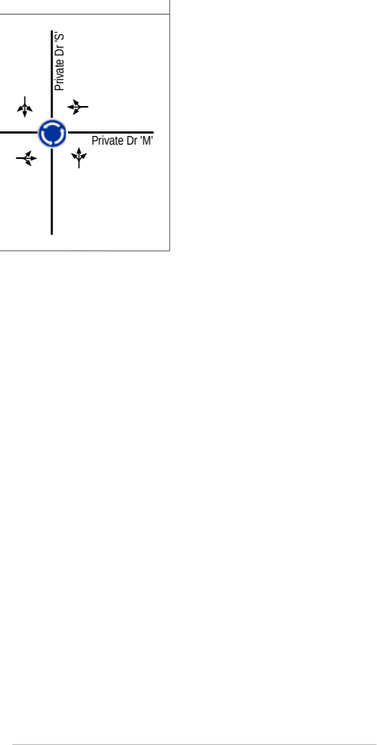
Figure 14-1

Existing + Project & Existing + Cumulative Projects + Project Access Conditions Diagram





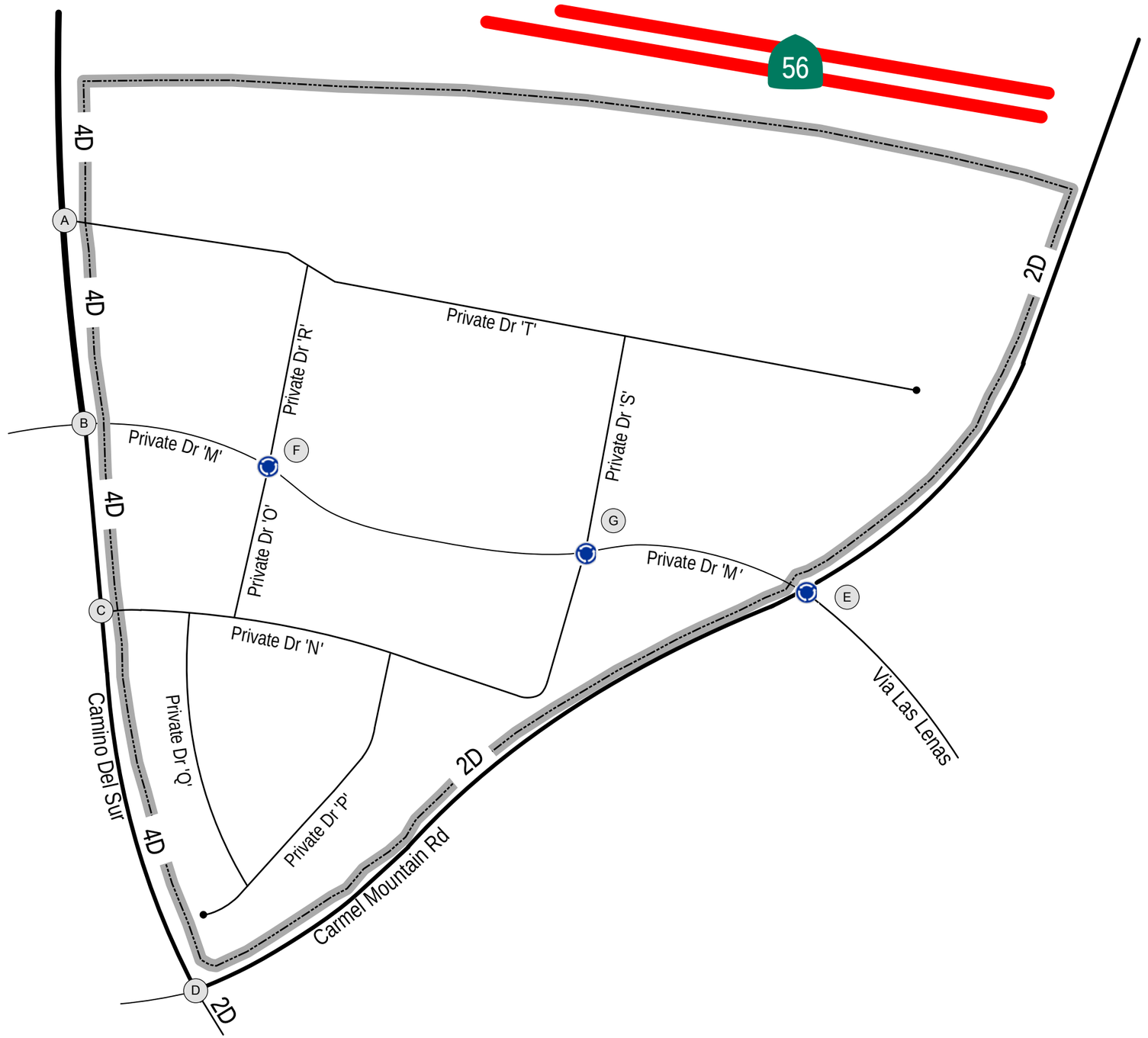


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Figure 14-2

Year 2035 + Project
Access Conditions Diagram

MERGE 56

14.1.2 *Traffic Volumes*

As discussed in earlier sections of this report, traffic volumes in the area were rerouted through the Project site via Private Drive 'M' with the development of the Project. Approximately 35% of the existing trips from the communities located north of SR 56 oriented to/from the freeway via Black Mountain Road were assumed to reroute to the Camino Del Sur/ SR 56 interchange and approximately 25% of existing trips from the Park Village community would be expected to reroute to Camino Del Sur and Carmel Mountain Road as discussed in *Section 7.2* earlier in this report. Some of these trips would be expected to cut-through Private Drive 'M' as it provides a more direct route from Carmel Mountain Road to Camino Del Sur than using the Camino Del Sur/ Carmel Mountain Road intersection located further south.

In addition, cumulative projects trips were assumed to cut-through the Project site via Private Drive 'M' for similar reasons. As a result of these new roadways, existing and near-term trips were rerouted through the Project site for the "Plus Project" scenarios.

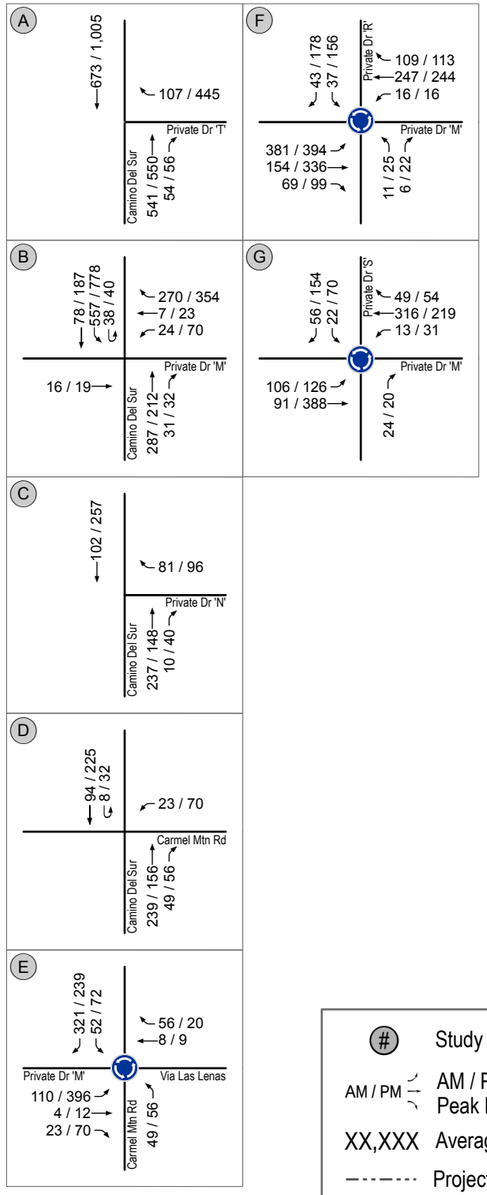
Appendix F ***Figure A_2*** illustrates the Rerouted Existing traffic volumes with the construction of Camino Del Sur, Carmel Mountain Road and Private Drive 'M' for the Project access roadways.

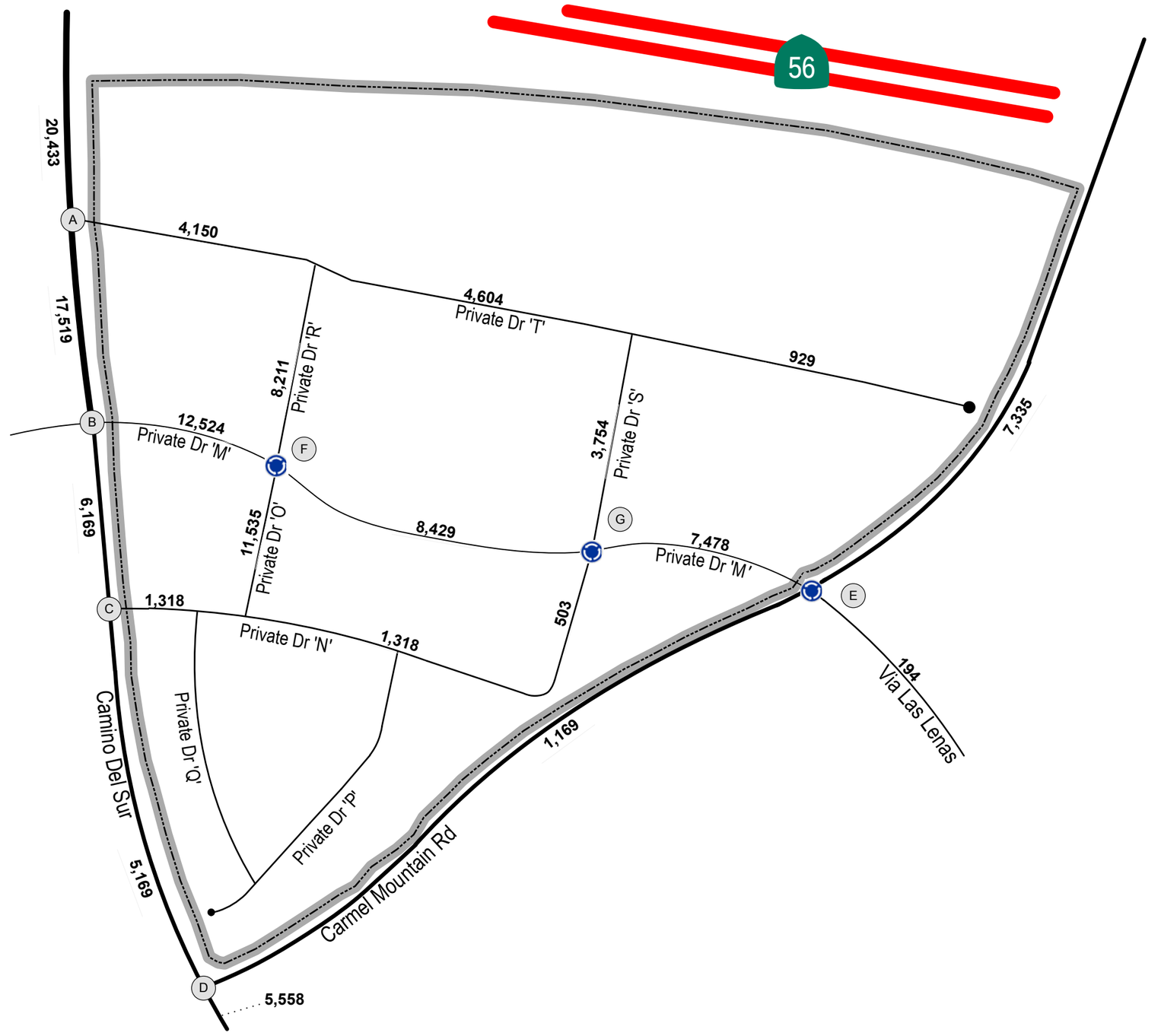
Appendix F ***Figure B_1*** illustrates the Existing + Rerouted Existing traffic volumes with the construction of Camino Del Sur, Carmel Mountain Road and Private Drive 'M' for the Project access roadways.

Appendix F ***Figure C_2*** depicts the rerouting of cumulative project trips for the Project access roadways.

Appendix F ***Figure D_1*** shows the Existing + Cumulative Projects volumes with both the rerouted existing and rerouted cumulative projects traffic volumes for the Project access roadways.

Figure 14–4 shows the Existing + Project traffic volumes for Project access locations, ***Figure 14–5*** shows the Existing + Cumulative Projects + Project traffic volumes for Project access locations, and ***Figure 14–6*** depicts the Year 2035 With Project traffic volumes for Project access locations.





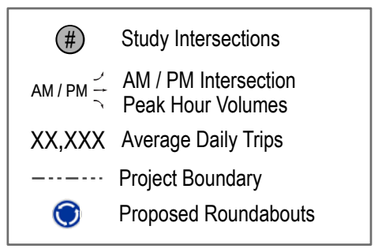


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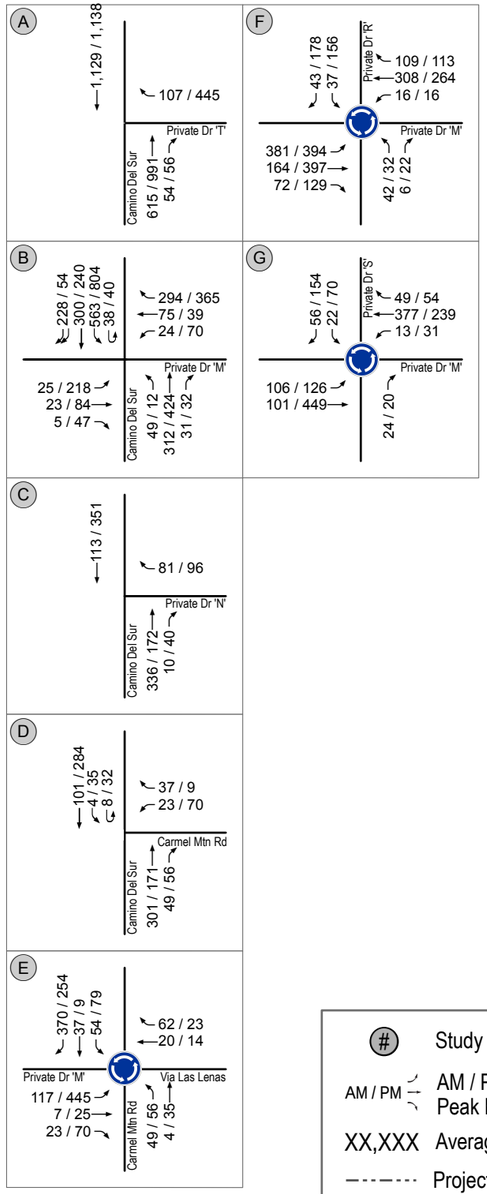
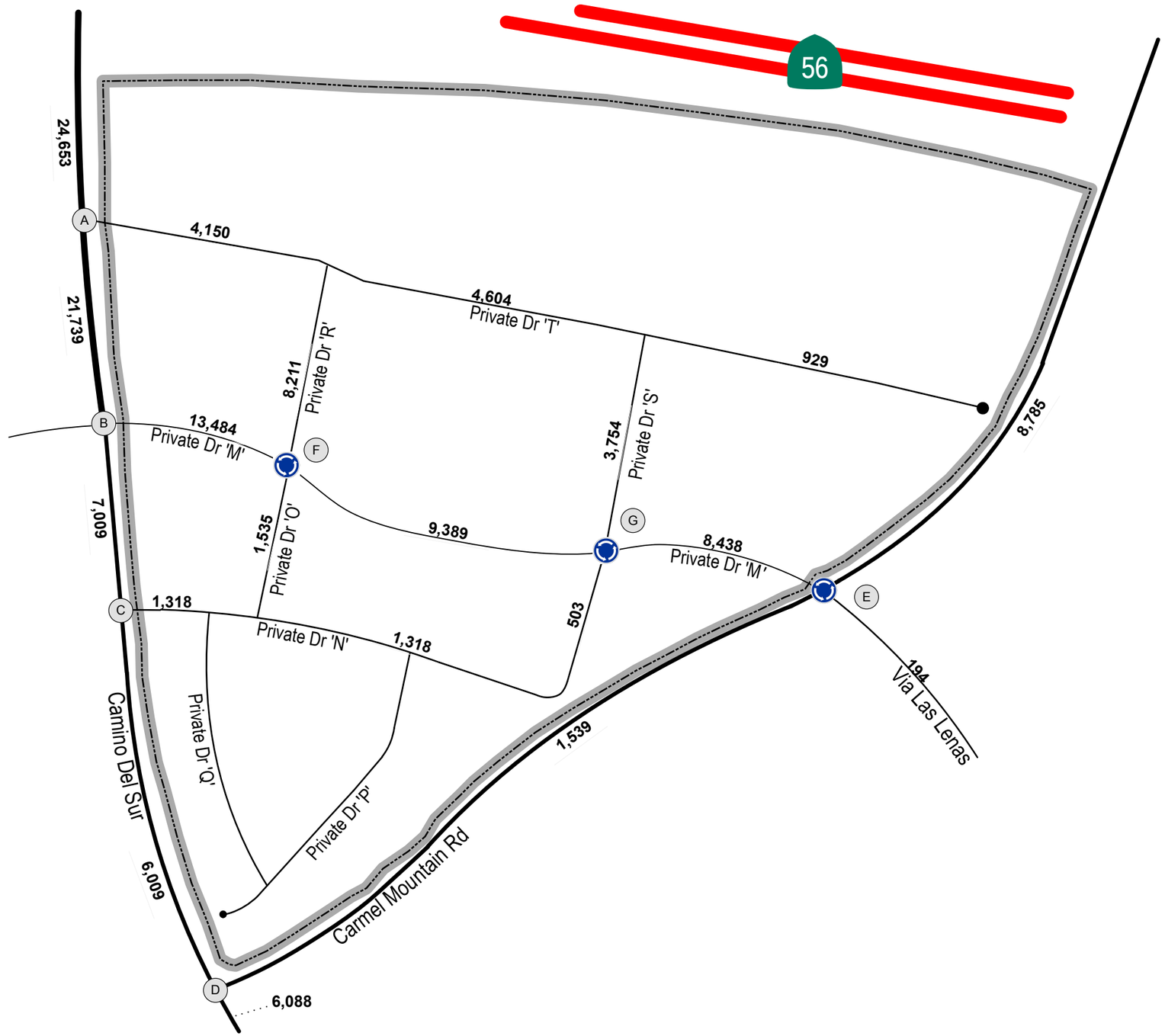
Figure 14-3

Existing + Project Traffic Volumes (Project Access)

MERGE 56





#	Study Intersections
AM / PM	AM / PM Intersection Peak Hour Volumes
XX,XXX	Average Daily Trips
	Project Boundary
	Proposed Roundabouts

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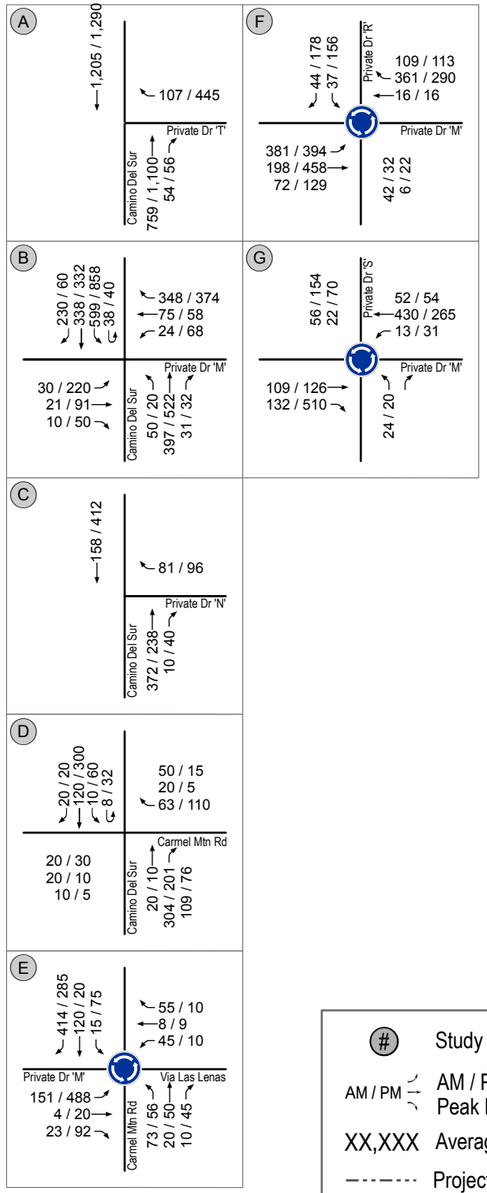
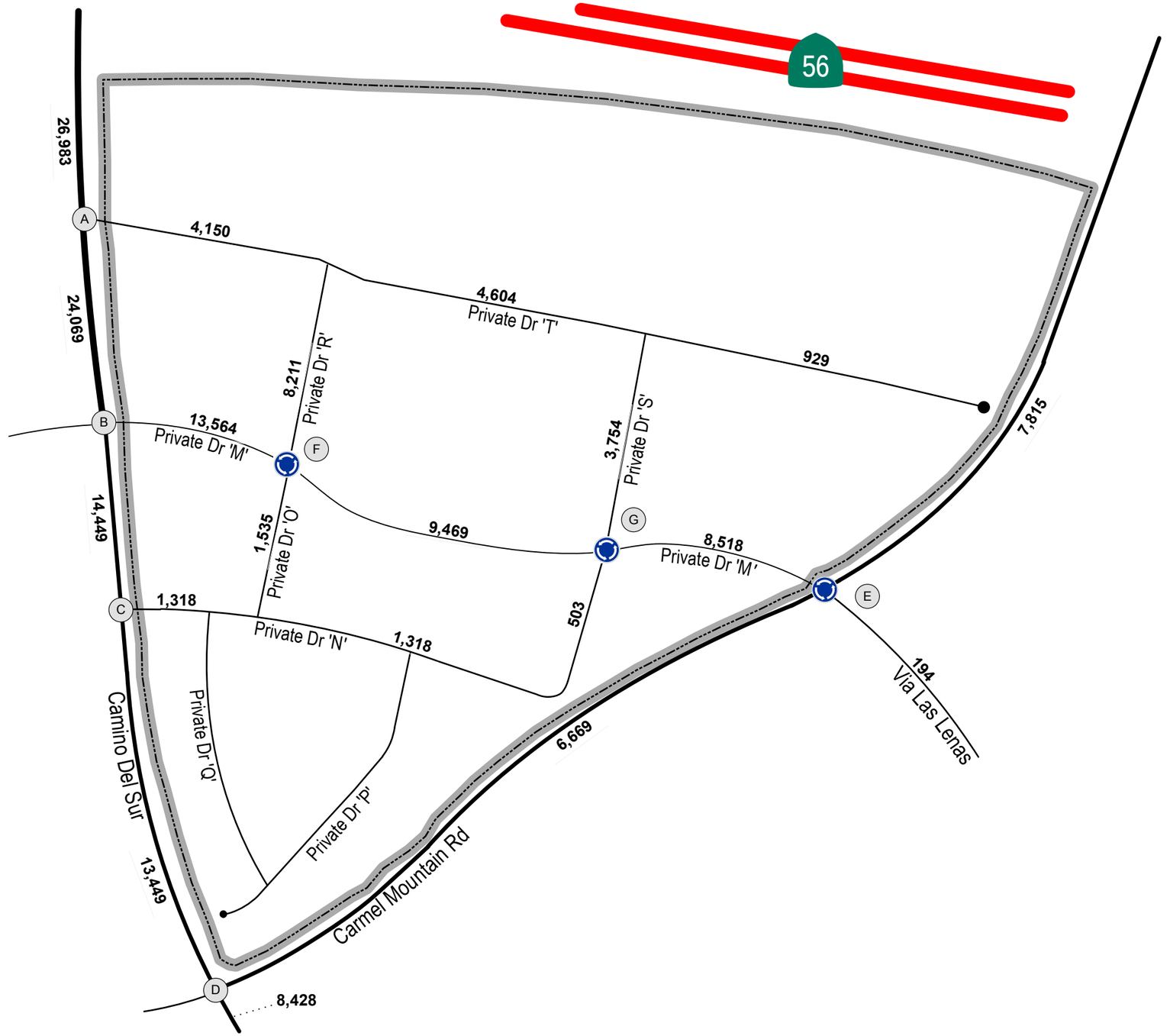
Figure 14-4

Existing + Cumulative Projects + Project Traffic Volumes (Project Access)

MERGE 56





#	Study Intersections
AM / PM	AM / PM Intersection Peak Hour Volumes
XX,XXX	Average Daily Trips
	Project Boundary
	Proposed Roundabouts

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Figure 14-5

Year 2035 With Project Traffic Volumes (Project Access)

MERGE 56

14.1.3 *Intersection Operations*

Table 14–2 summarizes the results of the Project Access intersection analysis. With the proposed network improvements to the Project access roads, LOS D or better operations are calculated under all "Plus Project" scenarios.

Appendix O contains the intersection analysis sheets for each of the "Plus Project" access analysis scenarios.

TABLE 14–2
ACCESS INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing + Project		Existing + Cumulative Projects + Project		Year 2035 With Project	
			Delay [a]	LOS [b]	Delay	LOS	Delay	LOS
A. Camino Del Sur/ Private Drive 'T'	MSSC [c]	AM	10.4	B	10.7	B	11.3	B
		PM	17.1	C	29.8	D	30.6	D
B. Camino Del Sur / Private Drive 'M'/ Kilroy Access	Signal	AM	17.5	B	21.5	C	22.6	C
		PM	18.7	B	36.8	D	42.2	D
C. Camino Del Sur / Private Drive 'N'	MSSC	AM	9.5	A	9.9	A	10.1	B
		PM	9.3	A	9.4	A	9.7	A
D. Camino Del Sur / Carmel Mountain Rd	Signal	AM	4.9	A	7.1	A	14.3	B
		PM	9.0	A	9.7	A	15.6	B
E. Carmel Mountain Rd/ Private Drive 'M'/ Via Las Lenas [d]	Roundabout	AM	—	—	—	—	—	—
		PM	—	—	—	—	—	—
F. Private Drive 'M'/ Westerly Roundabout [d]	Roundabout	AM	—	—	—	—	—	—
		PM	—	—	—	—	—	—
G. Private Drive 'M'/ Easterly Roundabout [d]	Roundabout	AM	—	—	—	—	—	—
		PM	—	—	—	—	—	—

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service
c. Minor Street Stop Controlled intersection. Minor street critical movements delay reported.
d. A separate roundabout analysis is provided in *Section 14.2*.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

14.2 Roundabout Assessment

The Year 2035 With Project traffic volumes were used to evaluate the operations of the proposed roundabouts along Private Drive 'M'. Using the *aaSIDRA INTERSECTION (Version 6.0.20.4660)* software, an analysis of the roundabout operations was conducted for the AM and PM peak hours. The results of the analysis provide delay (in seconds), LOS and queue outputs based upon the procedures found in Chapter 21 of the *2010 HCM*.

As shown on *Figure 14–3*, two eastbound approach lanes are proposed at Private Drive 'M'/ Westerly Roundabout. The original Project site design provided for one approach lane in the eastbound direction. The distance between Camino Del Sur and the westerly roundabout is proposed at approximately 300 feet. With the anticipated volume of 858 PM peak hour left-turns from southbound Camino Del Sur to eastbound Private Drive 'M', there was concern that excessive queues along this portion of Private Drive 'M' could flow back onto Camino Del Sur. An analysis of both the two lane and one lane configurations were conducted to recommend the appropriate lane configuration at this roundabout. ***Appendix P*** provides a detailed drawing of the roundabout configurations.

Table 14–3 summarizes the roundabout analysis for the Year 2035 With Project condition. As seen in *Table 14–3*, the one lane eastbound approach for the westerly roundabout would be deficient and result in LOS E operations with excessive queuing. It is therefore recommended that the Project construct this roundabout with two approach lanes in the eastbound direction.

Appendix O contains the intersection analysis sheets for each of the "Plus Project" access analysis scenarios.

A more detailed discussion on the roundabout lane geometry is discussed following *Table 14–3*.

TABLE 14–3
ROUNDABOUT OPERATIONS

Intersection	Control Type	Peak Hour	Year 2035 With Project				
			Delay [a]	LOS [b]	Private Drive 'M' Queue [c]		
					No. of Approach Lanes	Storage (ft)	Queue (ft)
E. Private Drive 'M' / Carmel Mountain Rd / Via Las Lenas	Roundabout/ Yield	AM	2.4	A	–	–	–
		PM	8.6	A	–	–	–
F. Private Drive 'M'/ Westerly Roundabout (Two Approach Lanes: 1 EBL, 1 Shared EBT/R)	Roundabout/ Yield	AM	6.5	A	1 – EBL 1 – Shared EBT/R	300 300	0 0
		PM	10.8	B	1 – EBL 1 – Shared EBT/R	300 300	63 157
Alternative 1 shared EB L/T/R Approach	*Roundabout/ Yield*	*AM*	*9.4*	*A*	*1 – Shared EBL/T/R*	*300*	*0*
		PM	*62.0*	*F*	*1 – Shared EBL/T/R*	*300*	*1,953*
G. Private Drive 'M'/ Middle Roundabout	Roundabout/ Yield	AM	8.5	A	1 – Shared WBL/T/R	200	86
		PM	11.2	B	1 – Shared WBL/T/R	200	48

Footnotes:
a. Average delay expressed in seconds per vehicle.
b. Level of Service
c. Queue reported is to adjacent external intersection.

General Notes:
1. Ft = Feet
2. EBT/R = Eastbound thru/right lane.
3. EBL = Eastbound left lane.

ROUNDABOUTS

DELAY/LOS THRESHOLDS

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 15.0	B
15.1 to 25.0	C
25.1 to 35.0	D
35.1 to 50.0	E
≥ 50.1	F

14.2.1 *Intersection #F. Private Drive 'M'/ Westerly Roundabout*

Two eastbound approach lanes at the westerly roundabout are needed to receive the dual southbound left-turn lanes from Camino Del Sur at noted above. The eastbound approach at the westerly roundabout should be configured with one left-turn lane and one shared thru/right-turn lane. This is recommended due to the high traffic volume expected to turn northerly towards the major parking structures. This will be the office workers in the morning and retail customers in the evening. This results in one functional circulating lane since the eastbound thru lane will be required to exit the roundabout and continue easterly on Private Drive 'M'. Additionally, the delays to enter the roundabout for eastbound traffic will be minimal since it only has to yield to southbound or westbound left-turning traffic, neither of which are expected to produce heavy volumes (See *Figure 14–4*). An eastbound bypass lane is not needed.

The westbound approach at the westerly roundabout needs to accommodate about half of the traffic of the eastbound approach. Therefore, a single approach lane will be sufficient. The parallel parking

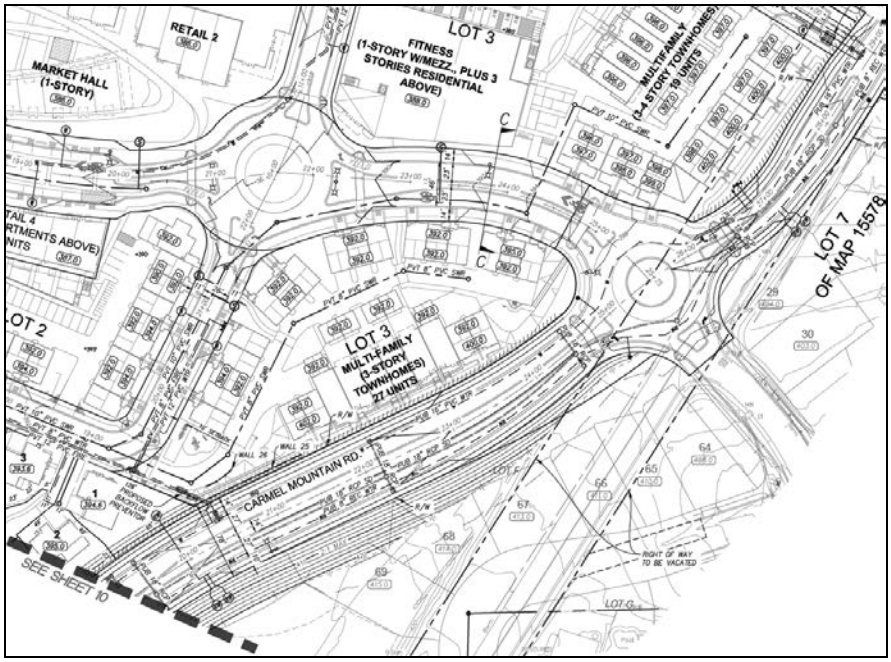
will make it easier for drivers to exit a parking stall and enter the "rolling queue" approaching the roundabout. The southbound approach will serve traffic primarily exiting the site, in all directions but northbound on Camino Del Sur, as no excessive queuing on Private Drive 'T' is anticipated. Parking will be prohibited on this north leg of the roundabout. Similarly, the northbound approach will serve traffic primarily exiting the site except for Camino Del Sur northbound. Northbound traffic on Camino Del Sur will have utilized the right-in/right-out driveway south of Private Drive 'M'. Also, parking will be prohibited on the south leg of the roundabout.

14.2.2 *Intersection #G. Private Drive 'M'/ Middle Roundabout*

The middle roundabout will have similar but simpler characteristics. It will have all single lane approaches. Parallel parking is provided on the west leg. The north leg will serve the mix of retail and residential uses located in the northeast of the site. The south leg will primarily serve the residential uses located south of Private Drive 'M'. The entering volumes are substantially less than at the westerly roundabout due to the westerly roundabouts proximity to the major parking structures.

14.2.3 *Intersection #E. Private Drive 'M'/ Carmel Mountain Road / Via Las Lenas (Easterly Roundabout)*

The easterly roundabout will have characteristics similar to the middle roundabout with all single lane approaches. There will be no parking on any approach and the nearby driveways for Unit 7 homes on Via Las Lenas will be located farther back from Carmel Mountain Road than as approved on the original Rhodes Crossing VTM. The entering volumes are similar to those at the middle roundabout, substantially less than at the westerly roundabout. The inset below shows the configuration of the roundabout taken from the most recently available Merge 56 tentative map. *Appendix P* also contains renderings of the roundabout.



Source: Latitude 33 Planning & Engineering, July 15, 2015

14.3 On-Site Circulation

Circulation within the Project site is provided by a network of north-south and east-west roadways. Additionally, pedestrian and bicycle linkages within the site have also been provided to connect the residential uses to the south with commercial uses to the north.

14.3.1 *Vehicular Circulation*

Private Drive 'M'

Primary vehicular access to the adjacent public street system is provided via Private Drive 'M'. Private Drive 'M' will connect the Project to Camino Del Sur to the west via a signalized intersection, and Carmel Mountain Road to the east via a roundabout. Within the site, two additional roundabouts along Private Drive 'M' (the westerly roundabout approximately 300 feet from the Camino Del Sur signalized intersection and the middle roundabout approximately 220 feet from the Carmel Mountain Road roundabout) will serve to efficiently direct traffic to/from the three parking structures located north of Private Drive 'M' and the single family and multifamily units located south of Private Drive 'M'.

Private Drive 'M' is designed with a curb-to-curb width ranging from 46 to 76 feet, provides non-contiguous sidewalks on both sides of the street, proposes intermittent striped bike lanes with sharrows spanning from the westerly roundabout to Carmel Mountain Road, and allows curbside parallel parking between the internal roundabouts.

Private Drive 'N'

Private Drive 'N' is an east-west drive that separates the multifamily residential to the north from the single family units to the south. Private Drive 'N' traverses nearly the entire breadth of the site from west to east, turning northward to become the south leg of the easterly roundabout. Private Drive 'N' provides day-to-day access to the public street system via an unsignalized right-in/right-out driveway to Camino Del Sur. Private Drive 'O' tees in to Private Drive 'N'.

Private Drive 'N' is designed with a curb-to-curb width ranging from 28 to 34 feet, provides non-contiguous sidewalks on both sides of the street, no bike lanes are proposed, and curbside parallel parking is permitted on one side of the roadway.

Private Drive 'O'

Private Drive 'O' runs north-south between Private Drive 'M' and Private Drive 'N'. Private Drive 'O' forms the south leg of the westerly roundabout.

Private Drive 'O' is designed with a curb-to-curb width of 28 feet, provides non-contiguous sidewalks on both sides of the street, no bike lanes are proposed, and curbside parallel parking is prohibited.

Private Drive 'T'

North of the parking garages, running west-east between Camino Del Sur and the townhomes located in the northeast corner of the site is a two-lane Private Drive 'T'. This road provides the site with right-in/right-out access at an unsignalized intersection on Camino Del Sur, and is intended to

provide relief to Private Drive 'M' and its intersection with Camino Del Sur by allowing outbound vehicles (presumably destined for SR 56 via Camino Del Sur) to exit the site separately. Project site residents and employees, as well as savvy local residents are expected to utilize this intersection to a high degree.

Private Drive 'T' is designed with a curb-to-curb width of 28 feet, provides non-contiguous sidewalks on both sides of the street, no bike lanes are proposed, and curbside parallel parking is prohibited.

Private Drives 'R' and 'S'

Running north-south between Private Drives 'M' and 'T' are two-lane Private Drives 'R' and 'S'. These roads serve as the north legs of the internal roundabouts and provide access to the structure parking and surface lots north of Private Drive 'M'.

Private Drives 'R' and 'S' are designed with a curb-to-curb width of 28 feet, provide non-contiguous sidewalks on both sides of the street, no bike lanes are proposed, and curbside parallel parking is prohibited.

Private Drives 'P' and 'Q'

Running north-south from Private Drive 'N', Private Drives 'P' and 'Q' serve as two-lane main access roads for the single-family homes. These drives connect into private alleys that are lined with garages for each of the residences. No access to Camino Del Sur or Carmel Mountain Road is available from Private Drives 'P' and 'Q'.

Private Drives 'P' and 'Q' are designed with a curb-to-curb width of 32 feet, provide non-contiguous sidewalks on both sides of the street, no bike lanes are proposed, and curbside parallel parking is permitted on one side of each roadway.

14.3.2 *Other Transportation Modes*

Pedestrians

The Project design would facilitate movement to off-site locales to the east and west via walkways, sidewalks, road improvements and trail connections. Sidewalks would be constructed parallel to the Camino Del Sur and Carmel Mountain Road extensions to facilitate linkages between the Park Village area, the Project site, and areas to the north in Rancho Peñasquitos, as described above. Access to existing and proposed trails and open space areas would be facilitated by direct connections placed in the southern and northern parkways running parallel to Camino Del Sur. The northerly trail connection from Deer Canyon would run through the western fill slope just south of Torrey Santa Fe Road where it would then transition into a five-foot decomposed granite (DG) trail running parallel to the sidewalk along the west side of Camino Del Sur. At the Carmel Mountain Road intersection, trail users would cross at the pedestrian crosswalk to connect to the continued five-foot DG trail running parallel to the sidewalk on the east side of Camino Del Sur up to its connection to Darkwood Canyon. After the connection with Darkwood Canyon, a two-foot DG trail is proposed to run the entirety of Camino Del Sur up to its terminus just north of Dormouse Road. The trails would provide a link to the approved trails in the Del Mar Mesa Preserve to the west and

Darkwood Canyon to the east that would be separated by construction of Camino Del Sur. ***Figure 14–6*** shows the proposed trail connections.

Pedestrian facilities will also be provided on-site to encourage non-vehicular trips between the residential uses to the south and the commercial uses to the north. The internal streets and drives will all have non-contiguous sidewalks, and marked pedestrian crossings will be provided at all three roundabouts on Private Drive 'M'. Several north-south pedestrian/bicycle linkages will be provided between Private Drive 'M' and Private Drive 'N', in addition to sidewalks on Private Drive 'O'. Additional pedestrian/bicycle linkages will be provided throughout the commercial area north of Private Drive 'M', including connections to the retail uses north of the parking garages along Private Drive 'T'.

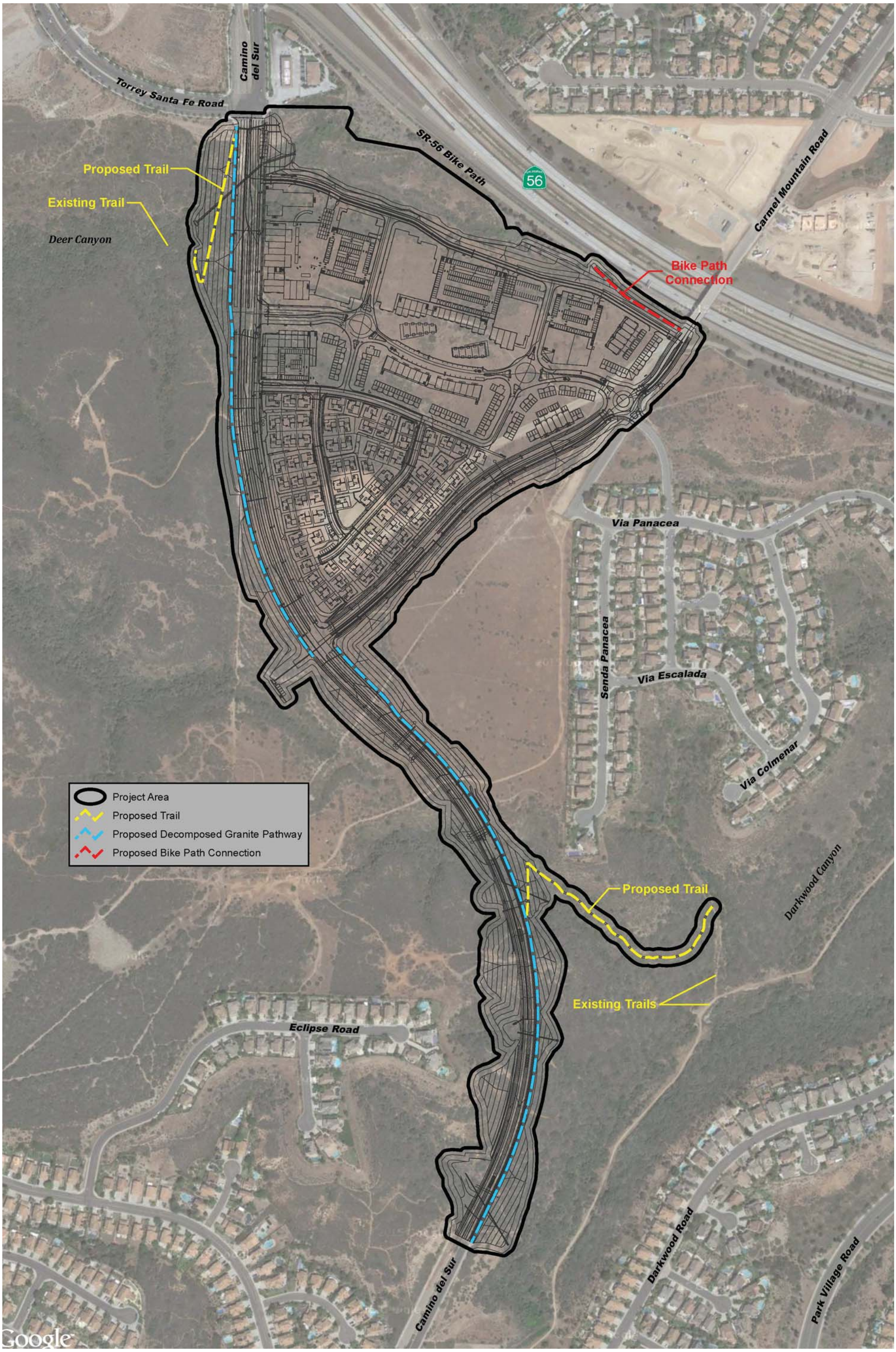
For the roundabouts, pedestrian crossings will be located one-car-length preceding the yield line. Parking, street lighting and landscaping should be configured to provide adequate sight distance of pedestrians on the sidewalks and at the crosswalk.

Bicycles

Class II bike lanes will be provided on Private Drive 'M' from Camino Del Sur to the westerly roundabout and from the middle roundabout to the easterly roundabout at Carmel Mountain Road. Class III bike routes (sharrow lanes) will be provided between the roundabouts to reduce the pavement cross-section width and increase traffic calming in front the commercial market uses.

Transit

The site is currently undeveloped, and there is no existing roadway infrastructure; therefore, there is currently no transit service in the vicinity. Upon development of all the Project improvements, the local circulation system will be interconnected between the Torrey Highlands community to the north, the Rancho Peñasquitos community to the south, and the Twin Trails neighborhood to the north and east. With this improved network connectivity, it is anticipated that transit routes could be realigned to utilize either or both of the Camino Del Sur and Carmel Mountain Road corridors. The Project is offering a Transportation Demand Management (TDM) plan which includes coordination with the Metropolitan Transit System (MTS) to investigate how to bring bus service to the development via the proposed extension of Camino Del Sur. The Project is proposing to construct bus pads on both of these roadways adjacent to the site to accommodate new potential routes.



Source: Alden Environmental 2014; Google

Figure 14-6

Proposed Trail Connections

MERGE 56 DEVELOPMENT PROJECT

15.0 NETWORK DEVELOPMENT AND ADVANTAGES TO COMMUNITY CIRCULATION

The Project will provide a key circulation element connection of Camino Del Sur and Carmel Mountain Road, providing a vital link in the Rancho Peñasquitos street network. These roadways provide a more direct route for trips destined to/from SR 56 from Carmel Valley Road, Park Village Road, and Carmel Mountain Road, reducing the number of trips along Park Village Road, Black Mountain Road, Sundance Avenue and Carmel Mountain Road. ***Figure 15–1*** shows the Community Planning Area boundaries.

The addition of increased network and public infrastructure by the Project will result in advantages to the community in addition to serving the Project's own traffic. The connection of these aforementioned roadways will result in more direct access to SR 56 at the Camino Del Sur interchange. As such, it would be expected that drivers in the area would alter their current travel patterns within the study area to take advantage of the improved network. The following is a discussion of how traffic and circulation in the study area are anticipated to be affected by the roadways that will be constructed as part of the Proposed Project.

15.1 Private Drive 'M'

One issue in this area is the fact that there are no connections between Torrey Highlands and Rancho Peñasquitos between Carmel Valley Road and SR 56. This is a distance of about two miles, which must be traveled as an out-of-direction trip by local students and residents traveling from one community to the other. This lack of direct access between communities was intentional to avoid cut-through traffic problems on future residential fronting streets. The Project will provide a necessary connection between these communities by extending Camino Del Sur and Carmel Mountain Road to their intersection.

The Project site is bounded by SR 56 to the north, Camino Del Sur to the west and Carmel Mountain Road to the east, creating a triangle. An internal east-west lateral street (Private Drive 'M') will connect Camino Del Sur and Carmel Mountain Road, and provide a shorter route across the site than traveling on the public roads around the south end of the triangle. This would create the opportunity for community "cut-through" trips across the site on Private Drive 'M', which would be undesirable from an internal vehicular and pedestrian circulation perspective. LLG has estimated that within the geographic area south of Adobe Bluffs and west of Twin Trails Drive, there are about 750 homes for whom the fastest route to SR 56 West, Westview High School, and general land uses in the area will be to use Carmel Mountain Road, Private Drive 'M' and Camino Del Sur. This is calculated to be approximately 3,000 ADT of Rancho Peñasquitos traffic cutting through Merge 56. This rerouting of traffic is also discussed earlier in this report in *Section 7.2* and briefly summarized below in *Section 15.2* and was included in the "Plus Project" analyses. ***Figure 15–2*** shows the potential cut-through area and route.

To strike a balance between accommodating non-Project related community trips and providing visibility for the retail uses, roundabouts in conjunction with other traffic calming measures are provided as the solution. The roundabouts have four legs, with the northern legs serving the parking

structures and access to Private Drive 'T' and the southern legs primarily serving the residential uses located south of Private Drive 'M'. Parallel parking and bicycle accommodation will also provide traffic calming. One challenge was locating the roundabouts far enough from Camino Del Sur and Carmel Mountain Road to provide adequate stacking approaching the Circulation Element roadways. The current design accomplishes this task, allowing for high capacity intersections with Camino Del Sur and Carmel Mountain Road. Private Drive 'M' will be supported by Private Drive 'T' and Private Drive 'N' that will be restricted to right-turns only at Camino Del Sur. In addition to Private Drive 'T' serving as an alternative outlet for the parking structures (as opposed to Private Drive 'M'), this road is also expected to be used by delivery trucks. Private Drive 'N' will alleviate congestion that could occur from residential trips that would otherwise be combined with office and/or retail trips along Private Drive 'M'.

Private Drive 'M'' will be the Project's "Main Street". The most active areas of the Project will be along Private Drive 'M' west of Private Drive 'S' and 'N', while more of the inactive elements (parking structures and back of house) will be along Private Drive 'T'.

The internal circulation on these roadways is discussed in further detail in *Section 14.0* provided earlier in this report.

15.2 Sundance Avenue/Carmel Mountain Road

The community has expressed concerns with speeding and cut-through traffic on Sundance Avenue since the homes off of Carmel Mountain Road south of SR 56 were built. To address the issue, four stop signs were installed on Sundance Avenue between Carmel Mountain Road and Twin Trails Drive. This solution appears to be effective, as field reviews indicate that it is generally faster to use Carmel Mountain Road and Twin Trails Drive instead of Sundance Avenue to travel between the east and west sides of the Twin Trails neighborhood (see ***Figure 15–3).***

It can be anticipated that this neighborhood will be concerned about local traffic (e.g. from Black Mountain Road) destined to/from the Project using Sundance Avenue. Based on the stop-signs and travel time described above, it is expected that any increase in traffic on Sundance Avenue will be from these residents themselves. It is expected that they will be more likely to cut-through the Project using Private Drive 'M' than Project trips will cut through on Sundance Avenue.

In addition, the trips shown to use Carmel Mountain Road over Sundance Avenue would be expected to divert to the west to Private Drive 'M' to reach the Camino Del Sur interchange, instead of the Black Mountain Road interchange. Of the 1,155 homes along the western corridor of Carmel Mountain Road north of SR 56 (bounded by SR 56 to the south, the riparian preserve west of Russet Leaf Lane to the west, the riparian preserve north of Ellingham Street to the north, and Sparren Avenue to the east; see *Figure 15–2*), it was assumed that approximately 35% of the trips oriented to/from SR 56 west of Black Mountain Road via the Black Mountain Road/SR 56 interchange would reroute to the Camino Del Sur interchange. The existing volume on Carmel Mountain Road from Sundance Avenue to Via Las Lenas is approximately 1,200 ADT. The KB Homes cumulative project contributes roughly an additional 1,000 ADT to this segment and the forecast Year 2035

traffic volumes amounts to approximately 6,600 ADT. Of the net increase of 4,400 daily trips to this segment, it was assumed approximately 3,000 ADT would be rerouted trips due to the connection of Carmel Mountain Road to Camino Del Sur, as discussed in *Section 15.1*.

15.3 Park Village Road

The public has raised the issue regarding the use of Park Village Road as an alternative route to Black Mountain Road and SR 56 once Camino Del Sur is extended southward to Park Village Road in discussions at community planning group meetings. This is due to existing peak hour congestion on both roadways, and the SR 56/ Black Mountain Road interchange. The southward extension of Camino Del Sur will relieve congestion at the SR 56/ Black Mountain Road interchange and reduce the demand on alternate routes, such as Park Village Road.

With the extension of Camino Del Sur, Park Village Road traffic currently using Black Mountain Road to SR 56 is expected to reroute to Camino Del Sur. Based upon a review of the forecast Year 2035 traffic volumes, the future volume on the new section of Camino Del Sur north of Park Village Road is approximately 8,400 ADT. Approximately 1,600 of those trips are Project-related ADT while 500 ADT represent near-term cumulative projects. The additional 5,300 ADT would be attributed to increases in traffic from other future development projects as well as the rerouting of Park Village Road trips oriented to/from SR 56 west currently using Black Mountain Road. It was therefore assumed that approximately 25% of the existing Park Village Road traffic (about 50% of the total traffic on Camino Del Sur north of Park Village), or 4,000 ADT, would be rerouted trips due to the connection of Park Village Road to Camino Del Sur. *Section 7.2* earlier in this report discusses the rerouting in further detail.

This will be an improvement over the current situation, as part of the congestion at the SR 56/ Black Mountain Road interchange is due to Park Village residents accessing Westview High School or traveling west on SR 56. The route from Park Village Road to SR 56 via Black Mountain Road is about 0.8 miles further to the same location than to SR 56 via the future Camino Del Sur connection. (See ***Figure 15–4***).

15.4 Dormouse Road

The public has also raised a concern of the possibility that increased traffic due to the extension of Camino Del Sur may use Dormouse Road as a shortcut to the west end of Park Village Road, rather than utilizing the Camino Del Sur/Park Village Road intersection (see ***Figure 15–5)***. While such a cut through is possible, it is 0.3 miles further than traveling directly from Camino Del Sur to Park Village Road (both Circulation Element roadways), making it an undesirable short-cut. This route's desirability is further diminished because of the steep hills, residential land uses and speed limits, and "friction" from parked cars. Most drivers would not choose this route to avoid just one traffic signal. For these reasons, cut-through traffic along this route is expected to be non-existent.

As part of the Camino Del Sur Extension SDP No. 41-0248, a traffic signal at Dormouse Road was required in the Conditions of Approval based on a motion passed by the Rancho Peñasquitos Planning Board to recommend it as a traffic calming measure given the intersection's close

proximity to Park Village Elementary School. The August 3, 2005 Rancho Peñasquitos Planning Board meeting minutes are provided as Attachment 9 to the Camino Del Sur Extension Report to the Planning Commission No. PC-06-029. As a result of the SDP's approval, the traffic signal for this intersection was included in *Rancho Peñasquitos PFFP Project No. T-4B* as part of the Camino Del Sur Extension improvements. The Project proposes to install the signal as a Project design feature in accordance with previous approvals. In order to determine if a signal meets City criteria for the installation of a new traffic signal, an existing and long-term analysis was conducted at the Camino Del Sur/ Dormouse Road unsignalized intersection.

15.4.1 *Peak Hour Intersection Analysis*

Dormouse Road serves as one of three access points to the residential area in the northwest quadrant of Camino Del Sur and Park Village Road. The intersection of Camino Del Sur at Dormouse Road is also approximately 350 feet north of one of two driveways accessing Park Village Elementary School. The school driveway on Camino Del Sur is restricted to right-in/right-out only movements. Therefore, as observed in the existing traffic counts, a substantial amount of trips destined to the south toward Park Village Road must first travel north on Camino Del Sur and complete a northbound to southbound U-turn at Dormouse Road. Existing traffic data was collected on Monday and Tuesday, June 8th and 9th, 2015 while school was in session for the 8:00 AM-9:00 AM and 3:00 PM-4:00 PM peak school periods. According to the data collected during the school peaks, 256 AM and 160 PM peak hour U-turns were completed at this intersection. In addition, 47 AM/ 127 PM pedestrian crossed Camino Del Sur. The vehicular and pedestrian data collected for Camino Del Sur at Dormouse Road was inputted into the *Synchro* intersection analysis software to compute the Existing and Year 2035 With Project LOS and delay. Existing traffic count data is included in *Appendix B*.

Existing

Year 2035 With Project

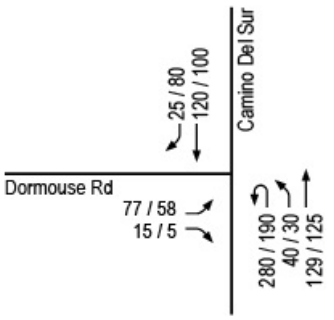


Table 15–1 shows that acceptable LOS B operations were calculated at the Camino Del Sur/ Dormouse Road unsignalized intersection under Existing conditions. Under Year 2035 With Project conditions, the unsignalized intersection degrades to unacceptable levels due to the increase in northbound/southbound flow which causes insufficient gaps in through traffic for drivers to complete U-turn maneuvers. The improvements needed in the Year 2035 condition to improve operations to acceptable levels would be to install a traffic signal. ***Appendix Q*** provides the intersection analysis worksheets.

TABLE 15–1
CAMINO DEL SUR / DORMOUSE ROAD
INTERSECTION OPERATIONS

Intersection	Traffic Control	Scenario	Peak Hour			
			AM		PM	
			Delay [a]	LOS [b]	Delay	LOS
Camino Del Sur/ Dormouse Rd	MSSC [c]	Existing	14.4	B	14.5	B
		Year 2035 With Project	48.7	E	52.7	F
	Signal	Year 2035 With Project	29.4	C	20.2	C

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. Minor street stop-controlled intersection. Minor street delay reported.

15.4.2 *Signal Warrant Analysis*

Although the capacity analysis shows poor LOS at this intersection, a traffic signal warrant analysis was also conducted to determine if this intersection meets the industry standard warrants. As outlined in Chapter 4C, "Traffic Control Signal Needs Studies," of the *2012 California Manual on Uniform Traffic Control Devices* (California MUTCD), the peak hour warrant (Warrant 3) was analyzed for the subject intersection to determine if a traffic signal would be warranted under the Year 2035 With Project condition.

Table 15–2 below illustrates the two categories. Category A requires three (3) conditions to be met for the same one (1) hour of an average day: 1) minor street delay exceeding four (4) vehicles hours, 2) minor street volume exceeds 100 vehicles per hour, and 3) the total entering volume at the intersection exceeds 650 vehicles. Category B plots the AM and PM entering volumes on a linear graphic (Figure 4C-3 of the MUTCD) to determine if the volumes exceed the allowable thresholds. For the signal warrant to be met at this location, either Category A or B must be satisfied.

Appendix Q also contains signal warrant excerpts from the MUTCD and the complete details of the warrant analysis including Figure 4C-3.

As shown in *Table 15–2*, both Category A and B are not satisfied. Therefore, according to Warrant 3, a traffic signal at the intersection of Camino Del Sur at Dormouse Road is not warranted.

TABLE 15–2
WARRANT 3: PEAK HOUR – EXISTING

Warrant 3 – Peak Hour	Category A *or* Category B Satisfied *		**Yes**		**No**	✓
Category A (All Parts 1, 2, and 3 below must be satisfied)	Satisfied *		**Yes**		**No**	✓
1. The total delay experienced for traffic on one minor-street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND			**Yes**		**No**	✓
2. The volume on the same-minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND			**Yes**		**No**	✓
3. The entering volume serviced during the hour equals or exceeds 800 vph for the intersections with four or more approaches or 650 vehicles per hour for intersections with three approaches.			**Yes**	✓	**No**	
Category B	Satisfied *		**Yes**		**No**	✓

Approach Lanes	**One**	**Two**	**Warrant Volume**	**AM**	**PM**
Both Approaches -Major Street	X		See Figure 4C-3 in *Appendix Q*	594	525
Highest Approach -Minor Street	X		See Figure 4C-3 in *Appendix Q*	92	63

The plotted points fall below the applicable curve on Figure 4C-4.	**Yes**		**No**	✓

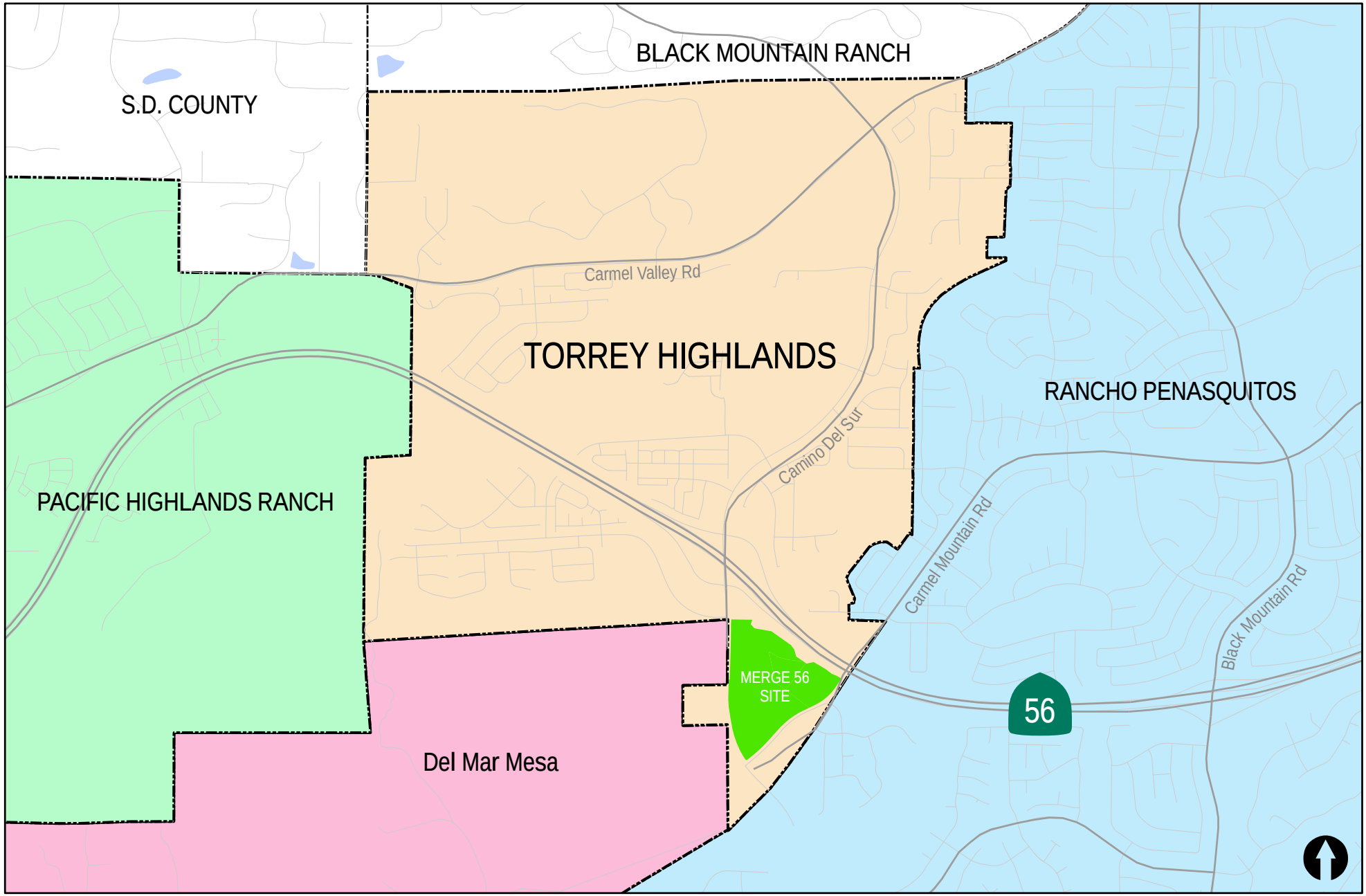
Other Considerations

There are a total of nine (9) signal warrants in the MUTCD. Warrant 3, Peak Hour only shows two hours of day for which traffic would meet signal warrants. There are at least eight (8) hours in a day where vehicular traffic would be constantly traveling on the roadway. Thus, conducting Warrant 1, Eight-Hour Vehicular Volume and Warrant 3, Four-Hour Vehicular Volume would provide a more detailed level of analysis as to whether a signal should be installed at this location. The AM major street volume (594) is just under the allowable threshold of 650 vehicles and PM minor street volume (92) is also under the allowable threshold of 150 vehicles during the peak periods for traffic in the area. This would indicate that volumes throughout the other six (6) hours of the day would most likely be lower than these peak volumes and therefore, may not meet the four- and eight-hour warrants. There are also pedestrian and school crossing warrants identified in the MUTCD, though even with 47 AM and 127 PM peak hour pedestrian crossings at Camino Del Sur the volumes do not exceed the thresholds set in Figure 4C-7 of the MUTCD. (See *Appendix Q*).

It should be noted that an intersection not meeting MUTCD warrants should not be the only decision making tool. Prior to the decision to recommend a traffic signal at this location during the Camino Del Sur Extension approval process, the Rancho Peñasquitos Planning Board considered the

implementation of other remedial measures such as warning signs and flashing beacons, school speed zones, and school crossing guards. Even though the intersection of Camino Del Sur at Dormouse Road did not meet "engineering warrants", the intersection's close proximity to Park Village Elementary School ultimately resulted in the recommendation of a traffic signal. Pedestrian access to this school, the existing and potential pattern of U-turns needed to be made at this intersection, combined with the downhill grade on southbound Camino Del Sur would all be benefited by a traffic signal.

It is therefore recommended that the Project install a traffic signal at the Dormouse Road intersection with Camino Del Sur consistent with *Rancho Peñasquitos PFFP Project No. T-4B,* to the satisfaction of the City Engineer.



LINSCOTT LAW & GREENSPAN engineers

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Figure 15-1

Community Planning Areas

MERGE 56

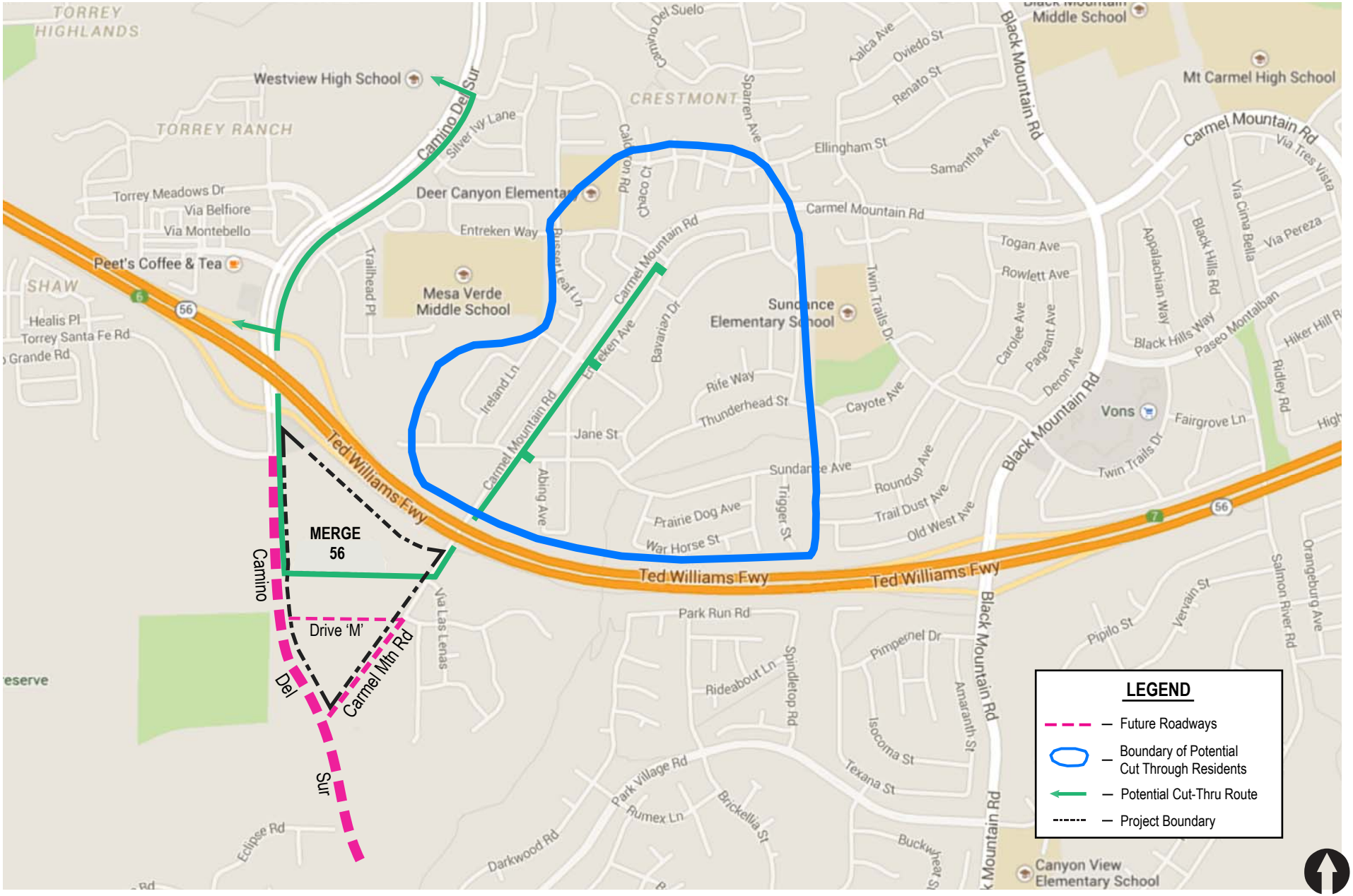

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Figure 15-2

Potential Cut-Thru

MERGE 56

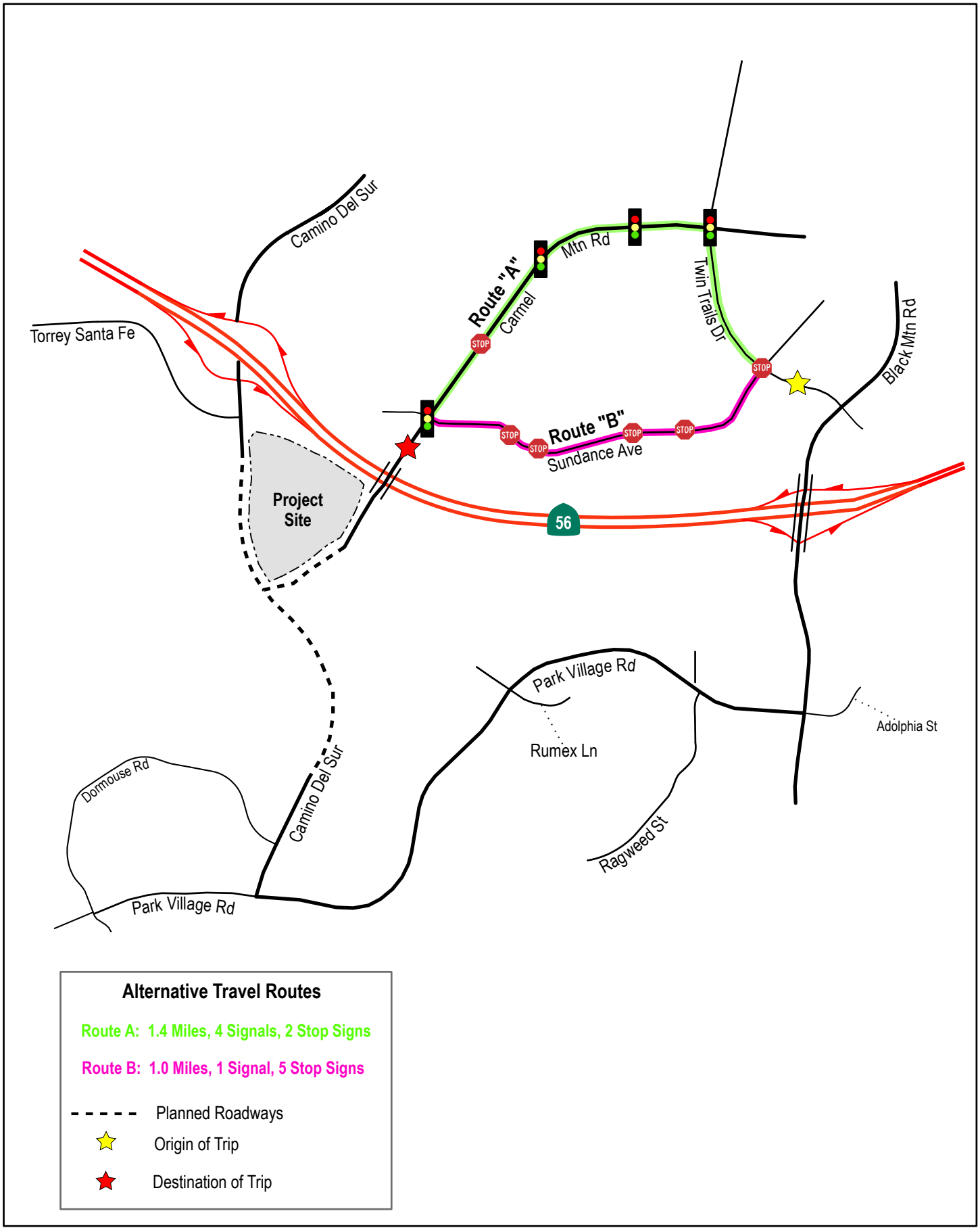

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Figure 15-3

Sundance Avenue Travel Route

MERGE 56

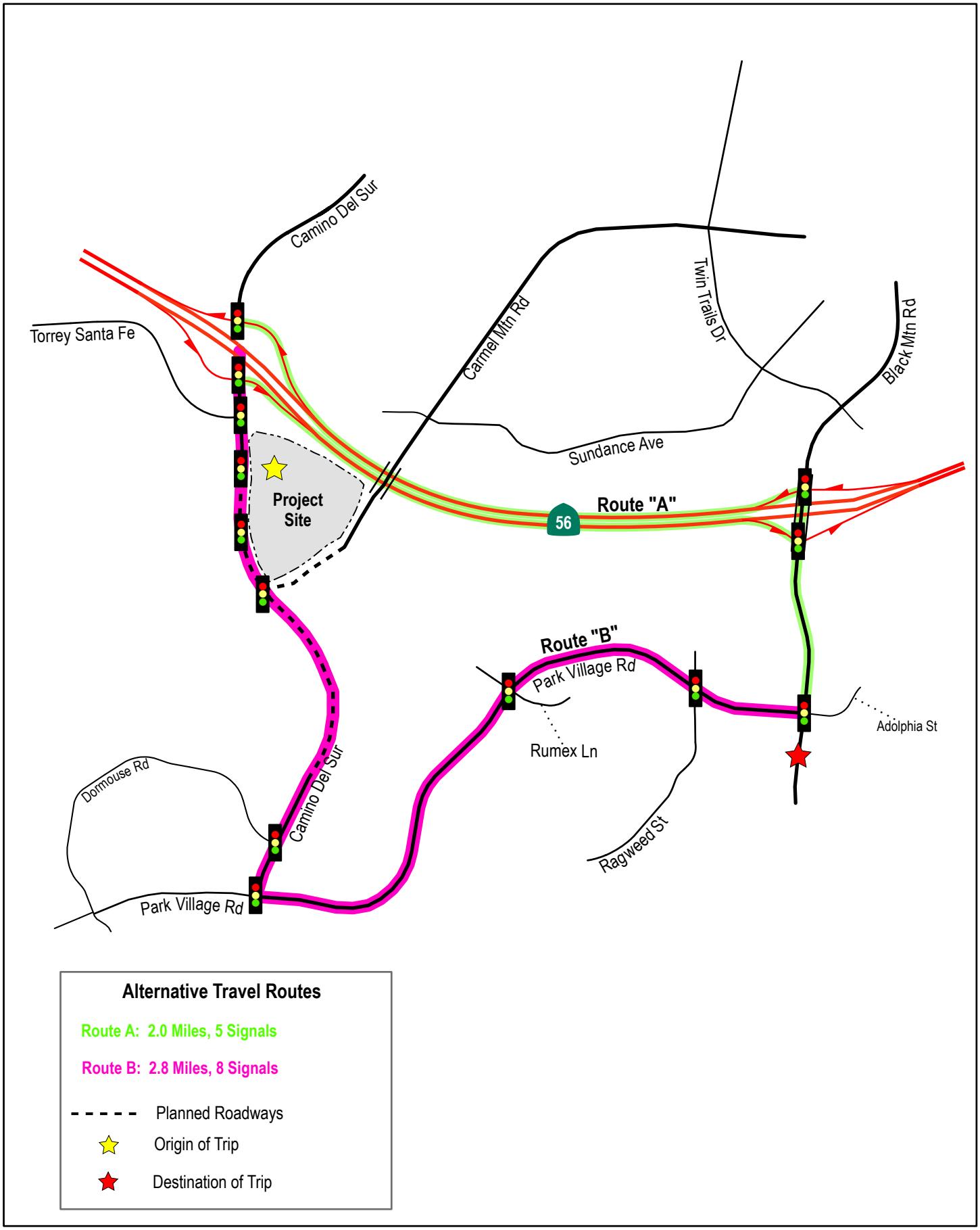

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Figure 15-4

Park Village Road Travel Route

MERGE 56

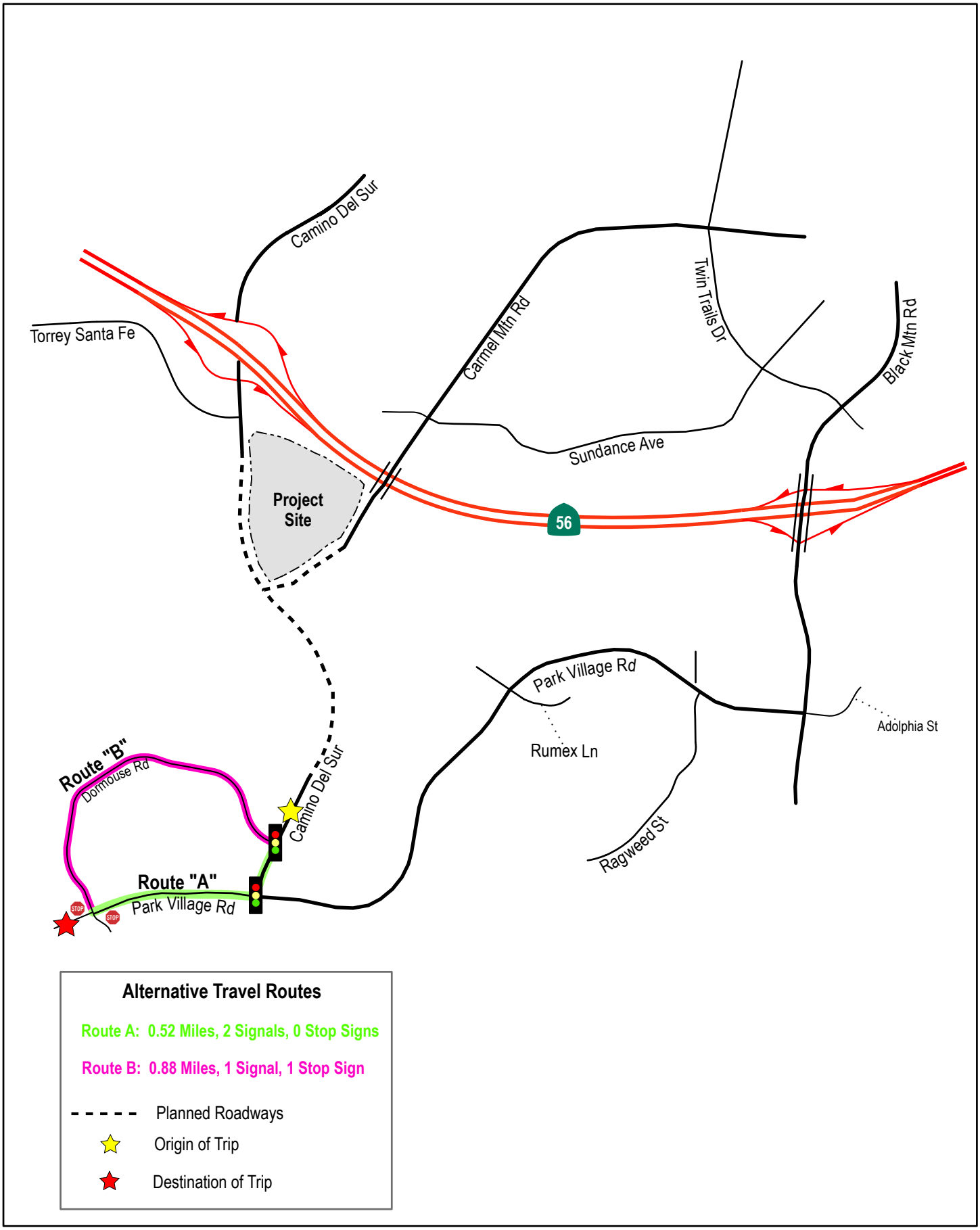

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Figure 15-5

Dormouse Road Travel Route

MERGE 56

16.0 PARKING SUMMARY

16.1 Commercial Area

The commercial area is primarily bound by the property line to the north, Camino Del Sur to the west, Private Drive 'M' to the south and Carmel Mountain Road to the east. Within the commercial area are the retail/commercial land uses, office uses and affordable housing units. There is also an office building and some retail commercial located south of Private Drive 'M'.

The approximately 238,450 SF of total retail/commercial uses (cinema, grocery, hotel, market hall, and retail) will require 671 parking spaces, while the proposed 241,128 SF of office uses will require 863 parking spaces. The 47 units of affordable housing will require 63 parking spaces. Collectively, these uses will result in a total parking requirement of 1,535spaces.

Parking supply in the commercial area will be provided through a combination of surface lots and parking structures. North of Private Drive 'M', three parking structures ("West", "Central" and "East") will provide 597 spaces, 644 spaces, and 209 spaces, respectively. Additionally, a parking structure adjacent to the southwestern office location will hold 155 spaces. Surrounding these structures are several surface parking areas totaling 78 spaces. In total, 1,683 parking spaces will be provided for the commercial area, providing a surplus of 85 spaces. The Project also proposes to provide all required accessible, carpool/ZEV, loading and motorcycle spaces. Long-term and short-term bicycle parking is also provided.

16.2 Residential Area

The main residential area is bound by the Private Drive 'M' to the north, and Camino Del Sur and Carmel Mountain Road to the southwest/southeast, respectively. Nineteen townhomes are proposed north of Private Drive 'M' adjacent to Carmel Mountain Road, and the 47 affordable units are located above the junior anchor building just west of the townhomes.

A total of eighty-four (84) single family residential units are proposed in the residential area and would require a minimum of 202 spaces. The Project will provide 168 garage spaces, 11 standard spaces, 52 parallel spaces and 2 disabled spaces for a total of 233 spaces. Additionally, 87 townhomes (3 bedrooms) and 24 flats (2 bedrooms) are proposed. These require a minimum of 293 spaces including 49 common area spaces. A total of 300 spaces are proposed, reserving 50 for visitors. The spaces are located as follows: 174 private garage spaces, 54 on-site spaces, 25 on-street spaces, and 47 spaces in Parking Structures 2 & 3. No tandem parking is proposed.

TABLE 16–1
MULTI-FAMILY RESIDENTIAL PARKING SUMMARY

Unit Type	No. Units	Minimum Required Ratio (spaces/du)	Minimum Required Parking (spaces/du)	Proposed Ratio (spaces/du)	Proposed Parking (spaces/du)
Vehicular Parking					
1. Flat Apartments (2 bedrooms)	24	2	48	2.25	54
2. Townhomes (3 bedrooms)	87	2.25	196	2.25	196
Subtotal	*111*	–	*244*	–	*250*
Common Area Parking		20%	49	–	50
Total Vehicular Spaces	**111**	–	**293**	–	**300**
Parking Locations					
Parking in Private Garages					174
On-Site Residents					54
On-Street (Private Drive N) - Residents					25
Shared in Parking Structure 2, 3 [a]					47
Total					***300***
Other Parking					
Bicycle (in private garages)		0.6	66.6	0.8	89
Motorcycle		0.1	11.1	0.1	11 (on site)

Source: Safdie Rabines Architects June 2015

Footnotes:

a. Visitor parking provided in PS 2 is located within approximately 300 feet of the flat apartments and approximately 600 feet of the 19 multi-family townhomes in the northeast corner of the Project site. Visitor parking in PS 3 is located adjacent to the 19 multi-family townhomes in the northeast corner of the Project site.

General Notes:

1. DU = Dwelling Units

17.0 TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) plans are comprised of features, practices and incentives to encourage employees and visitors to use alternate forms of transportation other than single occupancy vehicles. The goal of these plans is to reduce and/or remove vehicle trips out of the peak hours, thereby relieving congestion. For some projects, TDM plans are provided as mitigation measures to reduce significant Project traffic impacts, and as such must meet specific traffic reduction goals. The Merge 56 Project does not have significant impacts to be mitigated by a TDM plan; rather, the Project is offering the TDM plan as a benefit to both the future tenants and the community. TDM features such as bicycle facilities (racks, lockers, etc.) can encourage retail patrons to use bicycles although retail employees and office workers have the most potential to utilize the incentives provided by a TDM plan.

The Merge 56 Project will generally construct approximately 226,600 SF of retail uses along with about 242,700 SF of office uses. It will also complete substantial network improvements that will link the Rancho Penasquitos and Torrey Highlands communities, offering the possibility of new and expanded transit service in the area. The Project's TDM program will include the following measures, and will be finalized prior to the approval of the Project:

1. The Project will coordinate with the Metropolitan Transit System (MTS) to determine how and when routes should be implemented to serve the area.
2. The Project will encourage office and retail tenants to offer partially subsidized monthly passes for employees.
3. Transportation information will be displayed in common areas accessible to retail and office employees in each building. Transportation Information Displays should include, at a minimum, the following materials:
    - Ridesharing promotional material
    - Bicycle route and parking including maps and bicycle safety information
    - Materials publicizing internet and telephone numbers for referrals on transportation information
    - Promotional materials supplied by NCTD, MTS, and/or other publicly supported transportation organizations
    - A listing of facilities at the site for carpoolers/vanpoolers, transit riders, bicyclist and pedestrians, including information on the availability of preferential carpool/vanpool parking spaces and the methods for obtaining these spaces
    - Information on "Guaranteed ride home" programs like those provided by SANDAG's iCommute to ensure that employees that share rides to work are provided with a ride to their home or location near their residence in the event that an emergency occurs during the work day.
4. Carpool/vanpool parking spaces will be provided in preferentially located areas (closest to building entrances) for use by qualified employees. These spaces will be signed and striped "Car/Vanpool Parking Only". Information about the availability of and the means

of accessing the car/vanpool parking spaces will be posted on Transportation Information Displays located in retail back-offices, common areas or on intranets, as appropriate.

5. Retail and office employees will be offered the opportunity to register for commuter ridematching provided through publicly sponsored services (e.g., SANDAG sponsored "iCommute Ridetracker")
6. Biannual events will be held to promote use of alternative transportation.
7. Bicycle racks, lockers and showers will be provided for office and/or retail employee use.
8. Employers will be encouraged to provide flexible work schedules to stagger arrivals and departures.
9. An employee commute travel survey will be conducted within six months of occupancy to help evaluate the efficacy of the TDM plan as proposed, and to inform/validate any changes that may be proposed or needed. A copy of the results of this survey will be provided to the City Development Services Department.

18.0 SUMMARY OF PROJECT DESIGN FEATURES, SIGNIFICANT IMPACTS & MITIGATION MEASURES

18.1 Project Design Features

As part of the proposed Project, the extensions of Camino Del Sur and Carmel Mountain Road are required to be constructed consistent with the Torrey Highlands and Rancho Peñasquitos PFFPs and the Rhodes Crossing Phasing Plan which is being updated concurrently with development of this Project. Below is a summary of the Project Design Features:

TABLE 18–1
PROJECT DESIGN FEATURES BY THE PROJECT

Location	Proposed Improvements	Correlates to PFFP Project Number
Roadway Segments		
Camino Del Sur	Torrey Santa Fe Road to Private Drive 'M': Four Lane Major Arterial with intersection enhancements Private Drive 'M' to Carmel Mountain Road: Four-Lane Major Arterial Carmel Mountain Road to existing terminus north of Dormouse Road: 2-Lane Modified Collector	Torrey Highlands #T3-1.A, T3-1.B and 3-2.A and 3-2.B; Rancho Peñasquitos #T-4B
Carmel Mountain Road	SR 56 to Camino Del Sur: 2-Lane Modified Collector including the SR 56 Overpass	Torrey Highlands #T-5.1 and T-5.2; Rancho Peñasquitos #T-5B
Intersections		
Camino Del Sur/ Torrey Santa Fe Road	Construct the south leg of the intersection, allow protected N/S left-turn phasing and split E/W phasing, and provide the following lane geometry: SB: 1 left, 2 thrus, 1 right w/ overlap phase NB: 1 left, 2 thrus, 1 shared thru/right EB: 1 left, 1 shared left/thru, 1 right WB: 1 shared left/thru/right	Torrey Highlands #T3-1.B and 3-2.B
Camino Del Sur/ Private Drive 'T'	Construct this intersection, install a stop-sign on Private Drive 'T', restrict Private Drive 'T' to right-in/right-out only access by installation of a raised median, and provide the following lane geometry: SB: 3 thrus NB: 2 thrus, 1 shared thru/right WB: 1 right	Torrey Highlands #T3-1.B and 3-2.B
Camino Del Sur/ Private Drive 'M'/ Kilroy Access	Construct this intersection, install a traffic signal, provide protected left-turn phasing in all directions, and provide the following lane geometry: SB: 2 lefts, 2 thrus NB: 1 thru, 1 shared thru/right (provide for future left-turn access) WB: 1 shared left/right, 1 right	Torrey Highlands #T3-1.B and 3-2.B

(Continued on Next Page)

TABLE 18–1
PROJECT DESIGN FEATURES BY THE PROJECT

Location	Proposed Improvements	Correlates to PFFP Project Number
(Continued from Previous Page)		
Intersections *(Continued)*		
Camino Del Sur/ Private Drive 'N'	Construct the east and south legs of this intersection and provide the following lane geometry: SB: 2 thrus NB: 1 thru, 1 shared thru/right WB: 1 right	Torrey Highlands #T-5.2; Rancho Peñasquitos #T-5B
Camino Del Sur/ Carmel Mountain Road	Construct this intersection, install a traffic signal, provide protected southbound left-turn phasing, and provide the following lane geometry: SB: 1 left, 2 thrus NB: 1 thru, 1 shared thru/right (provide for future left-turn access) WB: 1 left, 1 right	Rancho Peñasquitos #T-15
Camino Del Sur/ Dormouse Road	Improve the north and south legs of this intersection, install a traffic signal, allow protected NB left-turn phasing and provide the following lane geometry: SB: 1 thru, 1 right NB: 1 left, 2 thrus (transitional striping to one lane north of Dormouse Road) EB: 1 shared left/right	Torrey Highlands #T-5.2; Rancho Peñasquitos #T-5B
Carmel Mountain Road/ Via Las Lenas/ Private Drive 'M'	Construct the west and south legs of this intersection, realign Via Las Lenas and install a roundabout.	Torrey Highlands #T-5.2; Rancho Peñasquitos #T-5B

General Notes:

1. All additional on-site roadways, including Private Drive 'M' and the middle proposed roundabout, will be constructed to private road standards, to the satisfaction of the City Engineer.
2. *Figures 12–1 and 14–1* provided earlier in this report depict the proposed Project Design Features.
3. As shown in *Section 15.4.2* of this report, the signal at the Camino Del Sur/Dormouse Road intersection does not meet warrants. However, recommended that a signal be installed to the satisfaction of the City Engineer.

Figures 12–1 and 14–1 shown earlier in this report depict the Project access configurations. *Appendix P* contains feasibility drawings for these improvements.

It should be noted that the Project will be required to complete extensions of Camino Del Sur and Carmel Mountain Road as part of its approval as proposed, prior to issuance of occupancy permits for any portion within the development. Therefore, completion of the network will be assured by the Project.

In addition, prior to the issuance of any building permits, the Project shall conform to the Torrey Highlands and Rancho Peñasquitos PFFPs, and updated Rhodes Crossing Phasing Plan to the satisfaction of the City Engineer.

18.2 Significance of Impacts

Per City of San Diego significance thresholds and the analysis methodology presented in this report, Project-related traffic is calculated to result in twelve (12) *cumulative* significant impacts.

The following section identifies the significance of impacts and recommended mitigation to address the identified cumulative impacts.

INTERSECTIONS

TRA-1. Intersection #6. Camino Del Sur / SR 56 WB Ramps

TRA-2. Intersection #7. Camino Del Sur / SR 56 EB Ramps

TRA-3. Intersection #14. Carmel Mountain Rd / Black Mountain Rd

TRA-4. Intersection #19. Black Mountain Rd / SR 56 WB Ramps

TRA-5. Intersection #20. Black Mountain Rd / SR 56 EB Ramps

TRA-6. Intersection #21. Black Mountain Rd / Park Village Rd

STREET SEGMENTS

TRA-7. Segment #11. Black Mountain Rd from SR 56 EB Ramps to Park Village Rd

TRA-8. Segment #12. Black Mountain Rd from Park Village Rd to Mercy Rd

RAMP METERS

None.

FREEWAY MAINLINE SEGMENTS

TRA-9. Mainline #1. SR 56 from Carmel Valley Rd to Camino Del Sur: Eastbound

TRA-10. Mainline #1. SR 56 from Carmel Valley Rd to Camino Del Sur: Westbound

TRA-11. Mainline #2. SR 56 from Camino Del Sur to Black Mountain Rd: Eastbound

TRA-12. Mainline #2. SR 56 from Camino Del Sur to Black Mountain Rd: Westbound

18.3 Mitigation Measures

In order to mitigate a project's cumulative traffic impacts, the standard of practice in the City of San Diego is to collect fair share contributions toward future infrastructure improvement projects (road widening, intersection enhancements, etc.) identified in a public facilities financing plan or program.

The Project is located within the Torrey Highlands Facilities Benefit Assessment (FBA) Planning Area. The FBA provides full funding for public facilities projects that serve a designated area, also known as the area of benefit, which is comprised of lands that receive special benefits from the construction, acquisition, and improvement of those public facilities projects. The dollar amount of the assessment is based upon the collective cost of each public facility, and is equitably distributed over the area of benefit in each planning area. Fees are collected from a variety of sources, placed

into a City revenue account, and used within the area of benefit solely for those capital improvements and administrative costs identified in the planning area PFFP. An individual developer will pay an assessment to the FBA fund, based upon the number of units or acres developed in a particular year. The year of completion is identified to assure the collection of interest on inflated construction costs or to allow for reimbursements for overpayment.

Per the Torrey Highlands PFFP, last updated in Fiscal Year 2013, the FBA is determined to be "fully funded", meaning all funds necessary to implement the projects listed in the PFFP have been allocated to the remaining properties to be developed and the proportionate fees have been accounted for in the Torrey Highlands FBA. Therefore, any cumulative traffic mitigation measures identified in the Torrey Highlands PFFP are fully funded and the applicant's payment of FBA fees would mitigate the Project's cumulative impacts.

For impacted locations not included in the Torrey Highlands FBA and PFFP, the City's formula used to determine the Project's fair share contribution toward cumulative traffic impacts is shown below. The standard formula calculates a development project's fair share contribution by dividing a project's total trips by the anticipated growth in traffic volumes in the future, i.e. future volumes minus existing volumes:

$$\text{Fair Share \%} = \frac{\text{Project Traffic Volumes}}{\text{Buildout (With Project) Traffic Volumes} - \text{Existing Traffic Volumes}}$$

*Calculation represents City of San Diego standard fair share formula for cumulative traffic impacts.

Table 18–2 at the end of this section provides a summary of the fair share calculations.

Mitigation measures for the preceding listed impacts fall into the following three categories: (1) Payment of the FBA satisfies the Project's CEQA requirements, except that the improvements are under Caltrans jurisdiction and neither the City nor the applicant can assure their timing of completion; (2) Physical improvements reduce impacts to less than significant level; and (3) Black Mountain Road. Using the categories listed above, the following mitigation measures are recommended.

INTERSECTIONS

TRA-1. **Intersection #6. Camino Del Sur / SR 56 WB Ramps – Category 1:** Prior to issuance of the first building permit, the owner/permittee shall pay the Project FBA fees to the fully funded Torrey Highlands FBA. Construction of *Torrey Highlands PFFP Project No. T-1.3* (corresponding *Black Mountain Ranch PFFP Project No. T-15.1*) to complete the northbound to westbound loop on-ramp would mitigate this cumulative impact to below a level of significance. However, the timing in the SANDAG RTP does not contemplate completion of the SR 56 widening, including the ramp improvements, until Year 2040 (after the cumulative impact occurs in Year 2035) and the interchange lies

within Caltrans' jurisdiction Because neither the City nor the applicant can assure the completion of these improvements in a timely manner, the impacts are considered significant and not fully mitigated.

TRA-2. **Intersection #7. Camino Del Sur / SR 56 EB Ramps – Category 1:** Prior to issuance of the first building permit, the owner/permittee shall pay the Project FBA fees to the fully funded Torrey Highlands FBA. Construction of *Torrey Highlands PFFP Project No. T-1.3* (corresponding *Black Mountain Ranch PFFP Project No. T-15.1*) to construct the southbound to eastbound loop on-ramp would mitigate this cumulative impact to below a level of significance. However, the timing in the SANDAG RTP does not contemplate completion of the SR 56 widening, including the ramp improvements, until Year 2040 (after the cumulative impact occurs in Year 2035) and the interchange lies within Caltrans' jurisdiction. Because neither the City nor the applicant can assure the completion of these improvements in a timely manner, the impacts are considered significant and not fully mitigated.

TRA-3. **Intersection #14. Carmel Mountain Rd / Black Mountain Rd – Category 2:** Prior to issuance of the first building permit, the owner/permittee shall assure by permit and bond the restriping of the northbound approach to provide an additional northbound left-turn lane within the existing curb-to-curb width, mirroring the geometry of the southbound approach and restripe the northbound receiving lanes and red curb an additional 160 feet north of Carmel Mountain Road to the satisfaction of the City Engineer. Implementation of these improvements would mitigate the Project's cumulative impact to this location. Feasibility drawings for these improvements are contained in *Appendix P*.

TRA-4. **Intersection #19. Black Mountain Rd / SR 56 WB Ramps – Category 3:** A Community Plan Amendment (CPA) to the Rancho Peñasquitos Community Plan to downgrade the roadway classification of Black Mountain Road is currently proposed by Black Mountain Ranch. If the proposed CPA is approved, this cumulative impact would remain significant and unmitigated. If the CPA is not approved, mitigation would be required to widen Black Mountain Road to six lanes. Under that scenario, since the Project lies in the Torrey Highlands FBA and fees are not paid toward the Rancho Peñasquitos FBA, the Project would be required to contribute a fair share contribution (17.7%, to the satisfaction of the City Engineer) toward the unfunded portion of *Rancho Peñasquitos PFFP Project No. T-2D* (corresponding *Black Mountain Ranch PFFP Project No. T-57, Pacific Highlands Ranch PFFP Project No. T-11.1*) to widen Black Mountain Road from Twin Trails Drive to the Community Plan boundary to its ultimate classification as a Six-Lane Primary Arterial to the satisfaction of the City Engineer. This would include the restriping of the temporary striping on Black Mountain Road overpass at SR 56 to provide three (3) thru lanes in the northbound direction. Implementation of these improvements would mitigate the Project's cumulative impact to this location.

TRA-5. **Intersection #20. Black Mountain Rd / SR 56 EB Ramps – Category 3:** A Community Plan Amendment (CPA) to the Rancho Peñasquitos Community Plan to downgrade the roadway classification of Black Mountain Road is currently proposed by Black Mountain

Ranch. If the proposed CPA is approved, this cumulative impact would remain significant and unmitigated. If the CPA is not approved, mitigation would be required to widen Black Mountain Road to six lanes. Under that scenario, since the Project lies in the Torrey Highlands FBA and fees are not paid toward the Rancho Peñasquitos FBA, the Project would be required to contribute a fair share contribution (25.2%, to the satisfaction of the City Engineer) toward the unfunded portion of *Rancho Peñasquitos PFFP Project No. T-2D* (corresponding *Black Mountain Ranch PFFP Project No. T-57, Pacific Highlands Ranch PFFP Project No. T-11.1*) to widen Black Mountain Road from Twin Trails Drive to the Community Plan boundary to its ultimate classification as a Six-Lane Primary Arterial to the satisfaction of the City Engineer. This would include the restriping of the temporary striping on Black Mountain Road overpass at SR 56 to provide three (3) thru lanes in the northbound direction. Implementation of these improvements would mitigate the Project's cumulative impact to this location.

TRA-6. **Intersection #21. Black Mountain Rd / Park Village Rd – Category 3:** A Community Plan Amendment (CPA) to the Rancho Peñasquitos Community Plan to downgrade the roadway classification of Black Mountain Road is currently proposed by Black Mountain Ranch. If the proposed CPA is approved, this cumulative impact would remain significant and unmitigated. If the CPA is not approved, mitigation would be required to widen Black Mountain Road to six lanes. Under that scenario, since the Project lies in the Torrey Highlands FBA and fees are not paid toward the Rancho Peñasquitos FBA, the Project would be required to contribute a fair share contribution (36.1%, to the satisfaction of the City Engineer) toward the unfunded portion of *Rancho Peñasquitos PFFP Project No. T-2D* (corresponding *Black Mountain Ranch PFFP Project No. T-57, Pacific Highlands Ranch PFFP Project No. T-11.1*) to widen Black Mountain Road from Twin Trails Drive to the Community Plan boundary to its ultimate classification as a Six-Lane Primary Arterial to the satisfaction of the City Engineer. Implementation of these improvements would mitigate the Project's cumulative impact to this location.

STREET SEGMENTS

TRA-7. **Segment #11. Black Mountain Rd from SR 56 EB Ramps to Park Village Rd – Category 3:** A Community Plan Amendment (CPA) to the Rancho Peñasquitos Community Plan to downgrade the roadway classification of Black Mountain Road is currently proposed by Black Mountain Ranch. If the proposed CPA is approved, this cumulative impact would remain significant and unmitigated. If the CPA is not approved, mitigation would be required to widen Black Mountain Road to six lanes. Under that scenario, since the Project lies in the Torrey Highlands FBA and fees are not paid toward the Rancho Peñasquitos FBA, the Project would be required to contribute a fair share contribution (35.9%, to the satisfaction of the City Engineer) toward the unfunded portion of *Rancho Peñasquitos PFFP Project No. T-2D* (corresponding *Black Mountain Ranch PFFP Project No. T-57, Pacific Highlands Ranch PFFP Project No. T-11.1*) to widen Black Mountain Road from Twin Trails Drive to the Community Plan boundary to its

ultimate classification as a Six-Lane Primary Arterial to the satisfaction of the City Engineer. Implementation of these improvements would mitigate the Project's cumulative impact to this location.

TRA-8. **Segment #12. Black Mountain Rd from Park Village Rd to Mercy Rd – Category 3:** A Community Plan Amendment (CPA) to the Rancho Peñasquitos Community Plan to downgrade the roadway classification of Black Mountain Road is currently proposed by Black Mountain Ranch. If the proposed CPA is approved, this cumulative impact would remain significant and unmitigated. If the CPA is not approved, mitigation would be required to widen Black Mountain Road to six lanes. Under that scenario, since the Project lies in the Torrey Highlands FBA and fees are not paid toward the Rancho Peñasquitos FBA, the Project would be required to contribute a fair share contribution (37.4%, to the satisfaction of the City Engineer) toward the unfunded portion of *Rancho Peñasquitos PFFP Project No. T-2D* (corresponding *Black Mountain Ranch PFFP Project No. T-57, Pacific Highlands Ranch PFFP Project No. T-11.1*) to widen Black Mountain Road from Twin Trails Drive to the Community Plan boundary to its ultimate classification as a Six-Lane Primary Arterial to the satisfaction of the City Engineer. Implementation of these improvements would mitigate the Project's cumulative impact to this location.

FREEWAY MAINLINE SEGMENTS

TRA-9. **Mainline #1. SR 56 from Carmel Valley Rd to Camino Del Sur: Eastbound**

TRA-10. **Mainline #1. SR 56 from Carmel Valley Rd to Camino Del Sur: Westbound**

TRA-11. **Mainline #2. SR 56 from Camino Del Sur to Black Mountain Rd: Eastbound**

TRA-12. **Mainline #2. SR 56 from Camino Del Sur to Black Mountain Rd: Westbound**

TRA-9. to TRA-12. – **Mainlines #1 and #2. SR 56 from Carmel Valley Road to Black Mountain Road – Category 1:** Prior to issuance of the first building permit, the owner/permittee shall pay the Project's FBA fees to the fully funded Torrey Highlands FBA. Construction of the *Torrey Highlands PFFP Project No. T-1.2B* to expand SR 56 from I-5 to I-15 to a Six-Lane Freeway would mitigate the cumulative impacts on SR 56 to below a level of significance. However, the timing in the SANDAG RTP does not contemplate completion of the SR 56 widening until Year 2040 (after the cumulative impact occurs in Year 2035) and SR 56 is within Caltrans' jurisdiction. Because neither the City nor the applicant can assure the completion of these improvements in a timely manner, the impacts would remain significant and not fully mitigated.

TABLE 18–2
FAIR SHARE CALCULATIONS

ID	Cumulatively Impacted Location	Recommended Improvements	Project Traffic Contribution (Fair Share %) [2]			
			Existing	Year 2035 Project Only	Year 2035 w/ Project	Fair Share %
TRA-4	Black Mountain Road/ SR 56 Westbound Ramps [1]	Restripe the temporary striping on Black Mtn Rd overpass at SR 56 to provide three (3) thru lanes in the NB direction. (This would be included in the Black Mtn Rd widening to its ultimate classification of 6-lanes from Twin Trail Drive to the Community Plan boundary)	3,834	81	4,291	17.7%
TRA-5	Black Mountain Road/ SR 56 Eastbound Ramps [1]	Restripe the temporary striping on Black Mtn Rd overpass at SR 56 to provide three (3) thru lanes in the NB direction. (This would be included in the Black Mtn Rd widening to its ultimate classification of 6 lanes from Twin Trail Drive to the Community Plan boundary)	3,444	120	3,920	25.2%
TRA-6	Black Mountain Road/ Park Village Road [1]	Widen Black Mtn Rd from Twin Trails Drive to the Community Plan boundary to its ultimate classification of 6 lanes	3,983	252	4,682	36.1%
TRA-7	Black Mountain Road from SR-56 EB Ramps to Park Village Road [1]	Widen Black Mtn Rd from Twin Trails Drive to the Community Plan boundary to its ultimate classification of 6 lanes	35,440	1,947	40,867	35.9%
TRA-8	Black Mountain Road from Park Village Road to Mercy Road [1]	Widen Black Mtn Rd from Twin Trails Drive to the Community Plan boundary to its ultimate classification of 6 lanes	30,380	2,337	36,637	37.4%

Footnotes:

1. A Community Plan Amendment (CPA) to the Rancho Peñasquitos Community Plan to downgrade the classification of Black Mountain Road from six lanes to four was initiated on February 27, 2014 by Black Mountain Ranch and is expected to go before City Council in 2016. Should the CPA be approved, the Project would not be required to make the fair share contribution and this cumulative impact would remain significant and unmitigated.
2. Complete fair share calculations are shown in ***Appendix R***.

References:

Rancho Peñasquitos Public Facilities Financing Plan FY 2014;
Black Mountain Ranch Public Facilities Financing Plan FY 2015;
Pacific Highlands Ranch Public Facilities Financing Plan FY 2013;

End of Report

APPENDIX C

Biological Resources Technical Report

Biological Technical Report for the Merge 56 Development Project

First Submittal July 18, 2014
Second Submittal September 9, 2014
Third Submittal October 17, 2014
Fourth Submittal March 4, 2015
Fifth Submittal May 15, 2015
Sixth Submittal July 17, 2015
Seventh Submittal August 27, 2015
Eighth Submittal December 18, 2015
Ninth Submittal June 17, 2016
Tenth Submittal October 17, 2016
Eleventh Submittal January 24, 2017

Prepared for:

Sea Breeze Properties, LLC
3525 Del Mar Heights Road, #246
San Diego, CA 92130

Prepared by:

Alden Environmental, Inc.
3245 University Avenue, #1188
San Diego, CA 92104

ALDEN
ENVIRONMENTAL, INC

Biological Technical Report for the Merge 56 Development Project

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1.0 INTRODUCTION

The Merge 56 Development Project (Project) includes two main components: 1) a Mixed Use component (i.e., commercial, office, hotel, and residential development) and 2) public roadway improvements to Camino Del Sur and Carmel Mountain Road, which are previously approved City of San Diego (City) Circulation Element roads. The Mixed Use component of the Project is a subset of a larger subdivision project entitled by the City in 2005 and formerly referred to as the Rhodes Crossing Project. Specifically, the Merge 56 Mixed Use component consists of the proposed construction of Units 4, 5, and 10 of the Rhodes Crossing Project.

Therefore, prior analysis of biological resources relevant to the Mixed Use component can be found in the following approved/certified documents and existing permits:

- Final Environmental Impact Report (EIR) Rhodes Crossing Project (City 2003)
- Rhodes Crossing Biological Technical Report (Helix Environmental Planning, Inc. 2003a)
- U.S. Fish and Wildlife Service (2012) Biological Opinion for the Rhodes Crossing Project (Appendix A)
- Clean Water Act permits for Rhodes Crossing (U.S. Army Corps of Engineers 2005, 2012, 2013; California Regional Water Quality Control Board 2005, 2013 [Appendix B])
- Streambed Alteration Agreement for Rhodes Crossing (California Department of Fish and Game 2009, California Department of Fish and Wildlife 2013 [Appendix C])

The Camino Del Sur-North and -South improvements were specifically analyzed in the following approved/certified documents listed below (Note: Camino Del Sur was previously known as Camino Ruiz at the time these analyses were completed).

- Camino Ruiz North Roadway Mitigated Negative Declaration (City 2001)
- Final EIR for Camino Del Sur (City 2005)
- Camino Ruiz North Project Biological Technical Report (Helix Environmental Planning, Inc. 2000)
- Camino Ruiz South Project Biological Technical Report (Helix Environmental Planning, Inc. 2001)

The land use changes and improvements proposed as part of the Merge 56 Development Project trigger amendments to a number of these adopted/certified environmental documents and existing permits.[1] Because the Project has been redesigned since issuance of these permits, findings must be made to reflect the current Project's potential impacts to biological resources. The purpose of this report is to document the current biological resources that exist in the Project study area and to analyze the impacts in support of the necessary community plan amendments, rezoning, and amended/new permits.

[1] Planned Development Permit (PDP No. 53203), Site Development Permit (SDP No. 53204), Conditional Use Permit (CUP No. 53205), Vesting Tentative Map (VTM No. 7938), SDP No. 40-0386 for Camino Del Sur-North and Carmel Mountain Road, and SDP No. 3278 for Camino Del Sur-South.

In addition to Project design changes, approval of the original Vesting Tentative Map No. 7938 analyzed, but specifically excluded, a wildlife undercrossing for Camino Del Sur-South per the City's staff report to Planning Commission. The Camino Del Sur-South Extension Site Development Permit (SDP) No. 3278 also states in the staff report to Planning Commission that a wildlife undercrossing was not required as a condition of the roadway construction. While local wildlife usage has been established in the area as described in Section 5.5.5, *Wildlife Corridors*, of this Biological Technical Report, an undercrossing has not since been identified in any adopted planning documents and, as stated above, was not included in the Camino Del Sur-South SDP or proposed mitigation. Consistent with the previous approvals, a wildlife undercrossing is not proposed for Camino Del Sur-South as part of the Merge 56 Development Project.

This report describes existing biological conditions in the Project study area that includes the 41.34-acre Mixed Use site and the impact footprints for the roadway improvements. This report provides the U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (Corps), California Department of Fish and Wildlife (CDFW), City, and Project applicant with information necessary to assess impacts to biological resources under the California Environmental Quality Act (CEQA), City's Biology Guidelines (City 2012), federal and State of California (State) Endangered Species Acts, federal Clean Water Act, and California Fish and Game Code.

1.1 PROJECT LOCATION

The Project is situated in the communities of Torrey Highlands and Rancho Peñasquitos immediately adjacent to the State Route 56 (SR-56) right-of-way in the City (Figures 1 and 2). Regional access to the Mixed Use site is from SR-56, Interstate 5, and Interstate 15; local access to the Mixed Use site is from the southern termini of Camino Del Sur and Carmel Mountain Road.

The roadway improvements are proposed to complete undeveloped segments of Camino Del Sur and Carmel Mountain Road. The Camino Del Sur extension would be from its current terminus south of Torrey Santa Fe Road to its existing terminus north of Dormouse Road (Figure 2). The existing paved portion of Carmel Mountain Road would be realigned and extended south of SR-56 to its planned intersection with Camino Del Sur. Both public roads front the Mixed Use site and intersect at its southern boundary (Figure 2).

In this report, the Project is separated into five distinct Project components: the Mixed Use site, Camino Del Sur-North (including the Del Mar Mesa Trail Connection; see Section 1.2, *Project Description*), Camino Del Sur-South, Carmel Mountain Road, and the Darkwood Canyon Trail. Figure 2 shows these five distinct components.

1.2 PROJECT DESCRIPTION

The Mixed Use component comprises approximately 35 acres of commercial and residential development (including modifications to land uses approved for Units 4, 5, and 10 of the Rhodes Crossing Project). Commercial uses would occupy approximately 14 acres of the Mixed Use site, while multi-family residential uses would occupy approximately 6.0 acres, and single-family residential development would occupy approximately 10.4 acres. Roads and slopes would occupy the balance of the Mixed Use site. The impact footprint for the Mixed Use site is shown on Figures 3 and 4. The area within the canyon to the north of the Mixed Use impact footprint

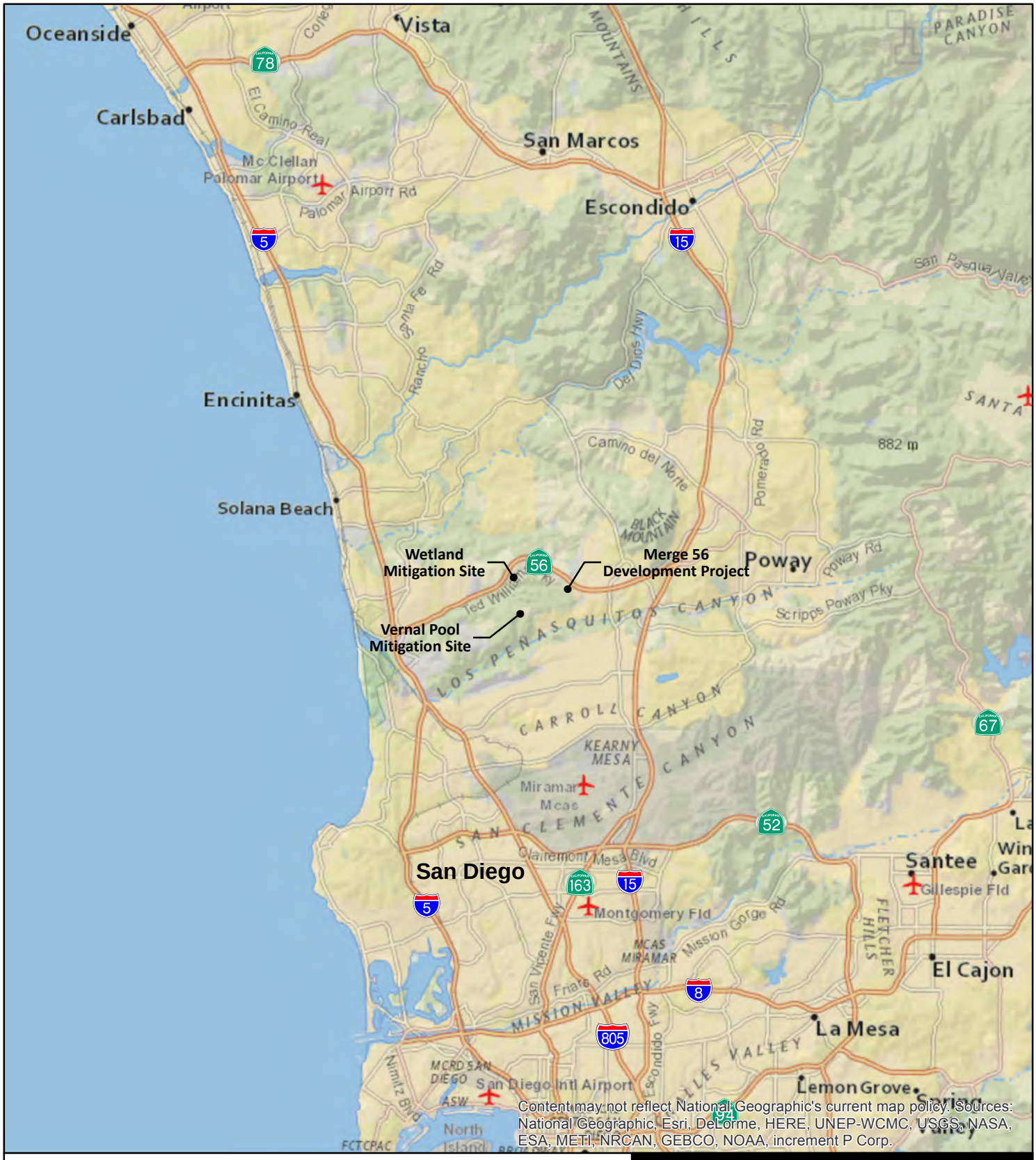


Figure 1

Regional Location

MERGE 56 DEVELOPMENT PROJECT

N
W E
S

0 2 4 Miles

ALDEN ENVIRONMENTAL, INC

Service Layer Credits: Imagery ©2016 , Cnes/Spot Image, DigitalGlobe, U.S. Geological Survey, USDA Farm Service

N
W E
S

0 500 1,000
Feet

ALDEN ENVIRONMENTAL, INC

Figure 2

Project Location

MERGE 56 DEVELOPMENT PROJECT

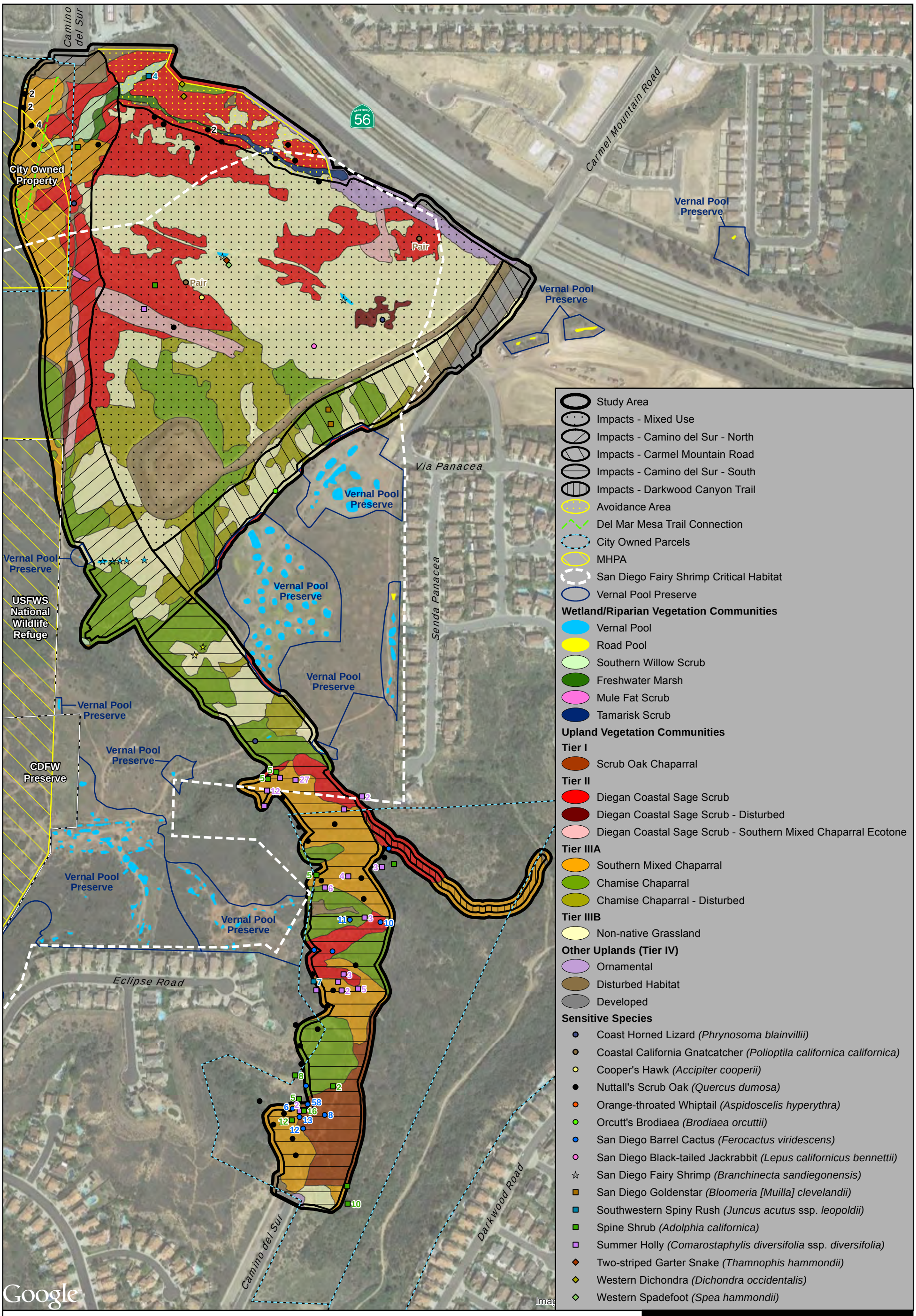


Figure 3

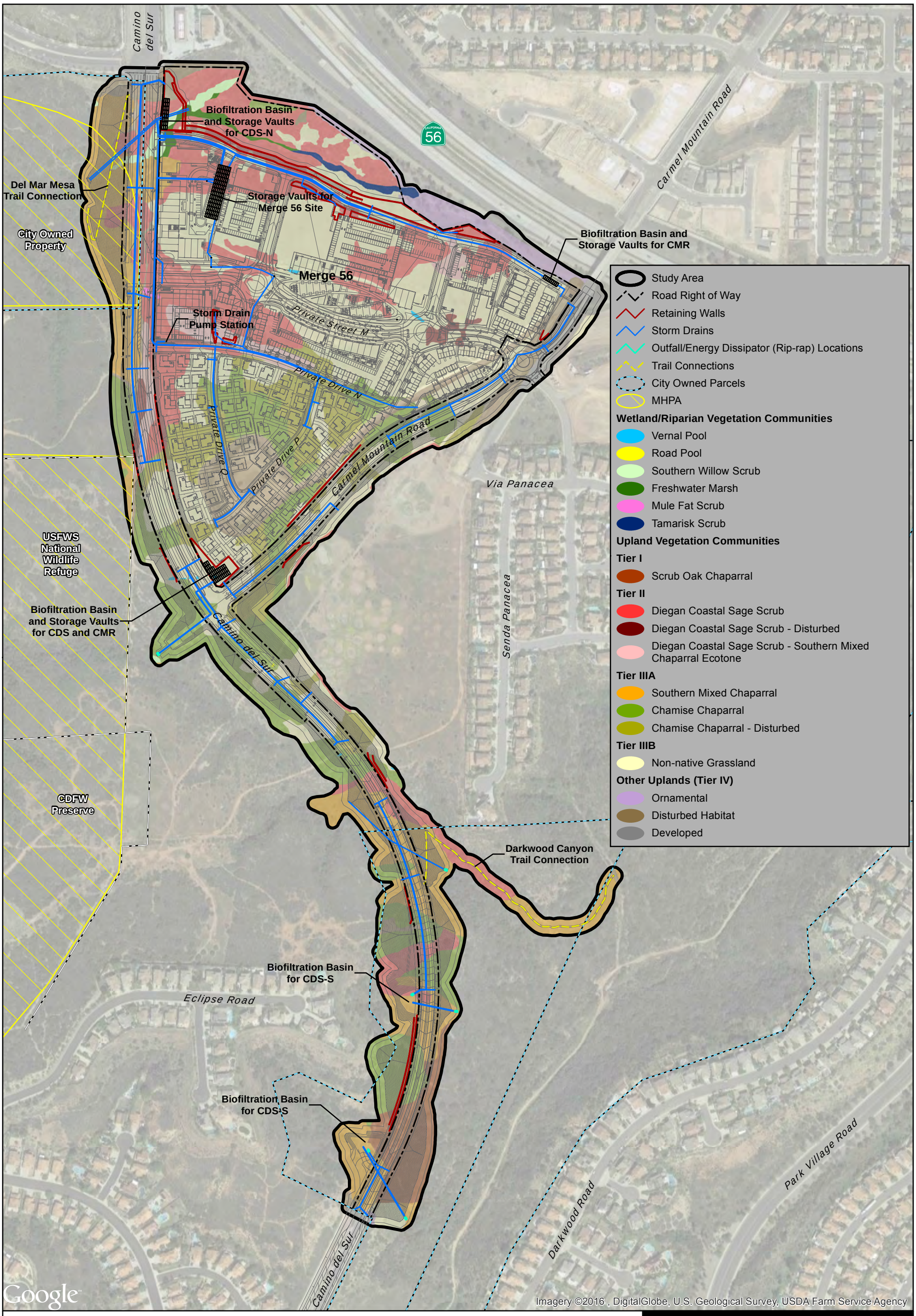
Biological Resources/Impacts

MERGE 56 DEVELOPMENT PROJECT

N
W E
S

0 175 350 Feet

ALDEN ENVIRONMENTAL, INC



N
W E
S

0 175 350
Feet

ALDEN ENVIRONMENTAL, INC

Figure 4

Development Plan/Impacts

MERGE 56 DEVELOPMENT PROJECT

(3.83 acres) is the Avoidance Area (Figure 3). Direct impacts from the Project would not occur in this area.

In addition to developing commercial, office, hotel, and residential uses on the Mixed Use site, the Project applicant would construct underground utilities (i.e., sewer, water, electrical, storm drains, and water quality features), private drives, and half-width improvements for Camino Del Sur and Carmel Mountain Road along the frontage of the Mixed Use site.

Camino Del Sur and Carmel Mountain Road are capital improvement projects identified in the Torrey Highlands and Rancho Peñasquitos Public Facilities Financing Plans. Camino Del Sur would be constructed from its current terminus at the intersection with Torrey Santa Fe Road, south to its planned intersection with Carmel Mountain Road, as a four-lane roadway. South of its planned intersection with Carmel Mountain Road, Camino Del Sur would transition to a two-lane roadway to its existing terminus north of Dormouse Road (Figure 2). A 16-inch public water main and a 24-inch diameter recycled water line would be installed within the Camino Del Sur right-of-way.

Camino Del Sur has been designed to avoid direct impacts to the San Diego National Wildlife Refuge immediately to the west by pulling the roadway slope back to the east and constructing a retaining wall. Grading for construction of the retaining wall and roadway, the retaining wall, and the roadway would be located outside the San Diego National Wildlife Refuge (Figures 3 and 4).

Camino Del Sur and Carmel Mountain Road were designed as separate projects in the event that the Mixed Use portion of the Project is not built. Therefore, some of the roadway grading in the impact footprint of Camino Del Sur-North (Figure 3) occurs where development associated with the Mixed Use component would be built (Figure 4). All of the impacts in the Camino Del Sur-North impact footprint, however, have been attributed to the roadway impacts in this report.

The existing segment of Carmel Mountain Road would be realigned northwest of its existing location and extended south to its planned intersection with Camino Del Sur as a two-lane roadway (Figures 3 and 4). A 16-inch public water main and an eight-inch diameter recycled water line would be installed within the Carmel Mountain Road right-of-way.

An unpaved, multi-use trail connection (Del Mar Mesa Trail Connection) from Camino Del Sur-North (in the City's Multiple Species Conservation Program [MSCP] Preserve) would be constructed along the roadway's western fill slope and entirely within the impact footprint for Camino Del Sur-North. The trail would connect with an existing hike/bike trail identified in the Public Notice of a Draft Mitigated Negative Declaration for the Carmel Mountain/Del Mar Mesa Trails Community Plan Amendments and Natural Resources Management Plan Adoption (City 2014). The trail connection would be five feet wide and would be dirt or other native material consistent with City Trail Policies and Standards (City 2010; Figure 2).

Additionally, sidewalks and an unpaved pathway would be constructed parallel to the proposed extension of Camino Del Sur to facilitate linkages for pedestrians and bicyclists between the Park Village area to the south and the Mixed Use site and developed areas to the north such as Torrey Highlands. The precise trail location and design are still being developed but would be contained entirely within the impact footprint for Camino Del Sur-South (Figure 3).

Lastly, a new segment of trail, coordinated with the City Park and Recreation Department, would be extended from the sidewalk along Camino Del Sur-South to the bottom of Darkwood Canyon where it would meet up with an existing trail (see Darkwood Canyon Trail on Figure 2). This trail segment would also be five feet wide and would be dirt or other native material consistent with City Trail Policies and Standards (City 2010).

2.0 METHODS AND SURVEY LIMITATIONS

2.1 LITERATURE REVIEW

As part of the preparation for biological resources surveys conducted for the Project and for preparation of this Biological Technical Report, Alden Environmental, Inc. reviewed the Rhodes Crossing Project and Camino Del Sur documents/permits listed in Section 1.0, *Introduction*. Pertinent information from those documents/permits has been incorporated by reference herein as appropriate. Additional documents relevant to the Merge 56 Development Project are listed below. These documents have been reviewed and incorporated by reference in this report, as appropriate:

- City's MSCP Subarea Plan (City 1997a and b)
- Final Environmental Impact Report (EIR) for Torrey Highlands (City 1996a)
- EIR for the Middle Segment of SR-56 (City 1998)
- Biology Technical Report for the Del Mar Mesa Specific Plan (Dudek & Associates 1996)
- Biological Technical Report for Vista Alegre (portion of the Merge 56 Development Project in the San Diego National Wildlife Refuge on Del Mar Mesa; Recon Environmental, Inc. 1990)

2.2 BIOLOGICAL SURVEYS

In addition to a literature review, a series of field surveys were conducted by Alden Environmental, Inc. in the Project study area to verify the presence or absence and present condition of previously reported biological resources. These included a jurisdictional delineation and vegetation mapping update, sensitive plant survey, vernal pool mapping confirmation, USFWS protocol-level presence/absence survey for the coastal California gnatcatcher (*Polioptila californica californica*), and a dry season fairy shrimp survey. Surveys were conducted between December 2011 and June 2014 as summarized in Table 1. Where relevant, time and weather conditions for the site visits are included in Table 1. The results of these updates are provided below. Table 1 also summarizes dates and personnel for several jurisdictional delineations of Waters of the U.S. (WUS), Waters of the State (WS), and City Wetlands conducted between 1998 and 2010 in the Rhodes Crossing Project study area and for Camino Del Sur that are still relevant to the Merge 56 Development Project.

Previous surveys conducted between July 1997 and August 2002 for the Rhodes Crossing Project in the Project study areas for Camino Del Sur (formerly Camino Ruiz North) and Carmel Mountain Road included vegetation mapping; a sensitive plant survey; a jurisdictional delineation; and USFWS protocol-level presence/absence surveys for the coastal California gnatcatcher, San Diego fairy shrimp (*Branchinecta sandiegonensis*), Riverside fairy shrimp

(*Streptocephalus woottoni*), and Quino checkerspot butterfly (*Euphydryas editha quino*; Helix Environmental Planning, Inc. 2003a and b). The results of these surveys were reviewed and incorporated by reference herein, as appropriate.

Previous surveys were also conducted in 1998, 2000, and 2002 for Camino Del Sur-South. These surveys include vegetation mapping, general wildlife, sensitive plants, and USFWS protocol-level presence/absence surveys for the coastal California gnatcatcher, San Diego fairy shrimp, Riverside fairy shrimp, and Quino checkerspot butterfly (City 2005). The results of these surveys were reviewed and also incorporated by reference herein, as appropriate.

Table 1
SURVEY INFORMATION

Survey Date	Survey Type	Personnel	Time/Weather Conditions
6/23/14	Confirm/Update JD and Vegetation Mapping	Greg Mason Jim Rocks	N/A
4/30/14	Vegetation Mapping Update Sensitive Plant Survey	Greg Mason	N/A
4/22/14	Vegetation Mapping Update	Greg Mason	N/A
4/17/14	Sensitive Plant Survey	Greg Mason	N/A
4/9/14	Vernal Pool Mapping Confirmation and Sensitive Plant Survey	Greg Mason	N/A
1/7/14	Coastal California Gnatcatcher	Lee Ripma	0900-1135; 59.2-71.1 degrees Fahrenheit (ºF); 0-80% sky cover; wind speed 0-0.2 mph.
12/17/13	Coastal California Gnatcatcher	Lee Ripma	0710-1010; 57.9-74.8ºF; 70-20% sky cover; wind speed 0.7-0.5 mph.
12/10/13	Coastal California Gnatcatcher	Lee Ripma	0901-1113; 55-61ºF; 30-20% sky cover; wind speed 0.3-0.5 mph.
12/10/11	Dry Season Fairy Shrimp	Dr. Black Greg Mason	N/A
4/30/10	JD for Rhodes Crossing	Stacy Nigro Erica Harris	N/A
6/5/00	Camino Del Sur JD	Helix	N/A
1/27/98	Camino Del Sur JD	Helix	N/A

2.2.1 Vegetation Mapping Update and Vernal Pool Mapping Confirmation

Several site visits (Table 1) were conducted in the spring and early summer of 2014 to update the previous vegetation mapping in the Project study area. During each visit, the Project study area was walked, and existing vegetation was mapped on a current aerial photograph with a scale of

1"=200'. All flat areas on the site with potential to support vernal pools were walked and searched for new vernal pools that were not mapped during previous field efforts. Existing mapped vernal pools also were visited to confirm their continued presence.

2.2.2 Jurisdictional Delineations

Delineations of the limits of WUS, WS, and City Wetlands were conducted for the Merge 56 Development Project. WUS and WS encompass wetlands but also may include ephemeral and intermittent streams that may or may not be vegetated. Generally, wetlands are lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities present.

WUS include wetlands and non-wetlands (streams) under the jurisdiction of the Corps. WS include wetland habitats and streambeds under the jurisdiction of the CDFW.

City Wetlands, specifically, are defined by the City Municipal Code (Chapter 11, Article 3, Division 1) as areas that are characterized by any of the following summarized conditions.

1. All areas persistently or periodically containing naturally occurring wetland vegetation communities;

2. Areas that have hydric soils or wetland hydrology and lack naturally occurring wetland vegetation communities; and/or

3. Areas lacking wetland vegetation communities, hydric soils, and wetland hydrology due to non-permitted filling of previously existing wetlands.

City Wetlands often overlap with Corps and CDFW jurisdiction. For simplicity, “jurisdictional areas” may be used in this document to refer to WUS, WS, and/or City Wetlands.

A jurisdictional delineation of the Merge 56 Development Project study area was conducted on April 30, 2010 (Helix Environmental Planning, Inc. 2010a) taking into account recent aerial photography, soils (Bowman 1973), and the results of previous jurisdictional delineation results (Helix Environmental Planning, Inc. 2003b). Corps wetland boundaries were determined using the three criteria (vegetation, hydrology, and soils) established for wetland delineations as described within the *Wetlands Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Supplement* (Corps 2008).

CDFW jurisdictional boundaries were determined based on the presence of riparian vegetation or regular surface flow. Streambeds within CDFW jurisdiction were delineated based on the definition of a streambed as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supporting fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports riparian vegetation.” CDFW jurisdictional limits for streambeds were determined by the top of the bank. Vegetated CDFW habitats were mapped at the limits of the riparian vegetation canopy (Helix Environmental Planning, Inc. 2010a).

A jurisdictional delineation specifically for Camino Del Sur (both north and south components) was conducted by Helix Environmental Planning, Inc. on January 27 and February 11, 1998 (Helix Environmental Planning, Inc. 2003b). Prior to beginning field work, aerial photographs (1"=400'), topographic maps (1"=100'), and U.S. Geological Survey topographical maps were reviewed to determine the location of potential jurisdictional areas. All areas with depressions or drainage channels were evaluated for the presence of WUS including wetlands. Each area was inspected according to wetland delineation guidelines. Wetland boundaries were determined using the three criteria (vegetation, hydrology, and soils) established for wetland delineations as described within the *Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Field Guide for Wetland Delineation* (Wetland Training Institute 1995). A subsequent field survey on June 23, 2014 was performed by Alden Environmental, Inc. to confirm and update the jurisdictional delineation mapping across the entire Project study area, as necessary (Table 1).

2.2.3 Sensitive Species Surveys

Sensitive species are those that are given special consideration or protection by federal, State, or local agencies. More detailed definitions for sensitive species are provided in Section 5.5.2, *Sensitive Plant Species* and Section 5.5.3, *Sensitive Animal Species*.

Plant Species

The results of previous surveys for sensitive plant species have been incorporated herein. Sensitive plant surveys also were conducted for the Merge 56 Development Project on three dates in April 2014 (Table 1) during the bloom period of many annual species.

Fairy Shrimp

The dry season fairy shrimp survey was conducted in accordance with the USFWS Listed Vernal Pool Branchiopods protocol (1996). The survey consisted of sampling six basins (vernal pools) that were newly discovered in the Project study area in 2011. Soil was collected from these basins on December 10, 2011 (Table 1). The soil was processed by wetting, sieving, and dispersing the final sieve material in a brine solution. Organic material (fairy shrimp cysts) was separated from inorganic material; the organic material was dried; and the cysts were identified to the genus level (Ecological Restoration Service and Alden Environmental, Inc. 2012).

Coastal California Gnatcatcher

Survey methods followed the USFWS presence/absence protocol (1997) including three sites visits at least one week apart (Table 1). The survey area included suitable habitat within the Project study area. During each site visit, potential coastal California gnatcatcher habitat (i.e., Diegan coastal sage scrub including -disturbed) was surveyed. Taped vocalizations were used to elicit a response and were ceased being played upon hearing or seeing a coastal California gnatcatcher (Rocks Biological Consulting 2014).

2.2.4 Survey Limitations

While precipitation in the fall/winter of 2013/2014 was very low, some sensitive plant species were still detectable in spring 2014 (e.g., San Diego mesa mint [*Pogogyne abramsii*; a federal and State endangered annual herb that blooms March to July] was visible in vernal pools just

outside of the Project study area). Despite the low rainfall and the limited observations of sensitive annual plant species in spring 2014, it is expected that all sensitive plant species with potential to occur in the Project study area would have been found during previous surveys from 1997 through 2002.

2.2.5 Nomenclature

Nomenclature used in this report is from the following sources: City's Biology Guidelines (City 2012) and the City's MSCP Subarea Plan (City 1997a and b); Holland (1986); Oberbauer, et al. (2008); Hickman, ed. (1993); CNPS (2015); Jepson Flora Project (2015); Crother (2008); The American Ornithologists' Union (2014); Jones, et al. (1992); and CDFW Natural Diversity Database (2015).

3.0 REGULATORY CONTEXT

3.1 REGULATORY ISSUES

Biological resources in the Project study area are subject to regulatory administration by the federal government, State, and City, as follows.

3.1.1 Federal

Endangered Species Act

The federal Endangered Species Act (FESA) designates threatened and endangered animals and plants and provides measures for their protection and recovery. "Take" of listed animal species and of listed plant species in areas under federal jurisdiction is prohibited without obtaining a federal permit. Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Harm includes any act that actually kills or injures fish or wildlife, including significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife. Activities that damage (i.e., harm) the habitat of listed wildlife species require approval from the USFWS for terrestrial species. The FESA also generally requires determination of Critical Habitat for listed species. If a project would involve a federal action potentially affecting Critical Habitat, the federal agency would be required to consult with USFWS. USFWS Critical Habitat for the San Diego fairy shrimp has been designated across much of the Project study area (Figure 3).

FESA Section 7 and Section 10 provide two pathways for obtaining authority to take listed species. Under Section 7 of the FESA, a federal agency that authorizes, funds, or carries out a project that "may affect" a listed species or its Critical Habitat must consult with USFWS. Under Section 10 of the FESA, private parties with no federal nexus (i.e., no federal agency will authorize, fund, or carry out the project) may obtain an Incidental Take Permit to harm listed species incidental to the lawful operation of a project.

In 2007, the USFWS designated Critical Habitat for the San Diego fairy shrimp, and this Critical Habitat occurs across much of the Project study area and includes the vernal pool preserves adjacent to the Project study area (Figure 3). Specifically, 30.2 acres of Critical Habitat are located in the Mixed Use impact footprint; 8.0 acres are located in the Camino Del Sur-North

impact footprint; 4.5 acres are located in the Camino Del Sur-South impact footprint; 4.4 acres are located in the Carmel Mountain Road impact footprint; and 0.45 acre is located in the Avoidance Area.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA; 16 U.S. Code Sections 703-711) includes provisions for protection of migratory birds, including the non-permitted take of migratory birds. The MBTA regulates or prohibits taking, killing, possession of, or harm to migratory bird species listed in Title 50 Code of Federal Regulations Section 10.13. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, and many others (including those that are not sensitive; see Section 5.5.3, *Sensitive Animal Species,* for an explanation of which species are sensitive). Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered a "take." The MBTA is an international treaty for the conservation and management of bird species that migrate through more than one country, and is enforced in the United States by the USFWS. The MBTA was amended in 1972 to include protection for migratory birds of prey (raptors). As a general/standard condition, the Merge 56 Development Project must comply with the MBTA.

Clean Water Act

Under Section 404 of the Clean Water Act, the Corps is charged with regulating the discharge of dredge and fill materials into jurisdictional WUS. The terms "WUS" and "jurisdictional waters" have a broad meaning that includes special aquatic sites, such as wetlands. Corps wetland boundaries are determined using three criteria (vegetation, hydrology, and soils) established for wetland delineations, as described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Corps 2008).

WUS, as defined by regulation and refined by case law include: (1) the territorial seas; (2) coastal and inland waters, lakes, rivers, and streams that are navigable WUS, including their adjacent wetlands; (3) tributaries to navigable WUS, including adjacent wetlands; and (4) interstate waters and their tributaries, including adjacent isolated wetlands and lakes, intermittent and ephemeral streams, prairie potholes, and other waters that are not a part of a tributary system to interstate waters or navigable WUS, the degradation or destruction of which could affect interstate commerce.

Section 401 of the Clean Water Act requires that any applicant for a federal license or permit to conduct any activity that may result in a discharge to WUS must obtain a Water Quality Certification, or a waiver thereof, from the state in which the discharge originates. In California, the Regional Water Quality Control Board issues Water Quality Certifications.

3.1.2 State of California

California Environmental Quality Act

Primary environmental legislation in California is found in the CEQA and its implementing guidelines (State CEQA Guidelines), requiring that projects with potential adverse effects or

impacts on the environment undergo environmental review. Adverse impacts to the environment are typically mitigated as a result of the environmental review process in accordance with existing laws and regulations.

California Endangered Species Act

The California Endangered Species Act (CESA) established that it is State policy to conserve, protect, restore, and enhance endangered species and their habitats. Under State law, plant and animal species may be formally designated rare, threatened, or endangered by official listing by the California Fish and Game Commission. CESA authorizes that private entities may "take" plant or wildlife species listed as endangered or threatened under the federal ESA and CESA, pursuant to a federal Incidental Take Permit if the CDFW certifies that the incidental take is consistent with the CESA (Fish & Game Code Section 2080.1[a]). For State-only listed species, Section 2081 of the CESA authorizes the CDFW to issue an Incidental Take Permit for a State listed threatened or endangered species if specific criteria are met.

Native Plant Protection Act

Sections 1900 - 1913 of the California Fish and Game Code (Native Plant Protection Act) direct the CDFW to carry out the Legislature's intent to "…preserve, protect and enhance endangered or rare native plants of this state." The Native Plant Protection Act gives the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and protect endangered and rare plants from take.

California Fish and Game Code

California Fish and Game Code provides specific protection and listing for several types of biological resources. Section 1600 of California Fish and Game Code requires a Streambed Alteration Agreement for any activity that would alter the flow, change or use any material from the bed, channel, or bank of any perennial, intermittent, or ephemeral river, stream, and/or lake. Typical activities that require a Streambed Alteration Agreement include excavation or fill placed within a channel, vegetation clearing, structures for diversion of water, installation of culverts and bridge supports, cofferdams for construction dewatering, and bank reinforcement. Notification is required prior to any such activities, and CDFW will issue a Streambed Alteration Agreement with any necessary mitigation to ensure protection of the State's fish and wildlife resources.

Pursuant to California Fish and Game Code Section 3503, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Raptors and owls and their active nests are protected by California Fish and Game Code Section 3503.5, which states that it is unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird unless authorized by the CDFW. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA. These regulations could require that construction activities (particularly vegetation removal or construction near nests) be reduced or eliminated during critical phases of the nesting cycle unless surveys by a qualified biologist demonstrate that nests, eggs, or nesting birds will not be disturbed, subject to approval by CDFW and/or USFWS. As a general/standard condition, the Merge 56 Development Project must comply with California Fish and Game Code Sections 3503 and 3503.5.

Porter-Cologne Water Quality Control Act of 1970

The Porter-Cologne Water Quality Control Act of 1970 grants the State Water Resource Control Board and its regional offices power to protect water quality and is the primary vehicle for implementation of the State's responsibilities under Section 401 of the Clean Water Act. The Porter-Cologne Act grants the State Water Resource Control Board authority and responsibility to adopt plans and policies, regulate discharges to surface and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants. Typically, the State Water Resource Control Board and Regional Water Quality Control Board act in concert with the Corps under Section 401 of the Clean Water Act in relation to permitting fill of WUS.

3.1.3 City of San Diego Environmentally Sensitive Lands (ESL) Regulations

Mitigation requirements for sensitive biological resources follow the requirements of the City's Biology Guidelines (2012) as outlined in the City's Municipal Code Environmentally Sensitive Lands (ESL) Regulations (Chapter 14, Article 3, Division 1). Impacts to biological resources within the City's Preserve, the Multi-habitat Planning Area (MHPA), must comply with the ESL Regulations, which also serve as standards for the determination of biological impacts and mitigation under CEQA in the City. ESL include sensitive biological resources, steep hillsides, coastal beaches, sensitive coastal bluffs and 100-year floodplains (San Diego Municipal Code [SDMC] 143.0110).

The purpose of the ESL Regulations is to, "protect, preserve and, where damaged, restore the ESL of San Diego and the viability of the species supported by those lands" (SDMC 143.0101). Outside the Coastal Overlay Zone where the Project lies, impacts to wetlands should be avoided. For vernal pools, avoidance of the entire watershed, which includes a buffer based on functions and values is required. Unavoidable impacts should be minimized to the maximum extent practicable. Whether or not an impact is unavoidable will be determined on a case-by-case basis. If impacts to wetlands cannot be avoided, a deviation from the ESL Regulations is required (see Section 6.1.5, *Impacts to Waters of the U.S., Waters of the State, and City Wetlands*). Examples of unavoidable impacts include those necessary to allow reasonable use of a parcel entirely constrained by wetlands, roads where the only access to the developable portion of the site results in impacts to wetlands, and essential public facilities (essential roads, sewer, water lines, etc.) where no feasible alternative exists.

A wetland buffer shall be maintained around all wetlands as appropriate to protect the functions and values of the wetland. Section 320.4(b)(2) of the Corps General Regulatory Policies (33CFR 320- 330) list criteria for consideration when evaluating wetland functions and values. These include wildlife habitat (spawning, nesting, rearing, and foraging), food chain productivity, water quality, ground water recharge, and areas for the protection from storm and floodwaters.

The ESL regulations also specify development requirements inside and outside of the MHPA. Inside the MHPA, development must be located in the least sensitive portion of a given site; outside of the MHPA, development must avoid wetlands and non-MSCP Covered Species (City 2012). The ESL regulations further require that impacts to sensitive biological resources must be assessed and mitigation provided where necessary, as required by Section III of the City's

biology guidelines. The MSCP and MHPA are further discussed in Section 4.0, *Regional Context.*

Biology Guidelines

The City's Biology Guidelines (2012) have been formulated by the Development Services Department to aid in the implementation and interpretation of the ESL Regulations; San Diego Land Development Code, Chapter 14, Division 1, Section 143.0101 et seq; and the Open Space Residential (OR-1-2) Zone, Chapter 13, Division 2, Section 131.0201 et seq. Section III of the Biology Guidelines (Biological Impact Analysis and Mitigation Procedures) also serves as standards for the determination of impact and mitigation under CEQA and the Coastal Act. The Biology Guidelines are the baseline biological standards for processing Neighborhood Development Permits, Site Development Permits, and Coastal Development Permits issued pursuant to ESL Regulations.

As described previously in Section 1.0, *Introduction*, the land use changes and improvements proposed as part of the Project would require amendments to a number of permits already obtained for the Rhodes Crossing Project.[2] Because the Project has been redesigned since the issuance of the original Site Development Permit, findings must be made to reflect the current Project's potential impacts to biological resources, in particular ESL, and mitigation must be proposed before amendments can be issued. Furthermore, in accordance with ESL Regulations, permits are required for impacts to wetlands and listed species habitat. The Project would be required to obtain all applicable federal and State permits (see Section 3.0, *Regulatory Context*) prior to the issuance of any discretionary permit by the City. Prior to the issuance of any construction permit(s), the Project applicant must provide a copy of the permit, authorization letter, or other official mode of communication from the federal and State permitting agencies to the City.

4.0 REGIONAL CONTEXT

4.1 MULTIPLE SPECIES CONSERVATION PROGRAM (MSCP) SUBAREA PLAN

The City, USFWS, CDFW, and other local jurisdictions joined together in the late 1990s to develop the MSCP, a comprehensive program to preserve a network of habitat and open space in the region and ensure the viability of (generally) upland habitat and species, while still permitting some level of continued development. The City's MSCP Subarea Plan (1997 a, b) was prepared pursuant to the outline developed by USFWS and CDFW to meet the requirements of the State Natural Communities Conservation Planning (NCCP) Act of 1992. Adopted by the City in March 1997, the City's Subarea Plan forms the basis for the MSCP Implementing Agreement, which is the contract between the City, USFWS, and CDFW (City 1997a). The Implementing Agreement ensures implementation of the City's Subarea Plan and thereby allows the City to issue "take" permits under the federal and State Endangered Species acts to address impacts at the local level. Under the federal Endangered Species Act, an Incidental Take Permit is required

[2] Planned Development Permit (PDP No. 53203), Site Development Permit (SDP No. 53204), Conditional Use Permit (CUP No. 53205), Vesting Tentative Map (VTM No. 7938), SDP No. 40-0386 for Camino Del Sur-North and Carmel Mountain Road, and SDP No. 3278 for Camino Del Sur-South.

when non-federal activities would result in "take" of a threatened or endangered species. A Habitat Conservation Plan, such as the City's Subarea Plan, must accompany an application for a federal Incidental Take Permit. In July 1997, the USFWS, CDFW, and City entered into the 50-year MSCP Implementing Agreement, wherein the City received its federal Endangered Species Act Section 10(a) Incidental Take Permit (City 1997a).

Pursuant to its MSCP permit issued under Section 10(a), the City has incidental "take" authority over 85 rare, threatened, and endangered species including regionally sensitive species that it aims to conserve (i.e., "MSCP Covered Species"). However, the City will, to the maximum extent practicable, minimize and mitigate the impacts of take. "MSCP Covered" refers to species that are covered by the City's federal Incidental Take Permit and considered to be adequately protected within the City's Preserve, the MHPA. Special conditions apply to Covered Species that would be potentially impacted including designing a project to avoid impacts to Covered Species in the MHPA where feasible. Projects must incorporate measures (i.e., Area Specific Management Directives) for the protection of Covered Species as identified in Appendix A of the City's Subarea Plan.

In addition to identifying preserve areas within the City (and guiding implementation of the MSCP within its corporate boundaries), the City's Subarea Plan also provides guidance on a regional approach to the conservation of natural communities throughout the City. Additional discussion of the MHPA as it relates to the Project is provided in Section 4.1.1, *Multi-habitat Planning Area*.

4.1.1 Multi-habitat Planning Area

The MHPA was developed by the City in cooperation with the USFWS, CDFW, property owners, developers, and environmental groups using the Preserve Design Criteria contained in the MSCP Plan, and the City Council-adopted criteria for the creation of the MHPA.

MHPA lands are large blocks of native habitat that have the ability to support a diversity of plant and animal life and, therefore, have been included within the City's Subarea Plan for conservation. The MHPA also delineates core biological resource areas and corridors targeted for conservation as these lands have been determined to provide the necessary habitat quality, quantity, and connectivity to sustain the unique biodiversity of the San Diego region. While MHPA lands are considered by the City to be a sensitive biological resource and intended to be mostly void of development activities, development is allowed in the MHPA subject to the requirements of the MSCP Plan. The MHPA is divided into several areas; the Merge 56 Development Project is located in the Northern Area.

Approximately 2.22 acres of the western edge of the Project (Camino Del Sur-North) occur within the MHPA. This area supports southern willow scrub, Diegan coastal sage scrub, Diegan coastal sage scrub-southern mixed chaparral ecotone, southern mixed chaparral, chamise chaparral, and disturbed habitat. Beyond the Project site, the MHPA continues off site to the west (Figure 3).

One specific management recommendation for the MHPA specified in the City's Subarea Plan for the Northern Area applies to the Project. That management recommendation is to:

> *Protect sensitive areas of Del Mar Mesa area from impacts from adjacent development. Use signage to inform people of the sensitivity of vernal pools and the Del Mar Mesa area, in general, and restrict off-road vehicle use of the area.*

To protect the sensitive portions of Del Mar Mesa in the MHPA from the adjacent development and road improvements, the Project will conform to the MHPA Land Use Adjacency Guidelines. Project conformance with these guidelines is discussed in Section 6.2, *Indirect Impacts*. Additionally, the vernal pool preserves adjacent to the Project would be permanently fenced as part of the Project to prevent pedestrian and off-highway vehicle access, and use of off-road vehicles will be prohibited as posted on signage for the Del Mar Mesa Trail Connection (as well as for the Darkwood Canyon Trail, despite the fact that it does not enter the MHPA).

Additional design features that will facilitate Project compliance with policies and directives established in the City's Subarea Plan are described in Section 6.3, *MSCP Evaluation*.

4.1.2 Land Use Adjacency Guidelines

Development adjacent to the MHPA must ensure that indirect impacts into the MHPA are minimized. The only Project component adjacent to the MHPA and subject to the Land Use Adjacency Guidelines is Camino Del Sur-North. Section 1.4.3 of the City's Subarea Plan outlines the requirements to address indirect effects related to drainage and toxics, lighting, noise, public access, invasive plant species, brush management, and grading/land development. Because the Project study area includes areas within and adjacent to the MHPA, conformance with the adjacency guidelines would be required as discussed in Section 7.3, *Mitigation for Indirect Impacts*.

5.0 SURVEY RESULTS

5.1 PHYSICAL CHARACTERISTICS

The Project study area is currently largely undeveloped, with several dirt access roads crossing it and signs of previous agricultural activities. An approximately 150-foot wide San Diego Gas and Electric utility easement crosses through the central portion of the Project study area. No facilities are located within the easement, however.

Several major roads cross the Project Study area. SR-56 crosses the northeastern portion of the Project study area. Carmel Mountain Road crosses SR-56 and extends into the northeastern portion of the Project study area. The northern segment of Camino Del Sur currently terminates at the northwestern corner of the Project study area. The southern segment of Camino Del Sur begins at the southern end of the Project study area (Figure 2).

Topographically, the Project study area is comprised of mesa tops, with an approximate elevation of 400 feet above mean sea level (AMSL). Finger canyons extend from the Project study area to Deer Canyon and Los Peñasquitos Canyon. Water flowing through these canyons ultimately reaches Los Peñasquitos Lagoon. Soils in the Project study area include Olivenhain

cobbly loam, Redding gravelly loam, and terrace escarpments, all of which generally have high shrink-swell potential (Helix Environmental Planning, Inc. 2003).
Residential development exists north, south, and east of the Project study area. The MHPA occurs within portions of the western part of the Project study area and extends westward off site (Figure 3) to include Del Mar Mesa Preserve (which also includes the Del Mar Mesa Vernal Pool Unit of the San Diego National Wildlife Refuge).

Vernal pools are present in the Project study area. Vernal pool preserves are present east and west of the Project study area (Figure 3). Vernal pools are associated with two important physical conditions: 1) a subsurface hardpan or claypan that inhibits the downward percolation of water and 2) topography characterized by a series of low hummocks (mima mounds) and depressions (vernal pools). These two physical conditions allow water to collect in the depressions during the rainy season. Water that has collected in these vernal pools gradually evaporates with the passing of the rainy season. As water evaporates, a gradient of low soil water availability to high soil water availability is created from the periphery of the pool margins to the center of the pool. The chemical composition of the remaining pool water becomes more concentrated as the pool water evaporates, creating a gradient of low ion concentration at the pool periphery to high ion concentration at the pool center. A temporal succession of plant species will occur at the receding pool margins, depending upon the physical and chemical micro-environmental characteristics of the pool. Specific plant species associated with the vernal pools in the Project study area are listed below in Section 5.2.1, *Wetland/Riparian Vegetation Communities.*

5.2 VEGETATION COMMUNITIES

Seventeen vegetation communities (six wetland/riparian and 11 upland) occur in the Project study area (Figure 3). The following sections describe each vegetation community and summarize the dominant plant species composition. The acreages of these communities in the Project impact footprints are provided along with the upland habitat tiers, as defined by the City's Biology Guidelines (2012). Wetland/riparian communities are not assigned a tier.

Upland vegetation communities are divided into five tiers of sensitivity (the first includes the most sensitive, the fifth the least sensitive) based on rarity and ecological importance (City 2012). Tier I includes rare uplands. Tier II includes uncommon uplands. Tiers IIIA and IIIB include common uplands. Tier IV includes other uplands.

5.2.1 Wetland/Riparian Vegetation Communities

Vernal Pool

Vernal pools are a highly specialized habitat supporting a unique flora and fauna. The physical conditions necessary for vernal pool formation were described in Section 5.1, *Physical Characteristics*. Vernal pools in a wet year will support a high proportion of native plant species. Some of the native species observed in vernal pools in the Project study area include pale spikerush (*Eleocharis macrostachya*), toad rush (*Juncus bufonius*), and woolly marbles (*Psilocarphus brevissimus*). During these wet years the exotic, ruderal species characteristic of the non-native grasslands that often surround these pools will not invade them because they are unable to tolerate the physiological conditions. In years of scarce rainfall that is insufficient to

saturate the soil and create a surface pool, the native flora will not germinate, and the pool will be invaded by the exotic species.
Vernal pools exist in the Project study area as follows (Figure 3):

- Two vernal pools (0.022 acre) in the Mixed Use impact footprint.
- Five vernal pools (0.014 acre) in the Camino Del Sur-North impact footprint.
- One vernal pool (0.002 acre) in the Camino Del Sur-South impact footprint.

Vernal pool preserves, including both vernal pools and their watersheds, were established as part of the Rhodes Crossing EIR (City 2003) and Biological Opinion (USFWS 2012). These preserves are located east, west, and southwest of the Project study area (Figure 3). The Project footprint has been designed to avoid direct impacts to these preserve areas. The preserved vernal pool areas immediately adjacent to the Project would be permanently fenced as part of the Project to prevent pedestrian and off-highway vehicle access. Potential indirect impacts to the vernal pool preserves are addressed in Section 6.1.5, *Direct Impacts to Waters of the U.S., Waters of the State, and City Wetlands, Wetland Deviations*.

Road Pool

Road pools are unvegetated, water-holding basins that, in the Project study area, support federal listed endangered San Diego fairy shrimp. Road pools are distinguished from vernal pools by their absence of vernal pool indicator plant species. Off-road vehicle activity has created or enhanced depressions and compacted the soil making it very difficult for native vegetation to become established. This compaction allows water to pond readily, even in a dry year when most natural vernal pools remain dry. There are two road pools (0.003 acre) in the Camino Del Sur-South impact footprint (Figure 3).

Southern Willow Scrub

Southern willow scrub consists of dense, broad-leaved, winter-deciduous stands of trees dominated by shrubby willows (*Salix* sp.) often in association with mule fat (*Baccharis salicifolia*). This community occurs on loose, sandy, or fine gravely alluvium deposited near stream channels during flood flows (i.e., it is a “riparian” community that occurs in association with streams and rivers). Frequent flooding maintains this early seral community, preventing succession to a riparian woodland or forest (Holland 1986). Plant species observed within this community in the Project study area include southwestern willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepis*), and red willow (*Salix laevigata*). The herbaceous understory in the Project study area includes cocklebur (*Xanthium strumarium* var. *canadense*) and western ragweed (*Ambrosia psilostachya*). Southern willow scrub occurs in the Camino Del Sur-North impact footprint (0.32 acre) and in the Avoidance Area (0.16 acre; Figure 3).

Mule Fat Scrub

Mule fat scrub is a depauperate, shrubby riparian scrub community dominated by mule fat and sometimes interspersed with small willows. This community occurs along intermittent stream channels with a fairly coarse substrate and moderate depth to the water table. Like southern willow scrub, this community is also, typically, riparian. This community in the Project study area is dominated by mule fat and is present in the Camino Del Sur-North impact footprint (0.03 acre; Figure 3).

Freshwater Marsh

Freshwater marsh is dominated by perennial, emergent monocots, which can reach heights of 12 to 15 feet. This vegetation type occurs along the coast and in coastal valleys near river mouths and around the margins of lakes and springs. These areas are permanently flooded by fresh water yet lack a significant current (Holland 1986). The dominant plant species in this community in the Project study area is southern cattail (*Typha domingensis*). This community is present in the Camino Del Sur-North impact footprint (0.15 acre) and in the Avoidance Area (0.18 acre; Figure 3).

Tamarisk Scrub

Tamarisk scrub is comprised of shrubs and/or small trees of exotic tamarisk species (*Tamarix* spp.) but may also contain willows, and in the desert, saltbushes (*Atriplex* spp.), catclaw acacia (*Acacia greggii*), and saltgrass (*Distichlis spicata)*. This riparian community occurs along intermittent streams. Tamarisk has a deep root system and high transpiration rate, so it can substantially lower the water table to below the root zone of native species, thereby competitively excluding them. It may also rapidly displace native species within a drainage because it is a prolific seeder (Holland 1986). This community is dominated by French tamarisk (*Tamarix ramosissima*) in the Project study area and is present in the Avoidance Area (0.19 acre; Figure 3).

5.2.2 Upland Vegetation Communities

Diegan Coastal Sage Scrub (including –disturbed and –southern mixed chaparral ecotone)

Coastal sage scrub is one of the two major shrub types that occur in California. This community occupies xeric sites characterized by shallow soils. Sage scrub is dominated by subshrubs whose leaves abscise during drought. This adaptation allows these species to better withstand the prolonged dry period in the summer and fall. Sage scrub species have relatively shallow root systems and open canopies, which may allow for the occurrence of a substantial herbaceous component. Four floristic associations are recognized within coastal sage scrub plant formation, and these occur in distinct geographic areas along the California coast with the Diegan association occupying the area from Orange County to northwestern coastal Baja California, Mexico (O'Leary 1990).

Diegan coastal sage scrub in the Project study area contains a diverse suite of plant species including California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), lemonade berry (*Rhus integrifolia*), and laurel sumac (*Malosma laurina*).

Diegan coastal sage scrub-disturbed contains many of the same shrub species as the undisturbed community but is sparser and has a higher proportion of non-native, annual species. Diegan coastal sage scrub (including -disturbed) are Tier II (uncommon upland) communities (City 2012).

The Project study area also supports Diegan coastal sage scrub-southern mixed chaparral ecotone. This community contains a mix of both sage scrub and southern mixed chaparral plant species (see Southern Mixed Chaparral description below). Diegan coastal sage scrub-southern mixed chaparral ecotone is a Tier II (uncommon upland) community (City 2012).

Diegan coastal sage scrub (including -disturbed) is present in the Mixed Use impact footprint (8.0 acres), Camino Del Sur-North impact footprint (2.7 acres), Camino Del Sur-South impact footprint (1.1 acres), the Darkwood Canyon Trail impact footprint (0.2 acre), and the Avoidance Area (2.4 acres; Figure 3).

Diegan coastal sage scrub-southern mixed chaparral ecotone is present in the Mixed Use impact footprint (1.3 acres) and Camino Del Sur-North impact footprint (0.5 acre; Figure 3).

Scrub Oak Chaparral

Scrub oak chaparral is a dense, evergreen chaparral up to 20 feet tall, dominated by scrub oak (*Quercus* spp.) often with mountain mahogany (*Cercocarpus betuloides*). Scrub oak chaparral occurs in somewhat more mesic areas than many other chaparrals, such as north facing slopes, and recovers more rapidly from fires than other chaparrals due to its resprouting capabilities (Holland 1986; Keeley and Keeley 1988). This vegetation community often occurs at slightly higher elevations (to 5,000 feet AMSL), and substantial leaf litter accumulates. Scrub oak chaparral (1.7 acres) is present in the Camino Del Sur-South impact footprint (Figure 3) and is dominated by Nuttall's scrub oak (*Quercus dumosa*) in the Project study area. Scrub oak chaparral is a Tier I (rare upland) community (City 2012).

Southern Mixed Chaparral

Southern mixed chaparral is composed of broad-leaved, sclerophyllous shrubs that grow to about 6 to 10 feet tall and form dense, often nearly impenetrable, stands. This community occurs on dry, rocky, often steep, north-facing slopes with little soil. As conditions become more mesic, broad-leaved, sclerophyllous shrubs that resprout from underground root crowns become dominant. Plant species observed within this community in the Project study area include Ramona lilac (*Ceanothus tomentosus* ssp. *olivaceus*), black sage (*Salvia mellifera*), and chamise (*Adenostoma fasciculatum*).

Southern mixed chaparral is present in the Mixed Use impact footprint (<0.01 acre), the Camino Del Sur-North impact footprint (3.7 acres), the Camino Del Sur-South impact footprint (4.1 acres), and the Darkwood Canyon Trail impact footprint (0.3 acre; Figure 3). Southern mixed chaparral is a Tier IIIA (common upland) community (City 2012).

Chamise Chaparral (including –disturbed)

Chamise chaparral is dominated by chamise. Chamise chaparral is found from Baja California, Mexico to northern California in pure or mixed stands. Chamise's ubiquitous distribution may be the result of it being the only chaparral species that regenerates after fire from both an underground root crown and from seed (Rundel 1986; Parker 1984). It often dominates at low elevations and on xeric, south-facing slopes with 60 to 90 percent canopy cover. Along its lower elevation limit, chamise intergrades with coastal sage scrub (Rundel 1986). Mission manzanita (*Xylococcus bicolor*) and black sage are minor associates within this community.

Chamise chaparral (including -disturbed) is present in the Mixed Use impact footprint (5.6 acres), Camino Del Sur-North impact footprint (2.5 acres), Camino Del Sur-South impact footprint (5.0 acres), the Carmel Mountain Road impact footprint (2.1 acres), and the Avoidance Area (0.1 acre; Figure 3). Chamise chaparral is a Tier IIIA (common upland) community (City 2012).

Non-Native Grassland

Non-native grassland occurs as a dense to sparse cover of non-native grasses, sometimes associated with species of showy-flowered, native, annual forbs. This community characteristically occurs on gradual slopes with deep, fine-textured, usually clay soils. Typical species in non-native grassland in the Project study area include oats (*Avena* spp.), red brome (*Bromus madritensis* ssp. *rubens*), ripgut grass (*Bromus diandrus*), ryegrass (*Lolium* sp.), and mustard (*Brassica* sp.). Most of the annual, introduced species that comprise the majority of species and biomass within non-native grassland originated from the Mediterranean region, an area with a long history of agriculture and a climate similar to California's. These two factors, in addition to intensive grazing and agricultural practices in conjunction with severe droughts, contributed to the successful invasion and establishment of these species and the replacement of native grasses with an annual-dominated, non-native grassland (Jackson 1985). These grasslands are common throughout San Diego County and serve as valuable raptor foraging habitat. Non-native grassland is present in the Mixed Use impact footprint (16.5 acres), Camino Del Sur-North impact footprint (2.4 acres), Camino Del Sur-South impact footprint (1.4 acres), Carmel Mountain Road impact footprint (2.1 acres), and the Avoidance Area (0.5 acre; Figure 3). Non-native grassland is a Tier IIIB (common upland) community (City 2012).

5.2.3 Other Uplands

Ornamental

Ornamental upland is where existing, non-native landscaping has been planted. It occurs in the Mixed Use impact footprint (0.9 acre), Camino Del Sur-South impact footprint (<0.1 acre), and the Avoidance Area (0.1 acre; Figure 3). Ornamental is a Tier IV (other upland) community (City 2012).

Disturbed Habitat

Disturbed habitat includes land cleared of vegetation, land containing a preponderance of non-native plant species, or land showing signs of past or present usage that reduces its capability of providing viable wildlife habitat. Some of the non-native species of disturbed habitat in the Project study area include filaree (*Erodium* sp.), tumbleweed (*Salsola australis*), smooth cat's-ear (*Hypochoeris glabra*), and prickly sow thistle (*Sonchus asper*). Disturbed habitat is present in the Mixed Use impact footprint (3.3 acres), Camino Del Sur-North impact footprint (0.8 acre), Camino Del Sur-South impact footprint (0.1 acre), Carmel Mountain Road impact footprint (0.1 acre), the Darkwood Canyon Trail impact footprint (<0.01 acre), and the Avoidance Area (0.2 acre; Figure 3). Disturbed habitat is a Tier IV (other upland) community (City 2012).

Developed

Developed land is where permanent structures and/or pavement have been placed, which prevents the growth of vegetation. Developed land is present in the Mixed Use impact footprint (<0.1 acre), Camino Del Sur-North impact footprint (0.1 acre), and Camino Del Sur-South impact footprint (<0.1 acre; Figure 3). Developed is not assigned to a tier (City 2012).

Table 2 summarizes the vegetation communities that exist in the Project study area, their location inside or outside of the MHPA, and their respective acreage totals existing within the study area for each Project component and the Avoidance Area.

5.3 PLANT SPECIES OBSERVED

Ninety-five species of plants have been observed in the Project study area during all surveys to date. A list of these plant species is presented in Appendix D. Some of these species were mentioned earlier in the vegetation community descriptions provided in Section 5.2, *Vegetation Communities*. Eight species that were observed are considered sensitive and are described below in Section 5.5.2, *Sensitive Plant Species*.

5.4 ANIMAL SPECIES OBSERVED

Fifty-four species of animals have been observed or detected in the Project study area during all surveys to date. A list of these animal species is presented in Appendix E. Animal species observed or detected in the Project study area include one butterfly, three crustaceans, three amphibians, four reptiles, 36 birds, and seven mammals. Eight of these species are considered sensitive and are described below in Section 5.5.3, *Sensitive Animal Species*.

5.5 SENSITIVE BIOLOGICAL RESOURCES

According to City Municipal Code (Chapter 11, Article 3, Division 1) and the City's Biology Guidelines (City 2012), sensitive biological resources refers to upland and/or wetland areas that meet any one of the following criteria:

(a) Lands that have been included in the City's MSCP Preserve (i.e., the MHPA);

(b) Wetlands;

(c) Lands outside the MHPA that contain Tier I, Tier II, Tier IIIA, or Tier IIIB habitats;
(d) Lands supporting species or subspecies listed as rare, endangered, or threatened under Section 670.2 or 670.5, Title 14, California Code of Regulations, or the federal Endangered Species Act, Title 50, Code of Federal Regulations, Section 17.11 or 17.12, or candidate species under the California Code of Regulations;

(e) Lands containing habitats with MSCP Narrow Endemic species as listed in the Biology Guidelines (City 2012); or

(f) Lands containing habitats of MSCP Covered Species as listed in the Biology Guidelines (City 2012).

5.5.1 Sensitive Vegetation Communities

Additionally, sensitive vegetation communities are those considered rare within the region or sensitive by CDFW (Holland 1986) and/or the City. These communities, in any form (e.g., disturbed), are considered sensitive because they have been historically depleted, are naturally uncommon, or support sensitive species. The Project study area supports 14 sensitive vegetation communities. Six of these communities are wetland/riparian communities: vernal pool, road pool, southern willow scrub, mule fat scrub, freshwater marsh, and tamarisk scrub. Eight of these communities are uplands: scrub oak chaparral, Diegan coastal sage scrub, Diegan coastal sage scrub-disturbed, Diegan coastal sage scrub-southern mixed chaparral ecotone, southern mixed chaparral, chamise chaparral, chamise chaparral-disturbed, and non-native grassland.

5.5.2 Sensitive Plant Species

Sensitive plant species are those that are considered federal, State, or CNPS rare, threatened, or endangered; MSCP Covered Species; or MSCP Narrow Endemic species (Appendix F). More specifically, if a species is designated with any of the following statuses (a-c below), it is considered sensitive per City Municipal Code (Chapter 11, Article 3, Division 1):

(a) A species or subspecies is listed as rare, endangered, or threatened under Section 670.2 or 670.5, Title 14, California Code of Regulations, or the FESA, Title 50, Code of Federal Regulations, Section 17.11 or 17.12, or candidate species under the California Code of Regulations;

(b) A species is a Narrow Endemic as listed in the Biology Guidelines in the Land Development Manual (City 2012); and/or

(c) A species is a Covered Species as listed in the Biology Guidelines in the Land Development Manual (City 2012).

A species may also be considered sensitive if it is included in the CNPS Inventory of Rare and Endangered Plants (CNPS 2015). California Rare Plant Rank 1 includes plants that are rare, threatened or endangered in California. California Rare Plant Rank 2 includes plants that are rare, threatened or endangered in California but more common elsewhere. California Rare Plant Rank 3 includes plants that are eligible for State listing as rare, threatened or endangered. California Rare Plant Rank 4 plants are locally significant but few, if any, are eligible for State listing.

Sensitive plant status is often based on one or more of three distributional attributes: geographic range, habitat specificity, and/or population size. A species that exhibits a small or restricted geographic range (such as those endemic to the region) is geographically rare. A species may be more or less abundant but occur only in very specific habitats. Lastly, a species may be widespread but exists naturally in small populations.

Sensitive plant species that were not observed but may have potential to occur in the Project study area (based on, for example, habitat types and soils present) are listed in Table 3 alphabetically by scientific name.

Table 4 lists MSCP Narrow Endemic species that may have potential to occur in the Project study area in alphabetical order by scientific name. Narrow Endemic species are a subset of MSCP Covered Species (defined in Section 4.1, *Multiple Species Conservation Program [MSCP] Subarea Plan*). The City specifies additional conservation measures in its MSCP Subarea Plan to ensure impacts to Narrow Endemic species are avoided to the maximum extent practicable. Multiple years of surveys have been conducted for all of the species in Tables 3 and 4, so it is likely that if they were present they would have been observed. Sensitive plant species that were observed in the Project study area are addressed following Table 4.

Table 2
EXISTING VEGETATION COMMUNITIES WITHIN THE STUDY AREA[1]

Vegetation Community	Mixed Use (acre)		Camino Del Sur-North (acre)[2]		Camino Del Sur-South (acre)		Carmel Mountain Road (acre)		Darkwood Canyon Trail (acre)		Avoidance Area	Total (acre)	
	Outside MHPA	Inside MHPA	Outside MHPA	Inside MHPA	Outside MHPA	Inside MHPA	Outside MHPA	Inside MHPA	Outside MHPA	Inside MHPA	Outside MHPA	Outside MHPA	Inside MHPA
Upland Vegetation Communities													
Tier I													
Scrub oak chaparral	--	--	--	--	2.1	--	--	--	--	--	--	2.1	--
Tier II													
Diegan coastal sage scrub (including –disturbed)	7.9	--	2.5	0.3	1.5	--	0.1	--	0.5	--	2.4	14.9	0.3
Diegan coastal sage scrub-southern mixed chaparral ecotone	1.3	--	0.5	--	--	--	--	--	--	--	--	1.8	--
Tier IIIA													
Southern mixed chaparral	<0.01	--	2.0	2.4	5.0	--	--	--	0.9	--	--	7.9	2.4
Chamise chaparral (including –disturbed)	5.7	--	3.1	<0.1	5.8	--	2.4	--	--	--	0.1	17.1	<0.1
Tier IIIB													
Non-native grassland	16.5	--	2.4	--	1.7	--	2.5	--	--	--	0.5	23.6	--
Subtotal Tier I through Tier IIIB Uplands	**31.4**	**--**	**10.5**	**2.7**	**16.1**	**--**	**5.0**	**--**	**1.4**	**--**	**3.0**	**67.4**	**2.7**
Tier IV													
Ornamental	1.1	--	0.3	--	<0.1	--	<0.1	--	--	--	0.1	1.5	--
Disturbed habitat	3.3	--	1.0	<0.1	0.2	--	0.8	--	<0.1	--	0.2	5.5	<0.1
Developed[3]	0.2	--	0.2	--	<0.1	--	0.9	--	--	--	--	1.3	--
Subtotal Tier IV Other Uplands	**4.6**	**--**	**1.5**	**<0.1**	**0.2**	**--**	**1.7**	**--**	**<0.1**	**--**	**0.3**	**8.3**	**<0.1**
Wetland/Riparian Vegetation Communities													
Vernal pool	0.022	--	0.014	--	0.002	--	--	--	--	--	--	0.038	--
Road pool	--	--	--	--	0.003	--	--	--	--	--	--	0.003	--
Southern willow scrub	--	--	0.33	0.02	--	--	--	--	--	--	0.16	0.49	0.02
Mule fat scrub	--	--	0.03	--	--	--	--	--	--	--	--	0.03	--
Freshwater marsh	--	--	0.15	--	--	--	--	--	--	--	0.18	0.33	--
Tamarisk scrub	--	--	0.05	--	--	--	--	--	--	--	0.19	0.24	--
Subtotal Wetland/Riparian	**0.022**	**--**	**0.574**	**0.02**	**0.005**	**--**	**--**	**--**	**--**	**--**	**0.53**	**1.13**	**0.02**
TOTAL	**36.02**	**--**	**12.57**	**2.72**	**16.31**	**--**	**6.7**	**--**	**1.4**	**--**	**3.83**	**76.83**	**2.72**
											GRAND TOTAL	**79.55**	

[1]Wetland/riparian acreages have been rounded to the nearest one-hundredth of an acre except vernal pools and road pools that have been rounded to the nearest one-thousandth of an acre. Upland acreages are generally rounded to the nearest one-tenth of an acre. Subtotals and totals reflect rounding.
[2] Includes the Del Mar Mesa Trail Connection.
[3] Technically not a Tier IV upland but included therein for simplicity.

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Table 3 SENSITIVE PLANT SPECIES AND THEIR POTENTIAL TO OCCUR[1]				
SPECIES	**SENSITIVITY[2]**	**HABITAT(S)/DISTRIBUTION**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR**
Thread-leaved brodiaea (*Brodiaea filifolia*)	FT SE CNPS Rare Plant Rank 1B.1	Clay soils in vernally moist grasslands and on vernal pool peripheries in interior valley regions of San Diego, Riverside, Orange, and Los Angeles counties.	March to June	Low. Soils have shrink-swell potential like clay and may be appropriate; however, this species was not found (but Orcutt's brodiaea [*Brodiaea orcuttii*] was). Recent observations of thread-leaved brodiaea within or adjacent to the MHPA, as reported to the California Natural Diversity Database and/or USFWS, occur to the north and northeast of the Project study area. The nearest location (observation in 2010) is located in Black Mountain Open Space Park more than two miles northeast of the Project study area.
Palmer's grapplinghook (*Harpagonella palmeri*)	CNPS Rare Plant Rank 4.2	Clay soils in annual grasslands and coastal sage scrub below approximately 3,300 feet AMSL in Los Angeles, Orange, Riverside, and San Diego counties; Baja California and Sonora, Mexico; San Clemente Island; Arizona.	March to April	Low. Soils have shrink-swell potential like clay and may be appropriate, but species was not observed during surveys conducted from 1997 through 2002 and in 2014.
Graceful tarplant (*Holocarpha virgata* ssp. *elongata*)	CNPS Rare Plant Rank 4.2	Coastal mesas and foothills with grassland habitats in San Diego, Orange, and Riverside counties.	May to November	Low. Was observed off site in the adjacent Rhodes Crossing Project study area, but species was not observed on site during surveys conducted from 1997 through 2002 and in 2014.
Little mousetail (*Myosurus minimus* ssp. *apus*)	CNPS Rare Plant Rank 3.1	Vernal pools and alkaline marshes in Riverside, San Bernardino, San Diego, and additional central California counties; Oregon; Baja California, Mexico.	March to June	Low. Potential habitat present, but species was not observed during surveys conducted from 1997 through 2002 and in 2014.

Table 3 (continued) **SENSITIVE PLANT SPECIES AND THEIR POTENTIAL TO OCCUR[1]**				
SPECIES	**SENSITIVITY[2]**	**HABITAT(S)/DISTRIBUTION**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR**
Golden-rayed pentachaeta (*Pentachaeta aurea* ssp. *aurea*)	CNPS Rare Plant Rank 4.2	Mesic montane grasslands and sage scrub in Riverside, San Bernardino, Orange, Los Angeles, and San Diego counties; Baja California, Mexico.	March to July	Low. Has been reported approximately 400 feet west of the northern portion of the Camino Del Sur-South impact footprint but was not observed on site during surveys conducted from 1997 through 2002 and in 2014.
Ashy spike-moss (*Selaginella cinerascens*)	CNPS Rare Plant Rank 4.1	Flat mesas in coastal sage scrub and chaparral in Orange and San Diego counties; northwestern Baja California, Mexico.	N/A	Low. Was observed off site in the adjacent Rhodes Crossing Project study area but was not observed on site during surveys conducted from 1997 through 2002 and in 2014.

[1]These species were not observed in the Project study area. Sensitive plant species that were observed are listed following Table 4.
[2]See Appendix F for an explanation of sensitivity codes.

Table 4 NARROW ENDEMIC PLANT SPECIES AND THEIR POTENTIAL TO OCCUR				
SPECIES	**SENSITIVITY[1]**	**HABITAT(S)/DISTRIBUTION**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR**
San Diego thornmint (*Acanthomintha ilicifolia*)	FT SE CNPS Rare Plant Rank 1B.1	Occurs on clay lenses in grassy openings in chaparral or sage scrub. Prefers friable or broken, clay soils. Range limited to coastal areas of San Diego County and Baja California, Mexico.	April to June	Low. Soils in Project study area have shrink-swell potential like clay, but occupied sites typically have crumbly and/or deeply fissured clay soil. Was not observed during surveys conducted from 1997 through 2002 and in 2014.
Shaw's agave (*Agave shawii*)	CNPS Rare Plant Rank 2B.1	Coastal sage scrub and coastal bluff scrub. Range limited to coastal areas of San Diego County and Baja California, Mexico.	September to May	Low. Potential habitat present, but this species is a perennial leaf succulent that would have been observed if present during surveys conducted from 1997 through 2002 and in 2014.
San Diego ambrosia (*Ambrosia pumila*)	FE CNPS Rare Plant Rank 1B.1	Found in disturbed areas within chaparral, coastal sage scrub and grasslands. Range includes San Diego and Riverside counties south to Baja California, Mexico.	June to September	Very low. Not known from Project vicinity.
Aphanisma (*Aphanisma blitoides*)	CNPS Rare Plant Rank 1B.2	Occurs in sandy areas along the coast. Range includes islands off the southern California coast from San Onofre to Imperial Beach in San Diego County.	April to May	Very low. No known populations in MSCP Plan Area (City 1997b).
Coastal dunes milk vetch (*Astragalus tener* var. *titi*)	FE SE CNPS Rare Plant Rank 1B.1	Occurs in sandy places along the coast, including coastal dunes. Range includes coastal areas of Monterey, Los Angeles, and San Diego counties.	March to May	None. Occurs on coastal dunes, and range does not include the Project study area.

Table 4 (continued) **NARROW ENDEMIC PLANT SPECIES AND THEIR POTENTIAL TO OCCUR**				
SPECIES	**SENSITIVITY[1]**	**HABITAT(S)/DISTRIBUTION**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR**
Encinitas baccharis (*Baccharis vanessae*)	FT SE CNPS Rare Plant Rank 1B.1	Occurs on sandstone soils in chaparral. Known mainly from the Encinitas area from which it has been nearly extirpated.	August to November	Not expected. Not known from near the Project study area.
Short-leaved dudleya (*Dudleya blochmaniae* ssp. *brevifolia*)	SE CNPS Rare Plant Rank 1B.1	Occurs on Torrey sandstone soils in chaparral and coastal scrub.	April	Not expected due to lack of suitable soils.
Variegated dudleya (*Dudleya variegata*)	CNPS Rare Plant Rank 1B.2	Occurs on dry hillside and mesas in chaparral, coastal sage scrub, grasslands and near vernal pools. Ranges from San Diego County south to Baja California, Mexico.	May to June	Low. Would have been observed if present during surveys conducted from 1997 through 2002 and in 2014.
Spreading navarretia (*Navarretia fossalis*)	FT CNPS Rare Plant Rank 1B.1	Occurs in chenopod scrub, marshes and swamps (assorted freshwater habitats), playas, and vernal pools.	April to June	Low. Would have been observed if present during surveys conducted from 1997 through 2002 and in 2014.
San Diego mesa mint (*Pogogyne abramsii*)	FE SE CNPS Rare Plant Rank 1B.1	Occurs in vernal pools.	March to July	Low. Observed in vernal pools just outside the Project study area, but would have been observed on site if present during surveys conducted from 1997 through 2002 and in 2014.

[1]See Appendix F for an explanation of listing/sensitivity codes. Narrow Endemic Species are a subset of MSCP Covered Species.

Eight sensitive plant species were observed in the Project study area (Figure 3). These species are listed in order below first by sensitivity, then by scientific name. The eight species include San Diego goldenstar (*Bloomeria* [*Muilla*] *clevelandii*), Orcutt's brodiaea (*Brodiaea orcuttii*), Nuttall's scrub oak, summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*), San Diego barrel cactus (*Ferocactus viridescens*), spine shrub (*Adolphia californica*), western dichondra (*Dichondra occidentalis*), and southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*).

San Diego goldenstar (*Bloomeria* [*Muilla*] *clevelandii*)

Sensitivity: CNPS Rare Plant Rank 1B.1; MSCP Covered Species (Appendix F)

Distribution: Southwestern San Diego County and northwestern Baja California, Mexico.

Habitat(s): Clay soils on dry mesas and hillsides in coastal sage scrub or chaparral.

Presence in the study area: San Diego goldenstar occurs in two locations (only two individuals were observed) in chamise chaparral in the Carmel Mountain Road impact footprint (Figure 3).

Orcutt's brodiaea (*Brodiaea orcuttii*)

Sensitivity: CNPS Rare Plant Rank 1B.1; MSCP Covered Species (Appendix F)

Distribution: Riverside and San Bernardino counties south to Baja California, Mexico.

Habitat(s): Vernal pools and ephemeral streams and seeps, usually associated with clay soils.

Presence in the study area: Orcutt's brodiaea was observed in one location (only one individual was observed) in non-native grassland in the Carmel Mountain Road impact footprint (Figure 3).

Nuttall's scrub oak (*Quercus dumosa*)

Sensitivity: CNPS Rare Plant Rank 1B.1 (Appendix F)

Distribution: Coastal southern California from near Point Conception in Santa Barbara County south into northern Baja California, Mexico.

Habitat(s): Coastal areas with sandy soil or on sandstone substrate, in scrub oak chaparral, southern maritime chaparral, southern mixed chaparral or coastal sage scrub vegetation.

Presence in the study area: Nuttall's scrub oak is the dominant species in scrub oak chaparral in the Project study area, which occurs in the Camino Del Sur-South impact footprint. Individual Nuttall's scrub oaks also occur in other vegetation communities in the Project study area in the Camino Del Sur-North, Camino Del Sur-South, and Mixed Use impact footprints, as well as in the Avoidance Area (Figure 3).

Summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*)

Sensitivity: CNPS Rare Plant Rank 1B.2 (Appendix F)

Distribution: Scattered locations below approximately 2,300 feet AMSL from the foothills to the coast in Orange and San Diego counties and south into Baja California, Mexico.

Habitat(s): North-facing slopes and drainages in chaparral.

Presence in the study area: Summer holly primarily occurs in the Camino Del Sur-South impact footprint. One individual was also observed in the Mixed Use impact footprint (Figure 3).

San Diego barrel cactus (*Ferocactus viridescens*)

Sensitivity: CNPS Rare Plant Rank 2B.1; MSCP Covered Species (Appendix F)

Distribution: San Diego County; Baja California, Mexico.

Habitat(s): Hillsides with Diegan coastal sage scrub, often at the crest of slopes and growing among cobbles. Occasionally found on vernal pool periphery and mima mound topography.

Presence in the study area: All San Diego barrel cacti were observed in the Camino Del Sur-South impact footprint (Figure 3).

Spine shrub (*Adolphia californica*)

Sensitivity: CNPS Rare Plant Rank 2B.1 (Appendix F)

Distribution: Below 1,000 feet AMSL in western San Diego County and northwestern Baja California, Mexico.

Habitat(s): Clay soils in dry canyons and washes in coastal sage scrub and chaparral.

Presence in the study area: Spine shrub primarily occurs in the Camino Del Sur-South impact footprint. One individual each was observed in the Mixed Use and Camino Del Sur-North impact footprints (Figure 3).

Western dichondra (*Dichondra occidentalis*)

Sensitivity: CNPS Rare Plant Rank 4.2 (Appendix F)

Distribution: Santa Barbara County to Baja California, Mexico and on San Miguel Island.

Habitat(s): Dry, sandy banks in coastal sage scrub, chaparral, or southern oak woodland; often proliferates on recently burned slopes.

Presence in the study area: Western dichondra was found in two locations in the Avoidance Area (Figure 3).

Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*)

Sensitivity: CNPS Rare Plant Rank 4.2 (Appendix F)

Distribution: Los Angeles, San Bernardino, San Luis Obispo, Ventura, and San Diego counties; Baja California, Mexico.

Habitat(s): Moist, saline, or alkaline soils in coastal salt marshes and riparian marshes.

Presence in the study area: Southwestern spiny rush was found in two locations in the Project study area—one immediately west of the Camino Del Sur-South impact footprint and one in the Avoidance Area (Figure 3).

5.5.3 Sensitive Animal Species

Sensitive animal species are those that are considered federal or State threatened or endangered; MSCP Covered Species; or MSCP Narrow Endemic species (Appendix F). More specifically, if a species is designated with any of the following statuses (a-c below), it is considered sensitive per City Municipal Code (Chapter 11, Article 3, Division 1):

(a) A species or subspecies is listed as endangered or threatened under Section 670.2 or 670.5, Title 14, California Code of Regulations, or the FESA, Title 50, Code of Federal Regulations, Section 17.11 or 17.12, or candidate species under the California Code of Regulations;

(b) A species is a Narrow Endemic as listed in the Biology Guidelines in the Land Development Manual (City 2012); and/or

(c) A species is a Covered Species as listed in the Biology Guidelines in the Land Development Manual (City 2012).

A species may also be considered sensitive if it is included on the CDFW's Special Animals List (CDFW Natural Diversity Database 2015) as a State Species of Special Concern, State Watch List species, State Fully Protected species, or federal Bird of Conservation Concern (Appendix F).

Generally, the principal reason an individual taxon (species or subspecies) is considered sensitive is the documented or perceived decline or limitations of its population size or geographical extent and/or distribution, resulting in most cases from habitat loss.

Sensitive animal species that were not observed or detected in the Project study area but that may have potential to occur (based on, for example, habitats present) are listed in Table 5. Sensitive animal species that were observed or detected are listed following Table 5.

Table 5 SENSITIVE ANIMAL SPECIES AND THEIR POTENTIAL TO OCCUR[1]			
SPECIES	**LISTING OR SENSITIVITY[1]**	**HABITAT(S)/DISTRIBUTION**	**POTENTIAL TO OCCUR**
INVERTEBRATES			
Riverside fairy shrimp (*Streptocephalus woottoni*)	FE	Found in moderate to deep (generally ranging from 10 inches to 5-10 feet in depth), longer-lived vernal pools and ephemeral wetlands in southern coastal California and northern Baja California, Mexico. Currently presumed to occupy 60 or fewer pool complexes throughout southern California (USFWS 2011).	Not expected. Was not observed during focused surveys.
Quino checkerspot butterfly (*Euphydryas editha quino*)	FE	Primary larval host plants in San Diego are dwarf plantain (*Plantago erecta*) at lower elevations. Owl's clover (*Castilleja exserta*) may serve as host plant if primary host plants have senesced. Potential habitat includes areas of low-growing and sparse vegetation. Exists only as several, probably isolated, colonies in southwestern Riverside County, southern San Diego County, and northern Baja California, Mexico.	Not expected. Was not observed during focused surveys. The Project study area is no longer within the recommended survey area for the species (USFWS 2014).
Hermes copper butterfly (*Lycaena hermes*)	FC	Southern mixed chaparral and coastal sage scrub with mature specimens of its larval host plant, spiny redberry (*Rhamnus crocea*). Range is San Diego County, south of Fallbrook, to northern Baja California, Mexico.	Not expected. Spiny redberry is not present.
VERTEBRATES			
Reptiles			
Silvery legless lizard (*Anniella pulchra pulchra*)	SSC	Areas with loose, sandy soil. Generally found in leaf litter, under rocks, logs, or driftwood in oak woodland, chaparral, and desert scrub. Occurs from the Bay Area south through the Coast and Peninsular Ranges to northern Baja California, Mexico.	Low to moderate. Prefers loose, sandy soil including cobbly and gravelly loams and terrace escarpments.
Northern red-diamond rattlesnake (*Crotalus ruber*)	SSC	Found in chaparral, coastal sage scrub, and along creek banks, particularly among rock outcrops or piles of debris supporting rodents. Ranges from extreme southeastern Los Angeles County (Diamond Bar) into southern San Bernardino County, and south into southern Baja California, Mexico.	Low. Prefers rocky outcroppings within coastal sage scrub or chaparral habitats. Rocky outcroppings are not present in the Project study area.

Table 5 (continued) **SENSITIVE ANIMAL SPECIES AND THEIR POTENTIAL TO OCCUR**			
SPECIES	**LISTING OR SENSITIVITY**[2]	**HABITAT(S)/DISTRIBUTION**	**POTENTIAL TO OCCUR**
VERTEBRATES (continued)			
Reptiles (continued)			
Coronado skink (*Plestiodon skiltonianus interparietalis*)	SSC	Grasslands, coastal sage scrub, open chaparral, pine oak woodland and coniferous forests. Prefers areas where there is abundant leaf litter or low, herbaceous growth. Inland southern California south through the north Pacific coast region of northern Baja California Norte, Mexico.	Moderate to high. Was observed off site in the adjacent Rhodes Crossing Project study area.
Birds			
Bell's sage sparrow (*Amphispiza belli belli*)	BCC WL	Chaparral and sage scrub with modest leaf litter. Patchy distribution throughout San Diego County, which often shifts to include partially recovered burned areas.	Moderate in chaparral. Likely would have been observed if present.
Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)	WL MSCP Covered Species	Coastal sage scrub and open chaparral as well as shrubby grasslands. Occur throughout coastal lowlands and foothills of San Diego County	Moderate to high. Reported outside the Project study area during the coastal California gnatcatcher survey in 2014.
Loggerhead shrike (*Lanius ludovicianus*)	BCC SSC	Grassland, open sage scrub, chaparral, and desert scrub. Uncommon year-round resident observed in lower elevations of San Diego County.	Low. Would have been observed if present.
Burrowing owl (*Athene cunicularia*)	BCC SSC MSCP Covered Species	Declining species occurring in grassland or open scrub habitats. In 2003, there were an estimated 25 to 30 resident pairs of in San Diego County located primarily in the southern quarter of the county and on North Island (Lincer and Bloom 2007).	Low. Would have been observed if present.
Northern harrier (*Circus cyaneus*)	SSC MSCP Covered Species	Coastal, salt, and freshwater marshlands; grasslands; and prairies. Widespread throughout the temperate regions of North America and Eurasia. Winters and migrates throughout California from below sea level in Death Valley to an elevation of 9,800 feet AMSL. Known breeding areas in San Diego County include Torrey Pines, the Tijuana River Valley, and Camp Pendleton.	Moderate to high. Observed off site on the south side of SR-56.

Table 5 (continued) **SENSITIVE ANIMAL SPECIES AND THEIR POTENTIAL TO OCCUR**[1]			
SPECIES	**LISTING OR SENSITIVITY**[2]	**HABITAT(S)/DISTRIBUTION**	**POTENTIAL TO OCCUR**
VERTEBRATES (continued)			
Birds (continued)			
White-tailed kite (*Elanus leucurus*)	State Fully Protected	Riparian woodlands and oak or sycamore groves adjacent to grassland on coastal slopes in San Diego County. Nests in the crowns of trees, especially coast live oak (*Quercus agrifolia*).	High (for foraging; no nesting habitat present). Observed during Project surveys on the south side of SR-56 off site hunting in non-native grassland.
California horned lark (*Eremophila alpestris actia*)	State Watch List	Sandy beaches, agricultural fields, grasslands and open areas on coastal slopes and in lowlands from Sonoma County to northern Baja California, Mexico.	High. Observed off site in the adjacent Rhodes Crossing Project study area.
Mammals			
San Diego desert woodrat (*Neotoma lepida intermedia*)	SSC	Open chaparral and coastal sage scrub, often building large, stick nests in rock outcrops or around clumps of cactus or yucca. Occurs along the coastal slope of southern California from San Luis Obispo County south into coastal northwestern Baja California, Mexico	Low. Nests likely would have been observed if present.
Dulzura pocket mouse (*Chaetodipus californicus femoralis*)	SSC	Primarily associated with mature chaparral. In San Diego County, it ranges eastward to the desert transition zone.	Moderate. Habitat potentially suitable.
Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)	SSC	Open areas of coastal sage scrub and weedy growth, often on sandy substrates. Ranges from Los Angeles County and southern San Bernardino County south into west-central Baja California, Mexico.	Moderate. Habitat potentially suitable.

[1]These species were not observed in the Project study area. Sensitive animal species that were observed are listed following Table 5.
[2]See Appendix F for an explanation of listing and sensitivity codes.

Eight sensitive animal species were found in the Project study area. Each is listed and described below and shown on Figure 3.

San Diego fairy shrimp (*Branchinecta sandiegonensis*)

Listing: Federal Listed Endangered (Appendix F)

Distribution: San Diego County

Habitat(s): Seasonally astatic pools which occur in tectonic swales or earth slump basins and other areas of shallow, standing water. Often in patches of grassland and agriculture interspersed in coastal sage scrub and chaparral.

Presence in the study area: San Diego fairy shrimp was found in the two vernal pools in the Mixed Use impact footprint and in the five vernal pools in the Camino Del Sur-North impact footprint (Figure 3). The San Diego fairy shrimp in those five latter vernal pools were found during dry sampling. That is, dry sampling identified *Branchinecta* cysts in each of the basins. Since San Diego fairy shrimp have been found in the Mixed Use impact footprint and elsewhere in the vicinity of the Project study area, it is assumed that the cysts identified in those vernal five pools are also *B. sandiegonensis* (Ecological Restoration Service and Alden Environmental, Inc. 2012). San Diego fairy shrimp were also found in two road pools in the Camino Del Sur-South impact footprint (Figure 3). USFWS Critical Habitat for the San Diego fairy shrimp has been designated across much of the Project study area (Figure 3).

Coastal California gnatcatcher (*Polioptila californica californica*)

Listing or sensitivity: Federal Listed Threatened; State Species of Special Concern; MSCP Covered Species (Appendix F)

Distribution: Southern Los Angeles, Orange, western Riverside, and San Diego counties south into Baja California, Mexico.

Habitat(s): Coastal sage scrub.

Presence in the study area: Two likely breeding pairs of coastal California gnatcatcher were found in the Mixed Use impact footprint (Figure 3).

The coastal California gnatcatcher was observed in 2013/2014 in the Project study area in the Mixed Use impact footprint. The coastal California gnatcatcher may use Diegan coastal sage scrub habitat in the Camino Del Sur-North impact footprint inside and outside the MHPA and in the Avoidance Area.

Orange-throated whiptail (*Aspidoscelis hyperythra*)

Sensitivity: State Species of Special Concern; MSCP Covered Species (Appendix F)

Distribution: Southern Orange and San Bernardino counties, south to the cape of Baja California, Mexico.

Habitat(s): Coastal sage scrub, chaparral, edges of riparian woodlands and washes. Also found in weedy, disturbed areas adjacent to these habitats. Important habitat requirements include open, sunny areas; shaded areas; and abundant invertebrate prey base, particularly termites (*Reticulitermes* sp.).

Presence in the study area: The orange-throated whiptail was observed in Diegan coastal sage scrub in the Avoidance Area (Figure 3). It is likely that the species occurs in similar habitats throughout the Project study area.

Coast horned lizard (*Phrynosoma blainvillii*)

Sensitivity: State Species of Special Concern; MSCP Covered Species (Appendix F)

Distribution: Southern California, west of the deserts, and south into northern Baja California, Mexico.

Habitat(s): Coastal sage scrub; chaparral; open oak woodlands; and open, coniferous forests. Important habitat components include basking sites, adequate scrub cover, areas of loose soil, and an abundance of harvester ants (*Pogonomyrmex* sp.), a primary prey item.

Presence in the study area: The coast horned lizard was observed in non-native grassland in the Mixed Use impact footprint, in Diegan coastal sage scrub in the Camino Del Sur-North impact footprint, and in chamise chaparral in the Camino Del Sur-South impact footprint (Figure 3). It is likely that this species occurs in similar habitats throughout the Project study area.

San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)

Sensitivity: State Species of Special Concern (Appendix F)

Distribution: Southern Santa Barbara County, south on the coastal slope to the vicinity of San Quintin, Baja California, Mexico. Localities on the eastern edge of its range include Jacumba and San Felipe Valley in San Diego County.

Habitat(s): Occurs primarily in open habitats including coastal sage scrub; chaparral; grasslands; croplands; and open, disturbed areas if there is at least some shrub cover present.

Presence in the study area: The San Diego black-tailed jackrabbit was observed in non-native grassland in the Mixed Use impact footprint (Figure 3). It is possible that this species occurs elsewhere in the Project study area, and while no evidence of nesting was detected, the species may nest in the study area as suitable habitat is present.

Western spadefoot (*Spea hammondii*)

Sensitivity: State Species of Special Concern (Appendix F)

Distribution: California's Central Valley and San Francisco Bay area south along the coast to northwestern Baja California, Mexico.

Habitat(s): Floodplains, washes, and low hills. Southern California habitats include coastal sage scrub, chaparral, and grassland. Important habitat components include temporary pools (which form during winter and spring rains) for breeding and friable soils for burrowing.

Presence in the study area: The western spadefoot was observed in association with one of the vernal pools in the Mixed Use impact footprint (Figure 3).

Two-striped garter snake (*Thamnophis hammondii*)

Sensitivity: State Species of Special Concern (Appendix F)

Distribution: Monterey County south through the coastal ranges into northwestern Baja California, Mexico.

Habitat(s): Primarily along permanent creeks and streams but also around vernal pools and along intermittent streams. Occasionally found in chaparral or other habitats relatively far from permanent water.

Presence in the study area: The two-striped garter snake was found in association with one of the vernal pools in the Mixed Use impact footprint (Figure 3).

Cooper's hawk (*Accipiter cooperii*)

Sensitivity: State Watch List; MSCP Covered Species (Appendix F)

Distribution: Throughout the continental U.S. (excluding Alaska) and parts of both Montana and the Dakotas. Winters south to Mexico and Honduras.

Habitat(s): In San Diego County, tends to inhabit lowland riparian areas and oak woodlands in proximity to suitable foraging areas such as scrubland or fields.

Presence in the study area: The Cooper's hawk was observed in Diegan coastal sage scrub-disturbed in the Mixed Use impact footprint (Figure 3).

5.5.4 Waters of the U.S., Waters of the State, and City Wetlands

WUS and WS encompass wetlands but also may include ephemeral and intermittent streams that may or may not be vegetated. Generally, wetlands are lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface. Wetlands vary widely because of regional and local differences in soils, topography, climate, hydrology, water chemistry, vegetation, and other factors (Environmental Protection Agency 2013). WUS, WS, and City Wetlands are sensitive as they are regulated by the Corps, CDFW, and City. See Section 2.2.2, *Jurisdictional Delineations*, for more detail.

Waters of the U.S.

Wetlands

Southern willow scrub, mule fat scrub, freshwater marsh, and tamarisk scrub that meet the three Corps wetland criteria (see Section 3.1.1, *Federal, Clean Water Act*) are present in the Project study area. Southern willow scrub, mule fat scrub, and freshwater marsh occur in the Camino Del Sur-North impact footprint. Southern willow scrub, freshwater marsh, and tamarisk scrub occur in the Avoidance Area (Figure 5).

Non-wetland Waters of the U.S.

While not meeting the three criteria to be considered wetlands under the federal Clean Water Act, non-wetland WUS protect the chemical and physical functions of the nation's wetlands, and for those reasons, are considered sensitive. Non-wetland WUS in the Project study area include both ephemeral and intermittent streams. Ephemeral streams flow only after precipitation. Runoff from rainfall is the primary source of water for these streams. Intermittent streams flow when smaller upstream waters are flowing and when groundwater provides enough water for stream flow. Runoff from rainfall supplements the flow of intermittent streams. Non-wetland WUS are present in the Mixed Use, Camino Del Sur-North, and Camino Del-Sur South impact footprints (Figure 5).

Waters of the State

California Fish and Game Code (see Section 3.1.2, *State of California*) provides specific protection for WS (both wetlands and non-wetlands) when an activity would alter the flow or change or use any material from the bed, channel, or bank of any perennial, intermittent, or ephemeral river, stream, and/or lake as such an activity may substantially adversely affect fish and wildlife resources conserved, protected, and managed by CDFW.

Wetland WS in the Project study area include southern willow scrub, mule fat scrub, freshwater marsh, and tamarisk scrub. Non-wetland WS in the Project study area include streambeds. WS are based on the presence of riparian vegetation or regular surface flow, and for streambeds, having at least periodic or intermittent flow through a bed or channel with banks. Southern willow scrub, mule fat scrub, and freshwater marsh occur in the Camino Del Sur-North impact footprint. Southern willow scrub, freshwater marsh, and tamarisk scrub occur in the Avoidance Area. Streambeds occur in the Mixed Use, Camino Del Sur-North, and Camino Del-Sur South impact footprints (Figure 5).

City Wetlands

As described in Section 2.2.2, *Jurisdictional Delineations*, City Wetlands are characterized as areas that persistently or periodically support wetland vegetation; areas that have hydric soils or wetland hydrology; or areas that lack those characteristics as a result of non-permitted filling.

Areas mapped as wetlands on Map No. C-713 are shown in SDMC Chapter 13, Article 2, Division 6 (Sensitive Coastal Overlay Zone). City wetlands in the Project study area are the same as WS (i.e., southern willow scrub, mule fat scrub, freshwater marsh, tamarisk scrub, and streambeds) but also include vernal pools and road pools, as described above (Figure 5). Vernal pools occur in the Mixed Use, Camino Del Sur-North, and Camino Del Sur-South impact footprints. Road pools occur in the Camino Del Sur-South impact footprint (Figure 3).

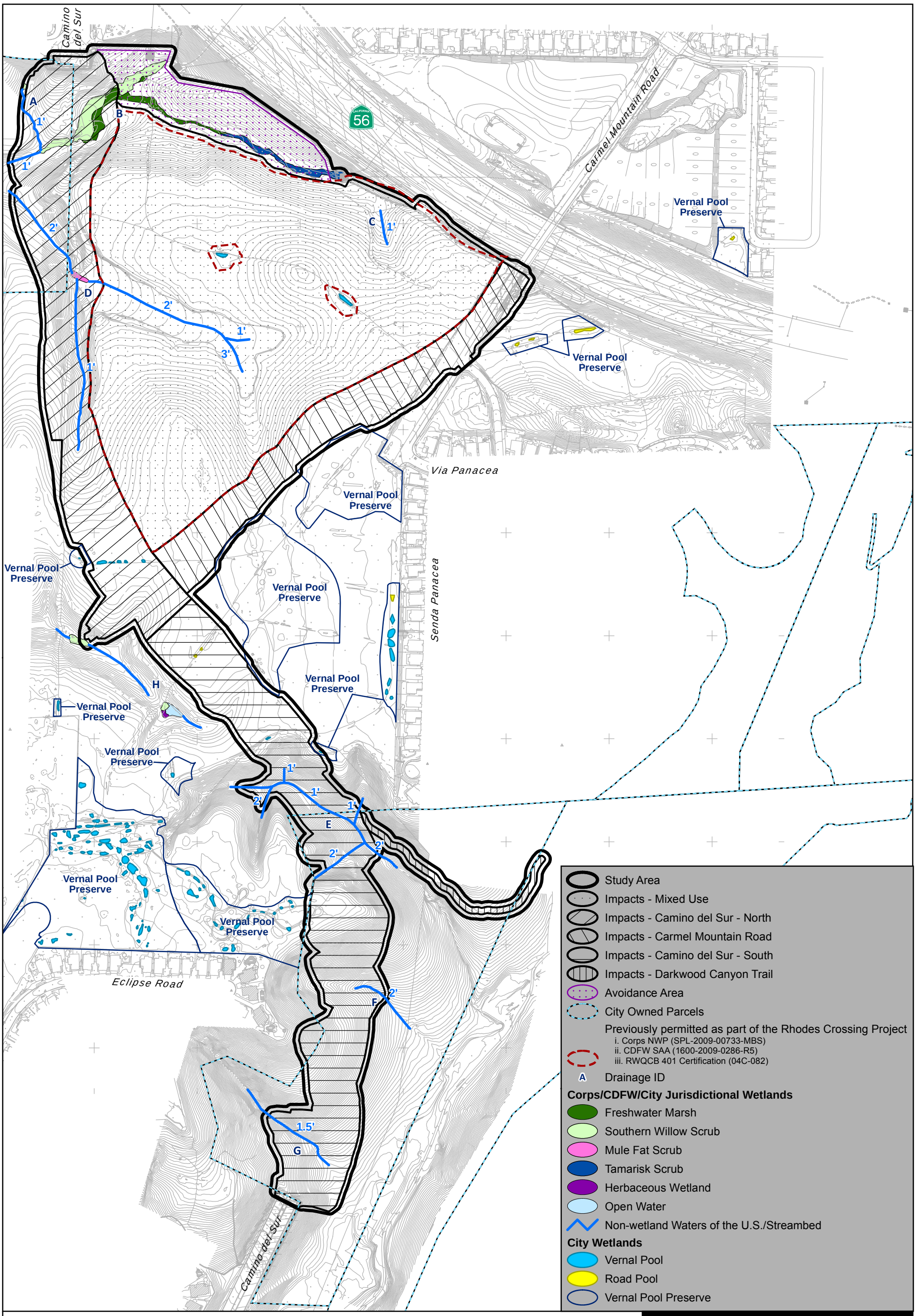
5.5.5 Wildlife Corridors

This section provides an analysis of wildlife corridors existing in the Project vicinity. As stated previously, approximately 2.22 acres of the western edge of the Project (Camino Del Sur-North impacts) occurs within the Northern Area of the MHPA. Goals and objectives of the MHPA for the Northern Area (Section 1.5.8 of the City's MSCP Subarea Plan) consist of providing regional wildlife corridors that link Del Mar Mesa, Los Peñasquitos Canyon Preserve, Los Peñasquitos Lagoon, Torrey Pines State Park, San Dieguito River Valley Regional Park, and the Black Mountain Area. The Del Mar Mesa Preserve is located off-site within the MHPA just beyond the western border of the Project.

Within approximately 1.5 miles of the Project study area, four identified MHPA connections (i.e., undeveloped, naturally vegetated corridors of land) exist between Del Mar Mesa Preserve and Los Peñasquitos Canyon Preserve as identified in the Carmel Mountain/Del Mar Mesa Natural Resource Management Plan (NRMP; Figure 6; Recon Environmental, Inc. 2015). According to the NRMP, the San Diego Tracking Team has been monitoring wildlife movement since 1997 as part of a wildlife corridor study by the Conservation Biology Institute for the MSCP. This study has shown that mule deer (*Odocoileus hemionus*) and other mammals (not including mountain lion [*Puma concolor*]) primarily utilize the San Diego Gas and Electric access roads west of Park Village Road to move between Del Mar Mesa and Los Peñasquitos Canyon Preserve (Wildlife Corridor 1; Figure 6). Wildlife Corridor 1 is the westernmost corridor shown on Figure 6 and is in the MHPA. This corridor does not cross any roads, is approximately 3,750 feet wide, and would not be affected by the construction of Camino Del Sur-South.

The easternmost connection of the four identified on Figure 6 (Wildlife Corridor 4) crosses the Camino Del Sur-South impact footprint. This connection consists of a finger canyon connecting Del Mar Mesa Preserve and Darkwood Canyon. To reach Los Peñasquitos Canyon Preserve from Darkwood Canyon, wildlife must travel through the southern portion of Darkwood Canyon that is approximately 150 feet wide and bordered by house lots and Park Village Elementary School. Then, wildlife must pass through the undersized culvert under Park Village Road[3] or

[3]The culvert under Park Village Road is five feet shorter than the recommended 12 feet for height for a wildlife undercrossing, and it has a length to width ratio of approximately 13, which is more than six times higher than the recommended ratio. Also, there are no skylights provided (Ogden Environmental and Energy Services [1992] *in* City 2005).

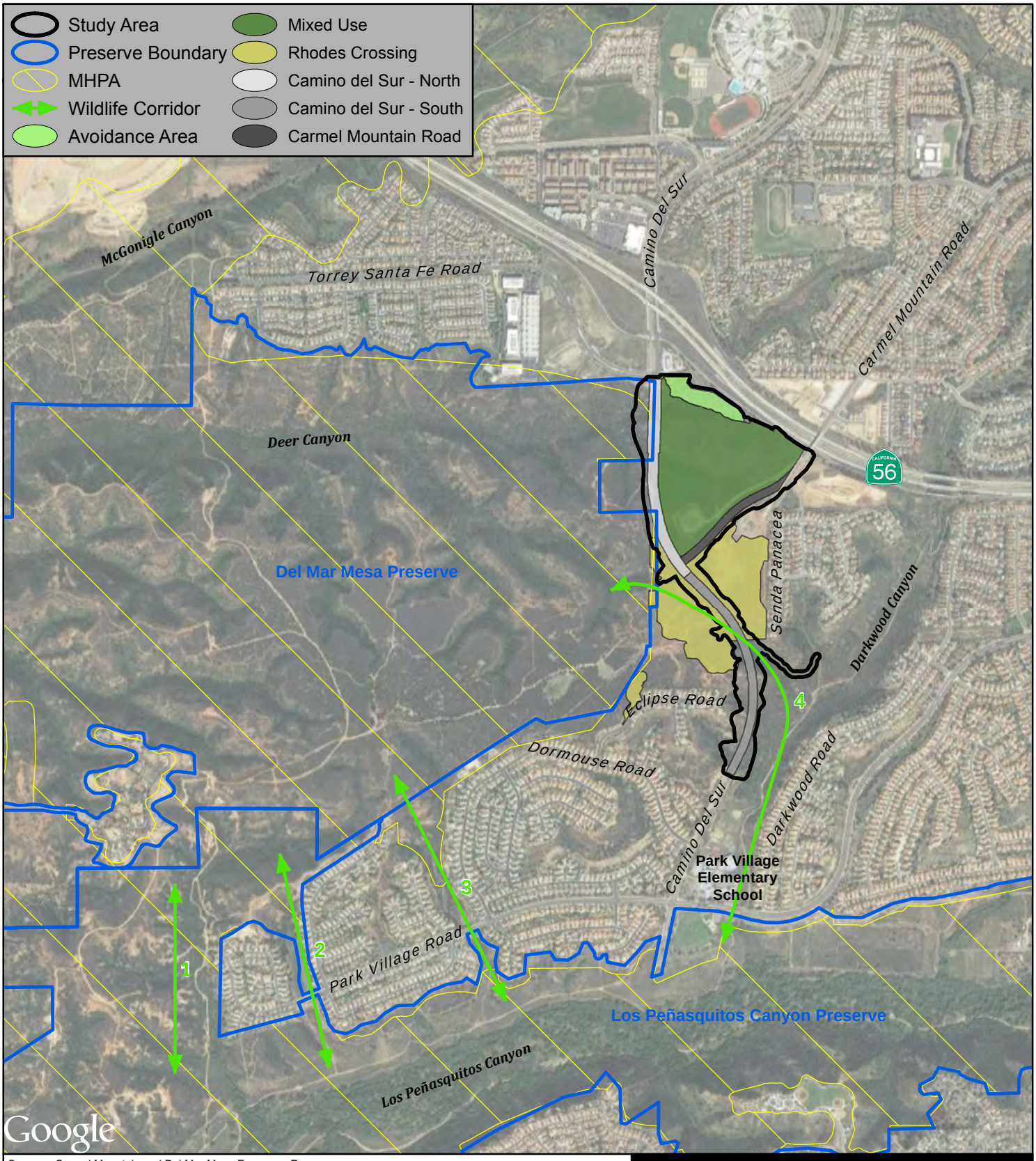


ALDEN ENVIRONMENTAL, INC

Figure 5

Jurisdictional Areas/Impacts

MERGE 56 DEVELOPMENT PROJECT



Sources: Carmel Mountain and Del Mar Mesa Preserves Resource Management Plan (RECON 2011); Imagery ©2016 , Cnes/Spot Image, DigitalGlobe, U.S. Geological Survey, USDA Farm Service Agency

N
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S

0 750 1,500
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ALDEN ENVIRONMENTAL, INC

Figure 6

Wildlife Corridors

MERGE 56 DEVELOPMENT PROJECT

cross at grade. Park Village Road is a four-lane roadway with no traffic calming features to slow vehicles (speed limit is 45 miles per hour) and a minimally landscaped median to provide temporary refuge from traffic. This corridor (Wildlife Corridor 4; Figure 6) is not conducive to wildlife movement due to its highly constrained condition.

East of Wildlife Corridor 1, Wildlife Corridors 2 and 3 are similarly narrow, bordered by house lots and require crossing of Park Village Road (Figure 6). However, where these corridors cross the roadway, the speed limit is 25 miles per hour. Still, neither is conducive to wildlife movement as they are also constrained corridors.

Construction of Camino Del Sur-South would require that wildlife cross the new two-lane roadway at grade to enter Darkwood Canyon from Del Mar Mesa Preserve. It should be noted that future planned development on the west side of Camino Del Sur-South (part of the Rhodes Crossing Project; Figure 6) along with protected (i.e., fenced) vernal pool preserves (Figure 3) southwest of Camino Del Sur-South would create additional constraints to potential wildlife movement in this already constrained corridor in the future.

The Project would, however, provide features as part of the design of Camino Del Sur-South to reduce vehicle speed and improve conditions for any potential at-grade crossings. First, the roadway has been narrowed to two lanes from four and would have a posted speed limit of 35 miles per hour. Second, there would be ample sight distance of the potential crossing location so that motorists could see wildlife up ahead in the roadway. Third, wildlife experts would be consulted to ensure the vegetation planted within the 10- to 14-foot wide median is not desirable forage for mule deer and other wildlife so as not to attract them to the roadway. The vegetation in the wide median would, however, provide a potential refuge from vehicle traffic if wildlife attempts to cross the roadway.

While Camino Del Sur-South would further constrain wildlife movement through Wildlife Corridor 4, this connection is already constrained by existing development. The Project would not affect the other three connections, particularly Wildlife Corridor 1, that provides the widest and most frequently used connection between Del Mar Mesa and Los Peñasquitos Canyon.

6.0 PROJECT IMPACT ANALYSIS

This section analyzes the Project's effects on sensitive biological resources. The City's CEQA Significance Determination Thresholds (City 2012) are used to establish whether or not there is a significant effect. A significant effect is defined as a "substantial or potentially substantial adverse change in the environment." The CEQA Guidelines (i.e., Appendix G of the CEQA Guidelines) further indicate that there may be a significant effect on biological resources if a project will trigger the following criteria:

A. Substantially affect an endangered, rare, or threatened species of animal or plant or the habitat of the species;

B. Interfere substantially with the movement of any resident or migratory fish or wildlife species; or

C. Substantially diminish habitat for fish, wildlife, or plants.

Impacts to biological resources are evaluated by City staff through the CEQA review process, the ESL Regulations and City's Biology Guidelines, and through the review of a project's consistency with the City's MSCP Subarea Plan. According to the ESL Regulations, Site Development Permits are required for impacts to wetlands and listed species habitat. The Project would also be required to obtain all applicable federal and State permits prior to the issuance of any discretionary permit by the City. Prior to the issuance of any construction permit(s), the Project applicant must provide a copy of the permit, authorization letter, or other official mode of communication from the federal and State permitting agencies to the City.

For projects within the City or carried out by the City which may affect sensitive biological resources, potential impacts to such sensitive biological resources must be evaluated using the following significance criteria:

1. Would the project result in substantial adverse impacts, either directly or through habitat modifications, to any species identified as a candidate, sensitive or special status species in the MSCP or other local or regional plans, policies or regulations, or by the CDFW or USFWS?

2. Would the project result in a substantial adverse impacts on any Tier I, Tier II, Tier IIIA or Tier IIIB habitats as identified in the Biology Guidelines or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS?

3. Would the project result in a substantial adverse impact on wetlands (including, but not limited to, marsh, vernal pools, riparian areas, etc.) through direct removal, filling, hydrological interruption, or other means?

4. Would the project substantially interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, including linkages identified in the MSCP Plan, or impede the use of native wildlife nursery sites?

5. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, NCCP, or other approved local, regional or state habitat conservation plan, either within the MSCP plan area or in the surrounding region?

6. Would the project introduce a land use within an area adjacent to the MHPA that would result in adverse edge effects?

7. Would the project conflict with any local policies or ordinances protecting biological resources?

8. Would the project introduce invasive species of plants in to natural open space?

6.1 DIRECT IMPACTS

Direct impacts immediately alter the affected biological resources such that those resources are eliminated temporarily or permanently. The removal of vegetation would be considered a direct impact. All direct impacts associated with the Project would be permanent.

6.1.1 Direct Impacts to Vegetation Communities

Approximately 67.03 total acres would be impacted by the Project (Figure 3). The total impacts would be comprised of 35.62 acres of impact from the Mixed Use component, 13.21 acres of impact from the Camino del Sur-North component (includes 2.22 acres within the MHPA and the Del Mar Mesa Trail Connection), 13.4 acres for the Camino del Sur-South component, 4.3 acres of impact from the Carmel Mountain Road component, and 0.5 acre of impacts associated with the Darkwood Canyon Trail (Figure 3). The Project would avoid 3.83 acres in the northern-most portion of the Project study area (Table 2). The impacted areas include upland vegetation communities and wetland/riparian vegetation communities as described below.

Approximately 2.22 acres of the MHPA would be impacted in the Camino Del Sur-North impact footprint (Figure 3). This impact is unavoidable as the roadway has fixed end points and meets current engineering safety standards and, consequently, cannot be realigned or relocated. Because Camino Del Sur has been identified in the Torrey Highlands Subarea Plan (THSP) and Rancho Peñasquitos Community Plan as a Circulation Element, it is "considered conditionally compatible with the biological objectives of the MSCP and allowed within the City's MHPA" (City 1997). Mitigation for these impacts both inside and outside of the MHPA are discussed in Section 7.0 *Mitigation Measures*.

Impacts to Upland Vegetation Communities

Impacts to 66.5 total acres of the following Tier I through Tier IV upland vegetation communities listed below would occur from the Project (Table 6). Table 6 provides a breakdown of the impacted acreage by Tier, Project component, and location inside or outside the MHPA.

- Scrub Oak Chaparral
- Diegan Coastal Sage Scrub (including –disturbed)
- Diegan Coastal Sage Scrub – Southern Mixed Chaparral Ecotone
- Southern Mixed Chaparral
- Chamise Chaparral (including –disturbed)
- Non-native Grassland
- Ornamental
- Disturbed Habitat
- Developed

Impacts to Wetland/Riparian Vegetation Communities

Implementation of the Project would result in impacts to 0.54 acre of the wetland/riparian vegetation communities listed below and shown in Table 6. Table 6 provides a breakdown of the community impacts by Project component. Vernal pool and road pool impacts are addressed in more detail below.

- Vernal Pool
- Road Pool
- Southern Willow Scrub
- Mule Fat Scrub
- Freshwater Marsh

Vernal Pools and Road Pools

The Project would impact eight vernal pools (1,661 square feet) and two road pools (114 square feet) with a combined surface area of approximately 1,775 square feet (0.041 acre; Figure 5). Each impacted pool, except one, supports San Diego fairy shrimp (Figure 3). None of the vernal pool or road pool impacts would occur within the MHPA. Table 7 presents the impacts to vernal pools and road pools by Project component.

The impacted pools are all located on dirt roads and are highly disturbed. They are either in areas previously used for agriculture and/or are subject to off-highway vehicle and pedestrian use. The impacted pools are considered to be of low quality.

Analysis of Significance of Impacts to Vegetation Communities

Upland Vegetation Communities. Impacts to the Tier I through Tier IIIB upland vegetation communities would be significant according to the significance criteria described previously in Section 6.0, *Project Impact Analysis*. Mitigation for these impacts would be required. Impacts to Tier IV Other uplands would be less than significant as the impacts would not meet criteria for significance described in Section 6.0, *Project Impact Analysis*. The mitigation ratio for impacts to disturbed habitat is 0:1 regardless of whether the impact or mitigation occurs inside or outside the MHPA (City 2012). Thus, no mitigation would be required.

Significance Criterion A: The Project would substantially affect an endangered, rare, or threatened species of animal or plant or the habitat of the species. The Project would affect the federal listed threatened coastal California gnatcatcher and its habitat. While the gnatcatcher is an MSCP Covered Species, it may also use habitat in the MHPA where its habitat would be impacted. The impact to its habitat is considered substantial. See Section 6.1.3, *Sensitive Animal Species*, for further analysis of impacts to the coastal California gnatcatcher.

Significance Criterion C: The Project would substantially diminish habitat for fish, wildlife, or plants. The Project would replace 61.74 acres of habitat (Tier I through Tier III uplands and wetland/riparian habitats) that supports at least 95 plant species and 54 animal species with urban development, which is considered substantial.

Table 6
DIRECT IMPACTS TO VEGETATION COMMUNITIES[1]

Vegetation Community	Mixed Use (acre)		Camino Del Sur-North (acre)[2]		Camino Del Sur-South (acre)		Carmel Mountain Road (acre)		Darkwood Canyon Trail (acre)[3]		Total Project Impacts (acre)	
	Outside MHPA	Inside MHPA	Outside MHPA	Inside MHPA	Outside MHPA	Inside MHPA	Outside MHPA	Inside MHPA	Outside MHPA	Inside MHPA	Outside MHPA	Inside MHPA
Upland Vegetation Communities												
Tier I												
Scrub oak chaparral	--	--	--	--	1.7	--	--	--	--	--	1.7	--
Tier II												
Diegan coastal sage scrub	7.7	--	2.2	0.3	1.1	--	--	--	0.2	--	11.2	0.3
Diegan coastal sage scrub-disturbed	0.3	--	0.2	<0.01	--	--	--	--	--	--	0.5	<0.01
Diegan coastal sage scrub-southern mixed chaparral ecotone	1.3	--	0.5	--	--	--	--	--	--	--	1.8	--
Tier IIIA												
Southern mixed chaparral	<0.01	--	1.8	1.9	4.1	--	--	--	0.3	--	6.2	1.9
Chamise chaparral	2.2	--	1.9	--	4.5	--	1.1	--	--	--	9.7	--
Chamise chaparral-disturbed	3.4	--	0.6	<0.01	0.5	--	1.0	--	--	--	5.5	<0.01
Tier IIIB												
Non-native grassland	16.5	--	2.4	<0.01	1.4	--	2.1	--	--	--	22.4	<0.01
Subtotal Tier I through Tier IIIB Uplands	**31.4**	**--**	**9.6**	**2.2**	**13.3**	**--**	**4.2**	**--**	**0.5**	**--**	**59.0**	**2.2**
Tier IV												
Ornamental	0.9	--	--	--	<0.1	--	--	--	--	--	0.9	--
Disturbed habitat	3.3	--	0.8	<0.01	0.1	--	0.1	--	<0.01	--	4.3	<0.01
Developed[4]	<0.1	--	0.1	--	<0.1	--	--	--	--	--	0.1	--
Subtotal Tier IV Other Uplands	**4.2**	**--**	**0.9**	**<0.01**	**0.1**	**--**	**0.1**	**--**	**<0.01**	**--**	**5.3**	**<0.01**
Wetland/Riparian Vegetation Communities												
Vernal pool	0.022	--	0.014	--	0.002	--	--	--	--	--	0.038	--
Road pool	--	--	--	--	0.003	--	--	--	--	--	0.003	--
Southern willow scrub	--	--	0.30	0.02	--	--	--	--	--	--	0.30	0.02
Mule fat scrub	--	--	0.03	--	--	--	--	--	--	--	0.03	--
Freshwater marsh	--	--	0.15	--	--	--	--	--	--	--	0.15	--
Tamarisk scrub	--	--	--	--	--	--	--	--	--	--	--	--
Subtotal Wetland/Riparian	**0.022**	**--**	**0.494**	**0.02**	**0.005**	**--**	**--**	**--**	**--**	**--**	**0.52**	**0.02**
TOTAL	**35.62**	**--**	**10.99**	**2.22**	**13.4**	**--**	**4.3**	**--**	**0.5**	**--**	**64.81**	**2.22**
										GRAND TOTAL	**67.03**	

[1]Wetland/riparian acreages have been rounded to the nearest one-hundredth of an acre except vernal pools and road pools that have been rounded to the nearest one-thousandth of an acre. Upland acreages have generally been rounded to the nearest one-tenth of an acre. Subtotals and totals reflect rounding.
[2]Includes impacts from construction of the Del Mar Mesa Trail Connection.
[3]This is a very conservative estimate of impacts for the trail, which were calculated using the trail width of five feet plus 10 feet on either side.
[4]Technically not a Tier IV upland but included therein for simplicity.

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Table 7 DIRECT IMPACTS TO VERNAL POOLS AND ROAD POOLS				
Project Component[1]	**Impacts to Vernal Pool**	**Impacts to Road Pool**	**Combined Impact (square feet)**	**San Diego Fairy Shrimp Present?**
Mixed Use	382	--	382	Yes
	584	--	584	Yes
		Subtotal	**966**	--
Camino Del Sur-North	319	--	319	Yes
	58	--	58	Yes
	94	--	94	Yes
	62	--	62	Yes
	91	--	91	Yes
		Subtotal	**624**	--
Camino Del Sur-South	--	51	51	Yes
	--	63	63	Yes
	71	--	71	No
		Subtotal	**185**	--
		TOTAL PROJECT	**1,775**	--

[1]No vernal or road pools are located in the Carmel Mountain Road and Darkwood Canyon Trail impact areas.

Significance Criterion 2: The Project would result in a substantial adverse impact on any Tier I, Tier II, Tier IIIA or Tier IIIB habitat as identified in the Biology Guidelines or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS. As presented in Table 6 in Section 6.1.1, *Direct Impacts to Vegetation Communities*, the Project would directly impact 61.2 acres of Tier I through Tier IIIB habitats. These impacts would be considered substantial and adverse.

Wetland/Riparian Vegetation Communities. Impacts to wetland/riparian vegetation communities would be significant according to the following significance criteria listed in Section 6.0, *Project Impact Analysis*. Mitigation for these impacts would be required.

Significance Criterion A: The Project would substantially affect an endangered, rare, or threatened species of animal or plant or the habitat of the species. The Project would impact the federal listed endangered San Diego fairy shrimp and its vernal pool and road pool habitats. See Section 6.1.3, *Sensitive Animal Species*, for further analysis of impacts to the San Diego fairy shrimp.

Significance Criterion C: The Project would substantially diminish habitat for fish, wildlife, or plants. The Project would replace habitat that supports wetland/riparian plant and animal species with urban development including that of the federal listed endangered San Diego fairy shrimp, which would be substantial.

Significance Criterion 1: The Project would result in substantial adverse impacts, either directly or through habitat modifications, to any species identified as a candidate, sensitive or special status species in the MSCP or other local or regional plans, policies or regulations, or by the CDFW or USFWS. The Project would directly impact the federal listed endangered San Diego fairy shrimp associated with vernal/road pool habitats that would be impacted resulting in a substantial, adverse effect.

Significance Criterion 2: The Project would result in a substantial adverse impact on sensitive natural communities identified in local or regional plans, policies, regulations or by the CDFW or USFWS. As presented in Tables 6 and 7 in Section 6.1.1, *Direct Impacts to Vegetation Communities*, the Project would directly impact wetland/riparian communities considered sensitive in the Biology Guidelines and regulated as ESL. Therefore, the impact is considered substantial and adverse.

Significance Criterion 3: The Project would result in a substantial adverse impact on wetlands (including, but not limited to, marsh, vernal pools, riparian areas, etc.) through direct removal, filling, hydrological interruption, or other means. The City's ESL Regulations state that wetlands impacts should be avoided, and unavoidable impacts should be minimized to the maximum extent practicable. As explained in Section 3.1.3, *City of San Diego Environmentally Sensitive Lands [ESL] Regulations*, non-avoidance of wetlands requires a deviation from the ESL Regulations. Therefore, the Project's impacts on wetlands are considered substantial and adverse.

Significance Criterion 7: The Project would conflict with any local policies or ordinances protecting biological resources. As stated above, the ESL Regulations state that impacts to wetlands should be avoided. Because wetlands cannot be avoided, a deviation from the regulations is required to resolve this conflict (see Section 6.1.5, *Direct Impacts to Waters of the U.S., Waters of the State, and City Wetlands*).

6.1.2 Direct Impacts to Sensitive Plant Species

The Project would directly impact six sensitive plant species through direct removal as follows. The significance of each impact is addressed within the impact discussions. Project conformance with the MSCP Area Specific Management Directives for Covered Species (impacted by the Project and that could be in the MHPA or adjacent vernal pool preserves) is also provided with each impact discussion. Generally, conformance is met through complying with the MHPA Land Use Adjacency Guidelines.

Impact to species with a CNPS Rare Plant Rank of 1 or 2 (rare, threatened, or endangered) and MSCP Covered Species would generally be significant according to Significance Criterion 1 because the Project would result in substantial adverse impacts, either directly or through habitat modifications, to species identified as candidate, sensitive, or special status species by the CNPS, or by the CDFW, USFWS, or in the MSCP.

Nuttall's Scrub Oak. Twenty-three individual Nuttall's scrub oak would be removed in the Camino Del Sur-North, Camino Del Sur-South, and Mixed Use impact footprints. Additionally, 1.7 acres of scrub oak chaparral dominated by Nuttall's scrub oak would be removed in the Camino Del Sur-South impact footprint (Figure 3). Nuttall's scrub oak has a CNPS Rare Plant

Rank of 1B.1 (rare, threatened, or endangered in California and elsewhere, greater than 80 percent of occurrences threatened; see Appendix F).

Due to the number of Nuttall's scrub oak that would be affected and its CNPS Rare Plant Rank of 1B.1, impacts to Nuttall's scrub oak would be significant according to Significance Criterion 1, and habitat-based mitigation would be required.

Orcutt's Brodiaea. One individual of Orcutt's brodiaea would be removed in the Carmel Mountain Road impact footprint (Figure 3). Orcutt's brodiaea has a CNPS Rare Plant Rank of 1B.1, and it is an MSCP Covered Species (see Appendix F).

Impacts to one Orcutt's brodiaea would be less than significant because of the low numbers of individuals impacted and the species' lack of federal or State listing. Orcutt's brodiaea is an MSCP Covered Species considered to be adequately protected in the MHPA. No mitigation would be required.

Area Specific Management Directives for this species must include specific measures to protect Orcutt's brodiaea from detrimental edge effects. The Project would conform to the Land Use Adjacency Guidelines to protect Orcutt's brodiaea from detrimental edge effects (see Section 7.3.1, *Mitigation for Indirect Impacts Associated with MHPA Land Use Adjacency*, for details).

San Diego Goldenstar. Two individual San Diego goldenstar would be removed in the Carmel Mountain Road impact footprint (Figure 3). San Diego goldenstar also has a CNPS Rare Plant Rank of 1B.1 and is an MSCP Covered Species (see Appendix F).

Impacts to two San Diego goldenstar would be less than significant because of the few numbers of individuals impacted and the species' lack of federal or State listing. San Diego goldenstar is an MSCP Covered Species considered to be adequately protected in the MHPA. No mitigation would be required.

Area Specific Management Directives require monitoring for transplanted populations of San Diego goldenstar and specific measures to protect it from detrimental edge effects. The Project does not propose to transplant the two individual San Diego goldenstar that would be impacted; no monitoring would be necessary. The Project would conform to the Land Use Adjacency Guidelines to protect San Diego goldenstar from detrimental edge effects (see Section 7.3.1, *Mitigation for Indirect Impacts Associated with MHPA Land Use Adjacency*, for details).

Summer Holly. Sixty-eight individuals of summer holly would be removed by the Project. One individual is within the Mixed Use impact footprint; the remaining individuals are located within the Camino Del Sur-South impact footprint. Summer holly has a CNPS Rare Plant Rank of 1B.2 (rare, threatened, or endangered in California and elsewhere, 20 to 80 percent of occurrences threatened; see Appendix F). It is not an MSCP Covered Species.

Due to summer holly's CNPS Rare Plant Rank of 1B.2 and the number of individuals impacted, impacts to the species would be significant according to Significance Criterion 1, and mitigation would be required.

San Diego Barrel Cactus. Approximately 55 San Diego barrel cacti would be removed in the Camino Del Sur-South impact footprint (Figure 3). San Diego barrel cactus has a CNPS Rare Plant Rank 2B.1 (rare, threatened, or endangered in California but more common elsewhere, greater than 80 percent of occurrences threatened), but it is an MSCP Covered Species.

Impacts to approximately 55 San Diego barrel cacti would be less than significant because the species is not federal or State listed, and it is an MSCP Covered Species considered to be adequately protected in the MHPA. No mitigation would be required. The barrel cacti would, however, be salvaged and transplanted, as feasible, to suitable locations on site such as in the vernal pool preserves.

Area Specific Management Directives for this species must include measures to protect it from edge effects, unauthorized collection, and must include appropriate fire management/control practices to protect against a too frequent fire cycle. San Diego barrel cactus in the Project study area occurs in and adjacent to the Camino Del Sur-South impact footprint outside the MHPA. It is not expected that unauthorized collection would occur in this location along a well-traveled roadway, and fire management/control is not expected to be necessary. While at least one San Diego barrel cactus is in the Project study area for the Darkwood Canyon Trail outside the MHPA, City signage for the trail would likely prohibit the collection of plants (see Section 6.3.2, *General Management Directives*).

The Project must also conform to the Land Use Adjacency Guidelines that would protect the species inside the MHPA from edge effects. The Project would conform to the Land Use Adjacency Guidelines, thereby protecting the species as described in Section 7.3.1, *Mitigation for Indirect Impacts Associated with MHPA Land Use Adjacency.*

Spine Shrub. Approximately 28 individual spine shrubs would be removed by the Project. Spine shrub primarily occurs in the Camino Del Sur-South impact footprint; however, one individual each was observed in the Mixed Use and Camino Del Sur-North impact footprints (Figure 3). Spine shrub has a CNPS Rare Plant Rank 2B.1. It is not an MSCP Covered Species.

Due to spine shrub's CNPS Rare Plant Rank of 2B.2, impacts to the species would be significant according to Significance Criterion 1, and mitigation would be required.

Southwestern Spiny Rush. There would be no impacts to southwestern spiny rush from the Project (Figure 3). Therefore, no mitigation would be required.

Western Dichondra. There would be no impacts to western dichondra from the Project (Figure 3). Therefore, no mitigation would be required.

6.1.3 Direct Impacts to Sensitive Animal Species

The Project would impact eight sensitive animal species, as follows. These impacts would occur primarily from vegetation removal and clearing/grubbing/grading activities, which would cause loss of habitat and potentially cause direct injury or mortality to individuals. Project compliance with the MSCP Area Specific Management Directives for Covered Species is also provided with each impact discussion.

San Diego Fairy Shrimp. The Project would remove seven vernal pools and two road pools that support the federal listed endangered San Diego fairy shrimp (Table 7). The Project would also remove 47.1 acres of USFWS designated Critical Habitat for the San Diego fairy shrimp (30.2 acres in the Mixed Use impact footprint, 8.0 acres in the Camino Del Sur-North impact footprint, 4.4 in the Carmel Mountain Road impact footprint, and 4.5 acres in the Camino Del Sur-South impact footprint; Figure 3). There would be no impacts to Critical Habitat from the Darkwood Canyon Trail. The Project would avoid 0.45 acre of USFWS designated Critical Habitat for the San Diego fairy shrimp (Figure 3).

The designation of Critical Habitat for San Diego fairy shrimp includes Five Critical Habitat units (with 29 subunits) on 2,931 acres of land located in Orange and San Diego counties. The individual units contain essential habitat for the San Diego fairy shrimp and help to identify special management considerations for the species. The designated Critical Habitat that would be impacted by the Merge 56 Development Project is within Subunit 4 A/B (Del Mar Mesa).

Primary Constituent Elements are specific physical or biological features that provide for a species' life-history processes and are essential to the conservation of the species. The extent of project impacts on the Primary Constituent Elements associated with Critical Habitat areas was determined using an analysis that was previously performed for a larger study area, inclusive of the Merge 56 Development Project (USFWS 2012). That analysis, when applied to the Project, indicates that the impacts to 47.1 acres of designated San Diego fairy shrimp Critical Habitat resulting from the Project would include 23.6 acres of habitat containing Primary Constituent Elements. Therefore, that analysis further extrapolated for the Project indicates that it would result in: 1) a nine percent reduction of Critical Habitat in Subunit 4 A/B; 2) a four percent reduction in Unit 4; and 3) a less than one percent reduction in total San Diego fairy shrimp Critical Habitat.

Impacts to San Diego fairy shrimp and its Critical Habitat would be considered significant according to Significance Criteria A and 1 as the Project would substantially affect an endangered species and its habitat and would result in adverse impacts, either directly or through habitat modifications. Mitigation would be required.

Although San Diego fairy shrimp is identified in the City's MSCP Subarea Plan as a covered species, a 2006 federal district court ruling determined that the City's Subarea Plan does not provide adequate protection for Riverside fairy shrimp. The City surrendered permit coverage for seven vernal pool species on April 20, 2010 including the San Diego fairy shrimp. The USFWS subsequently cancelled the Incidental Take Permit as it applied to those seven species on May 14, 2010 (USFWS 2011).

Currently the City is in the process of completing a new vernal pool Habitat Conservation Plan in order to enter into another Implementing Agreement for a new federal Incidental Take Permit for those seven species. Until that time, development involving take of any of the seven vernal pool species requires authorization from the USFWS through the federal Incidental Take process.

Section 7 consultation with the USFWS is required to address impacts to San Diego fairy shrimp that exist within the two vernal pools to be impacted by the Mixed Use component. Section 7 consultation also is required for impacts to San Diego fairy shrimp anticipated from the construction of Camino Del Sur-North and -South.

Coastal California Gnatcatcher. The Project would impact two pairs of the federal listed threatened (MSCP Covered Species) coastal California gnatcatcher and its associated habitat. The impacts would occur from direct removal of habitat and displacement of the birds.

Direct impacts to the coastal California gnatcatcher and its habitat would be considered significant according to Significance Criteria A and 1 inside the MHPA. The impacts would be significant because the Project would substantially affect a federal threatened species and its habitat and would result in adverse impacts, either directly or (potentially indirectly) through habitat modifications. Direct impacts to the species and its habitat outside the MHPA are authorized under the City's Subarea Plan and, therefore, are less than significant.

Although impacts to this MSCP Covered Species are permitted outside of the MHPA, impacts to the coastal California gnatcatcher in the MHPA (should it occur there) would be considered significant according to Significance Criterion 1 and would require mitigation. This would be accomplished through habitat-based mitigation associated with Project-related impacts to Diegan coastal sage scrub and Diegan coastal sage scrub-disturbed. This is discussed further in Section 7.1.3, *Mitigation for Direct Impacts to Upland Vegetation Communities*.

Area Specific Management Directives for the coastal California gnatcatcher must include specific measures to reduce edge effects and minimize disturbance during the nesting period, fire protection measures to reduce the potential for habitat degradation due to unplanned fire, and management measures to maintain or improve habitat quality including vegetation structure. Project conformance with Land Use Adjacency Guidelines will ensure that the project minimizes edge effects on the California gnatcatcher." Specifically, Area Specific Management Directives for the coastal California gnatcatcher require that no clearing, grubbing, grading, or other construction activities occur within the MHPA between March 1 and August 15 or at the edge of gnatcatcher-occupied habitat in the MHPA during the period March 1 through August 15 (see Section 7.3.1, *Mitigation for Indirect Impacts Associated with MHPA Land Use Adjacency*). Should the gnatcatcher be found present in the MHPA during the required pre-construction survey, the Project would comply with necessary restrictions on clearing, grubbing, grading or other construction activities in order to meet this directive. Fire protection and management measures to reduce the potential for habitat degradation due to unplanned fire will not be necessary as part of the Project. The right-of-way for Camino Del Sur-North separates the native vegetation west of the Project from all habitable structures associated with the Mixed Use component by a distance of at least 100 feet. Brush management is discussed further with the MSCP Land Use Adjacency Guidelines in Section 6.2.6, *Brush Management*.

Project conformance with the Land Use Adjacency Guidelines will ensure that the project minimizes edge effects on the California gnatcatcher see Section 7.3.1, *Mitigation for Indirect Impacts Associated with MHPA Land Use Adjacency.*

Orange-throated Whiptail. The orange-throated whiptail was observed in Diegan coastal sage scrub in the Avoidance Area (Figure 3). It is likely that the species occurs in similar habitats in all of the Project impact footprints and would be impacted by habitat removal and potential injury or mortality. The orange-throated whiptail is a State Species of Special Concern but is an MSCP Covered Species (Appendix F).

Impacts to this species would be adverse but not substantial according to Significance Criterion 1 and, therefore, would be less than significant because it is an MSCP Covered Species (Appendix F) considered to be adequately protected in the MHPA. Therefore, no mitigation would be required.

Area Specific Management Directives for the orange-throated whiptail must address edge effects to the orange-throated whiptail. Biological monitoring described in Section 7.2 IIA would be implemented to minimize Project-related edge effects on the orange-throated whiptail. The Project also would conform to the Land Use Adjacency Guidelines that protect biological resources in the MHPA from edge effects (see Section 7.3.1, *Mitigation for Indirect Impacts Associated with MHPA Land Use Adjacency*).

Coast Horned Lizard. The coast horned lizard was observed in non-native grassland in the Mixed Use impact footprint, in Diegan coastal sage scrub in the Camino Del Sur-North impact footprint, and in chamise chaparral in the Camino Del Sur-South impact footprint (Figure 3). It is likely that the species occurs in similar habitats in all of the Project impact footprints and would be impacted by habitat removal and potential injury or mortality. The coast horned lizard is a State Species of Special Concern but is an MSCP Covered Species (Appendix F).

Impacts to this species would be adverse but not substantial according to Significance Criterion 1 and; therefore, would be less than significant because it is an MSCP Covered Species. As a covered species, it is considered to be adequately protected within in the MHPA, and impacts to the species outside of the MHPA would be considered less than significant. Therefore, no mitigation would be required.

Area Specific Management Directives, however, must include specific measures to maintain native ant species, discourage the Argentine ant, and protect against detrimental edge effects to the coast horned lizard. Biological monitoring described in Section 7.2 IIA would be implemented to minimize Project-related edge effects on the coast horned lizard. The Project also would conform to the Land Use Adjacency Guidelines that protect biological resources in the MHPA from edge effects (see Section 7.3.1, *Mitigation for Indirect Impacts Associated with MHPA Land Use Adjacency*). To satisfy the directives related to the Argentine Ant, the Project's landscaping will not use plants that require intensive irrigation (see Section 6.2.5, *Invasive Plant Species*), which may help discourage the Argentine ant as it prefers year-round moisture.

San Diego Black-tailed Jackrabbit. The San Diego black-tailed jackrabbit was observed in non-native grassland in the Mixed Use impact footprint (Figure 3). It is possible that this species occurs elsewhere in the Project impact footprints as its habitats (open habitats including coastal sage scrub, chaparral, grasslands, disturbed areas) are present. Impacts to this species would occur from habitat removal and potential injury or mortality to very young jackrabbit litters that may be immobile. The San Diego black-tailed jackrabbit is a State Species of Special Concern; it is not an MSCP Covered Species (Appendix F).

Impacts to this species would be significant according to Significance Criterion 1 due to the acreage of lost habitat and potential injury and mortality. Mitigation would be required.

Western Spadefoot. The western spadefoot was observed in association with one of the vernal pools within non-native grassland in the Mixed Use impact footprint (Figure 3). Impacts to this species would occur from habitat removal and potential injury or mortality. The western spadefoot is a State Species of Special Concern; it is not an MSCP Covered Species (Appendix F).

Impacts to this species would be adverse but not substantial according to Significance Criterion 1 due to the limited extent of impacts to its observed habitat (a total of 966 square feet or 0.022 acre for both vernal pools on the Mixed Use site) and because habitat for the species occurs in vernal pool preserves around the Project. Therefore, the impacts would be less than significant, and no mitigation would be required.

Two-striped Garter Snake. The two-striped garter snake was also observed in association with the same vernal pools within non-native grassland in the Mixed Use impact footprint as the western spadefoot (Figure 3). Impacts to the two-striped garter snake would occur from habitat removal and potential injury or mortality. The two-striped garter snake is a State Species of Special Concern and is not an MSCP Covered Species (Appendix F).

Impacts to this species would be adverse but not substantial according to Significance Criterion 1 due to the limited extent of impacts to its observed habitat (a total of 966 square feet or 0.022 acre for both vernal pools on the Mixed Use site) and because habitat for the species occurs in vernal pool preserves around the Project. Therefore, the impacts would be less than significant, and no mitigation would be required.

Cooper's Hawk. The Cooper's hawk was observed in Diegan coastal sage scrub-disturbed in the Mixed Use impact footprint (Figure 3). Cooper's hawks typically nest in trees located on flat ground, and the nest is often placed approximately two-thirds of the way up the tree in a crotch or on a horizontal branch. The nest height is typically 25 to 50 feet above the ground (The Cornell Lab of Ornithology 2014); therefore, the nest tree would need to be a minimum of approximately 37.5 feet high. There is no suitable nesting substrate for the Cooper's hawk in the Project impact footprints; it is expected that it utilizes the area for foraging only.

Impacts to this species' foraging would be adverse but not substantial according to Significance Criterion 1 and, therefore, would be less than significant because it is an MSCP Covered Species (Appendix F) considered to be adequately protected in the MHPA. Therefore, no mitigation would be required.

Area Specific Management Directives must include a 300-foot impact avoidance area around active Cooper's hawk nests for any development inside the MHPA. None of the trees in the Project study area or within 300 feet of the Project study area meet this criterion; therefore, it is unlikely that a Cooper's hawk nest would occur within 300 feet of the Project.

Raptor Foraging Habitat. Loss of non-native grassland due to the Project would result in a loss of potential raptor foraging habitat. The Cooper's hawk, a sensitive raptor, was observed in the Project study area. Other sensitive raptors, the northern harrier and white-tailed kite, have also been observed in grasslands near SR-56 and the Project study area (Table 5). Additionally, non-sensitive raptors including the red-tailed hawk and red-shouldered hawk have been observed in the Project study area (Appendix E). While not all of these raptors favor grasslands, the non-native grassland still has the potential to act as foraging habitat for at least some of these species.

The loss of raptor foraging habitat (non-native grassland) could be significant according to Significance Criterion 1 (substantial adverse impacts, either directly or through habitat modifications, to [sensitive] species). Since the sensitive Cooper's hawk was observed in the Project study area, and the sensitive northern harrier and white-tailed kite have been observed nearby and may use the grassland to be impacted, mitigation would be required.

6.1.4 Direct Impacts to Sensitive Plant and Animal Species with Potential to Occur

Tables 3 and 4 presented lists of the sensitive and MSCP Narrow Endemic plant species not observed during surveys for the Project and their potential to occur in the Project study area. All of these species have low potential to occur or are not expected to occur based on the location of the Project study area, the habitats present in the study area, and/or because none of these species was found in the study area during surveys conducted from 1997 to 2002 and in 2014. Therefore, impacts to these species are not anticipated, and no mitigation would be required.

Table 5 presented a list of sensitive animal species and their potential to occur in the Project study area. As with sensitive plants, for sensitive animal species either not expected to occur or with low potential to occur, impacts would not be anticipated, so mitigation would not be required.

Several species listed in Table 5 have moderate to high potential to occur, however. Potential impacts to State Species of Special Concern including silvery legless lizard, Coronado skink, Bell's sage sparrow, Dulzura pocket mouse, and northwestern San Diego pocket mouse or the State Watch List California horned lark could be significant depending on the extent of the impacts, and mitigation would be required.

Two species with moderate potential to occur in the study area are MSCP Covered Species (southern California rufous-crowned sparrow and northern harrier). Impacts to Covered Species are permitted with conformance to the City's Subarea Plan. Therefore, mitigation would not be required. It should be noted, however, that mitigation required for other Project impacts would help to offset potential direct impacts to these species (see Section 7.0, *Biological Resource Protection During Construction*; Section 7.1.3, *Mitigation for Direct Impacts to Upland Vegetation Communities*; and Section 7.1.5, *Mitigation for Direct Impacts to Sensitive Animal Species, Raptor Foraging*). Conformance to the Land Use Adjacency Guidelines also would minimize potential adverse, indirect Project effects on these species.

Area Specific Management Directives for the southern California rufous-crowned must include maintenance of dynamic processes, such as fire, to perpetuate some open phases of coastal sage scrub with herbaceous components. The Project does not include any measures to inhibit dynamic processes, and all brush management would occur in the impact footprint.

Area Specific Management Directives for the northern harrier must: 1) manage agricultural and disturbed lands (which become part of the preserve) within four miles of nesting habitat to provide foraging habitat; 2) include an impact avoidance area (900 foot or maximum possible within the preserve) around active nests; and 3) include measures of maintaining winter foraging habitat in preserve areas in Proctor Valley, around Sweetwater Reservoir, San Miguel Ranch, Otay Ranch east of Wueste Road, Lake Hodges, and San Pasqual Valley.

The Project does not include any lands that would become part of the preserve. Also, while the northern harrier was observed in grasslands near SR-56 and has some potential to nest in grassland in the Project study area, none of the grassland is within the MHPA, and no grassland occurs in the MHPA within 900 feet of the Project study area. Therefore, Project construction is not expected to indirectly impact nesting northern harriers for which an avoidance area is required. Lastly, none of the listed winter foraging habitat areas is in the Project study area.

6.1.5 Direct Impacts to Waters of the U.S., Waters of the State, and City Wetlands

Waters of the U.S. and Waters of the State

The Project would directly impact WUS and WS that encompass 0.50 acre of wetlands and 0.13 acre of non-wetlands (Figure 5). Federal and State jurisdictional wetlands impacts include southern willow scrub, mule fat scrub, and freshwater marsh. Jurisdictional non-wetland waters in the project area include federal WUS and State streambeds. Table 8 provides a breakdown of the impacted acreage by Project component. All of the impacts are outside the MHPA except 0.02 acre of southern willow scrub in the Camino Del Sur-North impact footprint. Table 8 also shows the acreages of wetland habitats that would be avoided in the Project study area.

Table 8
DIRECT IMPACTS TO WATERS OF THE U.S.
AND WATERS OF THE STATE (acres)[1]

Jurisdictional Area	Mixed Use	Camino Del Sur-North	Camino Del Sur-South	Total Project Impacts	Avoided
Wetlands					
Southern willow scrub	-	0.30 outside MHPA 0.02 inside MHPA	-	0.32	0.16
Mule fat scrub	-	0.03	-	0.03	-
Freshwater marsh	-	0.15	-	0.15	0.18
Tamarisk scrub	-	-	-	-	0.19
Subtotal Wetlands	**-**	**0.50**	**-**	**0.50**	**0.53**
Non-wetland WUS/WS					
Non-wetland WUS/streambed	0.04	0.04	0.05	0.13	-
Subtotal Non-wetland WUS/WS	**0.04**	**0.04**	**0.05**	**0.13**	**-**
TOTAL	**0.04**	**0.54**	**0.05**	**0.63**	**0.53**

[1]There would be no impacts to WUS or WS from Carmel Mountain Road or Darkwood Canyon Trail. Vernal pools and road pools are not considered WUS or WS.

Impacts from the Mixed Use component would not encompass wetlands but would include 0.04 acre of non-wetlands. Impacts from the Camino Del Sur-North component would encompass 0.50 acre of wetlands and 0.04 acre of non-wetlands. Impacts from the Camino Del Sur-South component would not encompass wetlands but would include 0.05 acre of non-wetlands. There

would be no impacts to WUS or WS from the Carmel Mountain Road or Darkwood Canyon Trail Project components.

As shown in Table 8, the Project would avoid 0.53 acre of wetlands including 0.16 acre of southern willow scrub, 0.18 acre of freshwater marsh, and 0.19 acre of tamarisk scrub in the Avoidance Area (Figure 5).

City Wetlands

Total impacts to City Wetlands from the Project include all wetland WUS and wetland WS plus vernal pools and road pools. In total, impacts to City Wetlands would encompass 0.54 acre (Figure 5; Table 9). Table 9 provides a breakdown of the impacted acreage by Project component. All of the impacts are outside the MHPA except 0.02 acre of southern willow scrub in the Camino Del Sur-North impact footprint. Table 9 also shows the acreages of wetland habitats that would be avoided in the Project study area.

Table 9
DIRECT IMPACTS TO CITY WETLANDS (acres)[1]

Jurisdictional Area	Mixed Use	Camino Del Sur-North	Camino Del Sur-South	Total Project Impacts	Avoided
Wetlands					
Vernal pools	0.022	0.014	<0.002	0.038	-
Road pools	-	-	0.003	0.003	-
Southern willow scrub	-	0.30 outside MHPA 0.02 inside MHPA	-	0.32	0.16
Mule fat scrub	-	0.03	-	0.03	-
Freshwater marsh	-	0.15	-	0.15	0.18
Tamarisk scrub	-	-	-	-	0.19
TOTAL	**0.022**	**0.51[2]**	**0.005**	**0.54[2]**	**0.53**

[1]There would be no impacts to City Wetlands from the Carmel Mountain Road or Darkwood Canyon Trail components of the Project.
[2]Rounded to the nearest tenth.

Impacts from the Mixed Use component would encompass 0.022 acre of City Wetlands. Impacts from the Camino Del Sur-North component would encompass 0.51 acres of City Wetlands. Impacts from the Camino Del Sur-South component would encompass 0.005 acre of City Wetlands. There would be no impacts to City Wetlands from the Carmel Mountain Road or Darkwood Canyon Trail components of the Project. The Project would avoid 0.53 acre of City Wetlands including 0.16 acre of southern willow scrub, 0.18 acre of freshwater marsh, and 0.19 acre of tamarisk scrub (Table 9; Figure 5).

Analysis of Significance of Impacts to Waters of the U.S., Waters of the State, and City Wetlands

Impacts to WUS, WS, and City Wetlands would be significant according to the following significance criteria listed in Section 6.0, *Project Impact Analysis*. Mitigation for these impacts would be required.

Significance Criterion A: The Project would substantially affect an endangered, rare, or threatened species of animal or plant or the habitat of the species. The Project would affect the federal listed endangered San Diego fairy shrimp that occurs in vernal pools and road pools that would be impacted.

Significance Criterion C: The Project would substantially diminish habitat for fish, wildlife, or plants. The Project would replace habitat that supports wetland/riparian plant and animal species with urban development including the federal listed endangered San Diego fairy shrimp.

Significance Criterion 1: The Project would result in substantial adverse impacts, either directly or through habitat modifications, to any species identified as a candidate, sensitive or special status species in the MSCP or other local or regional plans, policies or regulations, or by the CDFW or USFWS. The Project would directly impact the federal listed endangered San Diego fairy shrimp in addition to two State Species of Special Concern (western spadefoot and two-striped garter snake), all associated with vernal pool and road pool habitats that would be impacted resulting in a substantial adverse effect.

Significance Criterion 2: The Project would result in a substantial adverse impact on any sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS. As presented in Tables 6 and 7 in Section 6.1.1, *Direct Impacts to Vegetation Communities*, the Project would directly impact wetland/riparian communities considered sensitive in the Biology Guidelines and regulated as ESL. It would also impact wetlands listed in Tables 8 and 9 regulated by the CDFW and USFWS (e.g., vernal pools supporting San Diego fairy shrimp) and City. Therefore, the impacts are considered substantial and adverse.

Significance Criterion 3: The Project would result in a substantial adverse impact on wetlands (including, but not limited to, marsh, vernal pools, riparian areas, etc.) through direct removal, filling, hydrological interruption, or other means. The City's ESL Regulations state that wetlands impacts should be avoided and unavoidable impacts should be minimized to the maximum extent practicable. As explained below in *Wetland Deviations*, non-avoidance of wetlands requires a deviation from the ESL Regulations. Therefore, the Project's impacts on wetlands are considered substantial and adverse.

Significance Criterion 7: The Project would conflict with any local policies or ordinances protecting biological resources. As stated above, the ESL Regulations state that impacts to wetlands should be avoided. Since wetlands cannot be avoided (see Section 6.1.5, *Direct Impacts to Waters of the U.S., Waters of the State, and City Wetlands)*, the Project requires a deviation from the regulations (see *Wetland Deviations* below). The analysis of Project components under the Essential Public Projects Option and the Biologically Superior Option is provided below.

Wetland Deviations

It is not feasible for the Project to avoid on-site wetlands; therefore, Project impacts to wetlands would require deviations from the ESL regulations (City 2012). Because the Project is located outside the Coastal Overlay Zone, it may qualify for a wetland deviation under two options: the Essential Public Projects Option for wetland impacts associated with City roadway improvements (i.e., Camino Del Sur–North and –South) and the Biologically Superior Option for wetland impacts associated with the Mixed Use component

Essential Public Projects Option

Both Camino Del Sur-North and Camino Del Sur-South would impact City Wetlands as presented in Table 9. These roadway wetland impacts would qualify for a deviation from the ESL regulations under the Essential Public Projects Option.

According to City Municipal Code (Chapter 14, Article 3, Division 1; §143.0150 Deviations from Environmentally Sensitive Lands Regulations, Essential Public Projects shall include:

> (i) Any public project identified in an adopted land use plan or implementing document and identified on the EPPs List adopted by Resolution No. R-307377 as Appendix III to the Biology Guidelines; or
>
> (ii) Linear infrastructure, including but not limited to major roads and land use plan Circulation Element roads and facilities including bike lanes, water and sewer pipelines including appurtenances, and stormwater conveyance systems including appurtenances; or
>
> (iii) Maintenance of existing public infrastructure; or
>
> (iv) State and federally mandated projects.

The project must service the community at large and not just a single development project or property. The project must be essential in both location and need (City 2012).

The proposed roadway improvements, including travel lanes, bike lanes, sidewalks and unpaved pathways, would provide local and regional access to the Project, surrounding properties/open space systems, and the local community in accordance with the Circulation Elements of the Torrey Highlands Subarea Plan and Rancho Peñasquitos Community Plan. The roadway extensions are needed to convey traffic volumes and connect critical infrastructure anticipated at buildout of surrounding development areas at acceptable levels of service. Specifically, a 10-inch diameter public sewer line is proposed in the Camino Del Sur right-of-way and beneath the section of Carmel Mountain Road. A 16-inch public water main and 24-inch diameter public recycled water line would be installed in the Camino Del Sur right-of-way to expand the public infrastructure in the Project area. In addition, a 16-inch public water main and 8-inch diameter public recycled water line would be constructed within the Carmel Mountain Road right-of-way. The recycled water lines, in particular, would increase the City's ability to meet future water demands in the Project area while reducing dependence on imported water. Therefore, the roadway improvements and related public utilities are essential in location and need.

The proposed public road improvements would implement City Circulation Element roads that have fixed endpoints and must comply with standard road design requirements in the City Street Design Manual; the improvements would create connections between existing road termini where they do not presently exist. The roadways have been designed to meet current engineering safety standards (e.g., vertical elevation, minimum curve radii and roadway slopes) while providing the minimum road capacity necessary to handle future projected traffic. The roadway footprints have been designed to avoid direct impacts to off-site vernal pool preserves and have been minimized, to the extent feasible, by narrowing the roads to two lanes (Figure 3).

According to City Municipal Code (Chapter 14, Article 3, Division 1; §143.0150 Deviations from ESL Regulations), "a deviation may only be requested for an EPP [Essential Public Projects Option] where no feasible alternative exists that would avoid impacts to wetlands." Therefore, the following three alternatives are addressed below: No Project Alternative, Wetlands Avoidance Alternative, and Merge 56 Development Project (the proposed Project).

No Project Alternative. As stated above, the roadway improvements would provide local and regional access and critical public infrastructure to the Project, surrounding properties, and the local community, and the roadway extensions are needed to convey traffic volumes anticipated at buildout of surrounding development areas at acceptable levels of service. Additionally, the roadway connections will provide an additional emergency access route from Los Peñasquitos Canyon. Without the roadway extensions this community would remain unserved and the City's Circulation Element goals would not be met. Therefore, a No Project Alternative is infeasible.

Wetlands Avoidance Alternative. City Wetlands impacted by the proposed City roadways include wetland habitat associated with drainages crossing the Camino Del Sur-North alignment and vernal pools located within the Camino Del Sur-North and -South alignments (Figure 5).

The northern and southern termini of Camino Del Sur are fixed by existing road segments constructed by others, and the interconnecting roadway alignment could not be altered to avoid impacts to the City Wetlands and still meet design standard requirements contained in the City's Street Design Manual. The vernal pools occur directly in the center of the proposed roadway alignment, making their avoidance infeasible. The other City Wetland impacts occur in the far northern portion of the study area where Camino Del Sur-North would cross two drainages.

Given that the alignment could not be altered to completely avoid wetland impacts, the Project engineers evaluated several design options to reduce impacts to City Wetland features associated with road construction. These options included reducing the roadway width, reducing the roadway elevation, and incorporating steeper slopes and retaining walls along the roadway.

The current roadway design meets the vehicular demand and Community Plan road capacity requirements. The criteria incorporated into the design include the proximity of existing intersection and resulting turn movements, parkway widths to meet City standards for pedestrians, landscaping, and the added City requirement to accommodate the continuation of a trail path alongside Camino Del Sur. At the northern terminus of Camino Del Sur the roadway also was designed to connect with the existing road section that was built by others and provides access to the SR-56/Camino Del Sur interchange. As such, the width could not be reduced in this area.

Another option explored by the Project engineers was to reduce the roadway design elevation at the northern terminus, with the goal of reducing the required width of the adjacent fill slopes, which could result in a reduction of impacts to the wetlands in the underlying drainage crossing. This option was rejected due to the elevation of the existing Torrey Santa Fe intersection immediately north of the proposed road extension. Camino Del Sur must connect with this intersection at its existing elevation; therefore, there is no feasible way of reducing the design elevation where the road crosses the drainage and still meet the City road design requirements. Additionally, the elevation of the intersection dictates the elevation for the street extension south of this intersection and the roadway classification, which restricts the rate of vertical alignment changes due to vehicular safety requirements. Given these constraints, reducing the width of Camino Del Sur-North as it crosses the drainage in an effort to avoid impacts is not feasible.

Finally, the option of reducing the extent of the adjacent slope grading to minimize wetland impacts at the northern end of Camino Del Sur-North was explored by the Project engineers. The current proposal is to create 50-foot tall fill slopes at a 2:1 gradient to support the road bed. An option was evaluated to install retaining walls (to steepen the gradient and reduce the width of the fill slopes), but tie-backs or restraining fabric (for geo-grid walls) would encroach under the roadway and interfere with area needed to install public utilities (i.e., storm drain, sewer, water, and reclaimed water) and water quality structures (i.e., storage vaults and water polishers). Given the infeasibility of reducing the width of the fill slopes along the northern segment of Camino Del Sur by integrating retaining structures, this design option was rejected.

Merge 56 Development Project. As described above, the roadway improvement components of the Merge 56 development project would implement City Circulation elements that have fixed endpoints. The roadways are also designed to meet current engineering safety standards (e.g., vertical elevation, minimum curve radii, and roadway slopes). Given these constraints, the roadway components of the Project have minimized impacts to wetland resources to the maximum extent practicable. Vernal pools and riparian habitats impacted by the roadway alignments are unavoidable.

Furthermore, the roadway design has maximized buffer width relative to adjacent wetlands to the extent possible in order to maintain wetland functions and values. Two vernal pool preserves undergoing restoration/enhancement exist in proximity to the Carmel Mountain Road footprint (Figure 5; Figure 3, areas 6 and 7 in Appendix G, *Rhodes Crossing Project Mitigation Plan*). Grading for Carmel Mountain Road would occur at least 20 feet from these vernal pool preserves. A third vernal pool preserve also undergoing restoration/enhancement is located in proximity to the Camino Del Sur-South impact footprint (Figure 5; Figure 3, area 9 in Appendix G, *Rhodes Crossing Project Mitigation Plan*). Grading for Camino Del Sur-South would occur within one foot of vernal pool preserve numbered 9 but at least 25 feet from the closest vernal pool. Lastly, a fourth vernal pool preserve undergoing restoration/enhancement is located west of the Camino Del Sur-North impact footprint. Grading would occur within two feet of vernal pool preserve numbered 15 but at least 31 feet from the vernal pool (Figure 5; Figure 3 in Appendix G, *Rhodes Crossing Project Mitigation Plan*).

The roadways would be constructed using cut slopes, and the retaining walls, travel lanes, sidewalks, and trails would be situated a minimum of 15 to 30 feet below grade of the preserves. This will avoid indirect drainage impacts from the roadways on the vernal pool watersheds.

In order to ensure that the proposed roadway design maintains wetland functions and values of adjacent vernal pool preserves, the following discussion evaluates potential Project-related effects on hydrology and water quality, invasion by non- native plant species, edge effects, and isolation/habitat fragmentation. Although roadway impacts to wetlands cannot be avoided, the following discussion establishes that the Project, as designed, would minimize indirect impacts; the wetland buffers between the roadways and adjacent wetlands would be considered adequate to protect wetland functions and values.

Hydrology/Water Quality

With regard to hydrology and water quality, changes in the natural micro-topography can alter the hydrology or increase runoff, erosion, sedimentation and contamination into vernal pools (USFWS 2012). Specifically, modifications to the uplands surrounding a vernal pool can negatively affect the pool's hydrology. Such effects can include accelerating the flow of water out of the subsoil, changing the onset or duration of ponding, modifying the length and duration of inundation that adversely influences vernal pool flora by changing the germination, flowering, and seed production of vernal pool plants and adversely influences vernal pool fauna by changing water chemistry caused by runoff contaminated with fertilizers/pesticides.

Other wetlands, such as those in the natural drainage avoided by the Project, can be impacted by toxins, chemicals, petroleum products, and other elements that might degrade or harm the surface water in the natural environment. The natural drainage, however, also lies adjacent to SR-56 and receives runoff from upstream areas east of the Project.

The Merge 56 Development Project incorporates design features to avoid/minimize impacts to the northern drainage and water quality within the off-site vernal pool preserves. Specifically, the Project grading plan was developed to place the roads well below grade of the areas adjacent vernal pool preserves, thus directing all runoff from Project hardscape away and ensuring that no runoff or contaminated water would flow into the areas. To prevent "leakage" from the vernal pool substrate, the Project design contains non-permeable barriers that would be installed as vertical elements into cut slopes along the adjacent roads. Additionally, biofiltration basins, water storage vaults, and water polishers have been incorporated into the Project design to capture and treat water from the built Project before it is released (Figure 4). Despite these Project features, however, there is potential that staging/storage areas, trash/oil, parking, or other construction-related activities and erosion could impact the hydrology and water quality of the adjacent vernal pool preserves and other City Wetlands during Project construction. These would be considered potentially significant indirect impacts to the hydrology/water quality of City Wetlands in proximity to the Merge 56 Development Project.

Structural and non-structural Best Management Practices (BMPs), Best Available Technology, and use of sediment catchment devices downstream of paving activities would be required under the City stormwater regulations. Erosion control techniques, including the use of silt fencing, sandbags, hay bales, and/or installation of sediment traps, would also be required during construction, in accordance with City stormwater regulations. No trash, oil, parking, or other construction/development-related material/activities would be allowed outside any approved construction limits (see Section 7.3, *Mitigation for Indirect Impacts associated with MHPA Land Use Adjacency*).

In addition, mitigation outlined in Section 7.2, *Biological Resource Protection During Construction*, requires a biological monitor to be present during and after grading operations to observe construction activities and ensure the integrity of the perimeter silt fencing and erosion control measures that would be installed to protect City Wetlands. With project design features, compliance with City regulations, and mitigation measures in place, potentially significant hydrology/water quality impacts to the functions and values of City Wetlands within the provided buffer zone would be less than significant.

Invasive Plants

Invasive, non-native plants could colonize areas disturbed by construction and potentially spread into the adjacent off-site vernal pool preserves and other City Wetlands. Such invasions could displace native plant species, reduce diversity; increase flammability and fire frequency; change ground and surface water levels; and adversely affect the native wildlife that are dependent on native vegetation.

No invasive or potentially invasive species identified in the California Invasive Plant Inventory prepared by the California Invasive Plant Council (2006) would be allowed within 100 feet of the MHPA and vernal pool preserves. Consistent with the MSCP Subarea Plan, the Merge 56 Development Project incorporates design features to avoid/minimize impacts associated with invasive plants. For example, the landscape plant palette for the Project excludes invasive plant species. Therefore, the built Project would not be a source of invasive species in the Project area. In addition, all brush management would be accomplished within the impact footprint because occupied structures are proposed more than 100 feet away from native vegetation. As such, there would be no need to remove or thin native vegetation within the vernal pool preserves or the natural drainage on site, thus preventing disturbance where invasive plant species could colonize. Given these project design features, the buffer proposed between the Project site and City Wetlands would be sufficient to prevent indirect impacts from invasive plants from the built Project.

During construction, however, invasive, non-native plants could colonize areas disturbed by construction, and those species could potentially spread. Invasion by non-native plants caused by construction would be considered a significant impact. However, no invasive, non-native plant species would be allowed into areas within or adjacent to the MHPA, vernal pool preserves, or any natural area per the Land Use Adjacency Guidelines. With Project design features, compliance with City regulations, and mitigation measures in place, potentially significant invasive plant impacts, including to the functions and values of City wetlands, would be less than significant, and no further mitigation would be required.

Fugitive Dust

Fugitive dust produced by construction could disperse and settle into adjacent City Wetlands. 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. Fugitive dust can settle in vernal pools and alter water temperatures required by the San Diego fairy shrimp adversely affecting its ability to mature and reproduce (USFWS 2012). Construction of the Project will adhere to applicable construction dust control measures prescribed by the City and in agency permits. These measures include, for example, reduced driving speeds on unpaved roads

and regular watering of dirt surfaces. Therefore, potential impacts from fugitive dust to the functions and values of City Wetlands would be less than significant would be less than significant, and no mitigation would be required.

General Edge Effects

Edge effects are often expected where urban development interfaces with biologically sensitive areas. General edge effects can include unauthorized dumping, human and pet intrusion, trampling, vandalism, plant and animal collection and increased off-road vehicle and bicycle activity.

The Merge 56 Development Project has the potential to increase unauthorized dumping, human intrusion, trampling and vandalism in City Wetlands due to the proximity of proposed development to those resources. The Project would, however, reduce the amount of unauthorized off-road vehicle and bicycle activity in the area by removing informal trails and constructing public roads with bike lanes, sidewalks, and authorized trails that would direct people through the Project area, around the sensitive resources, and to existing established roads and trails. Potentially significant impacts related to human intrusion, trampling, and vandalism within City Wetlands would be further avoided through the installation of permanent fencing to protect the off-site vernal pool preserves from public access (see Section 5.2.1, *Wetland/Riparian Vegetation Communities, Vernal Pools*).

The City Wetlands in the northern drainage would not be easily accessible from Camino Del Sur-North because the drainage would be 50 feet below the road. Also, a buffer distance of 50 to 100 feet would be maintained between the habitat and the nearest commercial development, and steep slopes and retaining walls would separate the wetland habitat from on-site roads/sidewalks and structures. The potential, however, exists for human intrusion during Project construction, which would be considered a potentially significant impact on City Wetlands. Mitigation outlined in Section 7.2, *Biological Resources Protection During Construction*, requires a biologist to monitor construction activities, as needed, to ensure that construction activities do not encroach into biologically sensitive areas or cause other similar damage to off-site areas.

Given these project design features and mitigation measures, the buffer proposed between the Project and City Wetlands within the off-site vernal pool preserves and on-site northern drainage would be sufficient to prevent significant indirect impacts from edge effects.

Isolation and Habitat Fragmentation

Isolation and habitat fragmentation can threaten important ecological processes that link vernal pools together and to the surrounding uplands. Such ecological processes involve insects that pollinate the vernal pool plants, mammals and birds that disperse flora and fauna between vernal pools, and amphibians that reproduce in vernal pools. For example, specialized plant-pollinator relationships can be threatened when the vernal pools are isolated from the surrounding uplands where the pollinators live. Similarly, the proximity of vernal pools to upland habitats influences the dispersion of seeds between vernal pools by herbivores. As vernal pools become fragmented, they can become unsuitable for avian species that consume and disperse fairy shrimp. Surrounding uplands influence vernal pool hydrology, species composition, and interactions between the species that inhabit the pools (USFWS 2012).

The Merge 56 Development Project would be constructed adjacent to vernal pool preserves. Construction of the Project would remove uplands possibly affecting pollination and the dispersion of species. In addition, the Project would contribute to general edge effects that can degrade the quality of the adjacent upland habitat. As such, the Project in conjunction with adjacent development that is occurring and has occurred in the Project area, would contribute to the isolation and fragmentation of these City Wetlands and be considered a cumulatively significant indirect impact.

Mitigation for these isolation/habitat fragmentation impacts would consist of the restoration and enhancement of the vernal pools in the vernal pool preserves, which would retain their long-term conservation value due to these efforts. This would be particularly true for the restoration/enhancement of off-site vernal pools adjacent to Carmel Mountain Road because those vernal pools support a concentration of vernal pools and vernal pool species (e.g., San Diego fairy shrimp, San Diego mesa mint (federal and State endangered), and San Diego button-celery (*Eryngium aristulatum* var. *parishii*; federal and State endangered). The *Rhodes Crossing Project Mitigation Plan* (Appendix G) and the *Rhodes Crossing Habitat Management Plan* (Helix Environmental Planning, Inc. 2010b) would guide the vernal pool restoration and enhancement, and associated long-term management and monitoring efforts. The implementation of these plans would ensure that the Project's contribution to isolation and habitat fragmentation impacts would be mitigated to less-than-significant levels.

The Merge 56 Development Project would qualify for deviations under the EPP because it meets the criteria specified in the ESL Regulations, and all direct and indirect impacts would be minimized, to the extent feasible, through project design features, compliance with City regulations, and/or mitigated through measures identified in this Biological Technical Report.

Biologically Superior Option

A deviation from ESL Regulations for wetlands is needed for the Mixed Use component of the Project, which would impact two vernal pools with a combined surface area of 966 square feet (0.022 acre). Deviations from the ESL Regulations for wetlands can be considered under the Biologically Superior Option when a project meets all four of the criteria listed below.

1. The CEQA document must fully analyze and describe the rationale for why the Biologically Superior Option (this could be the proposed project) would result in the conservation of a biologically superior resource compared to strict compliance with provisions of the ESL Regulations (i.e., no impacts to wetlands).

   No Project Alternative. A No Project alternative for the Mixed Use portion of the Project would result in no Project-related impacts to the two vernal pools and strict compliance with ESL Regulations on wetlands. The pools would not be formally preserved or protected, however. Furthermore, no mitigation for direct or indirect impacts to vernal pools would be required since the pools would not be impacted. Therefore, the opportunity for restoration and enhancement of an existing, protected vernal pool preserve elsewhere would be lost.

Wetland Avoidance Alternative. An alternative that would reduce or eliminate impacts to the two vernal pools on the Mixed Use site would not be considered biologically superior to the Project. If avoided, these two pools would be completely isolated and surrounded by development. As described in the Biological Opinion issued by the USFWS (Appendix A), if avoided, these two pools would be surrounded by development, have little to no habitat buffers, and be subjected to the full range of indirect effects described above including changes in hydrology/water quality, invasion by non-native plant species, isolation/fragmentation, and general edge effects. Even with project design features and mitigation measures in place, those indirect effects would be significant and unavoidable for the two isolated pools on site. While any alternative that would reduce or eliminate impacts to the two pools on the Mixed Use site might result in some protection of the pools, the City and USFWS (2012) have acknowledged that these two isolated vernal pools are of little conservation value. The City also has excluded these two pools from the proposed vernal pool preserve in its Draft Vernal Pool Habitat Conservation Plan.

If, on the other hand, the two vernal pools were to be impacted, mitigation would be required. Mitigation for the Merge 56 Development Project is proposed to occur off-site in the form of vernal pool creation at a 3:1 ratio. Avoidance of the two pools would eliminate the need for mitigation, and this additional vernal pool habitat would not be created.

Merge 56 Development Project. With the Project, the two isolated pools would be directly impacted, and mitigation would be required. These impacts are proposed to be mitigated through vernal pool creation at a 3:1 ratio, as described in Section 7.1.1, *Mitigation for Impacts to Vernal Pools and Road Pools.* This would result in a net increase of viable, preserved, and managed vernal pool habitat in the vicinity. Once successfully completed, the vernal pool mitigation would be of higher biological quality and long-term viability than the area of the two pools on the Mixed Use site. Therefore, a biologically superior resource would exist compared to leaving them intact on site and surrounded by development.

2. The wetland resources (in this case, two vernal pools) being impacted shall be limited to wetlands of low biological quality (based on factors such as use by sensitive species and pool surface area).

   As stated above, the City and USFWS have acknowledged that these two isolated vernal pools are of little conservation value. The two pools are located along a dirt road within an area previously used for agriculture, and they are subject to off-highway vehicle and pedestrian use. While the two pools support a federal listed species (San Diego fairy shrimp), and one pool was found to support the sensitive two-striped garter snake and western spadefoot, both pools are still considered of low biological quality.

   The pools are isolated geographically from other pool complexes (e.g., vernal pools in the off-site vernal pool preserves shown on Figure 3) that contain many more pools of much greater surface area and that support more listed species. Those listed species include San Diego fairy shrimp, San Diego mesa mint (federal and State endangered), and San Diego button-celery (federal and State endangered; see Appendix G, *Rhodes Crossing Project*

Mitigation Plan). The proposed vernal pool mitigation would provide a superior biological result to preserving the two isolated pools in place. The mitigation would provide long-term biological benefit and a net increase in quality and viability (functions and value) relative to existing conditions.

3. The project and proposed mitigation shall conform to the requirements for a Biologically Superior Option.

   Mitigation for Project impacts to the two vernal pools is proposed to occur at a ratio of 3:1 (see Section 7.1.1, *Mitigation for Impacts to Vernal Pools and Road Pools* for more details). This is within the mitigation range for vernal pools, as stated in Table 2A of the City's Biology Guidelines for projects qualifying under the Biologically Superior Option. As stated above, the resulting mitigation would provide a superior biological result and long-term benefit for vernal pool resources at the mitigation site.

4. The Wildlife Agencies (USFWS and CDFW) have concurred with the biologically superior project design and analyses (in writing prior to, or during, public review of the CEQA document; lack of unequivocal response is deemed to be concurrence).

   The USFWS has noted that the preservation of these two isolated pools was not desirable, and that it would be preferable to impact the pools and provide mitigation elsewhere (USFWS 2012). The USFWS and CDFW provided concurrence with the biologically superior design and analysis for impacts to wetland resources on October 20, 2016.

6.2 INDIRECT IMPACTS

Indirect impacts consist of secondary effects of a project that can occur during construction or from a project once built. Indirect effects listed in the City's Subarea Plan include those from drainage and toxics, lighting, noise, public access, invasive plant species, brush management, and grading/land development as addressed by the Land Use Adjacency Guidelines specifically for indirect impacts to the MHPA and primarily for built projects. Furthermore, indirect impacts to raptor nesting in the MHPA are addressed by the Biology Guidelines (City 2012). The only Project component adjacent to the MHPA and subject to the Land Use Adjacency Guidelines is Camino Del Sur-North.

Other indirect impacts of a project can also include fugitive dust from construction and roadkill from a built project. The magnitude of an indirect impact can be the same as a direct impact, but the effect usually takes a longer time to become apparent. Indirect impacts to City Wetlands are described in detail under *Direct Impacts to Waters of the U.S., Waters of the State, and City Wetlands* in Section 6.1.5. The below discussion is focused on indirect impacts to the MHPA both from construction and occupancy of the built Project but also includes potential impacts to vernal pool preserves and other adjacent undeveloped lands.

6.2.1 Drainage and Toxics

The Land Use Adjacency Guidelines require that all new parking lots and developed areas in and adjacent to the MHPA not drain directly into the MHPA. All developed and paved areas must prevent the release of toxins, chemicals, petroleum products, exotic plant materials, and other elements that might degrade or harm the natural environment or ecosystems processes.

Of particular concern would be drainage into Deer Canyon in the Del Mar Mesa Preserve west of the study area, Darkwood Canyon east of the study area, or any tributary to them. Toxics entering these drainages could not only harm the environment of these locations inside and outside the MHPA, but also downstream locations such as Los Peñasquitos Canyon and Los Peñasquitos Lagoon that are inside the MHPA.

All potential drainage and toxics impacts to the MHPA and other adjacent lands from the built Project would be minimized through project design features (e.g., biofiltration basins, storage vaults [Figure 4], as well as not using invasive species in landscaping; see Section 6.2.5, *Invasive Plant Species*), and no water would be discharged directly into the MHPA or any other drainage feature. Therefore, there would be no significant indirect impacts resulting from drainage or impaired water quality from the built Project. No mitigation would be required.

During construction, the Project would be subject to the requirements of a Storm Water Pollution Prevention Plan that would address pollutants and their sources associated with construction including, but not limited to, construction site erosion—all of which would be controlled through implementation of Best Management Practices. Still, construction activities could have potential to cause significant drainage and toxics impacts on the MHPA and other drainage features according to Significance Criterion C (substantially diminish habitat), Significance Criterion 1 (substantially impact sensitive species), Significance Criterion 2 (cause adverse impacts to sensitive habitats), Significance Criterion 3 (substantially impact wetlands), and Significance Criterion 8 (introduce invasive plant species). Mitigation would be required.

Vernal Pool Watersheds

The Project was designed to avoid all off-site vernal pool preserves to the maximum extent practicable due to the locations of these features and the approved roadway alignments (Figure 3). Indirect impacts to vernal pools are addressed in Section 6.1.5, *Direct Impacts to Waters of the U.S., Waters of the State, and City Wetlands, Wetland Deviations, Essential Public Projects Option, Merge 56 Development Project*.

6.2.2 Lighting

Night lighting exposes wildlife to an unnatural light regime that may adversely affect foraging patterns, increase predation risk, cause biological clock disruptions, and result in a loss of species diversity. The Land Use Adjacency Guidelines require that all developed areas adjacent to the MHPA direct lighting away from the MHPA.

Unless appropriate measures, such as directing and shielding lights, are taken to prevent dispersion of light into the adjacent MHPA, adjacent vernal pool preserves, or other adjacent natural habitat (e.g., Darkwood Canyon), lighting effects from the built Project (and construction if lighting is used) could be significant according to Significance Criterion A (substantially affect listed species habitat), Significance Criteria B and 4 (interfere with wildlife movement), Significance Criterion C (substantially diminish habitat), and Significance Criterion 6 (result in adverse effects to the MHPA). Mitigation would be required.

6.2.3 Noise

The Land Use Adjacency Guidelines require that uses in or adjacent to the MHPA be designed to minimize noise impacts. Construction-related noise from such sources as clearing, grading, and construction vehicular traffic would be a temporary impact to wildlife from the Project.

These noise-related impacts would be considered significant, however, according to Significance Criteria A and 1 (substantially affect listed or sensitive species) if species sensitive to noise (in this case, the coastal California gnatcatcher) are present in the MHPA. The City has take authorization for the coastal California gnatcatcher (i.e., it is an MSCP Covered Species), so noise impacts to this species outside the MHPA are allowed.

There is high potential for the gnatcatcher to be present in the MHPA in the Project study area and potentially in the MHPA adjacent to the Project study area. Indirect noise impacts to this species in the MHPA during construction would be significant, and mitigation would be required.

Built roadways that are in compliance with Section 1.4.2 of the City's Subarea Plan (General Planning Policies and Design Guidelines) are considered compatible with the biological objectives of the MSCP and thus will be allowed in the MHPA. As described in Section 6.3.1, *General Planning Policies and Design Guidelines, Roads and Utilities – Construction and Maintenance* Policies of this Biological Technical Report, the Camino Del Sur-North component of the Project complies with the guidelines/policies where it occurs within or adjacent to the MHPA. Therefore, there would be no significant noise impacts to wildlife in the MHPA from the built Project, and no mitigation would be required.

6.2.4 Public Access/Barriers

The Land Use Adjacency Guidelines state that new development adjacent to the MHPA may be required to provide barriers along the MHPA boundaries to direct public access to appropriate locations and to reduce domestic animal predation. Public access from occupied projects can result in such impacts as trails being created, trash being dumped, and domestic animals roaming loose in the vicinity of the projects.

A five-foot wide, unpaved, multi-use trail connection along the toe of the slope west of Camino Del Sur-North (i.e., the Del Mar Mesa Trail Connection) would be constructed largely in the MHPA. This trail would connect with a proposed future hike/bike trail identified in the Public Notice of a Draft Mitigated Negative Declaration for the Carmel Mountain/Del Mar Mesa Trails Community Plan Amendments and Natural Resources Management Plan Adoption (City 2014). The trail connection would be constructed entirely within the impact footprint for Camino Del Sur-North (see Del Mar Mesa Trail Connection on Figure 3). Fencing is proposed to be installed at the western Project boundary along the MHPA and USFWS Refuge. The Darkwood Canyon Trail would also provide access to an existing trail, and no barriers are expected to be required to protect Darkwood Canyon. No mitigation would be required for these trail connections. Public access to vernal pool preserves adjacent to the Project would be precluded as the Project would install permanent fencing to protect them, and no mitigation would be required.

Due to the proposal to develop residences, the occupied Project has the potential for domestic animals to impact native wildlife. In particular, free-roaming cats are known to harm native rodent and bird populations in locations where they have access to natural areas. Domestic animals could impact native wildlife within the MHPA, vernal pool preserves, or other adjacent natural areas, and this could be significant according to Significance Criteria A and 1 (substantially affect listed or sensitive species). However, the location of Camino Del Sur-North between the MHPA and the Mixed Use site, and Carmel Mountain Road between the Mixed Use site and vernal pool preserves, and adjacent natural areas to the southwest, would help preclude domestic animals from entering these areas. Also, the vernal pool preserves adjacent to the Project would be permanently fenced as part of the Project thereby excluding nuisance animals.

Each of these features will minimize the effects of predation on native wildlife by domestic animals to the extent possible. Furthermore, coyotes are known to control domestic animals, particularly cats (American Bird Conservancy 2013, Grubbs and Krausman 2009) that may wander from the developed areas. No significant impacts are anticipated, and no mitigation is required.

6.2.5 Invasive Plant Species

Invasive, non-native plants could colonize areas disturbed by construction and potentially spread into the MHPA and adjacent off-site vernal pool preserves. Such invasions could displace native plant species, reduce diversity, increase flammability and fire frequency, change ground and surface water levels, and adversely affect the native wildlife that are dependent on native vegetation.

The MSCP Land Use Adjacency Guidelines require that no invasive, non-native plant species be introduced into areas adjacent to the MHPA. No invasive or potentially invasive species identified in the California Invasive Plant Inventory prepared by the California Invasive Plant Council (2006) would be allowed within 100 feet of the MHPA and vernal pool preserves. Consistent with the MSCP Subarea Plan, the Merge 56 Development Project incorporates design features to avoid/minimize impacts associated with invasive plants. For example, the landscape plant palette for the Project, including the parkways and medians for the public roads, excludes invasive plant species that could spread into adjacent undeveloped areas (and includes drought tolerant species that do not require intensive irrigation, fertilizers, or pesticides). Therefore, the built Project would not be a source of introduced invasive species in the Project area. In addition, all brush management would be accomplished within the impact footprint because occupied structures are proposed more than 100 feet away from native vegetation. As such, there would be no need to remove or thin native vegetation on or off site thus preventing disturbance where invasive plant species could colonize. Given these project design features, indirect impacts from invasive plants from the built Project would be less than significant, and no mitigation would be required.

During construction, however, invasive, non-native plants could colonize areas disturbed by construction, and those species could potentially spread into the MHPA and off-site vernal pool preserves or areas outside the MHPA (e.g., Darkwood Canyon) where such species could spread downstream and into the MHPA (e.g., in Los Peñasquitos Canyon). Invasion by non-native plants caused by construction would be considered a significant impact according to Significance Criterion 8 (introduction of invasive plant species). However, no invasive, non-native plant

species would be allowed into areas within or adjacent to the MHPA, vernal pool preserves, or any natural area per the Land Use Adjacency Guidelines. With Project design features, compliance with City regulations, and mitigation measures in place, potentially significant invasive plant impacts would be less than significant, and no further mitigation would be required.

6.2.6 Brush Management

The Land Use Adjacency Guidelines require that new development located adjacent to and topographically above the MHPA (e.g., along canyon edges) be set back from slope edges to incorporate Zone 1 brush management areas on the development pad and outside the existing MHPA, while Zone 2 is considered "impact neutral" within the MHPA.

All habitable structures for the Project (i.e., the Mixed Use component) would be located 100 feet or more from native/naturalized vegetation, and no formal brush management would be required. In addition, the western portions of the Mixed Use site would be separated from the existing MHPA by Camino Del Sur. Therefore, brush management would not impact the MHPA, and no mitigation would be required.

6.2.7 Grading/Land Development

The Land Use Adjacency Guidelines require that manufactured slopes associated with development be included within the development footprint within or adjacent to the MHPA.

The Project was designed to include all slopes within the impact footprints. However, because there are times that errant construction activities can occur (e.g., construction equipment becomes disabled [stuck on a slope] and needs assistance to get out resulting in ground disturbance outside the footprint), the impact could be significant if it impacts the MHPA, vernal pool preserves, or adjacent natural areas according to Significance Criteria A and 1 (substantially affect listed or sensitive species), Significance Criterion 2 (adversely affect sensitive habitat), Significance Criterion 3 (adversely affect wetlands), and Significance Criterion 7 (conflict with local policies protecting biological resources). Mitigation would be required.

6.2.8 Other Indirect Impacts

Fugitive Dust

Fugitive dust produced by construction could disperse onto adjacent native vegetation (inside and outside the MHPA) and into vernal pool preserves. 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). Fugitive dust also may make plants unsuitable as habitat for insects and birds and can alter water temperature required by the San Diego fairy shrimp adversely affecting its ability to mature and reproduce (USFWS 2012; as addressed in Section 6.1.5, *Direct Impacts to Waters of the U.S., Waters of the State, and City Wetlands, Wetland Deviations, Essential Public Projects Option, Merge 56 Development Project*).

Construction of the Project will adhere to applicable construction dust control measures prescribed by the City and in agency permits. These measures include, for example, reduced driving speeds on unpaved roads and regular watering of dirt surfaces. Potential impacts from fugitive dust would be less than significant and would not require mitigation.

Raptor Nesting

Impacts to nesting raptors could occur if construction occurs in or near the MHPA within the raptor breeding season (generally February 1 to September 15). Therefore, if construction occurs during the raptor breeding season, mitigation would typically be required. The Biology Guidelines (City 2012) require 300 feet from any Cooper's hawk nesting site and 900 feet from any northern harrier nesting site.

None of the trees in the Project study area or within 300 feet of the Project study area, however, meet the criterion for a potential Cooper's hawk nest site, so it is unlikely that a Cooper's hawk nest would occur within 300 feet of the Project. Also, while the northern harrier was observed in grasslands near SR-56 and has some potential to nest in grassland in the Project study area, none of the grassland is within the MHPA, and no grassland occurs in the MHPA within 900 feet of the Project study area. Therefore, Project construction is not expected to indirectly impact nesting raptors for which avoidance areas are required per the Biology Guidelines.

Roadkill

While Camino Del Sur-South would pass through undeveloped land and would occur within a corridor between the Del Mar Mesa Preserve and Los Peñasquitos Canyon that crosses the Project study area, this corridor is highly constrained. Therefore, use of the proposed Camino Del Sur-South, two-lane roadway component would not interfere substantially with the movement of wildlife (Significance Criteria B and 4). See Section 5.5.5, *Wildlife Corridors*.

The Project would provide features to reduce vehicle speeds and improve conditions for any at-grade crossings on Camino Del Sur-South and would work with wildlife experts to ensure the vegetation planted within the 10- to 14-foot wide median (which may provide a refuge area for at-grade crossings) is unattractive to mule deer and other wildlife. Should roadkill occur, it is anticipated to be limited and to non-sensitive species and, therefore, less than significant. No mitigation would be required.

6.3 MSCP EVALUATION

In addition to compliance with the MSCP Land Use Adjacency Guidelines that require an analysis of potential indirect impacts from the Project, the City's Subarea Plan provides additional policies and guidelines that require Project compliance. These policies/guidelines are summarized below followed by a brief description of Project compliance.

6.3.1 Compatible Land Uses and General Planning Policies and Design Guidelines

Section 1.4.1 of the City's Subarea Plan states that the following land uses are conditionally compatible with the biological objectives of the MSCP and will be allowed within the MHPA:

- Passive recreation
- Utility lines and roads in compliance with policies in Section 1.4.2 (below)
- Limited water facilities and other essential public facilities
- Limited low density residential uses
- Brush Management (Zone 2)
- Limited agriculture

Camino Del Sur-North is the only Project component in the MHPA, and it is an essential public facility that is a previously approved City Circulation Element road.

Section 1.4.2 of the City's Subarea Plan includes general planning policies and design guidelines that have been applied in the review and approval of development projects within or adjacent to the MHPA. In this case, Camino Del Sur-North is the only Project component within or adjacent to the MHPA; however, Camino Del Sur-South is addressed, where applicable, if it indirectly affects the MHPA.

Roads and Utilities – Construction and Maintenance Policies

This section of the Subarea Plan includes eight guidelines/policies. Each is summarized below along with an explanation describing how the Camino Del Sur-North component of the Project complies with the guidelines/policies where it occurs within or adjacent to the MHPA.

1. All proposed utility lines should be designed to avoid or minimize intrusion into the MHPA.

   No utility lines would intrude upon the MHPA, and all lines would be within the proposed roadway improvements.

2. All new development for utilities and facilities within or crossing the MHPA shall be planned, designed, located, and constructed to minimize environmental impacts. If avoidance is infeasible, mitigation would be required.

   Approximately 2.22 acres of the MHPA would be impacted by the Camino Del Sur-North impact footprint (Figure 3). This impact is unavoidable as Camino Del Sur is a Circulation Element road approved by the City. There is no feasible alternative that would avoid impacts to the MHPA because of the fixed end points of the Camino Del Sur and engineering safety standards. Impacts to the MHPA would be mitigated in accordance with the methods and ratios provided in the Biology Guidelines (and/or per permit requirements for jurisdictional areas [i.e., for impacts to southern willow scrub in the MHPA]). See Section 7.1.2, *Mitigation for Direct Impacts to Other Jurisdictional and Wetland/Riparian Areas*, and Section 7.1.3 *Mitigation for Direct Impacts to Upland Vegetation Communities*.

3. Temporary construction areas and roads, staging areas, or permanent access roads must not disturb existing habitat unless determined to be unavoidable.

   Mitigation for the Project requires that no parking or other construction/development-related material/activities shall be allowed outside any approved construction limits (see Section 7.3.1, *Mitigation for Indirect Impacts Associated with MHPA Land Use Adjacency*).

4. Construction and maintenance activities in wildlife corridors must avoid significant disruption of corridor usage.

   The identified wildlife corridor in the Project study area occurs where Camino Del Sur would be extended north from its current terminus (Figures 2 and 6). While this southern part of Camino Del Sur is not located in the MHPA, it does cross a wildlife corridor that extends between Del Mar Mesa Preserve in the MHPA to the west and Los Peñasquitos Canyon in the MHPA to the south. However, the existing corridor is already highly constrained in this area. Camino Del Sur would not, therefore, interfere substantially with the movement of wildlife. See Section 5.5.5, *Wildlife Corridors*.

5. Roads in the MHPA will be limited to those identified in Community Plan Circulation Elements, essential collector streets, and necessary maintenance/emergency access roads.

   Camino Del Sur is a Circulation Element road approved by the City and identified in the Torrey Highlands Subarea Plan and Rancho Peñasquitos Community Plan.

6. Development of roads in canyon bottoms should be avoided whenever feasible. If an alternative location outside the MHPA is not feasible, then the road must be designed to cross the shortest length possible, and if a road crosses the MHPA, it should provide for fully-functional wildlife movement capability.

   Camino Del Sur has a defined alignment for which no feasible alternative exists to avoid the MHPA because of the fixed end points of the roadway and engineering safety standards. However, this Project component avoids canyon bottoms in the MHPA (Figures 3 and 6) and does not substantially interfere with wildlife movement. See Section 5.5.5, *Wildlife Corridors*.

7. Where possible, roads within the MHPA should be narrowed from existing design standards to minimize habitat fragmentation and disruption of wildlife movement and breeding areas. Roads must be located in lower quality habitat or disturbed areas to the extent possible.

   Camino Del Sur, a City-approved Circulation Element roadway, has a defined alignment for which no feasible alternative exists because of the fixed end points of the roadway and engineering safety standards. However, the northern portion of Camino Del Sur extends along the edge of the MHPA. The placement and design of the road along the eastern edge of the MHPA will not result in habitat fragmentation or disruption of wildlife movement in this portion of the MHPA.

8. Existing roads and utility lines are usually considered a compatible use in the MHPA.

   There are no existing roads or utility lines in the MHPA that are associated with the Project. An approximately 150-foot wide SDG&E utility easement crosses through the central portion of the Project study area and into the MHPA. However, no utility facilities are located within the easement.

Fencing, Lighting, and Signage

This section of the Subarea Plan includes three guidelines/policies. Each is summarized below along with an explanation as to how the Project complies where it occurs within or adjacent to the MHPA.

1. Fencing or other barriers will be used where it is determined to be the best method to achieve conservation goals and adjacent to land uses incompatible with the MHPA.

   There are no incompatible land uses adjacent to the MHPA associated with the Project. Sometimes, unauthorized public access can result in impacts such as trails being created and trash being dumped in the MHPA. A multi-use trail connection to Del Mar Mesa is proposed as part of the Project from Camino Del Sur-North to a proposed future hike/bike trail west of the road (City 2014; Figure 3). Existing illegal trails within the Project impact footprints and in the vicinity of the vernal pool preserves would be removed and/or restricted by fencing as part of the Project. Therefore, no new trails or public access impacts to the MHPA would be attributable to the Project.

2. Lighting shall be designed to avoid intrusion in the MHPA.

   Project mitigation requires that lighting within or adjacent to the MHPA be directed away/shielded from the MHPA and be subject to City Outdoor Lighting Regulations per LDC Section 142.0740 (see Section 7.3.1, *Mitigation for Indirect Impacts Associated with MHPA Land Use Adjacency*).

3. Signage will be limited to access, litter control, and educational purposes.

   Signage is proposed to be installed every 100 feet at the western boundary of the Project along the MHPA boundary. .

Materials Storage

Storage of materials (e.g., hazardous or toxic chemicals, equipment, etc.) will not be located within the MHPA, and proper storage of such materials is required per applicable regulations in any areas that may impact the MHPA, especially due to potential leakage.

Project mitigation requires that storage of materials not be located within or adjacent to the MHPA and that no equipment maintenance be conducted within or adjacent to the MHPA. Furthermore, no trash, oil, parking, or other construction/development-related material/activities be allowed outside any approved construction limits. See Section 7.3.1, *Mitigation for Indirect Impacts Associated with MHPA Land Use Adjacency,* for more information.

6.3.2 General Management Directives

The following summarized, general management directives for all areas of the City's MSCP Subarea Plan are applicable to the Project. Those directives not applicable to the Project include Adjacency Management Issues (except public access; see Section 6.2.4, *Public Access/Barriers*), Invasives Exotics Control and Removal (except Invasive Plant Species; see Section 6.2.5, *Invasive Plant Species*), and Flood Control (since there are no flood control channels associated with the Project).

1. Mitigation shall be performed in accordance with ESL Regulations and the City's Biology Guidelines.

   The mitigation measures in Section 7.0, *Mitigation Measures*, of this report have been formulated to satisfy the requirements of the City's MSCP Subarea Plan, Biology Guidelines, and ESL Regulations.

2. Restoration or revegetation undertaken in the MHPA shall be performed in a manner acceptable to the City.

   Mitigation for impacts to the two vernal pools on the Mixed Use site is proposed to occur at an off-site location and consist of vernal pool creation at a 3:1 ratio (as described in Section 7.1.1, *Mitigation for Impacts to Vernal Pools and Road Pools*). The vernal pool creation required as part of Project mitigation would be subject to a mitigation plan approved by the City and the regulatory agencies.

3. Public Access, Trails, and Recreation. This directive includes requirements for trail signage, type, location, design, and use.

   The Del Mar Mesa Trail and Darkwood Canyon Trail connections would be constructed consistent with City Trail Policies and Standards (City 2010). The Del Mar Mesa Trail Connection (Figure 3) will also be developed consistent with the Public Notice of a Draft Mitigated Negative Declaration for the Carmel Mountain/Del Mar Mesa Trails Community Plan Amendments and Natural Resources Management Plan Adoption (City 2014). The Darkwood Canyon Trail design and location was coordinated with the City Park and Recreation Department.

4. Litter/Trash and Materials Storage. This directive includes requirements for trash removal and permanent materials storage in the MHPA.

Litter, trash, and materials storage associated with Project construction would be addressed through required mitigation measures for potential indirect impacts (see Section 7.3.1, *Mitigation for Indirect Impacts Associated with MHPA Land Use Adjacency*). There would be no permanent storage of any kind in the MHPA associated with the Project. Litter and trash associated with use of the trails will be the responsibility of the City.

6.4 CUMULATIVE IMPACTS

The MSCP was designed to compensate for the cumulative loss of biological resources throughout the San Diego region. Projects that conform to the MSCP as specified by the City's Subarea Plan and implementing ordinances, (i.e., Biology Guidelines and ESL Regulations) are not expected to result in a significant cumulative impact for those biological resources adequately covered by the MSCP. These resources include the vegetation communities identified as Tier I through IV and MSCP Covered Species (City 2012).

The Project would comply with the City's Subarea Plan by conforming to the MHPA Land Use Adjacency Guidelines and Area Specific Management Directives for Covered Species and by mitigating for significant impacts in accordance with ESL Regulations and the City's Biology Guidelines (see Section 7.0, *Mitigation Measures*). Other projects in the City would also be required to comply with the City's Subarea Plan. Therefore, the Merge 56 Development Project would not contribute considerably to cumulatively significant impacts on sensitive biological resources in the City, and no mitigation for cumulative impacts would be required.

7.0 MITIGATION MEASURES

The Project would impact sensitive vegetation communities, sensitive plant species, sensitive animal species, WUS, WS, and City Wetlands. The following measures are proposed to mitigate the direct and indirect impacts to these resources that are significant. Successful implementation of the mitigation measures in this section would reduce each impact to a less-than-significant level.

7.1 MITIGATION FOR DIRECT IMPACTS

The following mitigation measures have been formulated to satisfy the requirements of the City's MSCP Subarea Plan and Biology Guidelines. The mitigation ratios used in this report follow the City's ESL Regulations five-tier system for impacts to sensitive upland vegetation/habitat communities and the Torrey Highlands Subarea Plan for North City Future Urbanizing Area IV (THSP; City 1996b). The mitigation requirements of the THSP apply to the Mixed Use component of the Project because it lies within the THSP boundaries. Mitigation for the Tier I roadway habitat impacts is proposed to occur in the MHPA, and mitigation for impacts to Tier II and Tier III habitats is proposed to occur in accordance with the Conservation Credit Agreement among the SANDAG and other signatories for regional transportation projects and local streets and roads (SANDAG et al. 2014). The ratios used in this report are as follows.

- **Tier I**: Southern foredunes, Torrey pines forest, coastal bluff scrub, maritime succulent scrub, maritime chaparral, scrub oak chaparral, native grasslands and oak woodlands (mitigation ratios range from 1:1 to 2:1)

- **Tier II**: Coastal sage scrub (1:1 to 2:1) and coastal sage scrub/chaparral ecotone (1:1 to 1.5:1)

- **Tier IIIA**: Mixed chaparral and chamise chaparral (0.5:1 to 1:1)

- **Tier IIIB**: Non-native grasslands (0.5:1 to 1:1)

- **Tier IV**: Disturbed, agricultural, and eucalyptus (0:1 regardless of where the impact or mitigation occurs—inside or outside the MHPA)

Although considered sensitive by the City, wetlands (including coastal wetlands, riparian habitats, freshwater marsh, natural flood channel, disturbed wetland, vernal pools, marine habitats, and eelgrass beds) are not included within the tier system. The THSP and Biology Guidelines include mitigation ratios for wetland communities, but the mitigation required as part of any federal or State permit required for the Project would supersede those ratios.

According to the THSP, the options for mitigation for the Mixed Use component of the Project that lies within the boundaries of the THSP include the following, and the priority is for mitigation to occur within the THSP segment of the MHPA (THSP MHPA). The THSP MHPA encompasses approximately 270 acres and is generally defined by McGonigle Canyon, the upper reaches of La Zanja Canyon, and Deer Canyon (City 1996b).

- Acquisition and preservation of existing native habitat in the THSP MHPA.
- Restoration within the THSP MHPA.
- Acquisition and restoration within the overall MHPA but outside the THSP MHPA at two times the mitigation ratios provided in the THSP.[4]
    - The ratios in the TSHP are 1:1 for Diegan coastal sage scrub and 3:1 for vernal pools with listed species.
    - For impacts to wetlands occurring outside of the overall MHPA, a combination of habitat restoration and habitat preservation will be permitted in Torrey Highlands. At a minimum, at least one acre of wetland habitat would need to be created for each acre impacted. Remaining mitigation requirements would, however, be allowed to be mitigated through wetland habitat acquisition to achieve the anticipated overall 3:1 mitigation requirement.
    - Impacts to chamise chaparral and southern mixed chaparral can be mitigated through preservation of any native vegetation community.
- Payment of fees into a habitat acquisition fund if mitigation requirements are less than 10 acres. The required mitigation would exceed 10 acres, so payment of fees would not be a viable option.

Because portions of the Merge 56 Development Project were previously included within the Rhodes Crossing Project area, some of the mitigation for the Project's wetland impacts was identified prior to the preparation of this document. In particular, impacts to non-wetland jurisdictional habitats associated with the Mixed Use component will be mitigated within the vernal pool preserves located east of the Project study area. Similarly, mitigation for impacts to

[4] The requirement for two times the prescribed mitigation ratios will be waived if mitigation within the THSP segment of the MHPA is infeasible.

non-wetland jurisdictional habitats associated with the Camino Del Sur-South component has been completed as part of the El Cuervo Norte Wetland Mitigation Site because the development of the roadway was previously anticipated.

Mitigation accomplished at these two sites and proposed mitigation for impacts to jurisdictional habitats associated with Camino Del Sur-North are described in Section 7.1.2, *Mitigation for Direct Impacts to Other Jurisdictional and Wetland/Riparian Areas*. Mitigation for upland impacts is described in Section 7.1.3, *Mitigation for Direct Impacts to Upland Vegetation Communities*.

7.1.1 Mitigation for Direct Impacts to Vernal Pools and Road Pools

Impacts to vernal pools and road pools supporting San Diego fairy shrimp are proposed to be mitigated through off-site creation of vernal pool habitat at a 3:1 ratio. Vernal pool and road pool impacts and their associated mitigation requirements for both the Mixed Use and City roadway Project components are presented together in Table 10.

Table 10
MITIGATION FOR DIRECT IMPACTS TO VERNAL POOLS AND ROAD POOLS

Vegetation Community	Impacts (acre)	Mitigation	
		Ratio	Required (acre)
Mixed Use Site			
Vernal Pool	0.022	3:1	0.066
Subtotal Mixed Use Site	**0.022**	**-**	**0.066**
City Roadways[1]			
Vernal Pool	0.016	3:1	0.048
Road Pool	0.003	3:1	0.009
Subtotal City Roadways	**0.019**	**-**	**0.057**
TOTAL	**0.041**	**-**	**0.123**

[1] There would be no impacts to vernal/road pools from the Carmel Mountain Road and Darkwood Canyon Trail components of the Project.

The mitigation for the Mixed Use vernal pool impacts and the City roadway vernal pool and road pool impacts is proposed to occur at a City-owned parcel on Del Mar Mesa (Figure 7). Sea Breeze Properties, LLC met with the City and USFWS and confirmed that the site is available and suitable for this mitigation. In total, the Project requires 0.123 acre of vernal pool mitigation. The proposed effort on the City-owned parcel would, however, provide 0.193 acre of vernal pool habitat. This would leave approximately 0.070 acre of surplus vernal pool surface area that could be used by the City as mitigation for other City projects. Additionally, Sea Breeze Properties, LLC will enhance an existing vernal pool (0.021 acre) as part of the overall effort on the City-owned parcel. The creation of surplus vernal pool habitat and enhancement of the existing vernal pool are being conducted to compensate for the use of City-owned land for private (i.e., the

Mixed Use) mitigation. The final mitigation, however, shall be determined through consultation with the City and USFWS. A separate *Merge 56 Development Project Conceptual Vernal Pool Mitigation Plan* (Alden Environmental, Inc. 2016a) has been prepared to direct the proposed mitigation and is included as Appendix H1.

Sea Breeze Properties, LLC shall be responsible for financing the installation, maintenance, and monitoring of the mitigation, as well as the City surplus vernal pools. Reimbursement from the City for the City roadway portion of the mitigation effort may be pursued by Sea Breeze Properties, LLC. Any reimbursement of costs will be determined through consultation between Sea Breeze Properties, LLC and the City.

Upon completion of the mitigation installation, there would be a five-year maintenance and monitoring period to ensure successful vernal pool creation followed by implementation of a long-term habitat management plan. See Appendix H2, *Merge 56 Development Project Vernal Pool Habitat Management Plan* (Alden Environmental, Inc. 2016b).

The mitigation would, at a minimum, replace the functions and services lost through impacts to vernal pools and road pools from the Project, and the pools would support reproducing populations of San Diego fairy shrimp. With the completed mitigation, it is expected that functions and services (water filtration, sensitive wildlife and plant habitat, etc.) would be greater in the mitigation pools by the end of the five-year mitigation effort than in the impacted pools. The target functions and values would be documented by conducting quantitative and qualitative analyses throughout the five years of monitoring. See Appendix H1, *Merge 56 Development Project Conceptual Vernal Pool Mitigation Plan*, for more details.

Long-term management (after the five-year maintenance and monitoring period) and funding of the City roadway portion of the vernal pool mitigation area would be the responsibility of the City. Long-term management and funding of the Mixed Use vernal pool mitigation area would be the responsibility of Sea Breeze Properties, LLC. Sea Breeze Properties would prepare a Property Analysis Record (PAR) and provide an endowment to ensure adequate long-term funding for the Mixed Use vernal pool mitigation component. Long-term management and funding of the surplus pools would be determined through consultation between the City and Sea Breeze Properties. All mitigation for impacts to vernal pools and road pools (and San Diego fairy shrimp) shall occur as defined in the final permits/authorizations to be issued by the USFWS and City prior to issuance of grading permits.

7.1.2 Mitigation for Direct Impacts to Other Jurisdictional and Wetland/Riparian Areas

The mitigation requirements for other (non-vernal/road pool) wetland/riparian impacts vary between the Project components. The following text describes the mitigation proposed for the Mixed Use, Camino Del Sur-North, and Camino Del Sur-South impacts.

Mixed Use

Impacts to 0.04 acre of jurisdictional non-wetland WUS/WS on the Mixed Use site (Table 8; Figure 5) were addressed in the Corps, CDFW, and Regional Water Quality Control Board permits (Appendices B and C) and the Biological Opinion for the Rhodes Crossing Project (Appendix A). Per those permits, the impacts would be mitigated through the creation and

Sources: Carmel Mountain and Del Mar Mesa Preserves Resource Management Plan (RECON 2011); Imagery ©2016 , Cnes/Spot Image, DigitalGlobe, U.S. Geological Survey, USDA Farm Service Agency

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ALDEN ENVIRONMENTAL, INC

Figure 7

Potential Off-site
Vernal Pool Mitigation Site

MERGE 56 DEVELOPMENT PROJECT

enhancement of 0.30 acre of vernal pools within the vernal pool preserve areas located adjacent to Carmel Mountain Road (Table 11). The created pools would be formed to replicate the hydrologic conditions of existing vernal pool habitat on Del Mar Mesa. They would be created by grading to specific micro-elevations and would be inoculated with vernal pool species and subject to long-term management through an endowment and dedication to an approved land management entity (see Appendix G, *Rhodes Crossing Project Mitigation Plan* [Alden Environmental, Inc. 2015] for details). No additional wetland mitigation would be required for the Mixed Use component.

Table 11
MITIGATION FOR DIRECT IMPACTSTO OTHER JURISDICTIONAL AND WETLAND/RIPARIAN AREAS

Jurisdictional Area	Impacts (acre)	Mitigation	
		Ratio	Required (acre)
Mixed Use Site			
Non-wetland WUS/streambed	0.04	NA[1]	0.30[1]
Subtotal Mixed Use Site	**0.04**	**-**	**0.30[1]**
Camino Del Sur-South			
Non-wetland WUS/streambed	0.05	1:1	0.05
Subtotal Camino Del Sur-South	**0.05**	**-**	**0.05**
Camino Del Sur-North			
Non-wetland WUS/streambed	0.04	2:1	0.08
Wetland/riparian	0.50	3:1	1.50
Subtotal Camino Del Sur-North	**0.54**	**-**	**1.58**
TOTAL	**0.63**	**-**	**1.93**

[1] Mitigation for non-wetland jurisdictional impacts associated with the Mixed Use project component was determined over time through consultation with the permitting agencies. Because these impacts were to be mitigated out-of-kind through the creation of a vernal pool preserve, mitigation does not follow a prescribed mitigation ratio. See Appendices A, B, C, and G for additional information regarding the creation and enhancement of vernal pools for impacts to non-wetland WUS/streambed from the Mixed Use site.

Camino Del Sur-South

Impacts to 0.05 acre of non-wetland WUS/WS from Camino Del Sur-South (Table 8) are proposed to be mitigated at a 1:1 ratio through the use of 0.05 acre of creation credits (out of a total of 0.08 acre of creation credits available for Camino Del Sur-South) at the El Cuervo Norte Wetland Mitigation Site in Los Peñasquitos Canyon Preserve (Table 11). The City pursued and completed the El Cuervo habitat restoration effort in order to meet agency mitigation requirements for several City projects including Camino Del Sur. A total of 0.08 acre of creation credits and 0.01 acre of enhancement credit was set aside for Camino Del Sur-South impacts (i.e., from Carmel Mountain Road to 1,600 feet North of Park Village Road [Appendix I1], which is the same area analyzed in this report). The City has confirmed that this creation credit is available for use by the Project (Appendix I2).

The acreage set aside was based on the impacts from Camino Del Sur-South (four lanes; 0.07 acre) analyzed in the Final EIR for Camino Del Sur (City 2005). The proposed extension of Camino Del Sur-South as part of the Project would be two lanes. The mitigation site received final sign-off from the Corps on July 7, 2010 (Corps 2010; Appendix I3) following the five-year maintenance and monitoring period (see Appendix I1 [Dudek 2010] for the five-year report).

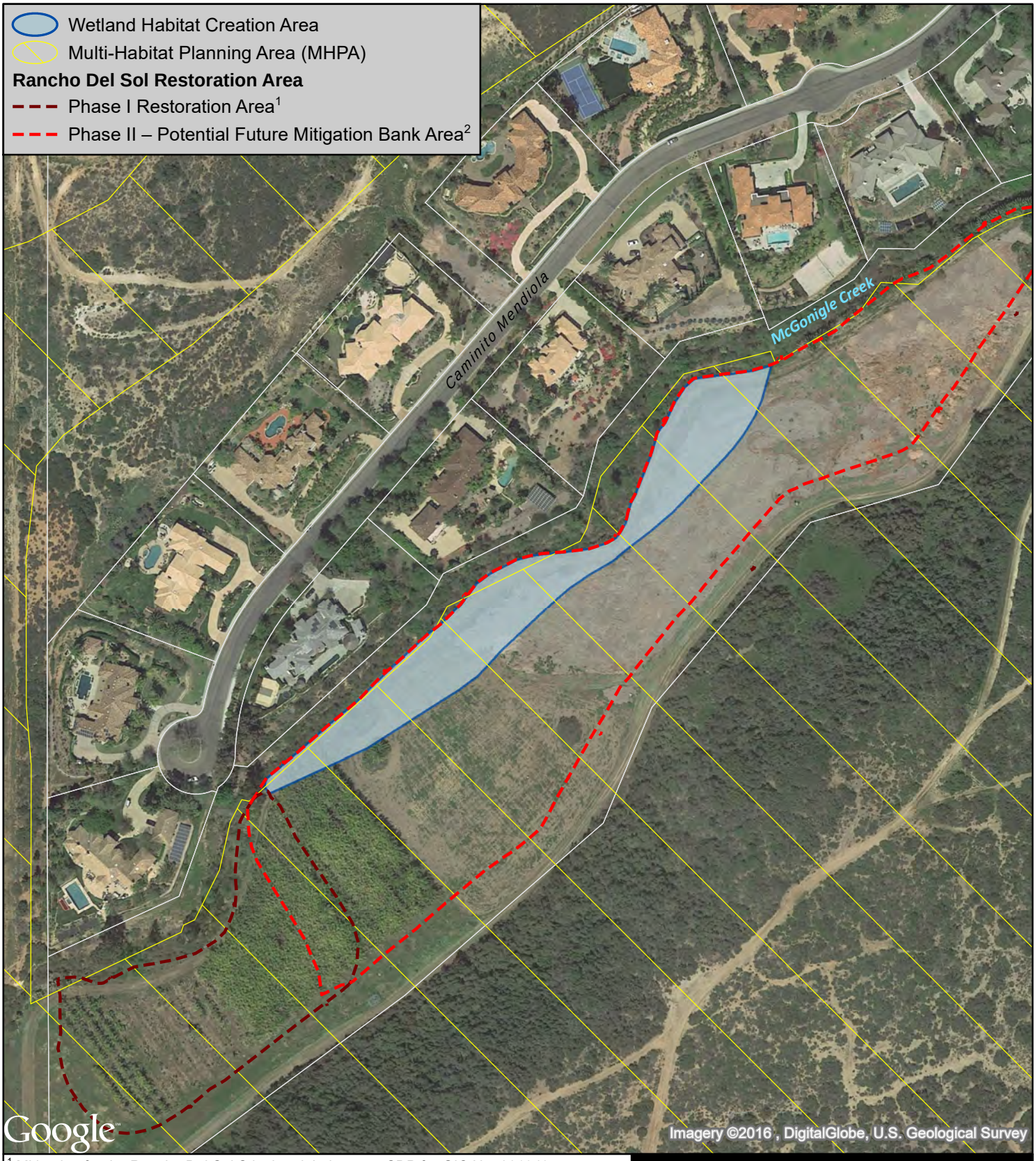
Given that the El Cuervo project has been completed well in advance of the Project impacts (no temporal loss) and that the current Project impacts (0.05 acre) are reduced from those approved previously for Camino Del Sur (0.07 acre), a 1:1 ratio is considered appropriate. The 0.03 acre of surplus creation credit and 0.01 acre of remaining enhancement credit available at El Cuervo would be available for other City projects (e.g., Camino Del Sur-North). The suitability of this previously completed mitigation effort must be determined and verified by the Corps, CDFW, and RWQCB as part of the jurisdictional permit process.

Camino Del Sur-North

The Camino Del Sur-North project component would impact a total of 0.5 acre of habitat that is considered jurisdictional by the Corps, CDFW, RWQCB, and the City (Table 11). In addition, Camino Del Sur-North would impact 0.04 acre of non-wetland WUS/WS that are jurisdictional to the agencies but not to the City. Combined, the Camino Del-Sur component would impact 0.54 acre of jurisdictional features that would require mitigation.

Mitigation for these impacts is proposed to be met through off-site creation of wetland/riparian habitat at a 3:1 ratio for wetland impacts and 2:1 for unvegetated streambed impacts (Table 11). This will achieve no net loss of acreage, functions, or values. The mitigation site is located along the creek in McGonigle Canyon approximately 1.5 miles northwest of the Project (Figure 8). The site supports existing wetland/riparian habitat along the creek and is located within the MHPA. The mitigation effort would widen the creek in an area that has been filled and used for agricultural purposes. A total of 1.58 acres of wetland/riparian habitat would be created at this location as project mitigation.

A separate *Merge 56 Development Project Wetland Mitigation Plan* (Alden Environmental, Inc. 2016c) has been prepared to direct this mitigation and is included as Appendix J1. Some of the required mitigation could be met through the use of remaining available credits in the El Cuervo Norte Wetland Mitigation Site as described above for Camino Del Sur-south. Should credits at El



[1] Mitigation for the Rancho Del Sol Stipulated Judgement SDP for GIC No. 801949
[2] Merge 56 mitigation would occur entirely within the Phase II area

N
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ALDEN ENVIRONMENTAL, INC

Figure 8

Off-site Wetland Mitigation Site

MERGE 56 DEVELOPMENT PROJECT

Cuervo be used, the mitigation required at McGonigle Canyon would be reduced accordingly.

The McGonigle Canyon mitigation site is within an area that has been previously identified as a wetland habitat mitigation site. A wetland creation plan was previously prepared for this area (Scheidt 2016; Appendix K1) as required mitigation for the Rancho Del Sol Stipulated Judgment SDP for GIC No. 801949. This plan includes a habitat restoration area for mitigation (Phase I) and a potential future wetland habitat mitigation bank area (Phase II). The Project's proposed mitigation is located outside of the Phase I mitigation area and entirely within the Phase II potential mitigation bank area (Figure 8). The City also has completed a Substantial Conformance Review (SCR) to confirm that the current proposed mitigation meets the requirements of the Stipulated Judgment Agreement SDP. The SCR is included in Appendix K2 to provide confirmation that the Project's mitigation does not create a conflict with the mitigation for the Stipulated Judgment Agreement SDP. Though the identified 1.58-acre mitigation would be constructed within the Phase II area, it would serve as mitigation specifically for impacts associated with the Camino Del Sur-North roadway and would not be available as part of any current or proposed future mitigation bank.

The wetland creation area consists of a long, narrow, flat piece of land within the floodplain of McGonigle Creek (Scheidt 2016; Appendix K1). This area supports intensive agriculture, as it has been used for many years to store and grow nursery plants such as queen palm (*Syagrus romanzoffiana*), Mexican fan palm (*Washingtonia robusta*), and others. As of December 2008, most of the nursery activity in this area had ended, with greenhouses and hundreds of container plants being removed. The proposed mitigation area currently supports mostly bare dirt and weedy species. This area is considered suitable for the proposed wetland habitat enhancement and creation within McGonigle Canyon as a result of the presence of appropriate soils and topography and adjacent existing wetland/riparian habitat.

The 1.58 acres of wetland area would be created by expanding the width of the existing creek. Expansion of the creek would involve removal of soil and all of the remaining debris/materials from the previous agricultural activities. The site would be graded to create an expanded channel area that is at an elevation within one to two feet of the existing creek bottom. All of the creation mitigation would occur within this expanded, graded area. The goal is to create a mosaic of site-appropriate wetland/riparian-associated habitats through the installation of a broad species mix. The habitats to become established are anticipated to range from freshwater marsh adjacent to the central portions of the channel that experience steady water flows to riparian scrub and forest habitats along the periphery of the mitigation area.

The wetland/riparian mitigation effort would include a five-year maintenance and monitoring period, a long-term habitat management plan (Appendix J2, *Merge 56 Development Project Wetland Habitat Management Plan* [Alden Environmental, Inc. 2016d]), and an endowment to provide long-term management funding.

All mitigation for the impacts shall occur as defined in the final permits/authorizations to be issued by the Corps, CDFW, USFWS, and City prior to issuance of grading permits.

7.1.3 Mitigation for Direct Impacts to Upland Vegetation Communities

Mitigation for direct impacts to 61.2 acres of sensitive upland vegetation communities is proposed to be accomplished through acquisition and preservation of a minimum of 51.8 acres of suitable habitat/mitigation credit. The impacts and proposed mitigation ratios and acreages are presented in Table 12 for the Mixed Use component and Table 13 for the City roadways.

Table 12
MIXED USE MITIGATION FOR DIRECT IMPACTS TO UPLAND VEGETATION

Vegetation Community	Impacts[1] (acres)	Mitigation[1]		
		Mitigation Ratio (acre)	Required Mitigation Acreage	Avoided
Tier II				
Diegan coastal sage scrub	7.7	2:1[2]	15.4	2.4
Diegan coastal sage scrub-disturbed	0.3	2:1[2]	0.6	-
Diegan coastal sage scrub-southern mixed chaparral ecotone	1.3	2:1[2]	2.6	-
Subtotal	**9.3**	**-**	**18.6**	**2.4**
Tier IIIA				
Southern mixed chaparral	<0.1	0.5:1	0.1	0.1
Chamise chaparral	2.2	0.5:1	1.1	-
Chamise chaparral-disturbed	3.4	0.5:1	1.7	-
Subtotal	**5.6**	**-**	**2.9**	**0.1**
Tier IIIB				
Non-native grassland	16.5	0.5:1	8.3	0.5
Subtotal	**16.5**	**-**	**11.2**	**0.5**
TOTAL	**31.4**	**--**	**32.7**	**3.0**

[1]Impact is outside the MHPA, and mitigation is within the MHPA.
[2]Since the Project proposes to mitigate for impacts to Diegan coastal sage scrub communities outside the THSP MHPA, the ratio has been doubled to 2:1.

Table 13
CITY ROADWAYS
MITIGATION FOR DIRECT IMPACTS TO UPLAND VEGETATION

Vegetation Community	Impacts[1]				Mitigation		
	CDS-N (acre)[2]	CDS-S (acre)	CMR (acre)	Darkwood Canyon Trail (acre)	Total Impact (acre)	Ratio[2] (acre)	Required Mitigation
Tier I							
Scrub oak chaparral	-	1.7	-	-	1.7	1:1	1.7[3]
Subtotal	**-**	**1.7**	**-**	**-**	**1.7**	**--**	**1.7[3]**
Tier II							
Diegan coastal sage scrub	2.2	1.1	-	0.2	3.5	1:1	3.5
Diegan coastal sage scrub-within MHPA	0.3	-	-	-	0.3	1:1	0.3
Diegan coastal sage scrub-disturbed	0.2	-	-	-	0.2	1:1	0.2
Diegan coastal sage scrub-southern mixed chaparral ecotone	0.5	-	-	-	0.5	1:1	0.5
Diegan coastal sage scrub-southern mixed chaparral ecotone-within MHPA	-	-	-	-	-	1:1	-
Subtotal	**3.2**	**1.1**	**-**	**0.2**	**4.5**	**-**	**4.5**
Tier IIIA							
Southern mixed chaparral	1.8	4.1	-	0.3	6.2	0.5:1	3.1
Southern mixed chaparral-within MHPA	1.9	-	-	-	1.9	1:1	1.9
Chamise chaparral	1.9	4.5	1.1	-	7.5	0.5:1	3.8
Chamise chaparral-within MHPA	-	-	-	-	-	1:1	-
Chamise chaparral-disturbed	0.6	0.5	1.0	-	2.1	0.5:1	1.1
Subtotal	**6.2**	**9.1**	**2.1**	**0.3**	**17.7**	**-**	**9.9**
Tier IIIB							
Non-native grassland	2.4	1.4	2.1	-	5.9	0.5:1	3.0
Subtotal	**2.4**	**1.4**	**2.1**	**-**	**5.9**	**-**	**3.0**
TOTAL	**11.8**	**13.3**	**4.2**	**0.5**	**29.8**	**-**	**19.1**

[1]Impact is outside the MHPA unless otherwise stated.
[2]The ratios are for mitigation inside the MHPA.
[3]Would also mitigate for impacts to Nuttall's scrub oak.

The Project proposes purchase of credits from mitigation banks in the MHPA in accordance with the City's Biology Guidelines for impacts on the Mixed Use site and for Tier I habitat impacts from Camino Del Sur-South. The Project also proposes purchase of credits in a mitigation bank for the remainder of the Camino Del Sur-South impacts (including the minor impacts from Darkwood Canyon Trail since it connects to Camino Del Sur-South) and for impacts from Camino Del Sur-North and Carmel Mountain Road. Purchase of those credits would be in accordance with the Conservation Credit Agreement among SANDAG and other signatories for regional transportation projects and local streets and roads (SANDAG et al. 2014).

According to the Biology Guidelines, impacts to Tiers II, IIIA, and IIIB habitats inside the MHPA (i.e., to Diegan coastal sage scrub [including -disturbed], Diegan coastal sage scrub-southern mixed chaparral ecotone, southern mixed chaparral, chamise chaparral [including -disturbed], and non-native grassland) must be mitigated with Tiers I through III habitats, but the mitigation may be out-of-kind. For Tier I habitat impacts, the mitigation can occur within the MHPA with any Tier I habitat (southern foredunes, Torrey pine forest, coastal bluff scrub, maritime succulent scrub, maritime chaparral, scrub oak chaparral, native grassland, and oak woodlands). The Project's proposed mitigation meets these requirements as follows.

Mixed Use

The Project proposes to meet the 32.7-acre upland mitigation requirement for impacts to Tiers II and III habitats from the Mixed Use component through the assignment of credits (one credit equals one acre) in the Deer Canyon Mitigation Bank and/or the purchase of credits in the City's Marron Valley Cornerstone Lands Mitigation Bank and/or the acquisition of land available at the Crescent Heights site owned by Pardee Homes. all of which are in the MHPA (but not in the THSP MHPA). The City has demonstrated that its mitigation banking agreement obligations have been met and has provided confirmation to the USFWS that the credits are available. Final mitigation compliance may be a combination of these three options and would be dependent upon credit/land availability and subject to City and wildlife agency approval prior to the issuance of the first grading permit. Any MHPA land acquired from Pardee Homes for Project mitigation would be dedicated in fee title to the City. Conveyance of any land in fee title to the City shall require approval from the Park and Recreation Department Open Space Division Deputy Director.

Camino Del Sur-South, Camino Del Sur-North, and Carmel Mountain Road

Mitigation for Camino Del Sur-South impacts to scrub oak chaparral (a Tier I habitat) is proposed to be met through use of 1.7 acres of credits in the Deer Canyon Mitigation Bank in the MHPA west of the Project that have been allocated by Mr. Keith Rhodes for the Rhodes Crossing Project. The Deer Canyon Mitigation Bank has 13.81 acres (mitigation credits) of remaining Tier I habitats that were previously allocated and currently owned by Mr. Keith Rhodes (Appendix L).

The Project proposes to meet the 17.4-acre upland mitigation requirement for impacts to Tiers II and III habitats from Camino Del Sur-North, Camino Del Sur-South (including Darkwood Canyon Trail), and Carmel Mountain Road at the Anderprizes mitigation site (in the City) in accordance with the Conservation Credit Agreement among SANDAG and other signatories for regional transportation projects and local streets and roads (SANDAG et al. 2014). The Anderprizes mitigation site has 5.76 acres of Tier I and 24.88 acres of Tier II and Tier III

mitigation credits available (SANDAG et al. 2014; Appendix M1). Per number 8 in the Conservation Credit Agreement, the City requested that SANDAG provide a current credit ledger and a letter to notify the USFWS and CDFW of the proposed use of Anderprizes credits by the Project. SANDAG is preparing the agency request letter and will provide it to the City for the administrative record once it is finalized. The City request letter is included in Appendix M2. The Anderprizes credit ledger is included in Appendix M3

7.1.4 Mitigation for Direct Impacts to Sensitive Plant Species

Direct impacts to Nuttall's scrub oak, summer holly, and spine shrub shall be mitigated through implementation of mitigation for impacts to sensitive upland vegetation communities as described in Section 7.1.3, *Mitigation for Impacts to Upland Vegetation Communities*. The Deer Canyon Mitigation Bank supports Nuttall's scrub oak, summer holly, and spine shrub (Recon Environmental, Inc. 2015; California Natural Diversity Database 2015).

7.1.5 Mitigation for Direct Impacts to Sensitive Animal Species

San Diego Fairy Shrimp

Mitigation for direct impacts to San Diego fairy shrimp in two vernal pools located on the Mixed Use site and direct impacts to San Diego fairy shrimp designated Critical Habitat shall be determined through consultation with the USFWS through a Section 7 Consultation with the Corps and addressed in an amended and/or new Biological Opinion.

Mitigation for impacts to the San Diego fairy shrimp are proposed to be met through vernal pool habitat creation/enhancement as identified in Section 7.1.1, *Mitigation for Direct Impacts to Vernal Pools and Road Pools*. All of the mitigation pools shall support reproducing populations of San Diego fairy shrimp as part of the mitigation. Any mitigation for San Diego fairy shrimp shall be conducted in accordance with a mitigation plan to be approved by the USFWS and City prior to issuance of grading permits.

The following measures shall also be implemented to protect San Diego fairy shrimp and its habitat in the immediately adjacent, off-site vernal pool preserves.

- The Project applicant shall submit documentation to the USFWS prior to the initiation of Project construction demonstrating that the distribution of San Diego fairy shrimp has not changed from the baseline (i.e., the number and distribution of pools occupied by San Diego fairy shrimp has not changed). Pools already occupied do not need to be re-surveyed; however, pools and Project areas supporting suitable habitat conditions shall be re-assessed and re-surveyed to protocol standards.

- A monitoring biologist approved by the USFWS shall oversee installation of fencing and erosion control measures within or up-slope of off-site vernal pool preserves.

- The Project proponent shall submit to the USFWS for approval, at least 30 days prior to initiating Project impacts, the final plans for initial clearing and grubbing and Project construction. These final plans shall include photographs that show the fenced limits of impacts and the fenced limits of all areas to be avoided.

- The monitoring biologist shall be on the Project site during clearing and grubbing of suitable habitat for the San Diego fairy shrimp, including all Critical Habitat, and any occupied habitat within 200 feet of the grading limits. The monitoring biologist shall conduct weekly site visits during rough grading to ensure that the grading limits have been respected and compliance with all mitigation has been achieved. The biologist shall be knowledgeable of vernal pool species. The Project applicant shall submit the biologist's name, address, telephone number, and work schedule on the Project to the USFWS at least seven days prior to initiating impacts.
- The monitoring biologist shall halt work, if necessary, and confer with the USFWS to ensure the proper implementation of San Diego fairy shrimp and habitat protection measures. The monitoring biologist shall also report any violation to the USFWS within 24 hours of its occurrence.

- The monitoring biologist shall implement a contractor training program to ensure compliance with the mitigation measures to avoid and minimize incidental take of San Diego fairy shrimp.

- The monitoring biologist shall submit:

    - Monthly letter reports (including photographs of impacted areas) to the USFWS during Project construction within 200 feet of avoided San Diego fairy shrimp habitat. The monthly reports shall document that authorized impacts were not exceeded, and general compliance with all conditions was met.

    - A final report to the USFWS within 60 days of Project completion that includes as-built construction drawings with an overlay of pools that were impacted or remain off site, photographs of the off-site pools, and other relevant information documenting that incidental take was not exceeded and that general compliance with the Project, including all mitigation measures, was achieved.

Coastal California Gnatcatcher, San Diego Black-tailed Jackrabbit, and Raptor Foraging

Direct impacts to the coastal California gnatcatcher, San Diego black-tailed jackrabbit, and raptor foraging habitat shall be mitigated through acquisition and preservation of habitat in accordance with the acreages in Tables 12 and 13.

Animal Species with Moderate to High Potential to Occur

Potential direct impacts to silvery legless lizard, Coronado skink, Bell's sage sparrow, California horned lark, Dulzura pocket mouse, and northwestern San Diego pocket mouse shall be mitigated through *Biological Resource Protection During Construction* (see Section 7.2) and acquisition and preservation of habitat in accordance with the acreages in Tables 12 and 13.

7.2 BIOLOGICAL RESOURCE PROTECTION DURING CONSTRUCTION

I. Prior to Construction

A. **Biologist Verification:** The owner/permittee shall provide a letter to the City's Mitigation Monitoring Coordination section stating that a Project Biologist (Qualified Biologist), as defined in the City of San Diego's Biological Guidelines (2012), has been retained to implement the Project's biological monitoring program. The letter shall include the names and contact information of all persons involved in the biological monitoring of the project.

B. **Pre-construction Meeting:** The Qualified Biologist shall attend a pre-construction meeting, discuss the Project's biological monitoring program, and arrange to perform any follow up mitigation measures and reporting including site-specific monitoring, restoration or revegetation, and additional fauna/flora surveys/salvage.

C. **Biological Documents:** The Qualified Biologist shall submit all required documentation to Mitigation Monitoring Coordination verifying that any special mitigation reports including but not limited to, maps, plans, surveys, survey timelines, or buffers are completed or scheduled per City Biology Guidelines, MSCP, ESL Ordinance, project permit conditions; CEQA; endangered species acts; and/or other local, State or federal requirements.

D. **Biological Construction Mitigation/Monitoring Exhibit:** The Qualified Biologist shall present a Biological Construction Mitigation/Monitoring Exhibit which includes the biological documents in C, above. In addition, include: restoration/revegetation plans, plant salvage/relocation requirements, avian or other wildlife surveys/survey schedules (including general avian nesting and USFWS protocol), timing of surveys, wetland buffers, avian construction avoidance areas/noise buffers/ barriers, other impact avoidance areas, and any subsequent requirements determined by the Qualified Biologist and the City Assistant Deputy Director/Mitigation Monitoring Coordination. The Biological Construction Mitigation/Monitoring Exhibit shall include a site plan, written and graphic depiction of the project's biological mitigation/monitoring program, and a schedule. The Biological Construction Mitigation/Monitoring Exhibit shall be approved by Mitigation Monitoring Coordination and referenced in the construction documents.

E. **Resource Delineation:** Prior to construction activities including the erection of any permanent fencing (e.g., around the vernal pool preserves adjacent to the Project), the Qualified Biologist shall supervise the placement of silt and orange construction fencing or equivalent along the limits of disturbance and verify compliance with any other project conditions as shown on the Biological Construction Mitigation/Monitoring Exhibit. This phase shall include flagging plant specimens and delimiting buffers to protect sensitive biological resources (e.g., habitats/flora and fauna species, including nesting birds) during construction. Appropriate steps/care should be taken to minimize attraction of nest predators to the site.

F. **Education:** Prior to commencement of construction activities, the Qualified Biologist shall meet with the owner/permittee or designee and the construction crew and conduct an on-site educational session regarding the need to avoid impacts outside of the approved construction area and to protect sensitive flora and fauna (e.g., explain the avian and wetland buffers, flag system for removal of invasive species or retention of sensitive plants, and clarify acceptable access routes/methods and staging areas, etc.).

II. During Construction

A. **Monitoring:** All construction (including access/staging areas) shall be restricted to areas previously identified, proposed for development/staging, or previously disturbed as shown on "Exhibit A" and/or the Biological Construction Mitigation/Monitoring Exhibit. The Qualified Biologist shall monitor construction activities as needed to ensure that construction activities do not encroach into biologically sensitive areas, or cause other similar damage, and that the work plan has been amended to accommodate any sensitive species located during the pre-construction surveys. In addition, the Qualified Biologist shall document field activity via the Consultant Site Visit Record. The Consultant Site Visit Record shall be e-mailed to Mitigation Monitoring Coordination on the 1st day of monitoring, the 1st week of each month, the last day of monitoring, and immediately in the case of any undocumented condition or discovery.

The Qualified Biologist shall monitor, as is feasible, for the presence of sensitive animals species and shall, if practicable, direct or move these animals out of harm's way (i.e., to a location of suitable habitat outside the impact footprint).

B. **Subsequent Resource Identification:** The Qualified Biologist shall note/act to prevent any new disturbances to habitat, flora, and/or fauna on site (e.g., flag plant specimens for avoidance during access, etc). If active nests or other previously unknown sensitive resources are detected, all Project activities that directly impact the resource shall be delayed until species specific local, State or federal regulations have been determined and applied by the Qualified Biologist.

III. Post Construction

A. In the event that impacts exceed previously allowed amounts, additional impacts shall be mitigated in accordance with City Biology Guidelines, ESL Ordinance and MSCP, CEQA, and other applicable local, State and federal laws. The Qualified Biologist shall submit a final Biological Construction Mitigation/Monitoring Exhibit /report to the satisfaction of the City Assistant Deputy Director /Mitigation Monitoring Coordination within 30 days of construction completion.

7.3 MITIGATION FOR INDIRECT IMPACTS

7.3.1 Mitigation for Indirect Impacts Associated with MHPA Land Use Adjacency

To mitigate for significant edge effect impacts due to drainage and toxics, lighting, , and noise, the following measures shall be required. Mitigation for significant impacts from errant construction (grading/land development) shall be mitigated through implementation of *Biological Resource Protection During Construction* (see Section 7.2) and *Mitigation for Direct Impacts to Upland Vegetation Communities* (see Section 7.1.3). While these measures are meant to protect the MHPA, they are also required to protect the off-site vernal pool preserves and adjacent natural areas that support, or may support, sensitive species.

I. Prior to issuance of any construction permit or notice to proceed, DSD/ LDR, and/or MSCP staff shall verify the Applicant has accurately represented the project's design in or on the Construction Documents (CDs/CDs consist of Construction Plan Sets for Private Projects and Contract Specifications for Public Projects) are in conformance with the associated discretionary permit conditions and Exhibit "A," and also the City's MSCP MHPA Land Use Adjacency Guidelines. The applicant shall provide an implementing plan and include references on/in CDs of the following:

A**.** **Drainage:** The use of structural and non-structural Best Management Practices, Best Available Technology, and use of sediment catchment devices downstream of paving activities shall be used to reduce potential impacts associated with construction. The Project design shall comply with the Standard Urban Stormwater Management Plan and Municipal Stormwater Permit criteria of the State Water Resources Control Board and City.

Natural drainage patterns shall be maintained as much as possible during construction. Erosion control techniques, including the use of sandbags, hay bales, and/or installation of sediment traps, shall be used to control erosion and deter drainage during construction activities into the MHPA, vernal pool preserves, or adjacent natural areas.

B. **Toxics/Project Staging Areas/Equipment Storage:** No trash, oil, parking, or other construction/development-related material/activities shall be allowed outside any approved construction limits. Provide a note in/on the CDs that states: *"All construction related activity that may have potential for leakage or intrusion shall be monitored by the Qualified Biologist/Owners Representative or Resident Engineer to ensure there is no impact to the MHPA."*

No staging/storage areas for equipment and materials shall be located within or adjacent to the MHPA, vernal pool preserves, or adjacent natural areas; no equipment maintenance shall be conducted within or near these areas.

No trash, oil, parking, or other construction related activities shall be allowed outside the established limits of grading. All construction related debris shall be removed off site to an approved disposal facility.

C. **Lighting:** Lighting within or adjacent to the MHPA, vernal pool preserves, or adjacent natural areas shall be directed away/shielded and be subject to City Outdoor Lighting Regulations per LDC Section 142.0740.

D. **Noise:** Due to the site's location adjacent to or within the MHPA where the Qualified Biologist has identified potential nesting habitat for listed avian species, construction noise that exceeds the maximum levels allowed shall be avoided during the breeding seasons for the coastal California Gnatcatcher (March 1 through August 15). If construction is proposed during the breeding season for the species, USFWS protocol surveys shall be required in order to determine species presence/absence. If protocol surveys are not conducted in suitable habitat during the breeding season for the aforementioned listed species, presence shall be assumed with implementation of noise attenuation and biological monitoring.

COASTAL CALIFORNIA GNATCATCHER (Federally Threatened)
Prior to the issuance of any grading permit the City Manager (or appointed designee) shall verify that the Multi-Habitat Planning Area (MHPA) boundaries and the following project requirements regarding the coastal California gnatcatcher are shown on the construction plans:

No clearing, grubbing, grading, or other construction activities shall occur within 500 feet of the MHPA between March 1 and August 15 (gnatcatcher breeding season) until the following requirements have been met to the satisfaction of the City Manager:

A. A qualified biologist (possessing a valid federal Endangered Species Act Section 10(a)(1)(A) Recovery Permit) shall survey appropriate habitat (coastal sage scrub) areas within the MHPA that lie within 500 feet of the project footprint and would be subject to construction noise levels exceeding 60 dB hourly average for the presence of the gnatcatcher. If no appropriate habitat is present then the surveys will not be required. If appropriate habitat is present, gnatcatcher surveys shall be conducted pursuant to USFWS protocol survey guidelines within the breeding season prior to commencement of any construction. If gnatcatchers are present within the MHPA, the following conditions must be met:

I. Between March 1 and August 15, no clearing, grubbing, or grading of occupied gnatcatcher habitat shall be permitted within the MHPA. Areas restricted from such activities shall be staked or fenced under the supervision of a qualified biologist; and

II. Between March 1 and August 15, no construction activities shall occur within any portion of the site where construction activities would result in noise levels exceeding 60 dB hourly average at the edge of occupied gnatcatcher habitat within the MHPA. An analysis showing that noise generated by construction activities would not exceed 60 dB hourly average at the edge of occupied habitat must be completed by a qualified acoustician (possessing current noise engineer license or registration with monitoring

noise level experience with listed animal species) and approved by the City Manager at least two weeks prior to the commencement of construction activities. Prior to commencement of construction activities during the breeding season, areas restricted from such activities shall be staked or fenced under supervision of a qualified biologist; or

III. At least two weeks prior to commencement of construction activities and under direction of a qualified acoustician, noise attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from construction activities will not exceed 60 dB hourly average at the edge of habitat (within the MHPA) occupied by the gnatcatcher. Concurrent with commencement of construction activities and construction of necessary noise attenuation facilities, noise monitoring* shall be conducted at the edge of occupied habitat area within the MHPA to ensure that noise levels do not exceed 60 dB hourly average. If the noise attenuation techniques implemented are determined to be inadequate by the qualified acoustician or biologist, then the associated construction activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (August 16).

* Construction noise shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity to verify that noise levels at the edge of occupied habitat within the MHPA are maintained below 60 dB hourly average or to the ambient noise level if it already exceeds 60 dB hourly average. If not, other measures shall be implemented in consultation with the biologist and the City Manager, as necessary, to reduce noise levels within occupied MHPA habitat to below 60 dB hourly average or to the ambient noise level if it already exceeds 60 dB hourly average. Such measures may include but are not limited to limitations on the placement of construction equipment and the simultaneous use of equipment.

B. If gnatcatchers are not detected within the MHPA during the protocol survey, the qualified biologist shall submit substantial evidence to the City Manager and applicable wildlife agencies which demonstrates whether or not mitigation measures such as noise walls are necessary between March 1 and August 15 as follows:

I. If evidence indicates high potential for gnatcatcher presence based on historical records or site conditions, Condition A.III shall be adhered to as specified above.

II. If evidence concludes that no impacts to this species are anticipated, no mitigation measures would be necessary.

8.0 REFERENCES

Alden Environmental, Inc. 2016a. Merge 56 Development Project Conceptual Vernal Pool Mitigation Plan. May 25.

2016b. Merge 56 Development Project Conceptual Vernal Pool Habitat Management Plan. May 25.

2016c. Merge 56 Development Project Wetland Mitigation Plan. May 25.

2016d. Merge 56 Development Project Wetland Habitat Management Plan. May 25.

2015. Rhodes Crossing Project Mitigation Plan. February 23.

American Bird Conservancy. 2013. Studies Show Outdoor Cats Are Popular Prey for Coyotes. Media Release. http://www.abcbirds.org/newsandreports/releases/120329.html

American Ornithologists' Union. 2014. Checklist of North and Middle American Birds. Updated through the 55th supplement. http://checklist.aou.org/taxa/

Bowman, R. 1973. *Soil Survey of the San Diego Area*. U.S. Department of Agriculture in cooperation with the USDI, UC Agricultural Experiment Station, Bureau of Indian Affairs, Department of the Navy, and the U.S. Marine Corps.

California Department of Fish and Game. 2009. Final Lake or Streambed Alteration Agreement Notification No. 1600-2009-0286-R5 Rhodes Crossing Project. November 4.

California Department of Fish and Wildlife. 2013. Extension and Amendment 1 of Lake or Streambed Alteration Agreement Notification No. 1600-2009-0286-R5 Rhodes Crossing Project. June 3.

California Department of Fish and Wildlife, Natural Diversity Database. January 2015. Special Animals List. Periodic publication. 50 pp.

California Native Plant Society. Rare Plant Program. 2015. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. http://www.rareplants.cnps.org

California Regional Water Quality Control Board. 2013. Amendment No. 1 to Water Quality Certification No. 04C-082 for the Rhodes Crossing Project. April 5.

2005. Order for Technically-Conditioned Certification and Waiver of Waste Discharge Requirements. Rhodes Crossing Project. File No. 04C-082. January 6.

City of San Diego. 2014. Public Notice of a Draft Mitigated Negative Declaration WBS No. 21002131. Carmel Mountain/Del Mar Mesa Trails Community Plan Amendments and Natural Resources Management Plan Adoption. March 20.

2012. Land Development Code Biology Guidelines. Adopted September 1999. Last amended April 23, 2012 by Resolution No. R-307376. http://www.sandiego.gov/development-services/pdf/industry/landdevmanual/ldmbio.pdf Accessed June 11, 2014.

2010. Trail Policies and Standards. Open Space Division. October 4. Appendix K *in* Consultants Guide to Park Design and Development (November 2011). http://www.sandiego.gov/park-and-recreation/pdf/parkdesign/consultantsguide2011.pdf

2005. Camino Del Sur Final Environmental Impact Report (PTS No. 1902, SCH No. 2001121109, LDR No. 41-0248). July 1.

2003. Final Environmental Impact Report, Rhodes Crossing Project (Project No. 3230, SCH No. 2002121089). December 1.

2001. Camino Ruiz North Roadway Mitigated Negative Declaration (LDR No 40-0386, SCH No. 2000121031). January 31.

1998. Draft Revised Environmental Impact Report, Middle Segment of State Route 56. January 21.

1997a. City of San Diego MSCP Implementing Agreement Documents.

1997b. Multiple Species Conservation Program. City of San Diego MSCP Subarea Plan. March.

1996a. Final Environmental Impact Report, Torrey Highlands Subarea IV Plan. July 27.

1996b. Torrey Highlands Subarea Plan for North City Future Urbanizing Area Subarea IV. August 5. Torrey Highlands Community Plan January 2006. http://www.sandiego.gov/planning/community/profiles/torreyhighlands/pdf/thcpfull.pdf

Cornell Lab of Ornithology. 2014. All About Birds. Cooper's Hawk. http://www.allaboutbirds.org/guide/coopers_hawk/lifehistory#at_nesting

Crother, B.I. 2008. Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding. Sixth Edition. Society for the Study of Amphibians and Reptiles. Herpetological Circular # 37. January.

Dudek. 2010. Fifth Annual Wetlands Mitigation Monitoring Report for the El Cuervo Norte Wetland Mitigation Project, Los Peñasquitos Canyon Preserve, San Diego, California. May.

Dudek & Associates. 1996. Biology Technical Report for the Del Mar Mesa Specific Plan. March.

Ecological Restoration Service and Alden Environmental, Inc. 2012. U.S. Fish and Wildlife Service Dry Season Protocol Level Survey for San Diego and Riverside Fairy Shrimp (*Branchinecta sandiegonensis* and *Streptocephalus woottoni*), Rhodes Crossing Project. Prepared for Mr. Gary Levitt, Sea Breeze Properties, LLC. January 15.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi. 100 pp. with Appendices.

Environmental Protection Agency. 2013. Wetlands Definitions. http://water.epa.gov/lawsregs/guidance/wetlands/definitions.cfm

Grubbs, Sharon E. and Paul R. Krausman. 2009. Observations of Coyote-Cat Interactions. Journal of Wildlife Management 73(5):683-685. http://www.bioone.org/doi/abs/10.2193/2008-033

Helix Environmental Planning, Inc. 2010a. Rhodes Crossing Jurisdictional Delineation Report. Prepared for Mr. Keith Rhodes. July 7.

2010b. Rhodes Crossing Habitat Management Plan. August 11.

2003a. Rhodes Crossing Biological Technical Report, Project No. 3230. August 1.

2003b. Jurisdictional Delineation for Camino Del Sur South. June.

2001. Camino Ruiz South Project Biological Technical Report. December.

2000. Camino Ruiz North Project Biological Technical Report. October.

Hickman, J.C., ed. 1993. The Jepson Manual: Higher Plants of California. University of California Press, Berkeley, 1400 pp.

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. State of California, The Resources Agency. 156 pp.

Jackson, L. 1985. Ecological origins of California's Mediterranean grasses. *Journal of Biogeography* 12: 349-361.

Jepson Flora Project. 2015. Jepson eFlora. http://ucjeps.berkeley.edu/IJM.html

Jones, J.K., D.C. Carter, H.H. Genoways, R.S. Hoffman and D.W. Rice. 1992. Revised Checklist of North American Mammals North of Mexico. Occasional Papers of the Museum, Texas Tech University 80: 1-22.

Keeley, J. and S. Keeley. 1988. Chaparral. North American Vegetation. Eds. M. Barbour and W. Billings. Cambridge University Press, pp. 165-207.

Lincer, Jeffrey L. and Peter H. Bloom. 2007. The Status of the Burrowing Owl in San Diego County, California. *Proceedings of the California Burrowing Owl Symposium* 90-102. http://www.globalraptors.org/grin/researchers/uploads/195/burrowing_owl_status_2007.pdf

Oberbauer, T., M. Kelly, and J. Buegge. 2008. Vegetation Communities of San Diego County. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California," R.F. Holland, 1986. 73 pp.

O'Leary, J. 1990. Californian coastal sage scrub: General characteristics and considerations for biological conservation. *Endangered Plant Communities of Southern California*. Ed. A. Schoenherr. Proceedings of the 15th Annual Symposium. Southern California Botanists. Special Publication 3, pp. 24-41.

Parker, V. 1984. Correlation of physiological divergence with reproductive mode in chaparral shrubs. *Madrono* 31 (4): 231-242.

Recon Environmental, Inc. 2015. Carmel Mountain and Del Mar Mesa Preserves Resource Management Plan. February 2. https://www.sandiego.gov/sites/default/files/cm_dmm_nrmp_final_042015.pdf

1990. Biological Technical Report for Vista Alegre. November.

Reiser, Craig H. 2001. Rare Plants of San Diego County. Aquafir Press. July.

Rocks Biological Consulting. 2014. 45-Day Report for Coastal California Gnatcatcher Survey at the Camino Del Sur North/South Project, City of San Diego, California. Letter to the U.S. Fish and Wildlife Service. January 14.

Rundel, P. 1986. Structure and function in California chaparral. *Fremontia*, Vol. 14 (3), pp.3-10.

SANDAG, California Department of Transportation, California Department of Fish and Wildlife, and U.S. Fish and Wildlife Service. 2014. Conservation Credit Agreement Among the San Diego Association of Governments, California Department of Transportation, California Department of Fish and Wildlife, and U.S. Fish and Wildlife Service (SANDAG Agreement No. 5009002). November.

Scheidt, Vince. 2016. A Wetlands Creation Plan, The McGonigle Creek Wetlands Mitigation Bank. January.

U.S. Army Corps of Engineers. 2013. Letter to Keith B. Rhodes, Nationwide Permit No. 29 and 39 Verification. April 5.

2012. Approved Jurisdictional Determination for Rhodes Crossing (SPL-2009-00733-MBS). Letter to Mr. Keith Rhodes. February 15.

2010. Department of the Army Permit Authorization. Letter to Jeannette De Angelis, City of San Diego, Engineering & Capital Projects Department from Therese O'Rourke, Chief, South Coast Branch. July 7.

2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). Eds. J.S. Wakely, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

2005. Letter to Keith B. Rhodes Living Trust, Verification of Nationwide Permit No. 39 for Rhodes Crossing. March 23.

U.S. Fish and Wildlife Service. 2014. Quino Checkerspot Butterfly Survey Protocol. February 21. http://www.fws.gov/carlsbad/tespecies/Documents/QuinoDocs/Quino_Protocol_2014_FINAL_022114_jrh.pdf

2012. Formal Section 7 Consultation [Biological Opinion] for the Rhodes Crossing Project (Corps File Number SPL-2009-00733-MBS), City of San Diego, California. September 17.

2011. 50 CFR Part 17 Endangered and Threatened Wildlife and Plants; Revised Critical Habitat for the Riverside Fairy Shrimp. Federal Register / Vol. 76, No. 105 / Wednesday, June 1 / Proposed Rules.

1997. Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Protocol. August 6.

1996. Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods. April 19.

Wetland Training Institute. 1995. Field Guide for Wetland Delineation: 1987 Corps of Engineers Manual. WTI 95-3. 143 pp.

Technical Appendices
A-G
Biological Technical Report for the Merge 56 Development Project

Prepared for:

Sea Breeze Properties, LLC
3525 Del Mar Heights Road, #246
San Diego, CA 92130

Prepared by:

Alden Environmental, Inc.
3245 University Avenue, #1188
San Diego, CA 9210

ALDEN
ENVIRONMENTAL, INC

Appendix A

U.S. Fish and Wildlife Service Biological Opinion for the Rhodes Crossing Project

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011

In Reply Refer To:
FWS-SD-08B0401-12FC0578

SEP 17 2012

Colonel R. Mark Toy
District Engineer
U.S. Army Corps of Engineers, Los Angeles District
P.O. Box 532711
Los Angeles, California 90053-2325

Attn: Meris Bantilan-Smith, San Diego Field Office

Subject: Formal Section 7 Consultation for the Rhodes Crossing Project (Corps File Number SPL-2009-00733-MBS), City of San Diego, California

Dear Colonel Toy:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion on the proposed issuance of a Clean Water Act (CWA) permit by the U.S. Army Corps of Engineers (Corps) to facilitate construction of the Rhodes Crossing Project on Del Mar Mesa in the City of San Diego, California, and the associated effects of the project on federally listed species and designated critical habitat.

On November 9, 2009, the Corps requested consultation on the federally threatened coastal California gnatcatcher (*Polioptila californica californica*, gnatcatcher) and designated critical habitat for the federally endangered San Diego fairy shrimp (*Branchinecta sandiegonesis*), in accordance with section 7 of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq.*). The project will also affect San Diego fairy shrimp and two federally endangered plants, the San Diego button-celery (*Eryngium aristulatum* var. *parishii*) and San Diego mesa mint (*Pogogyne abramsii*). Thus, the section 7 consultation and biological opinion address impacts to the gnatcatcher, San Diego button celery, San Diego mesa mint, and San Diego fairy shrimp and its designated critical habitat.

The Multiple Species Conservation Program (MSCP) establishes a multiple species conservation program to minimize and mitigate habitat loss and the incidental take of covered species in association with specific activities covered by the program. The MSCP encompasses a 900-square mile area in southwestern San Diego County and includes the City of San Diego (City), 10 additional city jurisdictions, and unincorporated portions of the County of San Diego. On July 18, 1997, the Service issued a section 10(a)(1)(B) permit ("incidental take permit") to the City for their Subarea Plan under the broader MSCP. The proposed project is located within the City's Subarea Plan boundary. The gnatcatcher is a covered species under the City's Subarea

Plan, and the City's incidental take permit exempts take of gnatcatcher for projects consistent with their Subarea Plan. The Service concurs with your agency's determination that the proposed project may affect gnatcatcher. We have also determined that the project, including the proposed conservation measures, is consistent for impacts to gnatcatcher with the City's Subarea Plan and its associated implementation agreement and incidental take permit.

The status of the gnatcatcher and the effects of implementing the City's Subarea Plan under the MSCP were previously addressed in our biological opinion for the City's Subarea Plan dated June 6, 1997. In this biological opinion, we concluded that the level of anticipated take in the City's Subarea Plan boundary was not likely to result in jeopardy to the gnatcatcher. Given that the proposed project is consistent with the City's Subarea Plan, we do not anticipate any adverse effects to the gnatcatcher that were not previously evaluated in our biological opinion for the Subarea Plan. No incidental take of gnatcatcher beyond that anticipated in the biological opinion for the City's Subarea Plan will occur. Therefore, it is our conclusion that implementation of the proposed project will not result in jeopardy to the gnatcatcher.

By this consultation, we are extending to the Corps the take exemption for gnatcatcher already provided to the City through their incidental take permit for their Subarea Plan. Extension of this take exemption to the Corps under the City's Subarea Plan is limited to the proposed project as described in this biological opinion and as provided in the incidental take statement of our biological opinion for the City's Subarea Plan dated June 6, 1997. With this determination, the Corps' obligations under the Act for section 7 consultation to address impacts to gnatcatcher have been met.

This biological opinion is based on information provided in the: "Rhodes Crossing Project Description" dated June 26, 2012, and provided by the Corps via email on the same date; *Rhodes Crossing Impact Summary* [Helix Environmental Planning, Inc. (Helix) 2010a]*; Rhodes Crossing Habitat Management Plan* (Helix 2010b); *Rhodes Crossing Vernal/Road Pool Enhancement Plan* (Helix 2010c); field site visits; and other sources of information available in our files. The complete project file for this consultation is maintained at the Carlsbad Fish and Wildlife Office (CFWO).

CONSULTATION HISTORY

Our knowledge of this project began in 2001, when we conducted a site visit with the City on a portion of the property to discuss how to map the biological resources on the site. We participated in the City's environmental review process between 2003 and 2005, and provided comments on how to avoid and minimize impacts to vernal pool resources.

In 2005, the Corps concluded that the project proponent had met the conditions for a Nationwide Permit 39 by default because the Corps had not responded to the permit application within the 45-day response period. However, the project proponent was advised to comply with the Act.

In 2007, the Service designated critical habitat for the San Diego fairy shrimp.

In 2008, the Corps suspended the Nationwide permit for the project and initiated formal consultation with the Service. On November 9, 2009, the Corps re-confirmed their request for formal consultation and indicated the application for the project would be processed as a standard individual permit. The Corps indicated that the consultation should also address potential impacts to gnatcatcher and San Diego fairy shrimp designated critical habitat. In our initiation response, dated February 24, 2010, we informed the Corps of our intention to include the San Diego button-celery and San Diego mesa mint in the consultation due to potential effects of the project on these two endangered plants.

We met with the Corps and the project proponent numerous times between 2009 and 2012 to discuss measures to avoid and minimize impacts to listed species and critical habitat.

A draft biological opinion was provided to the Corps and the project proponent ("Applicant" for the Corps permit) on July 27, 2012. Although not specifically requested in the Corps' 2009 request for consultation, the Service included an analysis of effects to San Diego fairy shrimp individuals in the draft biological opinion because enhancement and/or restoration actions will affect San Diego fairy shrimp.

Comments on the draft biological opinion were received from the Corps on September 10, 2012, and have been incorporated in this final biological opinion, as appropriate. Based on comments from the Corps, the Service re-examined its assessment of the access roads as an interrelated action. Though the project proponent is required by the final Environmental Impact Report (EIR) for the Rhodes Crossing Project, dated December 1, 2003, and issued pursuant to the California Environmental Quality Act (CEQA), to construct specific segments of Camino del Sur Road and Carmel Mountain Road within the action area, and specific areas of the Rhodes Crossing Project cannot be developed unless these access roads are built, the Corps and project proponent do not consider the access roads part of the proposed action. Thus, the access roads have been deleted from the proposed action in the final biological opinion.

A chronology of our meetings and discussions held during these meetings is included as Appendix 1.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The proposed action is issuance by the Corps of a Department of the Army permit to the project proponent, Mr. Keith B. Rhodes (Rhodes and Grus Investments), pursuant to section 404 of the Clean Water Act, for the Rhodes Crossing Project. The Rhodes Crossing Project is proposed for construction within a 147-acre subdivision that includes the Rhodes Crossing project site, a portion of the existing State Route 56 (SR 56), and the right-of-ways for the southern extensions of Camino del Sur and Carmel Mountain Road. SR 56 bisects the northern portion of the Rhodes Crossing property and accounts for approximately 17 acres of the subdivision (Figure 1). Extensions of Camino del Sur and Carmel Mountain Road will provide primary access to the

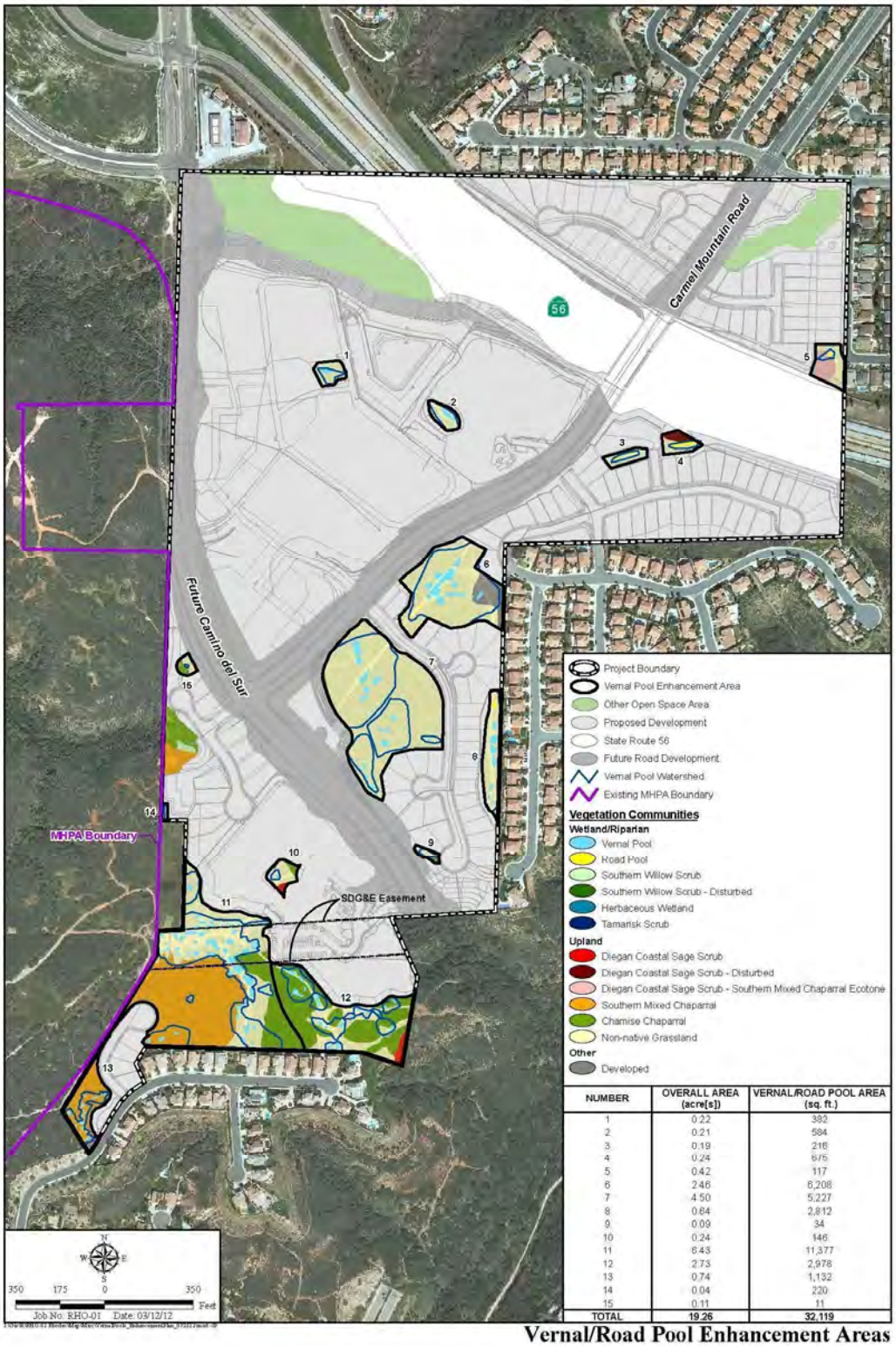
Rhodes Crossing Project and will impact an additional 20 acres of the subdivision. These two primary access roads are not included in the permit application for the Rhodes Crossing Project. In addition, an approximately 150-foot wide San Diego Gas & Electric (SDG&E) utility easement crosses the southern portion of the Rhodes Crossing project site, although no facilities are currently located within the easement (Figure 1). Not including the area of SR 56, Camino del Sur Road, and Carmel Mountain Road, the Rhodes Crossing Project site is approximately 109 acres.

The Rhodes Crossing property is located in the northern portion of the City of San Diego, approximately 2 miles west of Interstate 15, at the terminus of Carmel Mountain Road within Section 23, Township 14 South and Range 3 West of the U.S. Geological Survey 7.5-minute Section 23, Township 14 South and Range 3 West quadrangle map. The property is not located within the City of San Diego's Multi-Habitat Planning Area (MHPA), which is the City's preserve established under the MSCP.

The Rhodes Crossing Project is comprised of 144-single-family units; 584 multi-family units; 273,855 square feet of self-storage; 7,200 square feet of community commercial and 250,000 square feet of regional commercial activities on approximately 84.1 acres within the 147-acre subdivision (Figure 3). Approximately 25 acres of the property is avoided and/or will be preserved as open space, including 19.26 acres of vernal/road pool enhancement areas (Figure 1). The Rhodes Crossing Project has been designed so that no brush management for fire control will be needed in the Vernal Pool Enhancement Areas.

The individual Corps permit will authorize discharge of approximately 25,000 cubic yards of cut fill material into 0.22 acres of waters of the U.S., consisting of 0.05 acre of wetland and 0.17 acre (2,571 linear feet) of non-wetland waters of the U.S for the Rhodes Crossing Project. The 147-acre subdivision also supports 160 vernal and road pools. At least 50 percent of these pools are known to be occupied by at least one or more of the three federally listed species found within the project area. Of the total 160 pools, 154 vernal and road pools occur within the 85.1 acres of critical habitat that is designated for the San Diego fairy shrimp within the subdivision and 6 occur outside of critical habitat (Figure 2).

The project proponent is avoiding direct impacts to all of the known vernal and road pools and their watersheds as delineated by Helix (Helix 2003), but the avoided pools will be subjected to various indirect effects resulting from future isolation and fragmentation of habitat. Fifty-two acres of San Diego fairy shrimp critical habitat will be eliminated by construction of the Rhodes Crossing Project.



NUMBER	OVERALL AREA (acre[s])	VERNAL/ROAD POOL AREA (sq. ft.)
1	0.22	382
2	0.21	584
3	0.19	216
4	0.24	675
5	0.42	117
6	2.46	6,208
7	4.50	5,227
8	0.64	2,812
9	0.09	34
10	0.24	146
11	6.43	11,377
12	2.73	2,978
13	0.74	1,132
14	0.04	220
15	0.11	11
TOTAL	19.26	32,119

Vernal/Road Pool Enhancement Areas

FIGURE 1 RHODES CROSSING PROJECT

HELIX Environmental Planning

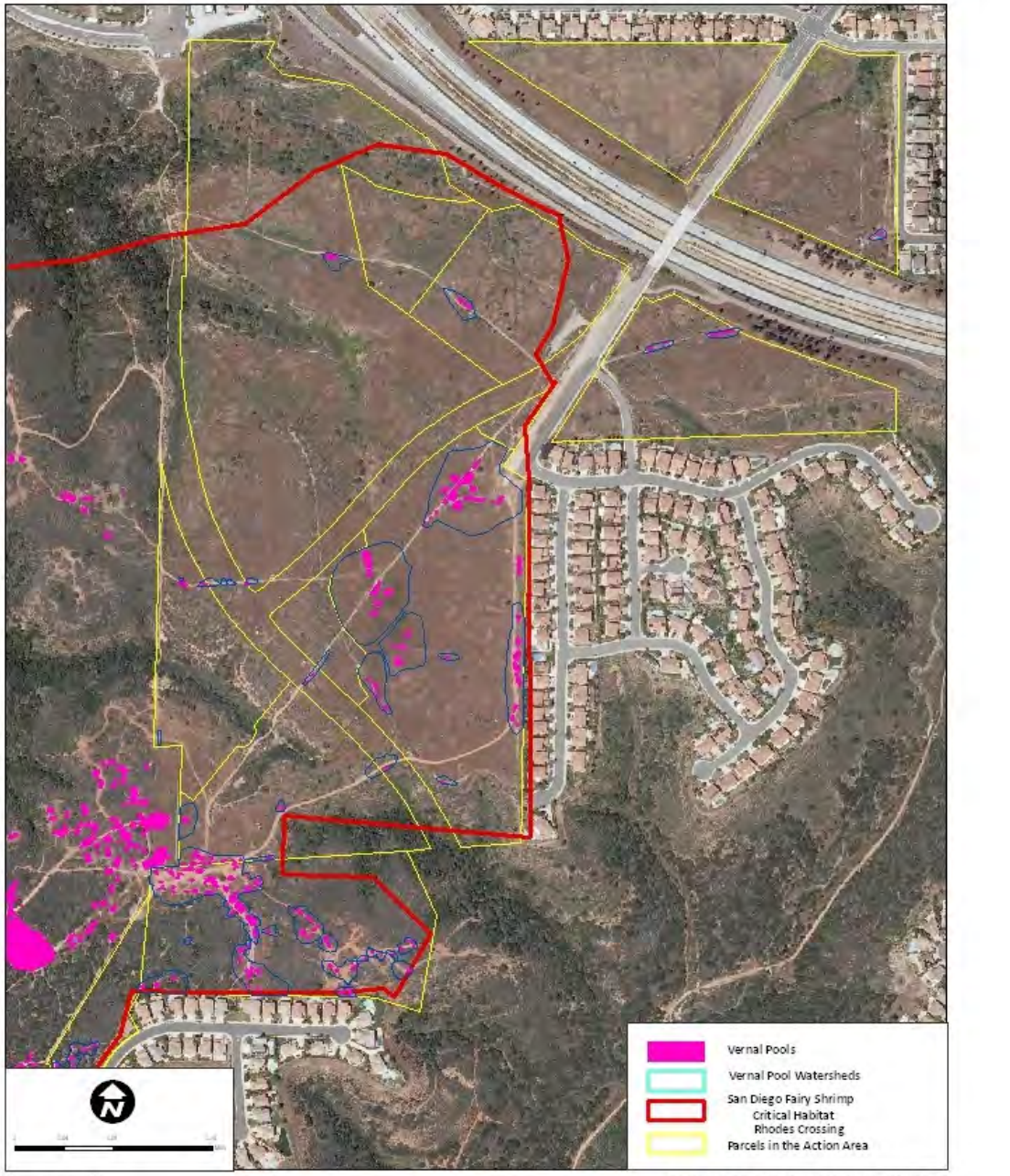


FIGURE 2 RHODES CROSSING PROJECT

Action Area

According to 50 CFR Section 402.02, pursuant to section 7 of the Act, the "action area" means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (e.g., Corps jurisdictional areas proposed to be filled). Subsequent analyses of the environmental baseline, effects of the action, and levels of incidental take are based upon the action area as determined by the Service.

The Corps scope of analysis for the Rhodes Crossing Project is limited to all areas within the proposed project boundary, south of State Route 56 and north of vernal pool areas 11 and 12 (Figure 3). For the purposes of this biological opinion, we have defined the action area to include the entire 147-acre subdivision encompassing the Rhodes Crossings Project footprint proposed for development (Figure 3).

The City of San Diego has determined that construction of the southern extensions of Camino del Sur and Carmel Mountain Road are required to serve 10 areas of residential and commercial development proposed by the Rhodes Crossing Project (Development Areas 1 and 6 can proceed without these additional access roads). Specifically, the final EIR for the Rhodes Crossing Project states that "The applicant shall extend Carmel Mountain Road and Camino del Sur from their current respective termini to their point of intersection (consistent with LDR No. 40-0386 Mitigated Negative Declaration dated May 24, 2001), subject to Facilities Benefit Assessment reimbursement. Subject to pending review and approval (LDR No. 41-0248), the applicant shall also construct Camino del Sur from its intersection with Camino del Sur to the southern property line."

The Service believes that these segments of the road should be considered part of the "proposed action" and has recommended to the Corps and project proponent that inclusion of these segments will streamline the regulatory process for addressing impacts to San Diego fairy shrimp and its designated critical habitat; however, the Corps and the project proponent do not consider construction of these road segments to be part of the proposed action. In addition, we have reviewed information in our project files provided previously by the City of San Diego to re-examine our previous determination that the Rhodes Crossing Project and construction of the access roads are interrelated. Based on this review, we have determined that construction of the access roads is not an activity that depends on construction of the Rhodes Crossing Project for its justification (i.e., not an interrelated activity). Likewise, we have determined that construction of the access roads is not an interdependent activity because the access roads will provide an independent transportation service and can be built whether or not the Rhodes Crossing Project is implemented. Thus, while we have included the entire 147-acre subdivision within the action area for ease of reference in identifying the Rhodes Crossing Project and development footprint, no impacts are addressed or attributed to the future access roads in the biological opinion.

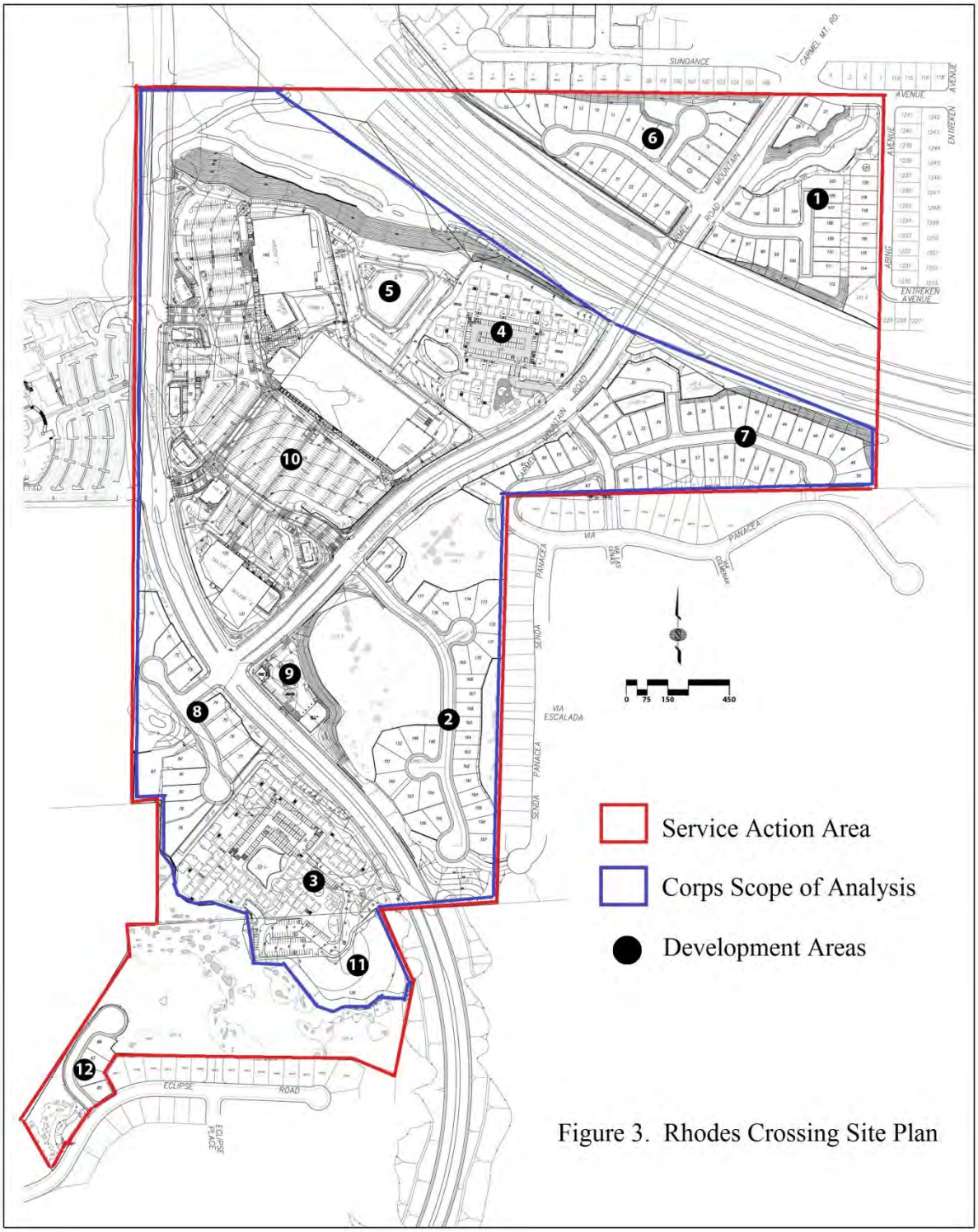


Figure 3. Rhodes Crossing Site Plan

Conservation Measures

The project proponent is required through the CEQA process to implement conservation measures to offset the environmental impacts of the project on sensitive resources, including federally listed species. Additional conservation is being required by the Corps to offset impacts to waters of the U.S. To the extent that these same measures will avoid, minimize, and offset adverse effects to San Diego mesa mint, San Diego button celery, and San Diego fairy shrimp and will be implemented by the project proponent, they are considered herein as an integral part of the Rhodes Crossing Project and summarized below.

1. The project proponent will implement the Mitigation Monitoring and Reporting Program (MMRP) dated December 1, 2003, as specified in the final EIR, Project No. 3230 (SCH No. 2002121089). Measures within this document that are specific to avoiding and minimizing impacts to vernal pool species are as follows:

    - A Biological Monitor will be on site full time during initial grading near the vernal pool complexes and throughout the remaining grading/excavation activities at a minimum frequency of three times per week to ensure that grading limits are observed;
    - No staging/storage areas for equipment and materials will be located within or adjacent to habitat retained in open space area; no equipment maintenance will be conducted within or near adjacent open space;
    - Natural drainage patterns will be maintained as much as possible during construction. Erosion control techniques, including the use of sandbags, hay bales, and/or installation of sediment traps, will be used to control erosion and deter drainage during construction activities into the adjacent open space.
    - No trash, oil, parking or other construction-related activities will be allowed outside the established limits of grading. All construction related debris will be removed off site to an approved disposal facility.
    - No nonnative plant species will be introduced into areas adjacent to the Multiple Habitat Planning Area (MHPA) or onsite open space. In addition, no plants included on the California Exotic Pest Plant Council's list of invasive species will be used anywhere on site.
    - The project proponent will provide a final Habitat Management Plan (HMP) for review and approval by the City. The project proponent will also provide funding as specified in the approved HMP. The HMP states that a Vernal/Road Pool Enhancement Plan will be provided to the City and will require approval by applicable agencies, including the Service, the Department of Fish and Game, and the City prior to implementation of the enhancement activities.

2. Prior to project construction, the project proponent will temporarily fence (with silt barriers) the limits of project impacts (including construction staging areas and access routes) to prevent the spread of silt from the construction zone into avoided adjacent

areas. The entire impact limits will be fenced with silt fencing and/or orange construction fencing that will be maintained throughout the construction period to preclude human entry into avoided vernal pool watersheds. Temporary construction fencing will be removed upon project completion.

3. A combination of block wall, chain link, wrought iron and peeler pole fencing will be constructed along the perimeter of all onsite vernal pool/resource preserve areas and areas adjacent to the MHPA in conformance with the approved Wall and Fencing Plans (Sheet 39 of 105 [October 13, 2003]).

4. A minimum of 1 acre of vernal pool basin area will be enhanced and/or restored within 19.26 acres in the Vernal Pool Enhancement Areas.

    a. The draft HMP includes enhancement of approximately 0.74 acre of vernal/road pool basin area within 152 pools as described in the proposed Rhodes Crossing Vernal/Road Pool Enhancement Plan dated August 11, 2010, and prepared by Helix.

    b. Approximately 0.3 acre of vernal pool basins will be restored (i.e., new vernal pool basins will be graded in areas supporting suitable soils and hydrology) within Enhancement Areas 6, 7, 11 (excluding the SDG&E easement), 12, and 13 as a condition of the Corps permit.

5. Approximately 17.62[1] acres of designated critical habitat will be preserved, enhanced, and managed in accordance with the HMP and Vernal/Road Pool Enhancement Plan.

STATUS OF THE SPECIES

In order to facilitate our discussion on the status of listed species addressed by this draft biological opinion that are associated with vernal pools, we are providing the following generalized discussion. Further information regarding the status of the individual species is provided below including additional information on habitat affinities and threats/conservation needs where warranted.

Habitat Affinities and Threats/Conservation Needs of Vernal Pool Species

Vernal pools are ephemeral wetlands that occur from southern Oregon through California into northern Baja California, Mexico (Service 1998). They require a unique combination of climatic, topographic, geologic, and evolutionary factors for their formation and persistence. They form in regions with Mediterranean climates where shallow depressions fill with water

[1] This includes the SDG&E easement (1.51 acres); therefore, only 16.11 acres of conservation can be assured by the project proponent.

during fall and winter rains and then dry up when the water evaporates in the spring (Collie and Lathrop 1976; Holland 1976; Holland and Jain 1977, 1988; Thorne 1984).

Downward percolation of water within the pools is prevented by an impervious subsurface layer consisting of claypan, hardpan, or volcanic stratum (Holland 1976, 1988). Seasonal inundation makes vernal pools too wet for adjacent upland plant species adapted to drier soil conditions, while rapid drying during late spring makes pool basins unsuitable for typical marsh or aquatic species that require a more persistent source of water.

For convenience of reference, groups of vernal pools are sometimes referred to as vernal pool complexes that may include two to several hundred individual vernal pools (Keeler-Wolf et al. 1998). Vernal pool complexes are defined as a series of vernal pool groups that are hydrologically connected with similar soil types and species compositions. Within San Diego County, vernal pool complexes were first described and surveyed by Beauchamp and Cass (1979) and subsequently updated in 1986 (Bauder) and 2004 (City of San Diego). Local upland vegetation communities associated with vernal pools include needlegrass grassland, annual grassland, coastal sage scrub, maritime succulent scrub, and chaparral (Service 1998).

Threats to vernal pools and associated species can be divided into three major categories: 1) direct destruction of vernal pools from construction, vehicle traffic, grazing, dumping, and deep plowing; 2) indirect threats that degrade or destroy vernal pools (e.g., altered hydrology, draining, competition by introduced species, habitat fragmentation); and 3) potential long-term, cumulative impacts such as the effects of isolation on genetic diversity and locally adapted genotypes, air and water pollution, drastic climatic variations, and changes in nutrient availability (Bauder 1986).

Vernal pool species may also be affected by factors associated with climate change. Current climate change predictions for terrestrial areas in the Northern Hemisphere indicate warmer air temperatures, more intense precipitation events, and increased summer continental drying (Field et al. 1999, Cayan et al. 2005, IPCC 2007). Although predictions of climatic conditions for smaller sub-regions such as southern California remain uncertain, factors associated with climate change that could affect vernal pool species include: 1) drier conditions that may result in fewer suitable pool complexes, lower percent germination (plant species)/hatching (fairy shrimp species) rates, smaller population sizes, and fewer and less reliable recovery cycles of abundant individuals; 2) higher temperatures may inhibit germination/hatching, speed desiccation of pools, and affect pollinator services for plant species; 3) a shift in the timing of the annual rainfall may favor nonnative species; 4) the timing of pollinator life-cycles may become out-of-sync with the timing of flowering vernal pool plant species; and 5) drier conditions may result in increased fire frequency, making the ecosystems in which vernal pool species rely more vulnerable to the threats of subsequent erosion and nonnative/native plant invasion (Bauder et al. 2002, Bauder 2005, Hathaway and Simovich 1996).

Conservation of vernal pool species is dependent on maintaining pool hydrology and the surrounding watershed, as well as protecting adjacent upland habitats including pollinators (for

vernal pool plant species). Extant populations need to be preserved and managed to reduce stressors from on site and adjacent activities, and regular monitoring is essential to gauging population trends and stressor effects. For some vernal pool species, re-establishment of populations within extant unoccupied or restored pools may be warranted.

San Diego Button-Celery

Listing Status

The Service listed the San Diego button-celery as endangered on August 3, 1993 (58 FR 41384). The *Recovery Plan for Vernal Pools of Southern California* ("vernal pool recovery plan") (Service 1998) addresses the San Diego button-celery. A 5-Year Review for San Diego button-celery was completed September 1, 2010 (Service 2010a). The 5-Year Review recommended no change in the status of the San Diego button-celery. No critical habitat has been designated for this species.

Species Description

San Diego button-celery is a biennial or longer lived perennial gray-green herb that has a storage tap-root. It has a spreading shape and reaches a height of 16 inches (Constance 1993). The stems and lanceolate leaves give the plant a prickly appearance.

Habitat Affinities

San Diego button-celery is a vernal pool obligate taxon. Zedler (1987) hypothesizes that the patchy distribution of button-celery may be attributed to the extreme desiccation which vernal pools undergo in summer; hence, the species favors pools with a deep clay subsoil that do not dry as rapidly or as completely as those with shallower or more coarsely textured soils.

Life History

San Diego button-celery blooms from April to June; the small white flowers vary in length from 0.067 to 0.11 inch (Munz 1974, Constance 1993). Species-specific studies have not been conducted for San Diego button-celery regarding pollination, dispersal, population ecology, and genetics. It survives the dry summer and autumn months through dormant seeds and perenniating vegetative structures. San Diego button-celery is presumably insect-pollinated (Zedler 1987), potentially by bee flies (*Bombyliids*) (Schiller et al. 2000) and solitary bees (*Apoidea*), as are many vernal pool species (Thorp 2007). San Diego button-celery seems more tolerant of peripheral vernal pool habitat than most obligate vernal pool species. It is specifically adapted to surviving in vernally wet conditions due to the presence of aerenchyma tissue (air channels in the roots) that facilitates necessary gas exchange in submerged plants (Keeley 1998).

Status and Distribution

The historical distribution of San Diego button-celery included a coastal swath from Mesa de Colonet and San Quintín in Baja California, Mexico, north to Los Angeles County, California in the U.S. San Diego button-celery currently occurs in 14 geographic areas in Riverside and San Diego counties. There are four sites on the Santa Rosa Plateau (Western Riverside County MSHCP 2003) in Riverside County. Within San Diego County, San Diego button-celery occurs in 10 regional locations including Camp Pendleton, Carlsbad, San Marcos, Ramona, Del Mar Mesa, Carmel Mountain, Mira Mesa, Marine Corps Air Station (MCAS) Miramar, Otay Lakes, and Otay Mesa. Current status of the species in Mexico is unknown.

San Diego button-celery can be locally abundant in remnant vernal pools; however, the distribution of this variety has been dramatically reduced due to loss of most (95 to 97 percent) of the vernal pool habitat in San Diego County (Oberbauer and Vanderwier 1991). Little data relative to population counts and trends are extant. In 2003, the City of San Diego conducted a survey of vernal pools within their jurisdiction. These surveys revealed that of the 69 sites surveyed, 28 contained San Diego button-celery. The taxon was found on 20 of 36 acres of basin habitat (City of San Diego 2004). Based on survey data at MCAS Miramar that incorporates survey efforts since 1993, San Diego button-celery was found in 20 of 45 vernal pool complexes located on the installation (Black 2004a, 2007).

Threats and Conservation Needs

As with other vernal pool species, conservation of San Diego button-celery is dependent on maintaining hydrology and the surrounding watershed for the occupied vernal pools, as well as protecting adjacent upland habitats for pollinators. Extant populations need to be managed to reduce stressors from on-site and adjacent activities, and regular monitoring is essential to gauging population trends and stressor effects.

San Diego Mesa Mint

Status of the Species

Listing Status

The Service listed the San Diego mesa mint as endangered September 28, 1978 (43 FR 44811). The vernal pool recovery plan (Service 1998) addresses the San Diego Mesa mint. A 5-Year Review for San Diego mesa mint was completed September 1, 2010 (Service 2010b). No critical habitat has been designated for this species.

Species Description

San Diego mesa mint is an annual herb in the Lamiaceae (mint family) that is restricted to vernal pools in southern California. Plants can reach 1 foot or more in height, and flowers are arranged

in whorls that typically bloom from May or June through early July. Key characters of the genus *Pogogyne* include floral bracts and calyx lobes that are "conspicuously hirsute and bristly-ciliate" (Howell 1931). The flowers are strikingly patterned with a rich rosy-purple limb and throat and white tube; the middle lobe of the lower lip has a yellow central area spotted with deep purple. The plants usually give off a strong, sweet mint odor. In the past, San Diego mesa mint has been misidentified as Otay Mesa mint (*Pogogyne nudiuscula*), which also occurs in San Diego County. There are several distinct differences between the two species: San Diego mesa mint usually has two flowers per node while Otay Mesa mint has six or more; the vegetative portions of San Diego mesa mint develop a reddish tinge during maturation, while Otay Mesa mint does not develop this reddish tinge until after the flowering period; San Diego mesa mint has a hairy calyx, while Otay Mesa mint has a smooth calyx; and the bracts and leaves of San Diego mesa mint are narrower than Otay Mesa mint (Howell 1931, Munz 1974, Service 1998).

Habitat Affinities

San Diego mesa mint is restricted to vernal pools and occurs on coastal terraces at 328 to 656 feet in elevation.

Life History

The life cycle of the San Diego mesa mint is dependent on the function of the vernal pool ecosystem. San Diego mesa mint seeds germinate with the first significant fall and winter rains. As the season progresses, temperature increases and rainfall declines result in increased evaporation. More rapid growth of young plants is stimulated as the pools begin to dry out. Flowering commences in May and continues through June or July, and by early to mid-summer the pools become dry. The family is primarily bee pollinated (Proctor and Yeo 1973).

Gene dispersal may occur via pollen or seed. None of the *pogogyne* species have seed morphology associated with animal or wind dispersal, although scattered occurrences of pool plants along well-worn trails that link individual pools over wide areas suggest large animals may contribute to seed dispersal (Cole 1995). Waterfowl use pools, especially the larger ponds or vernal lakes, and they are presumed to carry seeds from pool to pool (Proctor et al. 1967, Zedler 1987).

Zedler and Black (1992) found that San Diego mesa mint seeds germinated and grew from pellets of brush rabbits and Audubon's cottontail rabbits (*Sylvilagus bachmani* and *S. auduboni*),which were collected from vernal pools on Del Mar Mesa and Miramar Mesa. They postulated that rabbit movement may be a potential mechanism for dispersal and genetic mixing of vernal pool obligate species. In addition, San Diego mesa mint seeds float, which may result in limited dispersal opportunities when pools interconnect or lakes fill their basins in years of greater than average precipitation (Scheidlinger 1981).

Status and Distribution

San Diego mesa mint is endemic to San Diego County. This mint grows in vernal pools on the coastal central mesas of San Diego County. The northern limit of its distribution is Del Mar Mesa. It also occurs to the south on Mira Mesa, MCAS Miramar, and Kearny Mesa, with a few scattered populations in western Tierrasanta. San Diego mesa mint populations have been extirpated from the Linda Vista area, the vicinity of Balboa Park, Normal Heights, and the area surrounding San Diego State University. Although most of these extirpated populations from the San Diego mesa are labeled as Otay Mesa mint on herbarium collections, these specimens have not been annotated and should be considered San Diego mesa mint (McMillan unpublished data 1995).

Historically, San Diego vernal pool habitat probably covered no more than 6 percent of the county, approximately 200 square miles. Current estimates indicate a loss of vernal pool habitat in the San Diego County around 95 to 97 percent because of intensive cultivation and urbanization (Bauder and McMillan 1998). No estimate of numbers of San Diego mesa mint plants is available; however, it is known to occur from approximately 19.2 acres of vernal pool basins on MCAS Miramar and approximately 0.8 acre outside the boundary of MCAS Miramar (City of San Diego 2004, MCAS 2006). This lack of an estimate for San Diego mesa mint plants is likely due to the difficulty of measuring temporal abundance at each occurrence. Local site conditions, rainfall, and fresh water pooling likely influence numbers of standing plants and their local distribution (Schiller et al. 2000).

Like most annual plants, the germination success of San Diego mesa mint differs annually depending on temperature, timing, and rainfall. The number of individuals may differ at each site for any year because it also depends upon reproductive success of previous cohorts, the number of seeds deposited in the soil seed bank, and the survivorship of the annual seedling cohort in the year the survey was conducted. In 2003, the City of San Diego conducted a survey of vernal pools within their jurisdiction, revealing that, of the 1,142 vernal pools surveyed, San Diego mesa mint was found in 373 with a mean percent cover per pool of 6.2 percent (City of San Diego 2004).

Threats and Conservation Needs

San Diego mesa mint is predominately found in vernal pool complexes on Redding soils. As with other vernal pool species, conservation of San Diego mesa mint is dependent on maintaining hydrology and the surrounding watershed for the occupied vernal pools, as well as protecting adjacent upland habitats for pollinators. Due to its restricted range and small population size, conservation of San Diego mesa mint is dependent on preservation of extant populations as well as re-establishment of populations of mint within other pools.

San Diego Fairy Shrimp

Listing Status

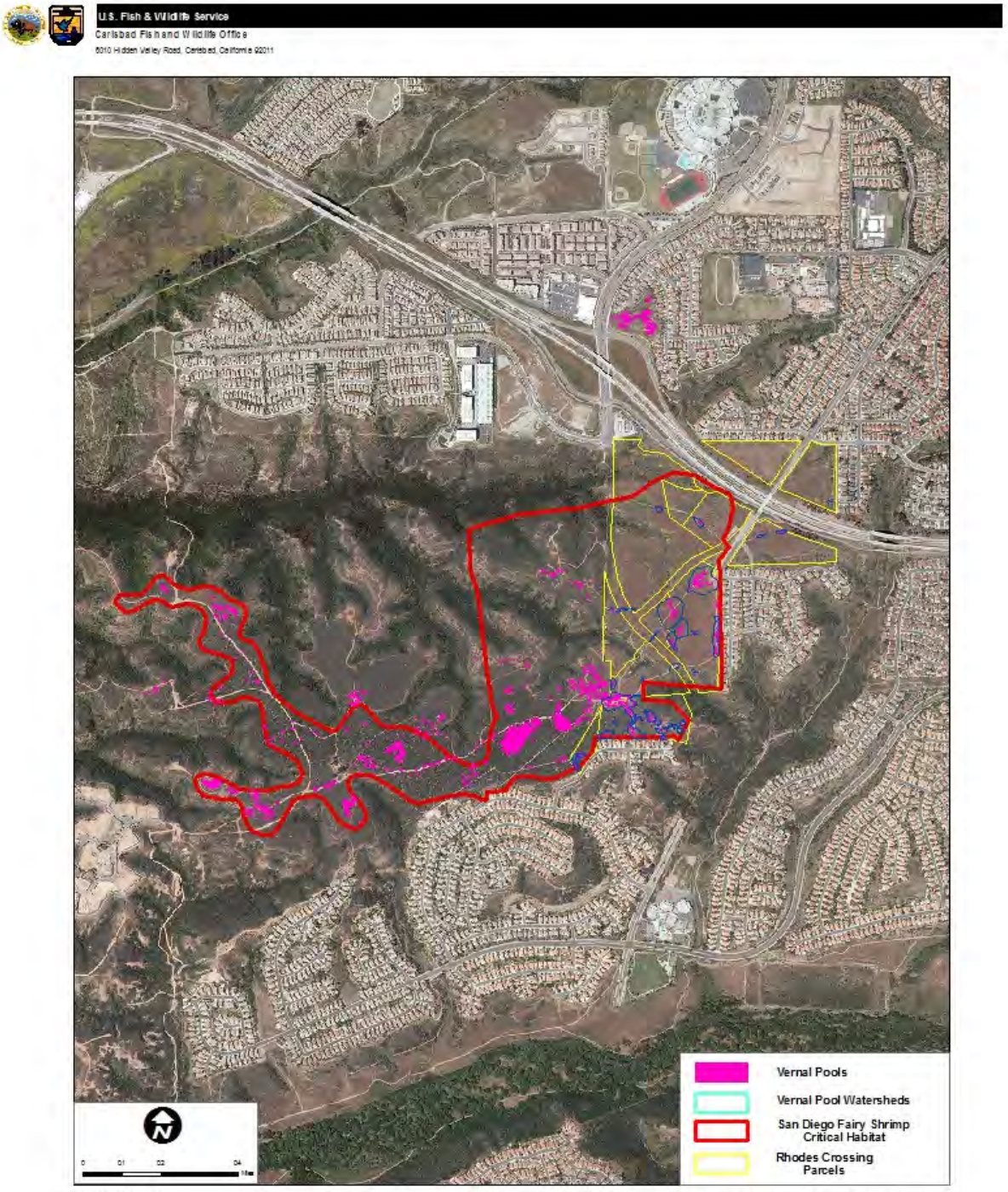
The Service listed the San Diego fairy shrimp as endangered on February 3, 1997, (62 FR 4925). The vernal pool recovery plan (Service 1998) addresses the San Diego fairy shrimp. Critical habitat for the San Diego fairy shrimp was designated on December 12, 2007 (72 FR 70648). On September 20, 2010, the District Court of the District of Columbia (D.C. Court) vacated 151 acres of designated critical habitat as mandated by the United States Court of Appeals for the District of Columbia Circuit on September 14, 2011, and its underlying Opinion and Judgment dated July 22, 2011 (*Otay Mesa Property L.P. et al. v U.S. Department of the Interior, et al. 1:08-CY-00383*).

In September 2008, the Service completed a 5-Year Review addressing the status of the San Diego fairy shrimp (Service 2008). The 5-Year Review recommended no change in the status of the San Diego fairy shrimp.

Species and Critical Habitat Description

The San Diego fairy shrimp is a small, freshwater crustacean in the family Branchinectidae of the Order Anostraca. The species was originally described by Fugate (1993) from samples collected on Del Mar Mesa, San Diego County. Male San Diego fairy shrimp are distinguished from males of other *Branchinecta* species by differences found at the distal (located far from the point of attachment) tip of the second antennae. Females are distinguishable from females of other species of *Branchinecta* by the shape and length of the brood sac, the length of the ovary, and by the presence of paired dorsolateral (located on the sides, toward the back) spines on five of the abdominal segments (Fugate 1993). Adult male San Diego fairy shrimp range in size from 0.35 to 0.63 inch, and adult females are 0.31 to 0.55 inch long. A genetic study based on mtDNA sequencing of San Diego fairy shrimp across its range found two evolutionary significant units (genetic clades A and B) (Bohonak 2005).

Five critical habitat units (with 29 subunits) on 2,931 acres of land in Orange and San Diego counties are included in the designation of critical habitat for San Diego fairy shrimp. The individual units contain essential habitat for the San Diego fairy shrimp and help to identify special management considerations for the species. The project site is located within Subunit 4 A/B (Del Mar Mesa of the final critical habitat designation) (Figure 4). Unit 4 includes 551 acres associated with coastal terraces and mesas found south of the San Dieguito River to the Sweetwater River. This unit is essential to the conservation of San Diego fairy shrimp because it includes vernal pools that are within the center of this species' geographical distribution and retains the genetic diversity of these geographically distinct populations. This unit contains vernal pools that support San Diego fairy shrimp populations in both the "Group A" and "Group B" genetic clade (Bohonak 2005). Subunit 4 A/B consists of 252 acres of habitat.



San Diego Fairy Shrimp Critical Habitat (Subunit 4 A/B)

FIGURE 4 RHODES CROSSING PROJECT

Primary Constituent Elements (PCEs) are the physical and biological features essential to the conservation of the species that may require special management considerations or protection. The PCEs for San Diego fairy shrimp are:

1. Vernal pools with shallow to moderate depths (2 to 12 inches) that hold water for sufficient lengths of time (7 to 60 days) necessary for incubation, maturation, and reproduction of the San Diego fairy shrimp, in all but the driest years;

2. Topographic features characterized by mounds and swales and depressions within a matrix of surrounding uplands that result in complexes of continuously, or intermittently, flowing surface water in the swales connecting the pools described in PCE 1, providing for dispersal and promoting hydroperiods of adequate length in the pools (i.e., the vernal pool watershed); and

3. Flat to gently sloping topography and any soil type with a clay component and/or an impermeable surface or subsurface layer known to support vernal pool habitat (including Carlsbad, Chesterton, Diablo, Huerhuero, Linne, Olivenhain, Placentia, Redding, and Stockpen soils).

Please refer to the final critical habitat rule (72 FR 70648) for detailed information on the units, including their sizes, locations, and special management considerations.

Habitat Affinities

San Diego fairy shrimp are restricted to vernal pools and vernal pool-like depressions (e.g., ruts in dirt roads). This species tends to inhabit shallow, small vernal pools and vernal pool-like depressions that range in temperature from 50 to 79 degrees Fahrenheit. They are ecologically dependent on seasonal fluctuations in their habitat, such as absence or presence of water during specific times of the year, duration of inundation, and other environmental factors that likely include specific salinity, conductivity, dissolved solids, and pH levels (Gonzalez et al. 1996, Hathaway and Simovich 1996, Holtz 2003).

San Diego fairy shrimp may also be found in disturbed vernal pool habitats where basins have been compacted or artificially deepened. Although basins supporting populations often appear to be artificially created or enhanced, such basins are located within soils that are capable of seasonal ponding and are often surrounded by naturally occurring vernal pool complexes. These "artificial basins" (sometimes referred to as road pools) function in the same manner as naturally occurring vernal pools by filling with late fall, winter and/or spring rains that gradually dry up during the spring and/or summer (Service 1998).

Life History

San Diego fairy shrimp are non-selective particle feeding filter-feeders, or omnivores. Detritus, bacteria, algal cells, and other items between 0.3 to 100 microns may be filtered and ingested

(Eriksen and Belk 1999). Adult fairy shrimp are usually observed from January to March; however, in years with early or late rainfall, the hatching period may be extended (Service 2008). Like most vernal pool fairy shrimp, San Diego fairy shrimp have a two-stage life cycle and spend the majority of their life cycle in the cyst stage (Templeton and Levin 1979, Schaal and Leverich 1981, Herzig 1985, Hairston and De Stasio 1988, Venable 1989). After hatching, San Diego fairy shrimp reach sexual maturity in about 7 to 17 days, depending on water temperature, and persist for about 4 to 6 weeks (Hathaway and Simovich 1996). Fairy shrimp mate upon reaching maturity, and female San Diego fairy shrimp produce between 164 and 479 cysts (eggs) over their lifetime (Simovich and Hathaway 1997). The cysts are either dropped by the females to settle into the mud at the bottom of the pool, or they remain in the brood sac until the female dies and sinks to the bottom (Eriksen and Belk 1999). Fairy shrimp cysts may persist in the soil for several years until conditions are favorable for successful reproduction (Simovich and Hathaway 1997). The cysts will hatch in 3 to 5 days when water temperatures are between 50 to 68 degrees Fahrenheit (Hathaway and Simovich 1996). Not all cysts are likely to hatch in a season, thus providing a mechanism for survival if water quality and ponding conditions are not favorable in a given year (Simovich and Hathaway 1997, Ripley et al. 2004). Ripley et. al. (2004) suggests that the pools need to fill long enough for shrimp to reproduce in one of every two or three fillings, on average, to maintain the cyst bank.

Status and Distribution

The range of the San Diego fairy shrimp includes Orange and San Diego counties in southern California and northwestern Baja California, Mexico (Brown et al. 1993, Service 1998). In Baja California, San Diego fairy shrimp have been recorded at two localities: Valle de Palmas, south of Tecate and Baja Mar, north of Ensenada. A single isolated female was previously reported from vernal pools in Isla Vista, Santa Barbara County, California; however, directed surveys have not located any additional individuals (62 FR 4934).

In Orange County, the San Diego fairy shrimp has been documented at Fairview Park, Newport Banning Ranch, Irvine Ranch Lands Reserve (within an area formerly known as the North Ranch Policy Plan Area), and within the San Juan Creek watershed at Chiquita Ridge and Radio Tower Road.

In San Diego County, the species occurs in vernal pools from Marine Corps Base Camp Pendleton (MCBCP) inland to Ramona and south through Del Mar Mesa, Proctor Valley, and Otay Mesa. A minimum of 246 pools on MCBCP are known to be occupied by San Diego fairy shrimp. Based on surveys of the 2,856 vernal pool basins currently mapped on MCAS Miramar, 1,303 are occupied by San Diego fairy shrimp (MCAS Miramar 2006). Of the 62 vernal pool complexes mapped by the City of San Diego, 29 were found to be occupied by San Diego fairy shrimp and occur at the following localities: Del Mar Mesa (1), Carmel Mountain (1), Mira Mesa (6), Nobel Drive (3), Kearny Mesa (3), Mission Trails Regional Park (1), and Otay Mesa (14) (City of San Diego 2004). The City of San Diego conducted non-protocol surveys for San Diego fairy shrimp. Therefore, this inventory may under-represent the true number of vernal pools with occurrences of San Diego fairy shrimp.

Additional vernal pool complexes with occurrences of San Diego fairy shrimp located in San Diego County but not included in the City of San Diego's Inventory include: Carlsbad, San Marcos, Ramona, Poway, Santee, Rancho Santa Fe, Murphy Canyon, Otay Lakes, Imperial Beach, East Otay Mesa, Marron Valley, and Proctor Valley.

A summary of occupied vernal pool complexes is provided in Appendix 1 of the San Diego Fairy Shrimp (*Branchinecta sandiegonensis*) 5-Year Review: Summary and Evaluation (Service 2008).

Threats and Conservation Needs

The loss and modification of vernal pool habitat continues to be a significant threat to the San Diego fairy shrimp, especially in areas where urbanization is expected to expand. Of the estimated 137 vernal pool complexes now occupied by San Diego fairy shrimp, Service files show that approximately 38 percent are on military land where they are managed for conservation under Integrated Natural Resource Management Plans or protected by other means, and approximately 25 percent are at least partially conserved on other lands. Approximately 20 percent of occupied complexes have lost some pools to development, 2 percent have been completely developed, and 18 percent are proposed for development. Acquisition of land and conservation easements have resulted in the preservation of vernal pool habitat for the species, but the trend of habitat loss, fragmentation, and degradation continues, particularly on private lands. Additionally, even preserved lands are often subject to impacts such as invasion by non-native plants, off-highway vehicle use, trespassing, and other conditions that contribute to lower-quality habitat for San Diego fairy shrimp (Service 2008).

San Diego fairy shrimp habitat is also threatened to some degree by indirect impacts resulting from the proximity of San Diego fairy shrimp habitat to development, including human access and disturbance impacts, runoff, dumping of trash and litter, and water and air pollution. Off-highway vehicle use for recreation, law enforcement (including Border Patrol), and by the military threatens this species throughout much of its range. Non-native plants also threaten San Diego fairy shrimp habitat throughout its range. San Diego fairy shrimp habitat is naturally fragmented, but development projects continue to further fragment and isolate vernal pools within and between complexes, which may disrupt the population dynamics of the species. Conservation measures beyond habitat preservation, such as habitat and species management and monitoring, are necessary to ensure the long-term sustainability and persistence of this species throughout its range (Service 2008).

Impacts to vernal pools from development have been offset through the restoration, enhancement, and management of habitat. In some cases, due to security of the site and the active management of the vernal pools, the species status has improved. In addition, grants have been awarded to restore habitat in several areas including Del Mar Mesa and Proctor Valley. Sites that have been restored benefit from fencing and management, which further removes threats from the site that were occurring prior to the restoration efforts (Service 2008).

ENVIRONMENTAL BASELINE

Regulations implementing the Act (50 CFR § 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area. Also included in the environmental baseline are the anticipated impacts of all proposed Federal projects in the action area that have undergone section 7 consultation and the impacts of State and private actions that are contemporaneous with the consultation in progress.

Project Site Characteristics and Surrounding Land Uses on Del Mar Mesa

The project site is located within the City of San Diego's Rancho Peñasquitos and Torrey Highlands communities. Del Mar Mesa Preserve and Deer Canyon are located directly west of the project site and Los Peñasquitos Canyon Preserve is located 3,000 feet to the south. Immediately south, north and northeast are residential developments. State Route 56 cuts across the northern portion of the site, and Carmel Mountain Road extends into the northeastern portion of the project site (Figure 1). Camino del Sur and Carmel Mountain Road are planned to be completed across the site, and the area encompassed by these future roads is included in the action area; however, as indicated above, the construction of these roads is not part of the proposed action for this consultation thus no impacts are assessed for these areas for the proposed Rhodes Crossing Project (Figure 3). In addition, an approximately 150-foot wide SDG&E utility easement crosses the southern portion of the site, although no facilities are currently located within the easement (Figure 1).

The project site is largely undeveloped, with several dirt roads crossing the property and signs of previous agricultural activities evident. Topography on the project site includes mesa tops, with an approximate elevation of 400 feet above mean seal level, and finger canyons of Deer Canyon and Los Peñasquitos Canyon. Drainage flows westward into Deer Canyon and south into Los Peñasquitos Canyon. Areas of remnant mima mound topography occur on the central and southern mesa tops. Soils on site include Olivenhain cobbly loam, Redding gravelly loam, and terrace escarpments.

A Biological Technical Report for the Rhodes Crossing site was prepared in 2003 (Helix 2003). The report includes discussions of vegetation mapping (including vernal pools), rare plant surveys, focused species surveys (e.g., fairy shrimp, gnatcatchers, etc.), and jurisdictional delineation fieldwork. Acreages were verified and updated in the *Rhodes Crossing Impact Summary* (Helix 2010a). Vegetation communities mapped on site include vernal pools[2],

[2] "Vernal pools" technically do not constitute a plant community, but rather are a complex ecological system of unique plants, insects, and crustaceans associated with a seasonally wet habitat (Sawyer et al. 2009). Historically vernal pools were differentiated by edaphic (e.g., basalt flow, hardpan) or geographic/topographic (e.g., San Diego mesa, San Jacinto Valley) characteristics. Beginning in the 1990s and still ongoing (especially in southern California), a new classification based on ecological and floristic relationships between individual stands of plants (not individual pools or pool complexes) eventually will form the nomenclatural foundation for understanding vernal pool vegetation (Sawyer et al .2009). Until this effort is completed, we will use the term "vernal pools" in the sense of a plant community.

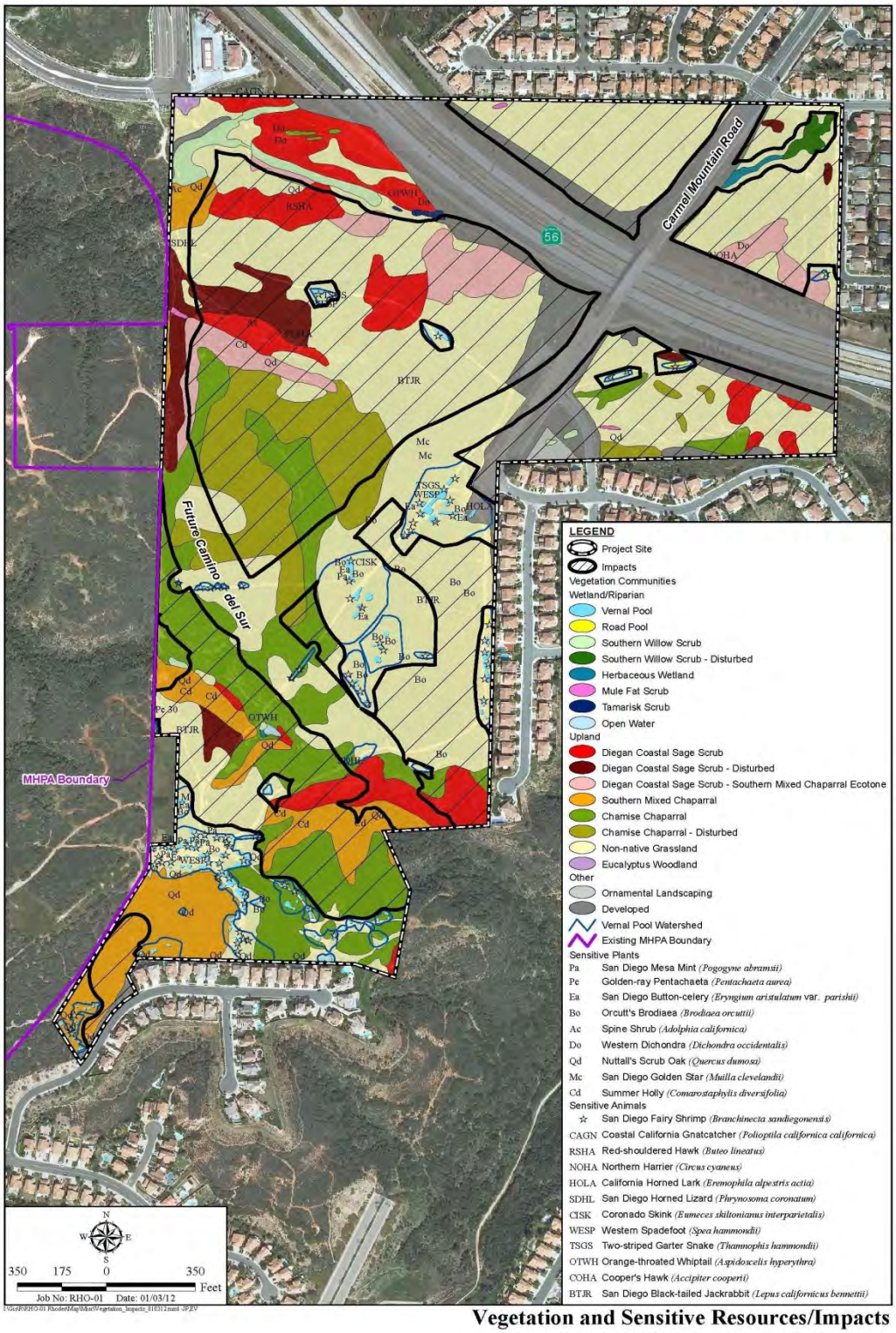
southern willow scrub, mulefat scrub, Diegan coastal sage scrub, southern mixed chaparral, chamise chaparral and non-native grasslands (Figure 5) (Table 1). Wetland resources on the project site include a network of small drainages, road pools, and vernal pools[3]. Collectively, the project site supports 144 (0.71 acre) vernal pools and 8 (0.03 acre) road pools for a total of 152 (0.74 acre) pools.

The vernal pools are located along trails and within areas previously used for agriculture. Because of their location adjacent to residential communities, the vernal pools are subject to impacts from off-highway vehicle (OHV) and pedestrian activity. In the road pools, vehicular activity has compacted the soil, making it very difficult for native vegetation to become established. Subsequently, the vernal pools generally exhibit low native plant species diversity and cover while the road pools are devoid of any vegetation.

Table 1. Existing vegetation communities.

HABITAT TYPE	**ACRE(S)**
Wetland/Riparian	
Vernal pool	0.71
Road pool	0.03
Southern willow scrub	1.41
Southern willow scrub - disturbed	0.38
Mule fat scrub	0.07
Herbaceous Wetland	0.16
Tamarisk Scrub	0.08
Open water	0.05
TOTAL WETLAND/RIPARIAN	**2.89**
Uplands	
Diegan coastal sage scrub	9.85
Diegan coastal sage scrub - disturbed	3.56
Diegan coastal sage scrub/chaparral	5.28
Southern mixed chaparral	9.12
Charnise chaparral	17.15
Charnise chaparral - disturbed	9.22
Non-native grassland	60.05
TOTAL UPLANDS	**114.23**
Other Areas	
Disturbed/developed	29.75
Eucalyptus woodland	0.14
Ornamental landscaping	0.35
TOTAL OTHER AREAS	**30.24**
GRAND TOTAL	**147.36**

[3] "Vernal pools" are distinguished from "road pools" in that they support vernal pool flora, whereas road pools are devoid of vernal pool flora but may be occupied by San Diego.



Vegetation and Sensitive Resources/Impacts

FIGURE 5 RHODES CROSSING PROJECT

HELIX Environmental Planning

Depressional features (e.g., vernal pools and road pools) within the action area are defined as part of the H Series (i.e., Penasquitos North) of vernal pools that are located on Del Mar Mesa and Carmel Mountain, which extend from I-805 to the west, I-15 to the east, McGonigle Canyon to the north, and Penasquitos Canyon to the south (Bauder 1986, Service 1998). Vernal pools on Del Mar Mesa are associated with Redding soils, which consist of a well-drained gravelly loam underlain with gravelly clay subsoils and a hardpan composed of cobbles cemented by iron and silica (Bauder and McMillan 1998).

Federally listed species known to occupy vernal pools on Del Mar Mesa include the endangered San Diego fairy shrimp, San Diego mesa mint, San Diego button celery, and spreading navarretia (*Navarretia fossalis*) (Bauder 1986). Vernal pools on Del Mar Mesa often occur among openings of dense chaparral vegetation, making them difficult to detect away from existing trails. Prior to 1979, over 200 vernal pools were identified in this series. By 1986, approximately 40 percent of these pools had been lost to either residential development or agricultural activities (Bauder 1986). Although some of the remaining pools on Del Mar Mesa are relatively undisturbed, other pools, particularly near existing trails and roads, have been damaged or nearly eliminated by past road grading, off-road vehicle traffic, and creation of new trails by mountain bikes.

Vernal pools located within the action area have been classified as part of the H 18-23 and H 24-26 groups. Prior to 1979, 66 vernal pools had been mapped in this area (Beauchamp and Cass 1979). Bauder's (1986) efforts to provide a status of vernal pools that had been previously mapped speculated that the H 24-26 pools had been lost to short-lived agricultural operations. Bauder indicated that these eastern pools contained San Diego mesa mint, San Diego button celery, and spreading navarretia. The vernal pool recovery plan also noted that these pools needed restoration. Though agricultural activities have ceased, the site continues to be affected by off-road vehicle use of the access roads and trails.

With the cessation of agriculture, the area has naturally reverted to the existing vegetation types. Helix mapped 144 vernal pools and 10 road pools during their surveys for the biological technical report (Helix 2003). The Service identified 6 additional vernal pools in January 2011.

Table 2. Summary of the number of vernal and road pools located within the action area.

Component	**Vernal Pool**	**Road Pool**	**Total**
Proposed Camino Del Sur North	5	-	5
Proposed Camino Del Sur South	1	2	3
Rhodes Crossing Project	144	8	152
Total	**150**	**10**	**160**

Species and Critical Habitat within the Project Site

San Diego fairy shrimp have been identified throughout the site, whereas the two listed plant species have limited distribution in the central and southern portions of the site (Figure 5). Surveys consistent with the Service's recommended protocol for San Diego fairy shrimp were conducted on the project site between 1997 and 2000. Additional surveys of the 6 pools found in 2011, detected *Branchinecta* cysts in all of these pools (ERS 2011) which are assumed to be San Diego fairy shrimp. In total, all of these past surveys detected San Diego fairy shrimp in 79 of the 160 pools onsite (Helix 1998, 2000, 2010a; ERS 2011). Please refer to Appendix 2 for a complete listing, by pool, of the acreage and species composition.

Seasonal variability in ponding as a result of varying rainfall amounts and patterns can affect fairy shrimp occupancy in vernal pools from year to year (Bauder 2005; Ripley and Simovich 2008). This variability can result in substantial differences in fairy shrimp occupancy data at a site between years. As an example, surveys conducted on site in 2000 detected shrimp in 16 pools that had negative surveys in 1997/1998. In addition, based on existing habitat conditions, San Diego fairy shrimp have the potential to occur in all 160 pools in the action area. Rather than conduct additional, updated surveys to determine presence or absence of San Diego fairy shrimp within each pool, we consider all 160 vernal pools as occupied, including the 152 pools on the Rhodes Crossing Project.

Site conditions can also change overtime. For example, 6 pools were found in 2011 that were previously undetected during surveys between 1997 and 2000. Thus, it is possible that not all vernal or road pools supporting San Diego fairy shrimp within the action area have been identified

In addition, San Diego mesa mint was observed in 6 pools and San Diego button celery was observed in 7 pools on site (Helix 2003). All of these pools are also occupied by San Diego fairy shrimp.

The vernal pool species addressed in this biological opinion historically occurred in vernal pool complexes throughout the Del Mar Mesa ecosystem, which is part of the San Diego Central Coastal Mesa Management Area[4] identified in the vernal pool recovery plan (Service 1998). The vernal pools within this Management Area are associated with the coastal terraces and mesas of central San Diego County from the San Dieguito River south to San Diego Bay and north of the Sweetwater River. It includes the vernal pools at Del Mar Mesa and Mira Mesa, the Kearny Mesa vernal pool complexes (MCAS Miramar, Tierrasanta, Montgomery Field, Mission Trails Regional Park), and the San Diego Mesa Complex (Chollas Heights). San Diego fairy shrimp have been detected from all of these areas. Approximately 73 percent of all the pools destroyed in San Diego County during the 7-year period between 1979 and 1986 (Keeler-Wolf et. al. 1998)

[4] Management Areas were defined in the vernal pool recovery plan based on plant and animal species distributions, soil types and climatic variables. Eight distinct Management Areas, which comprise locally variable vernal pool complexes covered in Southern California, were defined (see Figure 9 in the Recovery Plan).

occurred in this Management Area. Currently, there are 99 complexes in this Management Area, 72 (or 73 percent) are known to be occupied by San Diego fairy shrimp (Service 2008). The vernal pool recovery plan identified 53 of these complexes as needed to stabilize (45) or reclassify (8) the San Diego fairy shrimp, including the H series vernal pool complexes that occur on Del Mar Mesa and on the Rhodes Crossing Project site (Service 1998).

The project site is located within Subunit 4 A/B of designated critical habitat for the San Diego fairy shrimp, which is one of 11 subunits included in Unit 4. As described above within the *Status of the Species* section of this biological opinion, PCEs for San Diego fairy shrimp designated critical habitat include shallow basins within a matrix of surrounding uplands that are on clay soils.

An evaluation of the presence of PCEs on the Rhodes Crossing project site was provided to us in a letter from Helix dated May 22, 2008. Helix created a basic GIS overlay model to exclude areas on site that do not have the PCEs for San Diego fairy shrimp. Data layers used in the analysis included soils, topography, vernal pools, fairy shrimp, and the Subunit 4 A/B mapping. In addition, a slope gradient layer was created on the topographic mapping for the site using the tools in ArcGIS. The layers were overlain on the site footprint map, and areas that did not support any of the San Diego fairy shrimp PCEs were identified and a map was generated. Helix then accompanied us on a site visit to verify the results. As a result of this site visit, Helix modified the map to include additional areas in the vicinity of Development Areas 4 and 5. The final map was provided to us in a letter dated August 11, 2010. Approximately 43.2 acres of the 69.61 acres of designated critical habitat within the Rhodes Crossing Project footprint support at least one or more of the PCEs of San Diego fairy shrimp critical habitat (Table 3).

Table 3. Summary of critical habitat and PCEs located within the action area.

Project	Critical Habitat	PCEs
Rhodes Crossing Direct Impacts	52	25.9
Rhodes Crossing Conserved Enhancement Areas	16.11	15.8
Rhodes Crossing SDG&E easement	1.5	1.5
Subtotal	69.61	43.2
City Roads - Impacts	14.34	6.31
Total	83.95	49.51

EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action, which will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent

actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur.

This biological opinion does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 CFR 402.02. Instead, we have relied upon the statute and the August 6, 2004, Ninth Circuit of Appeals decision in *Gifford Pinchot task Force v. U.S. Fish and Wildlife Service* (No. 03-35279) to complete the following analysis with respect to critical habitat.

Activities that alter hydrology, increase vernal pool habitat fragmentation, or decrease land types suitable for vernal pool formation have the potential to limit the survivability and recovery of San Diego button-celery, San Diego mesa mint, and San Diego fairy shrimp (Service 1998a). The Rhodes Crossing Project will cause all three of these impacts. First, the site will be graded to support the development areas and associated infrastructure, thus altering the micro-topography and hydrology on the site. The small areas to be avoided will then be highly fragmented (i.e., isolated from surrounding similar habitat) and subject to increased edge effects. Finally, substantial areas of suitable habitat, within Development Areas 1 through 12, where vernal pools could form or be restored will be permanently eliminated.

Direct effects of the Rhodes Crossing Project on San Diego fairy shrimp, San Diego button-celery, and San Diego mesa mint individuals will be limited to enhancement and restoration actions that are aimed at benefitting these species over the long-term. However, the indirect effects to individuals of these species and the direct and indirect effects of the proposed project on designated critical habitat for the San Diego fairy shrimp are substantial and will contribute to a local and range-wide trend of habitat loss and degradation, which are the principal reasons these species were federally listed. The proposed project will contribute to the fragmentation and reduction in acreage of the remaining vernal pool habitat within the San Diego Central Coastal Management Area for these three species as identified in the vernal pool recovery plan, including designated critical habitat for the San Diego fairy shrimp (Subunit 4 A/B). This net loss in vernal pool habitat further reduces the amount of suitable habitat throughout the range of these narrowly distributed vernal pool species. These potential impacts are further described below.

Direct Effects

Implementation of the Rhodes Crossing Project will directly impact approximately 84 acres of the 109-acre project site. The Rhodes Crossing Project will avoid direct impacts to 152 pools and their associated surface micro-watersheds from construction. However, during grading for the proposed project, dust, excess runoff and contaminants and/or fill could be unintentionally introduced into avoided pools. The project proponent proposes to use erosion control measures around the pools; however, if grading and construction are conducted adjacent to the pools during the rainy season, overland flows from rain events may overwhelm the erosion control measures and enter the pools. Such events could introduce excess dirt or fill and contaminants

into the pools, potentially harming the San Diego fairy shrimp. The introduction of dust, fill dirt or polluted runoff to adjacent landscapes can alter the specific water chemistry (Gonzalez et al. 1996) and temperature (Hathaway and Simovich 1996) required by San Diego fairy shrimp, thus negatively affecting their ability to mature and reproduce (Gonzalez et al. 1996, Holtz 2003).

To reduce the potential for such unintentional direct impacts to the avoided 152 pools, all pools, and the lots within which they are located, will be flagged and surrounded with orange construction fencing prior to the beginning of grading (Conservation Measure 2). Best management practices will be used and grading will be done in such a manner to ensure that no runoff enters the pools (Conservation Measure 1). Additionally, a biologist will monitor construction to ensure damage to the pools is avoided (Conservation Measure 1). Following construction, the project proponent will construct permanent barriers along the boundaries between the enhancement areas and the adjacent development to minimize encroachment into the conserved areas (Conservation Measure 3).

The project proponent will enhance approximately 0.74 acre of ponded basin area through minor re- contouring of pools, trash and tire rut removal, inoculation, and weeding (Helix 2010c). However, approximately 0.24 acre of the basins proposed to be enhanced are within Enhancement Areas 1, 2, 3, 4, 5, 8, 9, 10, and 15 (Figure 1), which will be completely surrounded by development, or within the SDG&E easement, which is an area that cannot be assured for long-term conservation by the project proponent. Therefore, the Service considers only approximately 0.5 acre of the proposed enhancement to support the long-term conservation of the San Diego button-celery, San Diego mesa mint, and San Diego fairy shrimp. In addition to 0.5 acre of proposed enhancement, the project proponent will restore approximately 0.30 acre of vernal pool basins (i.e., new vernal pool basins will be graded in areas supporting suitable soils and hydrology) (Conservation Measure 4).

The enhancement/restoration plan includes the potential to collect and distribute soil/inoculum found at the project site into enhanced and restored areas to increase the diversity of the extant vernal pools on site. If soil/inoculum is collected, seeds of the San Diego button-celery and San Diego mesa mint and San Diego fairy shrimp cysts may be destroyed during the process of collecting, storing, translocating, and reintroducing the seeds and cysts into enhanced areas. The overall long-term benefit to these species, however, outweighs the potential loss of some minor component of the available onsite seed/cyst bank.

In addition, activities associated with enhancement and restoration of vernal pool basins, such as grading and movement of soils, have the potential to spread the versatile fairy shrimp (*Branchinecta lindahli*) into pools that are not occupied by versatile fairy shrimp. This is a non-endangered, widely distributed species, which can compete and hybridize with San Diego fairy shrimp and typically occurs in disturbed pools, but is rarely found in undisturbed pools (Branchiopod Research Group 2005; Shanney, C., and A. J. Bohanak. unpublished). Hybridization with the versatile fairy shrimp could cause genetic degradation and loss of genomic integrity in the San Diego fairy shrimp. While the pools on the project site have been and are still subject to disturbance, the versatile fairy shrimp has not been observed at the Rhodes

Crossing Project site to our knowledge. However, because versatile fairy shrimp are documented elsewhere on Del Mar Mesa and surveys of the Rhodes Crossing Project site are outdated (i.e, protocol surveys are 12 years old), it is possible that versatile fairy shrimp may be present within the action area. If soil/inoculum is collected from the project site without first conducting updated surveys, versatile fairy shrimp may be unintentionally spread to extant pools or enhanced or restored areas on the site, potentially compromising the success of the enhancement/restoration efforts.

In summary, none of the 152 vernal pools in the Rhodes Crossing development footprint known to be or potentially occupied by San Diego fairy shrimp, San Diego button-celery, and/or San Diego mesa mint will be permanently impacted by the Rhodes Crossing Project. These pools have been degraded by past agricultural and other human-related disturbances and are subject to ongoing threats due to lack of protection and management. San Diego button-celery and San Diego mesa mint seeds and San Diego fairy shrimp cysts will likely be destroyed during the enhancement and restoration activities. However, the enhancement/restoration activities combined with measures to protect and manage the restored and enhanced areas (Conservation Measure 5) will provide protection and management to vernal pool resources in the action area and increase the likelihood that all three vernal pool species within conserved areas remain viable. Therefore, despite the loss of a minor component of the onsite seed bank for San Diego button-celery and San Diego mesa mint and cyst bank for San Diego fairy shrimp, no appreciable reduction in the numbers, reproduction, or distribution of San Diego button-celery, San Diego mesa mint, or San Diego fairy shrimp in the action area or range-wide is expected.

Indirect Effects

Indirect effects of particular concern to the three vernal pool species are changes to hydrology and water quality, erosion and sedimentation into the vernal pool basins, the invasion of non-native vegetation within pool basins and/or the adjacent watershed, and isolation and fragmentation of vernal pool habitat. There is no exact science to determining or calculating the precise area or distance from a specific vernal pool and its watershed subject to indirect effects of a proposed development project. Using best professional judgment, the CFWO has assumed that any vernal pool and its associated watershed located within 100 feet of development are likely subject to indirect effects (Figure 6)[5]. Likewise, using this estimate, we generally recommend that projects include a minimum 100 foot-buffer between the edge of development and the watershed of a vernal pool. Using this method, we determined that approximately 0.48 acre of ponded basins (Table 4) within the action area will be subject to the indirect effects described below (Figure 6).

[5] This is a conservative estimate compared to the buffer used by the Service's Sacramento Field Office (SFO). The SFO uses a 250-foot buffer to identify the area of indirect effects affecting their vernal pools supporting federally listed species.

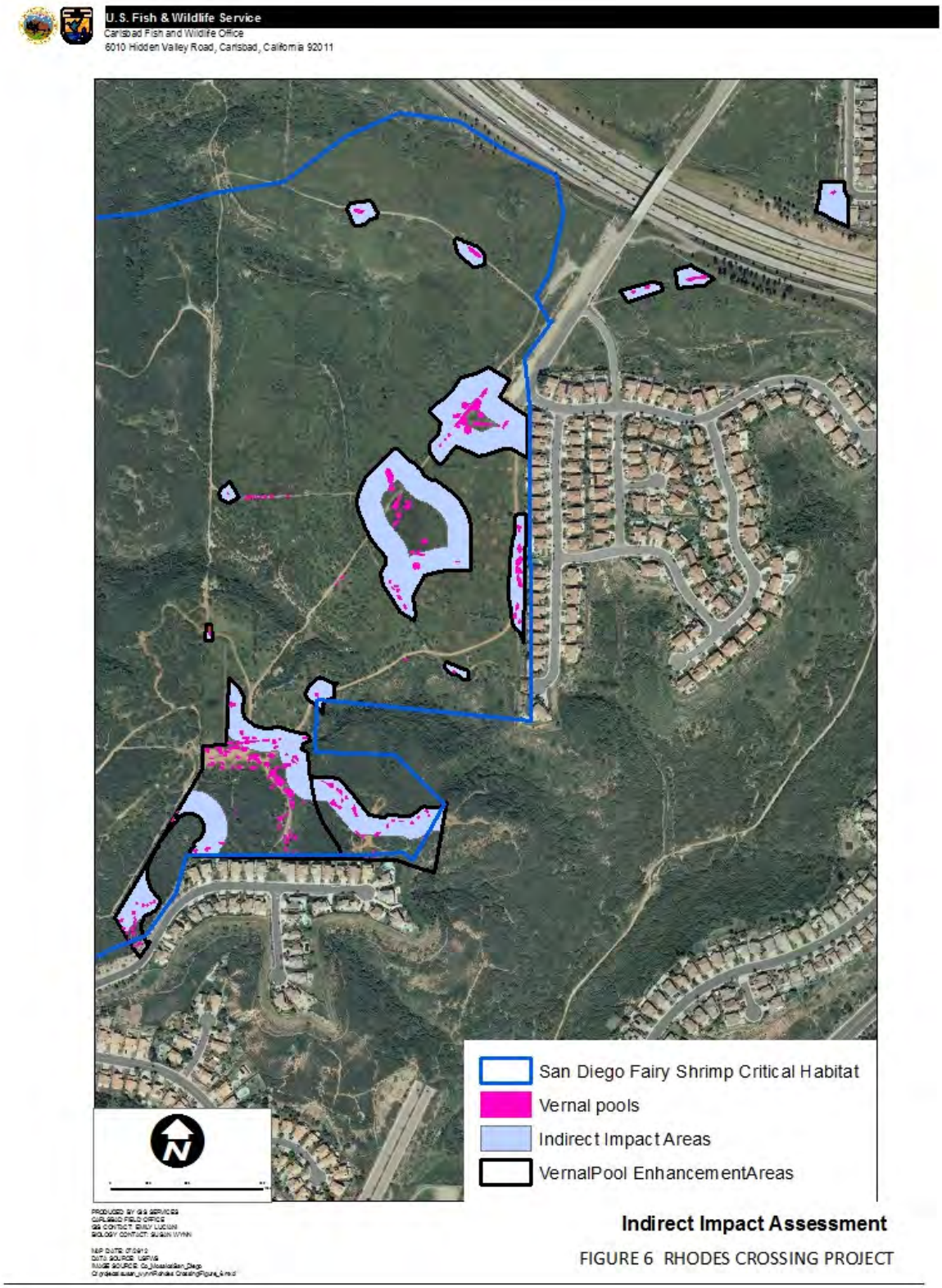

U.S. Fish & Wildlife Service
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Carlsbad, California 92011
San Diego Fairy Shrimp Critical Habitat
Vernal pools
Indirect Impact Areas
VernalPool EnhancementAreas
Indirect Impact Assessment
FIGURE 6 RHODES CROSSING PROJECT

Table 4.

Vernal Pool Enhancement Area	Acreage of Enhancement Area	Acreage in Critical Habitat	Basin Acreage (number of Basins)	Indirect Impacts to Critical Habitat	Indirect Impacts to Basins
1	0.22	0.22	0.009 (1)	0.22	0.009 (1)
2	0.21	0.21	0.013 (1)	0.21	0.013 (1)
3	0.19	0	0.005 (2)	0	0.005 (2)
4	0.24	0	0.015 (1)	0	0.015 (1)
5	0.42	0	0.003 (1)	0	0.003 (1)
6	2.46	2.46	0.142 (14)	2.26	0.13 (13)
7	4.50	4.5	0.120 (18)	3.35	0.067 (11)
8	0.64	0.64	0.065 (8)	0.64	0.065 (8)
9	0.09	0.09	0.001 (1)	0.09	0.001 (1)
10	0.24	0.22	0.003 (1)	0.24	0.003 (1)
11	4.92	4.79	0.134 (32)	1.73	0.071 (17)
11 SDGE easement	1.51	1.51	0.127 (31)	0.48	0.030 (7)
12	2.73	2.19	0.068 (20)	1.30	0.055 (17)
13	0.74	0.66	0.026 (19)	0.56	0.015 (12)
14	0.04	0.04	0.005 (1)	0.04	0.005 (1)
15	0.11	0.11	0.0003 (1)	0.11	0.0003 (1)
Total	**19.26**	**17.62**	**0.74 (152)**	**10.96**	**0.483 (95)**

Isolation and fragmentation of vernal pool habitat

Construction of the Rhodes Crossing Project will introduce development adjacent to the extant pools, which are proposed by this project to be avoided and conserved and which are occupied by the San Diego button celery, San Diego mesa mint, and San Diego fairy shrimp. Extant pools in Enhancement Areas 1, 2, 3, 4, 5, 8, 9, 10, and 15 (Figure 1) will be completely surrounded by development (e.g., residential buildings, roads, and commercial development) and will have little to no habitat buffers between them and development. Most of the conserved lots are relatively small (less than one acre) and likely do not contain enough acreage of upland habitat to support essential ecological interactions between vernal pools, pollinators, and herbivores and their predators. In addition, 11 of the 15 Enhancement Areas containing vernal pools are not contiguous with preserved open space (i.e., Enhancement Areas 1-10 and 15) (Figure 1).

Because most of the lots containing vernal pools proposed for conservation will be isolated from each other and lack a connection to contiguous open space, the long-term viability of the "conserved habitat" for San Diego button celery, San Diego mesa mint, and San Diego fairy shrimp is questionable. The continued existence of these vernal pool species is dependent upon the long-term survival of a functioning vernal pool ecosystem. Although ecological processes in vernal pools may be viewed at relatively small temporal (e.g., weeks to months during wetting and drying cycle) and spatial (e.g., tens of m^2) scales, they are greatly influenced by large landscape scale processes (e.g., hydrology, plant and animal dispersal) (Leidy and White 1998). Fragmentation and isolation of vernal pools can threaten the important ecological and mutualistic processes that link vernal pools to each other and the surrounding uplands (Service 1998). Such ecological and mutualistic processes involve insects that pollinate the vernal pool plants;

mammals and birds that disperse flora and fauna between vernal pools; and amphibians that reproduce in vernal pools. Specialized plant-pollinator relationships can be threatened by fragmentation of vernal pools from the surrounding uplands. For example, some solitary bees from the Andrenidae family focus on vernal pool annuals (e.g., *Blennosperma*, *Downingia*, *Lasthenia*, *Limnanthes*) for collecting pollen (Thorp 1990). Except during the blooming period of their host plants, these bees spend most of their lives nesting underground in the adjacent uplands. These bees have a limited range of foraging, which is not surprising since they are small, have limited flight ability, and tend to remain near their natal site (Thorp 1990, Thorp and Leong 1995).

General fragmentation of plant-pollinator systems can have detrimental effects on the visitation rates by pollinators and, ultimately, the seed set produced by the plants (Jennersten 1988). Although few empirical studies exist for southern California, similar plant-insect specialization is likely and may be essential to successful reproduction of certain species (Service 1998). Therefore, plants in vernal pools that are isolated from other natural ecosystems may experience reduced pollination and thus produce less seed. Habitat fragmentation further threatens pollination systems by reducing population sizes and thus potentially increasing occurrences of genetic drift, inbreeding depression, and extinction due to demographic stochasticity.

Watershed contiguity augments gene flow in populations already naturally low in variability (Davies 1996) by allowing flooding between pools. Vernal pool organisms are typically defined by the complex in which they occur, in part because gene flow between complexes appears to be extremely low (Fugate 1993; Davies 1996). Isolation of pools, or modification of the natural watershed, potentially compromises gene flow, resulting in a loss of genetic variability and an increased susceptibility to extinction and reduced fitness (Bohonak 2005, Soule 1986).

Similarly, the proximity of vernal pools to upland habitats influences the dispersal of seeds between vernal pools by herbivores, such as rabbits that can be important vectors of seed dispersal (Zedler and Black 1992). As they become fragmented and isolated, vernal pools can become unsuitable for avian species that consume and disperse vernal pool fairy shrimp species, which could in turn negatively affect the genetic stability of vernal pool fairy shrimp (Proctor 1964, Krapu 1974, Swanson et al. 1974). Vernal pool preserves should provide adequate upland habitat and/or habitat linkages adjacent to vernal pools to support pollinators, herbivores and their predators, to prevent overgrazing of vernal pool flora, and avian species.

Preserving small, isolated, fragmented preserves may not sustain the multi-scale ecological processes associated with vernal pools (Leidy and White 1998). As such, the scientific community repeatedly recommends that conservation of vernal pools include the surrounding upland habitats (Bauder 1987, Thorp and Leong 1995 and 1998, Hanes and Stromberg 1998, Leidy and White 1998, Service 1998). These surrounding upland habitats influence vernal pool hydrology, species composition, and essential interactions between the species that inhabit them. Fragmenting vernal pools from each other can disrupt dispersal and gene flow between populations of vernal pool flora and fauna, increase their vulnerability to stochastic events, and hinder their ability to reestablish after local extinctions. Elimination of predators, which could

lead to population increases of herbivores such as burrowing rodents, rabbits, and quail, is an indirect effect resulting from the fragmentation and isolation of vernal pools (Service 1998).

Edge Effects

Other indirect effects to San Diego fairy shrimp and its habitat often referred to as "edge effects" include unauthorized dumping; human and pet intrusion; trampling; vandalism; plant and animal collection; runoff; erosion and siltation; spills and contamination; invasion of nonnative species; and increased off-road vehicle and bicycle activity. Despite the presence of no-trespassing signs, the extant pools within the action area are already subject to unauthorized use of the site, including people walking their dogs, children walking to and from school, mountain bikers, and OHV use.

Conservation measures summarized in the *Project Description* section of this biological opinion will be implemented to avoid, minimize, and offset some of the indirect impacts associated with development of the Rhodes Crossing Project. Conservation Measures 1 and 2 include actions that will be taken to avoid and minimize indirect effects during construction. Temporary fencing (with silt barriers) will be installed at the limits of project impacts (including construction staging areas and access routes) to prevent additional sensitive habitat impacts and to prevent the spread of silt from the construction zone into adjacent habitats to be avoided. No construction activities will be permitted within the avoided areas and best management practices will be implemented to address erosion, sedimentation, and contaminants during construction. In addition, to ensure that these measures are implemented, a biological monitor will be on site during initial grading and grubbing near the avoided vernal/road pools. Following construction, permanent fencing and/or walls will be installed around the development footprint to reduce human encroachment into the onsite conservation areas (Conservation Measure 3).

Despite efforts to preserve vernal pools surrounded or adjacent to development, multiple examples exist demonstrating the "edge effect" impacts to vernal pool preserves. Impacts have been observed at two vernal pool preserves (i.e., the 14-acre Phoenix Park Vernal Pool Preserve and the 8-acre Phoenix Field Ecological Reserve) in Sacramento County, California (Clark et. al. 1998). These preserves have a large perimeter relative to their size (i.e., large edge-to-area ratio) and have little or no buffer from surrounding residential and recreational areas. Indirect impacts associated with urban development observed at one or both of these preserves resulted from: use of herbicides in nearby areas; changes in hydrology; dumping of landscape litter; introduction and invasion of exotic plants; brush management for fire; encroachment from feral and domestic animals; vandalism of the protective fencing; foot, horse and bicycle traffic; and plant and animal collection.

Similar to the Sacramento pools, vernal pools in San Diego have suffered from dumping, vehicle and foot traffic, irrigation and redirected surface water (both damming and culverts), and invasions of exotic plants (Bauder 1987). Most vernal pool mitigation and/or preserve monitoring reports the Service receives document some form of human disturbance related to urban development that must be corrected. For example, the City's *Carroll Canyon Vernal Pool*

Preserve Monitoring Report for the September 27, 2004, site visit documented that trash, illegally planted non-natives, and dirt discarded by an adjacent landowner had to be removed from the preserve. As another example, vandals removed the protective fencing surrounding vernal pool complexes and constructed moguls (bumps probably used for jumping bicycles) within the vernal pool watersheds located in the West Otay Mesa Environmental Preserve. Although not its primary purpose, the *City of San Diego Vernal Pool Inventory* (City 2004b) also provides documentation of indirect impacts to preserved vernal pools adjacent to urban development. For example, the inventory notes that trash has been observed in the only remaining pool of the C 27 series at the Mira Mesa Market Center (a.k.a., Cousins Market Center), which is surrounded by housing and Interstate 15. Thus, while the project proponent is implementing measures to minimize the potential increase in edge effects associated with the Rhodes Crossing Project, some of these effects will be un-avoidable due to the substantial increase in human activity anticipated with commercial and residential development of the site.

The project proponent proposes to offset the un-avoidable indirect impacts to approximately 0.48 acre of basin area by enhancement of 152 onsite pools (approximately 0.74 acre) (Conservation Measure 4a). Enhancement of these pools will benefit the listed vernal pool species and their habitat; however, there will still be a net loss of function and value because the preserved pools will still include a large edge to area ratio. Of the 15 conservation areas, all but 4 are less than an acre in size (0.09-0.74 acre) and 11 of the areas are completely surrounded by development (Figure 1; Table 4). Although the project proponent proposes to enhance the habitat within these areas, it is doubtful that the nine smaller areas (i.e., less than one acre) completely surrounded by development will provide any long-term conservation value to the listed vernal pool species because they are too small and isolated to maintain the functions necessary to support the vernal pool habitat and associated species. For example, the pools may not pond long enough for the San Diego fairy shrimp to complete its reproduction cycle. The adjacent uplands within the isolated areas may be too small to support the pollinators needed to maintain populations of San Diego button celery and San Diego mesa mint. In addition, the long term conservation of the pools within the SDG&E easement cannot be guaranteed by the project proponent. Therefore we are assuming that only approximately 0.5 acres of the proposed enhancement actions will support the long-term conservation of the San Diego button-celery, San Diego mesa mint, and San Diego fairy shrimp.

Enhancement actions will be beneficial within the 15.35 acres of habitat encompassed by Enhancement Areas 6, 7, 11(excluding the SDG&E easement[6]),12, and 13 (Figure 1; Table 4). These five enhancement areas include larger conserved areas, and/or are connected to adjacent open space, with a higher chance of maintaining at least some long-term ecosystem functions. In accordance with the HMP, the project proponent will provide for the long-term conservation of all of the enhancement areas either through transfer of fee title to the City of San Diego or by a

[6] Enhancement actions required by CEQA cannot occur within the SDG&E easement unless the easement is vacated or written concurrence is provided by SDG&E assuring the Service and the City of San Diego that no future impacts to the enhanced area will occur.

combination of fee title and open space easement to a non-profit organization and implement and fund a perpetual management and monitoring plan approved by the City.

In addition to enhancement of approximately 0.74 acre of extant vernal pools, approximately 0.3 acre of vernal pool basin area will be restored (i.e., new vernal pool basins will be graded in areas supporting suitable soils and hydrology) (Conservation Measure 4b). The restoration of vernal pool basins will provide additional "ecological lift" to the ecosystem function of the larger enhancement areas and help offset the indirect effects of the project on San Diego fairy shrimp, San Diego button-celery and San Diego mesa mint. Vernal pool basins will be restored in Enhancement Areas 6, 7, 11 (excluding the SDG&E easement), 12, and 13.

Vernal pool restoration can reestablish the physical and biotic characteristics of vernal pool habitat such that critical functions are restored. The restored habitat should resemble reference habitat in regard to the following attributes: soil properties, water quality, topography, hydrology, nutrient cycling, species diversity and species interactions. Based on positive data from ongoing monitoring programs, it appears that restoration can provide self-sustaining vernal pool ecosystems with clear and significant benefits to San Diego fairy shrimp, San Diego button-celery, and San Diego mesa mint, especially when cyst and seed translocation occurs from existing (conserved) occupied pools (RECON 2005; Black 2000a, 2000b; EDAW 2005 and 2010).

Benefits of restoration to the listed vernal pool species include increasing the amount of available vernal pool habitat and increasing the quality of existing vernal pool habitat. These benefits, when supplemented by long-term monitoring and management, can reduce threats to the listed vernal pool species and maintain and improve the habitat quality and regional distribution of the pools and species they support. Since 1997, several projects have documented success in the translocation of San Diego fairy shrimp and in the establishment of populations of listed plant species including San Diego button-celery and San Diego mesa mint. These include California Terraces on Otay Mesa (RECON 2005), San Diego Spectrum at Kearny Mesa (Glen Lukos Associates 2005), and other vernal pool restoration projects on Otay Mesa, MCAS Miramar, and MCBCP.

Hydrology

The above measures will help to minimize indirect impacts from construction and eventual residential occupancy of the project site; however they do not address any potential impacts resulting from changes to hydrology. Changes in the natural micro-topography surrounding vernal pools will alter natural hydrological regimes and may result in increased runoff, erosion, sedimentation, and contamination into the vernal pools. The complex hydrology of vernal pools is supported by both surface flows within a pool's topographic watershed (e.g., the surface area in which water drains into a vernal pool) and subsurface flows that may extend beyond the surface watershed (Rains et al 2006). Surface and subsurface lateral flows between vernal pools and the surrounding uplands influence the onset and level of inundation and the seasonal drying of vernal pools (Hanes and Stromberg 1998). Therefore, modifications to the uplands

surrounding a vernal pool can negatively affect the pool's hydrology, even if such modifications occur outside the pool's surface watershed. For example, grading cuts near pools can accelerate the flow of water out of the subsoil (Bauder 1987). As such, graded slope cuts adjacent to the watersheds of vernal pools may result in 'leakage' of water out of the watersheds (City of San Diego 2003). Conversely, trapping all subsurface flows of water within the surface watershed of the vernal pools via putting in retaining walls may alter the hydrology of the pools by changing the onset or duration of ponding. Preliminary review of the avoided pools on the Shaw Lorenz project site (biological opinion FWS-SDG-08B0023-08F0016R001) suggests that perching the pools on isolated lots above the proposed development may impact the pools ability to pond (Figure 7).

Modifications to the hydrology of vernal pools can alter the distribution of other vernal pool flora and fauna that are influenced by the length and frequency of water inundation (Bauder 1987, 2000). For instance, non-native plant species can become more prevalent in disturbed vernal pools when the periods of water inundation are reduced, while freshwater marsh species can expand into disturbed vernal pools when the periods of inundation are increased.

Modification of a pool's hydrology can also affect germination, flowering, and seed production of San Diego button-celery and San Diego mesa mint and the reproductive cycle of San Diego fairy shrimp. As an example, irrigation of artificial landscapes adjacent to vernal pools can saturate the soils and alter the timing and duration of inundation in vernal pools, causing hatching of cysts or germination of seeds at inappropriate times for their phenology. Artificial landscapes may also be laden with fertilizers and pesticides that can alter the specific water chemistry (Gonzalez et al. 1996) and temperature (Hathaway and Simovich 1996) required by San Diego and Riverside fairy shrimp and negatively affect their ability to mature and reproduce (Gonzalez et al. 1996, Holtz 2003). San Diego fairy shrimp is an "osmoregulator" that maintains constant internal chemical concentrations, but cannot tolerate wide extremes in sodium or bicarbonate concentrations. This makes them especially vulnerable to contaminants in runoff waters and watershed quality that alter levels of salts and alkalinity (Service 1998). Therefore, runoff laden with fertilizers and pesticides from adjacent artificial landscapes could alter the required by SD fairy shrimp, thus negatively affecting their ability to mature and reproduce (Gonzalez et al. 1996, Holtz 2003).

Isolated Vernal Pool Preserve
Area at the Shaw Lorenz Project

FIGURE 7 RHODES CROSSING PROJECT

To address the potential for "leakage" from onsite vernal pools where cut slopes will be necessary adjacent to vernal pool watersheds, the final EIR states that non-permeable barriers will be installed as vertical elements inside cut slopes. Despite these measures, we are concerned that the hydrology essential to maintaining the ecological functions and values of the extant vernal pools within Development Area 2 could be altered due to the proximity and location of the arterial access road serving this residential development area. Of particular concern is the potential elimination of the hydrologic connection between Enhancement Areas 6 and 7 and between Enhancement Areas 8 and 7 following construction of this arterial access road. Helix prepared a map that analyzes how surface water flows across the land scape based on the mapped topography of the site (Figure 8). The site slopes down from Enhancement areas 6 and 8 towards Enhancement area 7; therefore, we are concerned that grading of the access road and the individual lots within Development Area 2 may interfere with the hydrological function of Enhancement area 7, which is one of critical areas for restoration and enhancement of vernal pools on site. This concern remains outstanding.

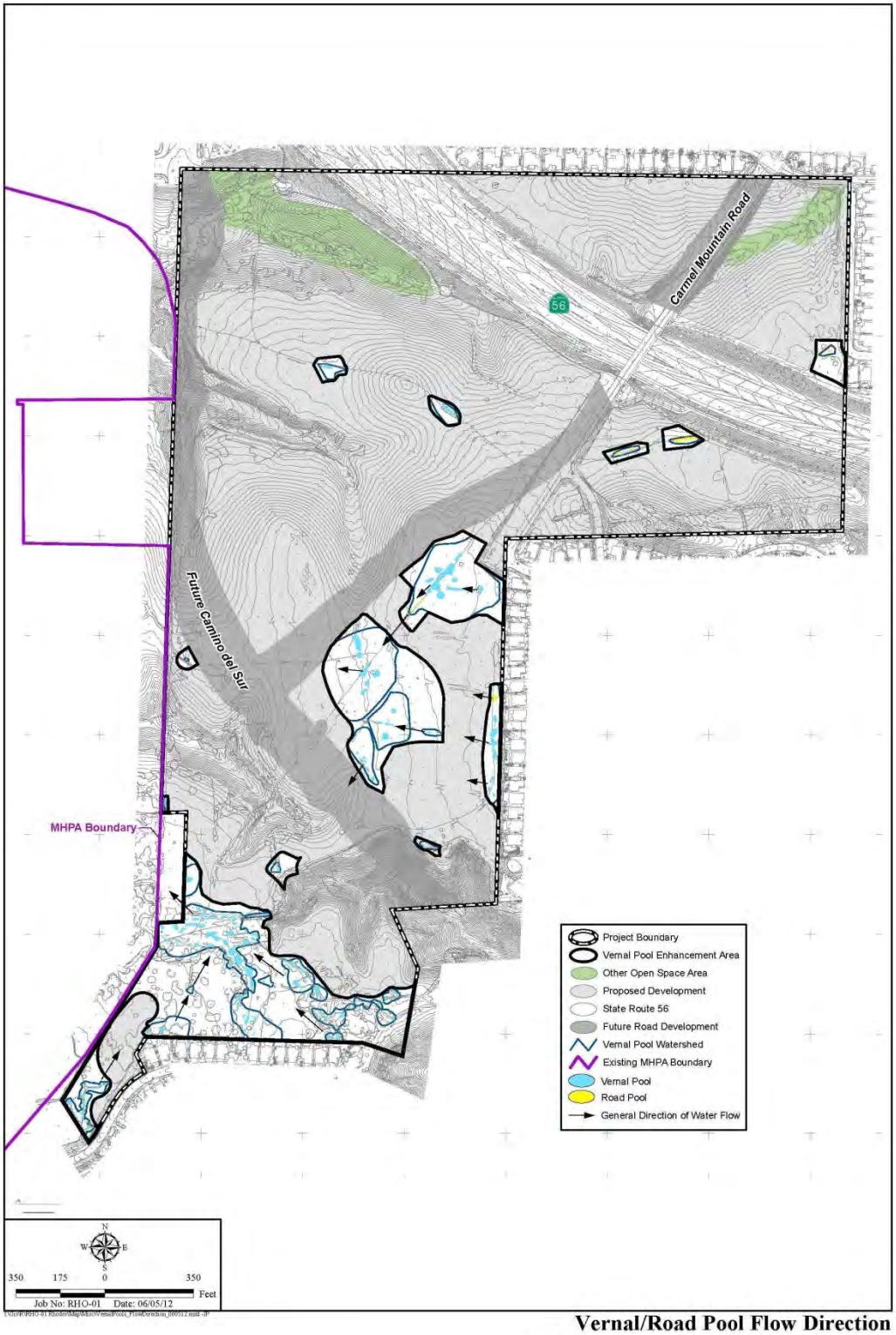
In summary, the proposed Rhodes Crossing will increase indirect effects to approximately 0.48 acre of extant pools supporting San Diego fairy shrimp, San Diego button-celery, and/or San Diego mesa mint due to the substantial increase in human activity associated with the scope of the proposed commercial and residential development proposed within the action area. This is acknowledged in the final EIR, which states, "Despite the protective measures described above, the potential for indirect impacts to vernal pools preserved on site is considered significant." As a result, only pools enhanced, restored, and preserved within the 15.35 acres of habitat encompassed by Enhancement Areas 6, 7, 11(excluding the SDG&E easement), 12, and 13 are likely to retain long-term conservation value for these three species.

While long-term viability of the vernal pools in the other 10 Enhancement Areas (1, 2, 3, 4, 5, 8, 9, 10, 14, and 15) is not likely, these areas are generally smaller in area and support fewer extant pools. The enhancement areas where most of the enhancement and restoration activities will occur (6, 7, 11 (excluding the SDG&E easement), 12, and 13) are larger in area, connected to existing preserve areas, and/or support a greater concentration of vernal pools and thus have a higher likelihood of remaining viable despite the anticipated project-related increase in indirect effects.

San Diego Fairy Shrimp Critical Habitat

The Rhodes Crossing Project, when fully implemented, will result in the permanent loss of 52 acres of designated critical habitat within Subunit 4 A/B, but only 25.9 of these acres support PCEs for the San Diego fairy shrimp (Figure 4; Table 3).

Subunit 4 A/B is 252 acres and is one of 12 subunits that comprise Unit 4 (San Diego, Central Coastal Mesas). Designated critical habitat for the San Diego fairy shrimp totals 2,931 acres, of which 551 acres are within Unit 4. The loss of approximately 52 acres represents a 21 percent reduction in the extent of Subunit 4 A/B and an approximate 9 percent reduction in Unit 4. The impact to the overall designation is less, but still represents an overall 2 percent reduction.



Vernal/Road Pool Flow Direction

FIGURE 8 RHODES CROSSING PROJECT

HELIX Environmental Planning

In addition to the direct loss of 25.9 acres of PCEs, the project will indirectly impact 10.96 acres (Table 4) of critical habitat with PCEs that will remain on site (Figure 6). Fragmentation and isolation of vernal pool habitat can threaten the important ecological and mutualistic processes that link vernal pools to each other and the surrounding uplands (Service 1998) as described more fully in the above in the *Indirect Effects* section. Isolation of pools or modification of the natural watershed potentially compromises gene flow, resulting in a loss of genetic variability and an increased susceptibility to extinction and reduced fitness (Bohonak 2005, Soulé 1986).

The primary function of Unit 4 is to maintain vernal pools that are within the center of the San Diego fairy shrimp's geographical distribution and retain the genetic diversity of these geographically distinct populations. Impacts to 25.9 acres of PCEs within the Rhodes Crossing project site will be offset through the preservation and enhancement of approximately 15.35 acres of PCEs within the larger areas of designated critical habitat in the onsite open space [includes Enhancement Areas 6, 7, 11 (excluding the SDG&E easement), 12, and 13)]. Within this 15.35-acre area of critical habitat approximately 0.50 acre of extant vernal pool basin area (PCE 1) will be enhanced, an additional 0.30 acre of vernal pool basin will be restored (PCE1), and the surrounding upland areas (PCE 2) will be enhanced by the removal of non-native grasses and the establishment of native shrubs, grasses, and forbs. Genetic diversity may be maintained by the avoidance of 72 pools (i.e. ponded basins; PCE1) supporting San Diego fairy shrimp all within designated critical habitat on site, but especially in Enhancement Areas 6, 7, 11 (excluding the SDG&E easement), 12, and 13 where the likelihood of long-term conservation is greater.

A concentration of the avoided pools (PCE 1) is found in Enhancement Areas 11 (excluding the SDG&E easement), 12, and 13 in the southern portion of the project site. These three enhancement areas include approximately 8 acres of the total 15.35 acres of critical habitat that will be preserved on site. Preservation of these areas is significant because they will remain connected to offsite, but adjacent, critical habitat within the subunit, that is already being preserved and managed by the California Department of Fish and Game.

Enhancement Areas 6 and 7, which support 7 of the 15.35 acres of habitat proposed for conservation also include a concentration of pools (PCE 1) located in the more central portion of the project site. While proposed for conservation and likely large enough to sustain critical habitat functions, Enhancement Areas 6 and 7 will lose connectivity to the southern, larger area of preserved critical habitat. Intervening areas between the southern and central preserved critical habitat areas on site will be developed for residential and commercial use.

In summary, PCEs within the action area will be reduced by over 60 percent; however, the proposed preservation, enhancement, and restoration efforts, if successful, will partially offset this loss and help to maintain the primary functions of Unit 4. Ensuring that the existing hydrologic conditions in Enhancement Areas 6 and 7 are maintained is essential.

Effect on Recovery

Habitat favorable for vernal pool formation consists of coastal terraces with an underlying iron-silica impervious soil layer or layers with undulating landscapes, where soil mounds are interspersed with basins, swales, and drainages (Service 1998). As stated above, approximately 95 to 97 percent of vernal pool habitat within San Diego County has been eliminated. Any further loss of remaining habitat where vernal pool formation is possible reduces the amount of suitable land available for vernal pool restoration, constrains re-introduction opportunities for species endemic to these vernal pools, and limits our ability to achieve recovery for federally listed vernal pool species.

Over the last 10 years, the Service has consulted on a number of projects impacting vernal pool species and/or designated critical habitat. Recently built projects within the immediate vicinity of Del Mar Mesa include Shaw Lorenz Project (08B0023), Greystone Homes (1-6-00-F-36), and State Route 56 (1-6-99-F-60). Recent projects affecting critical habitat for the San Diego fairy shrimp include State Route 11 and the East Otay Mesa Port of Entry, Otay Business Park, and Otay Crossings (08B0316).

While all of these projects have impacted San Diego fairy shrimp and/or associated federally listed vernal pool plants, the project proponents have agreed to offset these losses with conservation that is expected to substantially increase the ecological function of the vernal pool habitat preserved and enhanced. Most of these projects have committed to conservation at a greater than 1:1 ratio. The conservation agreed to has been developed project by project and based on the quality and/or quantity of the habitat and species affected. However, the Service has attempted to maintain consistency between projects and importantly to ensure that project conservation supports recovery of the vernal pool species affected.

In particular, because San Diego fairy shrimp is a narrowly distributed species endemic to southern California, the amount of designated critical habitat for this species is similarly small[7]. Despite our best efforts to improve mapping of PCEs within our critical habitat units, not all land within any designation includes PCEs. Thus, any loss of PCEs that is not fully offset by preservation, enhancement and restoration actions at a greater than 1 to 1 ratio represents a net loss in ecological function and does not support the vernal pool recovery plan goal of maintaining and restoring vernal pool habitat for the San Diego fairy shrimp, San Diego button-celery, and San Diego mesa mint.

Development of the project will eliminate the potential to restore approximately 26 acres of potential vernal pool habitat on Del Mar Mesa that support Redding soils. Task 2, in the vernal pool recovery plan, states that, “Restoration and re-introduction are necessary to expand the current ranges of these (vernal pool species) endemic species to reduce risk of extinction through

[7] Designated critical habitat for San Diego fairy shrimp is < 3,000 acres; in comparison designated critical habitats for the more widely distributed vernal pool fairy shrimp and vernal pool tadpole shrimp known from northern California include 597,821 acres and 228,785 acres, respectively.

random and natural events". The recovery plan identifies the H 18-23 complexes as necessary for the stabilization of San Diego button celery, San Diego mesa mint, and San Diego fairy shrimp. In addition, the recovery plan identifies the H 24-26 complexes as necessary to reclassify the San Diego button celery and San Diego mesa mint.

To avoid, minimize, and offset the project impacts, including eliminating 26 acres of restorable habitat (i.e., Redding soils on Del Mar Mesa), the project proponent reduced the project footprint in Development Area 2 by eliminating six lots, such that some of the restorable vernal pool habitat will be maintained and managed within Enhancement Area 7. Restoration of 0.30 acre of new vernal pool basins along with protection and management of the enhancement areas will help ensure significant vernal pool resources are preserved, restored, and enhanced on site. These enhancement areas are identified in the vernal pool recovery plan as necessary to stabilize San Diego button-celery, San Diego mesa mint and/or San Diego fairy shrimp.

The proposed restoration and enhancement will be consistent with the vernal pool recovery plan Task 2 (i.e., to reestablish vernal pool habitat to historic structure and composition and Task 3 (i.e., to rehabilitate and enhance secured vernal pool habitats and their constituent species). The vernal pool recovery plan also emphasizes the need to manage and monitor protected habitat (see Recovery Tasks 4 and 5). Consistent with these tasks, the Vernal Pool Enhancement Plan within the HMP (Conservation Measure 1) will ensure the restoration and enhancement areas will be preserved and managed in perpetuity by a natural lands manager after the initial installation and 5-year monitoring period.

The project will result in a net decrease of over 60 percent of the acreage of potential vernal pool habitat in an area that, while still subject to ongoing human disturbance, is beginning to recover from previous agriculture activity. Despite the significant onsite loss that will occur with development of the site, the proposed restoration, enhancement, and management actions should increase the quantity and quality of vernal pool habitat occupied by San Diego button-celery, San Diego mesa mint, and San Diego fairy shrimp within the enhancement areas. While the amount of habitat important to the recovery of these species, both within the action area and range-wide will be reduced, the remaining onsite habitat will support the listed plants and the life cycle functions (e.g., breeding, sheltering, feeding) of the San Diego fairy shrimp within the enhanced and preserved areas. Thus, the remaining onsite habitat will have long-term conservation value to the recovery of the three listed vernal pool species known from within the action area, and implementation of the Rhodes Crossing Project and construction of the associated access roads will not preclude the greater habitat protection and management goals outlined in the vernal pool recovery plan for these species.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. We are unaware of

any future non-Federal actions that are reasonably certain to occur within the action area and may affect the San Diego button celery, San Diego mesa mint, or San Diego and its designated critical habitat with the exception of the proposed Camino del Sur and Carmel Mountain Road segments. While not an active project, the Corps initiated consultation on the project in the past; thus, it is likely to require separate section 7 consultation to address impacts to San Diego fairy shrimp and its designated critical habitat.

CONCLUSION

After reviewing the current status of the San Diego button celery, San Diego mesa mint, and San Diego fairy shrimp and its designated critical habitat, the environmental baseline for the action area, the effects of the action, and the cumulative effects, it is the Service's biological opinion that development of the Rhodes Crossing Project, as proposed, is not likely to jeopardize the continued existence of the San Diego button celery, San Diego mesa mint, or San Diego fairy shrimp and is not likely to result in the destruction or adverse modification of designated critical habitat for the San Diego fairy shrimp. We reached these conclusions by considering the following:

- San Diego button-celery occurs in 4 geographic areas on the Santa Rosa Plateau in Riverside County and 10 regional locations in San Diego County including Camp Pendleton, Carlsbad, San Marcos, Ramona, Del Mar Mesa, Carmel Mountain, Mira Mesa, MCAS Miramar, Otay Lakes, and Otay Mesa.

- San Diego mesa mint is endemic to San Diego County with locations on Del Mar Mesa, Mira Mesa, MCAS Miramar, and Kearny Mesa, with a few scattered populations in western Tierrasanta.

- The range of the San Diego fairy shrimp includes Orange and San Diego counties in southern California and northwestern Baja California, Mexico.

- Although a minor component of the onsite San Diego button-celery and San Diego mesa mint seed bank and San Diego fairy shrimp cyst bank will be destroyed as a result of enhancement and restoration activities, none of the 152 vernal pools in the action area known to be or potentially occupied by San Diego fairy shrimp, San Diego button-celery and/or San Diego mesa mint will be permanently impacted by the Rhodes Crossing Project; thus, no appreciable reduction in the numbers, reproduction, or distribution of San Diego button-celery, San Diego mesa mint, or San Diego fairy shrimp across the range of the species is expected.

- Adverse effects to all federally listed species will be reduced with implementation of the avoidance and minimization measures identified in the *Project Description* section of this biological opinion.

- The identified enhancement, restoration, and management actions will provide protection and management to vernal pool resources in the action area and increase the likelihood that all three vernal pool species within the action area remain viable.

- Indirect impacts to 0.48 acre of basin area will be offset through preservation, restoration, enhancement, and perpetual management of approximately 0.8 acre (0.5 acre enhancement and 0.3 acre restoration) of vernal pool basin area within 15.35 acres in Vernal Pool Enhancement Areas 6, 7, 11 (excluding the SDG&E easement), 12, and 13.

- The enhancement and restoration actions proposed are expected to be successful because these actions will be implemented in an area that likely supported vernal pools historically (soil types necessary to sustain vernal pool habitat are present) and the methods proposed for these actions have been successful on an adjacent site.

- The enhancement areas where most of the enhancement and restoration activities will occur [i.e., 6, 7, 11 (excluding the SDG&E easement), 12, and 13] are larger in area; more connected to existing preserve areas; and/or support a greater concentration of vernal pools than the other 10 enhancement areas. Therefore they have a higher likelihood of remaining viable despite the anticipated project-related increase in indirect effects.

- PCEs (25.9 acres) within 52 acres or 21 percent of Subunit 4 A/B of designated critical habitat for San Diego fairy shrimp will be permanently impacted. A minimum of 15.35 acres of designated critical habitat for San Diego fairy shrimp within Subunit 4 A/B will be preserved in perpetuity within the onsite Vernal Pool Enhancement Areas [i.e., 6, 7, 11 (excluding the SDG&E easement), 12, and 13] and PCEs will be enhanced, restored, and managed.

- PCEs within the action area will be reduced by over 60 percent; however, the proposed preservation, enhancement, restoration, and management efforts will partially offset this loss and help to maintain the primary functions of Unit 4.

- Because the loss of 52 acres of San Diego fairy shrimp designated critical habitat within critical habitat Unit 4 (551 acres) will be partially offset by conservation efforts with a high success of improving the overall status of the species within the remaining onsite enhancement areas, this loss is not expected to appreciably diminish the role or function of the overall critical habitat designation (2,931 acres) to support recovery of the San Diego fairy shrimp.

- The life cycle functions (e.g., breeding, feeding, sheltering) of the remaining onsite habitat to the three listed vernal pool species will be maintained, and the overall project will not preclude the habitat protection and management goals outlined in the vernal pool recovery plan for these species.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary and must be implemented by the Corps and/or the project proponent [i.e., Mr. Keith B. Rhodes (Rhodes and Grus Investments)] in order for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity that is covered by this incidental take statement. If the Corps (1) fails to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, or the Corps or the project proponent (2) fails to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

To monitor the impact of incidental take, the Corps and/or the Project proponent must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

AMOUNT OR EXTENT OF TAKE

It is not possible to determine the precise number of San Diego fairy shrimp that will be impacted by the proposed project. The exact population size of fairy shrimp species is difficult to estimate due to the dynamic conditions associated with their habitat. The reproductive success of fairy shrimp is dependent on seasonal fluctuations in their habitat, such as presence or absence of water during specific times of the year, duration of inundation, and other environmental factors that likely include specific salinity, conductivity, dissolved solids, and pH levels. Therefore, the population of fairy shrimp in any given pool varies dramatically.

We anticipate that San Diego fairy shrimp cysts within up to 152 pools in the Enhancement Areas may be harmed as a result of enhancement and restoration activities. In addition, inoculum from existing occupied pools within the Enhancement Areas and “avoided areas” on the Rhodes Crossing project site may be collected and translocated to enhanced/ restored pools.

We anticipate that most of the translocated cysts will survive in the enhanced/restored pools, but some will suffer mortality during the collection and translocation process.

Because the precise number of individual San Diego fairy shrimp harmed or killed cannot be determined, take exemptions are established based on the number and area of pools impacted. If any of the take exemptions are exceeded, reinitiation of consultation will be triggered.

Take of San Diego fairy shrimp cysts is exempted as follows:

- Collection and associated mortality of cysts in inoculum from up to 152 pools encompassing 0.74 acre of basins if necessary to facilitate enhancement/restoration activities for the Rhodes Crossing Project.

- Harm to San Diego fairy shrimp cysts within up to 152 pools encompassing 0.74 acre of basins associated with enhancement activities. The amount or extent of incidental take within these areas will be exceeded if more than 152 pools or 0.74 acre of basin area are re-contoured.

EFFECT OF THE TAKE

In the accompanying biological opinion, we determined that this level of take is not likely to result in jeopardy to San Diego fairy shrimp.

REASONABLE AND PRUDENT MEASURES

The project proponent is implementing conservation measures required through the CEQA process that minimize the incidental take of San Diego fairy shrimp during construction and implementation of the Rhodes Crossing Project. Our evaluation of the proposed action is based on the assumption that the actions as set forth in the "Conservation Measures" section of this biological opinion will be implemented. Any changes to the conservation measures, or in the conditions under which project activities were evaluated, may constitute a modification of the proposed action. If this modification causes an effect to the San Diego fairy shrimp that was not considered in this biological opinion, reinitiation of formal consultation pursuant to the implementing regulations of section 7(a)(2) of the Act (50 CFR § 402.16) may be warranted.

Reasonable and prudent measure 1 supplements and clarifies select conservation measures included as part of the proposed action and further minimizes the take of San Diego fairy shrimp. Reasonable and prudent measures 2 is necessary and appropriate to monitor and report the incidental take of San Diego fairy shrimp and to provide a trigger for reinitiation of consultation, if necessary.

1. The Corps and/or the project proponent will minimize take during construction and implementation of the Rhodes Crossing Project, including during post-construction management and monitoring activities.

2. The Corps and/or the project proponent will monitor and report on compliance with the established take exemptions for San Diego fairy shrimp prior to and during construction impacting occupied pools at the Rhodes Crossing project site. The project proponent will monitor and report on compliance with the established take exemptions for San Diego fairy shrimp during implementation of the enhancement activities that may be ongoing post construction.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, the Corps and/or the project proponent must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1.1 The monitoring biologist will periodically monitor avoided vernal pools and adjacent habitats for excessive amounts of dust (i.e., if a visible film of dust is observed on the water surface or on adjacent plants) and will recommend remedial measures to address dust control if necessary.

1.2 The project proponent proponent will submit a final vernal enhancement/restoration plan for Enhancement Areas 6, 7, 11(excluding the SDG&E easement), 12, and 13 to the Service (CFWO) for approval within 120 days of the project proponent's receipt of the final biological opinion. The final plan will include the information and conditions in Appendix 3.

1.3 Prior to collecting inoculum at any of the exempted donor pools, the donor pools should be surveyed to document that they are free of versatile fairy shrimp (*Branchinecta lindahli*). This information will be provided to the Service (CFWO) prior to collection.

1.4 To minimize the potential for incidental take of San Diego fairy shrimp during enhancement and restoration activities within Enhancement Areas 6 and 7, a hydrology study, including an assessment of existing surface and subsurface flows, will be conducted to confirm that the existing hydrologic conditions in Enhancement Areas 6 and 7 are maintained despite the proposed construction of residential development and the arterial access road that will bisect these enhancement areas. The study design and results will be provided to the Service (CFWO) for peer-review by an independent hydrologist. The study will be conducted prior to any clearing, grading, or grubbing activities in Development Area 2. If the results of this study indicate that the hydrology will be compromised due to the construction of the access road and the individual lots, then enhancement and restoration activities should be re-directed to either Enhancement Area 6 or Enhancement Area 7 (i.e., increased in one area, decreased in the other) to ensure that enhancement and restoration actions are conducted in the area with the highest potential for success.

2.1 The Corps and/or the project proponent will submit documentation to the Service (CFWO) prior to the initiation of project construction demonstrating that the distribution of San Diego fairy shrimp has not changed from the baseline condition described in this biological opinion (i.e., the number and distribution of pools occupied by San Diego fairy shrimp has not changed). Pools already known to be occupied by San Diego fairy shrimp do not need to be re-surveyed; however, pools and project areas supporting suitable habitat conditions for San Diego fairy shrimp should be re-assessed and re-surveyed to protocol standards.

2.2 A monitoring biologist approved by the Service (CFWO) will be on the project site during clearing and grubbing of suitable habitat for San Diego fairy shrimp, including all critical habitat, and any occupied habitat that occurs within 200 feet of the grading limits. The monitoring biologist will conduct weekly site visits during rough grading to ensure that the grading limits have been respected and compliance with all terms and conditions have been achieved. The biologist will be knowledgeable of vernal pool species. The project proponent will submit the biologist's name, address, telephone number, and work schedule on the project to the Service (CFWO) at least 7 days prior to initiating project impacts.

2.3 The monitoring biologist will oversee installation of and inspect the fencing and erosion control measures within or up-slope of San Diego fairy shrimp avoidance and enhancement areas a minimum of once per week and daily during all rain events to ensure that any breaks in the fence or erosion control measures are repaired immediately.

2.4 The monitoring biologist will halt work, if necessary, and confer with the Service (CFWO) to ensure the proper implementation of San Diego fairy shrimp and habitat protection measures. The monitoring biologist will also report any violation to the Service (CFWO) within 24 hours of its occurrence.

2.5 To ensure that the construction and implementation of the project does not adversely affect and harm San Diego fairy within the avoided vernal pools on site, monitoring will be conducted throughout the rainy season to determine whether the project is changing the hydrology of, or causing erosion and sediment delivery to, these vernal pools. Monitoring will occur during grading of the project site and for 3 years following project construction. In the event that sufficient rainfall to demonstrate adequate ponding does not occur during the 3 years following project construction, monitoring will continue in 1-year increments, to a maximum of 5 years. A monitoring report will be submitted by September 1 following each monitoring season. The monitoring program will be described in the final vernal pool restoration/enhancement plan. If the monitoring detects impacts to the adjacent vernal pools from construction and/or operation of the proposed project (e.g., from changes in hydrology) within the monitoring period, the project proponent will implement remedial measures to eliminate and repair observed impacts.

2.6 The project proponents will submit to the Service (CFWO) for approval, at least 30 days prior to initiating project impacts, the final plans for initial clearing and grubbing of sensitive habitat and project construction. These final plans will include photographs that show the fenced limits of impact and all areas to be impacted or avoided. If work occurs beyond the fenced or demarcated limits of impact, all work will cease until the problem has been remedied to the satisfaction of the Service (CFWO). Temporary construction fencing will be removed upon project completion.

2.7 The monitoring biologist will submit: 1) monthly letter reports (including photographs of impact areas) to the Service (CFWO) during project construction within 200 feet of avoided habitat. The monthly reports will document that authorized impacts were not exceeded, and general compliance with all conditions; and 2) a final report to the Service (CFWO) within 60 days of project completion that includes: as-built construction drawings with an overlay of pools that were impacted or preserved, photographs of the preserved pools, and other relevant information documenting that incidental take was not exceeded and that general compliance with the project as described in this biological opinion, including the conservation measures, was achieved.

2.8 The monitoring biologist will implement a contractor training program to insure compliance with the conservation and other measures to avoid and minimize incidental take of San Diego fairy shrimp.

2.9 The Corps will notify the Service (CFWO) in writing within 24 hours of transferring the 404 permit to any project proponent not specifically listed in this biological opinion [i.e., if the permit or any portion thereof is transferred to a project proponent other than Mr. Keith B. Rhodes (Rhodes and Grus Investments)]. This term and condition is necessary so that the Service (CFWO) has full knowledge of the project proponent(s) for which incidental take is exempted and that are responsible for monitoring and reporting on compliance with the established take exemptions for San Diego fairy shrimp: 1) prior to and during construction impacting occupied pools at the Rhodes Crossing project site; and 2) following construction during implementation of the enhancement and restoration activities that may be ongoing post construction.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans or to develop information.

In addition to the conservation strategy evaluated as part of the proposed action in this biological opinion, the Service recommends that the project proponent and the Corps give serious consideration to a revised proposed action that incorporates one of the two conservation

strategies identified below. These additional conservation strategies also support a determination by the Service that the Rhodes Crossing Project is not likely to jeopardize the continued existence of the San Diego fairy shrimp, San Diego button-celery, and the San Diego mesa mint and is not likely to result in the adverse modification of San Diego fairy shrimp critical habitat.

Acquisition of Development Area 2 will substantially reduce the overall impacts of the Rhodes Crossing Project and increase conservation of the extant vernal pools and designated critical habitat that support San Diego fairy shrimp, San Diego button-celery, and San Diego mesa mint. The Habitat Conservation Plan (HCP) Conservation Strategy allows for increased development of isolated vernal pools supporting these three listed species but consolidates conservation efforts into enhancement areas with the highest possibility for success.

Additional Conservation Strategies

I. Acquisition of Development Area 2

- Parcel 30642002, encompassing Development Area 2 and Vernal Pool Enhancement Areas 6, 7, 8, and 9, will be sold for conservation purposes compatible with the preservation, enhancement and restoration of vernal pool complexes supporting federally listed animal and plant species and designated critical habitat.

- Because impacts will be reduced, enhancement and long-term management actions required by CEQA and other City of San Diego permits will also be reduced and will not be necessary in Enhancement Areas 6, 7, 8, and 9. Enhancement actions to address any remaining impacts should be carried out in Vernal Pool Enhancement Areas 11 (excluding the SDG&E easement), 12 and 13.

- The Service recommends that no enhancement actions to offset remaining impacts to listed species and critical habitat occur in Vernal Pool Enhancement Areas 1, 2, 3, 4, 5, 10, 14, and 15 (i.e., no enhancement of isolated vernal pool or road pools) because enhancement/restoration activities in these areas are not beneficial to the long-term conservation of vernal pools species in consideration of the proposed surrounding development.

- Enhancement/restoration/management actions to offset CEQA, Corps' jurisdictional wetlands, and other indirect effects of the project to designated critical habitat for the Rhodes Crossing Project will be conducted in Vernal Pool Enhancement Areas 11 (excluding the SDG&E easement), 12 and 13 in accordance with the standards provided in the Rhodes Crossing Vernal/RoadPool Enhancement Plan and Appendix 3.

Conservation Analysis

With full acquisition of Parcel 30642002, Development Area 2 and Vernal Pool Enhancement Areas 6, 7, 8, and 9 will be excluded from the action area. This strategy significantly reduces the

overall indirect effects to federally listed vernal pool species and direct effects to designated critical habitat as a result of the Rhodes Crossing Project. This conservation strategy also addresses the Service's concern that existing hydrologic conditions sufficient to support the long-term conservation and ecosystem functions of the significant vernal pool resources in Parcel 30642002 are assured. Under this strategy, the need for the project proponent to conduct a hydrology study within Parcel 30642002 and certain enhancement/restoration/management actions to offset CEQA and indirect effects to critical habitat are avoided.

II. HCP Conservation Strategy

- The Rhodes Crossing Project will be redesigned to maintain the hydrologic connection between the avoided pools in Enhancement Areas 6 and 7. This strategy will require redesign of the main access road into the residential subdivision planned within Parcel 30642002. The loss of lots can be offset by filling the isolated pools in Enhancement Areas 1, 2, 3, 4, 5, 9 and 10. To the extent that changes to traffic and biology trigger the need for additional CEQA review, they will be covered under the City of San Diego's Vernal Pool HCP.

- Enhancement/restoration actions to offset CEQA, Corps' jurisdictional wetlands, and other indirect effects of the project to designated critical habitat for the Rhodes Crossing Project will be conducted in accordance with the standards provided in the in the Rhodes Crossing Vernal/RoadPool Enhancement Plan and Appendix 3.

Conservation Analysis

The HCP Conservation Strategy conserves the significant vernal pool resources in Parcel 30642002 and allows impacts to the less important resources in Enhancement Areas 1, 2, 3, 4, 5, 9 and 10. Impacts to the isolated vernal pools on site will increase, but these impacts will be offset by greater conservation in Enhancement Areas 6 and 7. This strategy also addresses the Service's concern that existing hydrologic conditions sufficient to support the long-term conservation and ecosystem functions of the significant vernal pool resources in Parcel 30642002 are assured despite the planned development of residential housing in this area. Under this strategy, the need for the project proponent to conduct a hydrology study within Parcel 30642002 is avoided.

REINITIATION NOTICE

This concludes formal consultation on the development of the Rhodes Crossing Project, as outlined in the request for initiation. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or

critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

With respect to (2) above, the Service should be informed if updated protocol surveys reveal additional vernal or road pools supporting San Diego fairy shrimp. While we do not expect that large areas supporting additional vernal pools will be identified, it is possible that at least some new pools will be identified. If occupied by San Diego fairy shrimp, the biological opinion may need to be amended to ensure that the incidental take exemptions and conservation analysis included in the biological remain valid.

With regard to (3) above, if Conservation Measure 4b is not included as a condition of the Corps permit, and the current or any future project proponent commits to implementation of this conservation measure, the analysis in this biological opinion will remain valid and reinitiation of consultation will not be required. Finally, the Service is still amenable to a re-initiated biological opinion that amends this existing opinion to include construction of the segments of Camino del Sur Road and Carmel Mountain Road that are integral to the Rhodes Crossing Project as part of the proposed action. Alternately, if a section 10 permit under the Act is issued for the City of San Diego's Vernal Pool HCP with construction of the access roads included as a "Covered Activity," processing of any section 7 consultation required in associated with a Corps CWA permit for this same activity, can be streamlined.

If you have any questions or concerns about this biological opinion, please contact Susan Wynn of my staff at 760-431-9440.

Sincerely,

for Jim A. Bartel
Field Supervisor

Cc:
Mr. Keith B. Rhodes, Rhodes and Grus Investments

LITERATURE CITED

Bauder, E. T. 1986. San Diego vernal pools: Recent and projected losses; their condition; and threats to their existence, 1979-1990. Report prepared for Endangered Plant Project, California Department of Fish and Game, Sacramento, California.

Bauder, E. T. 1987. Threats to San Diego vernal pools and a case study in altered pool hydrology. In*:* T. S. Elias (ed.), Conservation and management of rare and endangered plants. California Native Plant Society, Sacramento, California.

Bauder, E. T. 2000. Inundation effects on small-scale plant distributions in San Diego, California vernal pools. *Aquatic Ecology*. 34:43-61.

Bauder, E. T. 2005. The effects of an unpredictable precipitation regime on vernal pool hydrology. *Freshwater Biology*. 50:2129-2135.

Bauder E. T., J. Snapp-Cook, and J. Sakrison. 2002. A study of *Agrostis avenacea* in vernal pools on Marine Corps Air Station Miramar, San Diego, California. Final report to Southwest Division, Naval Facilities Engineering Command, San Diego, California.

Bauder, E. T. and S. McMillan. 1998. Current distribution and historical extent of vernal pools in Southern California and Baja Mexico. Ecology, Conservation and Management of Vernal Pool Ecosystems-Proceedings from a 1996 Conference, California Native Plant Society, Sacramento, California [C. W. Witham, E. Bauder. D. Belk, W. Ferron, and R. Ornduff (eds)].

Beauchamp, M. L. and T. Cass. 1979. San Diego Vernal Pool Survey. California Department of Fish and Game Non-Game Wildlife Investigations. Endangered Plant Program 145, Job 1–10.

Black, C. H. 2000a. Restoration and Enhancement of the Vernal Pools at the AA4-7, F (north), F16, U15, and U19 Vernal Pool Groups at Marine Corps Air Station Miramar. Contract N68711-97-M-4004, Final Implementation Report. Ecological Restoration Service, San Diego, California.

Black, C. H. 2000b. Restoration and Enhancement of the Vernal Pools at the 2/X1-4, 3Z1-3, 8/EE1, and 8/HH3+ Vernal Pool Groups at Marine Corps Air Station Miramar. Contract N68711-97-M-4005, Final Implementation Report. Ecological Restoration Service, San Diego, California.

Black, C. H. 2004a. Vernal pool delineation, rare plant and fairy shrimp survey reports on Miramar vernal pools, 2000-2001 through 2002–03 seasons, comprehensive findings. EcologicalRestoration Service, San Diego, California.

Black, C. H. 2007. Vernal pool regulatory surveys, Marine Corps air station Miramar, San Diego, California. Ecological Restoration Service, San Diego, California.

Bohonak, A. J. 2005. MSCP vernal pool inventory City of San Diego (USFWS) conservation genetics of the endangered fairy shrimp species *Branchinecta sandiegonensis*. August 12, 2005.

Branchiopod Research Group. 2005. Faunal survey and habitat evaluation: 2003-2004 (Phases IIIA and VB), Marine Corps Air Station Miramar.

Brown, J. W., H. A. Wier, and D. Belk. 1993. New records of fairy shrimp (Crustacea: Anostraca) from Baja California, Mexico. *Southwestern Naturalist*. 38(4):389-390.

Cayan, D., M. Dettinger, I. Stewart, and N. Knowles. 2005. Recent changes towards earlier springs: early sings of climate warming in western North America? U.S. Geological Survey, Scripps Institution of Oceanography, La Jolla, California.

Clark, R. J., J. L. Lincer, and J. S. Clark. 1997. Appendix A: a bibliography on the Burrowing Owl (Speotyto cunicularia). Pp 145-170. In: J. Lincer and K. Steenhof (eds.), The Burrowing Owl, its biology and management including the proceedings of the First International Burrowing Owl Symposium. Raptor Research Report Number 9.

Cole, L. 1995. Deer and coyote use of Eastgate Mall vernal pool area, Miramar NAS, San Diego, California. Unpublished student report.

Collie, N. and E. W. Lathrop. 1976. Chemical characteristics of the standing water of a vernal pool on the San Rosa Plateau, Riverside County, California. In: S. Jain (ed.), *Vernal pools: Their ecology and conservation.* University of California, Davis, Institute of Ecology Publication, No. 9, Davis, California: 27-31.

Constance, L. 1993. Apiaceae in The Jepson Manual, Higher Plants of California, J. C. Hickman (ed.), University of California Press, Berkeley, California.

Davies, C. P. 1996. Population genetic structure of a California endemic Branchiopod, *Branchinecta sandiegonensis*. Master's Thesis, University of San Diego. San Diego, California: 92.

EDAW. 2005. Final Fifth Year Maintenance and Monitoring Report for the A4, AA8, AA9, and AA10 Vernal Pool Groups at Marine Corps Air Station Miramar. Navy Contract #N68711-99-C-6650. Prepared for MCAS Miramar and Southwest Division, Naval Facilities Engineering Command, San Diego, California.

EDAW. 2010. Year 5 Monitoring Report for the State Route 125 South Vernal Pool and Quino Checkerspot Butterfly Habitat Restoration Site (November 2009 - October 2010). December 2010.

Eriksen, C. and D. Belk. 1999. Fairy Shrimps of California's Puddles, Pools, and Playas. Mad River Press, Inc., Eureka, California.

ERS. 2011. San Diego fairy shrimp and Riverside fairy shrimp 2011 dry season surveys for Rhodes Crossing Project, San Diego, California.

Field, C. B., G. C. Daily, F. W. Davis, S. Gaines, P. A. Matson, J. Melack, and N. L. Miller. 1999. Confronting Climate Change in California. Ecological Impacts on the Golden State. A Report of the Union of Concerned Scientists and the Ecological Society of America. 62 pages.

Fugate, M. 1993. *Branchinecta sandiegonensis,* a new species of fairy shrimp (Crustacea: Anostraca) from western North America. Proceedings of the Biological Society of Washington 106:296-304.

Glenn Lukos Associates. 2005. Fourth and Fifth Annual Monitoring Report for Impacts to Areas Within the Jurisdiction of the United States Army Corps of Engineers Pursuant to Section 404 of the Clean Water Act and Pursuant to the Federal Endangered Species Act, San Diego Spectrum, San Diego California. Dated August 26, 2005.

Gonzalez, R. J., J. Drazen, S. Hathaway, B. Bauer, and M. Simovich. 1996. Physiological correlates of water chemistry requirements in fairy shrimps (Anostraca) from Southern California. Journal of Crustacean Biology 16(2):315-322.

Hairston, Jr., N. G. and B. T. De Stasio. 1988. Rate of evolution slowed by a dormant propagule pool. Nature 336:239-242.

Hanes, T. and L. Stromberg. 1998. Hydrology of Vernal Pools on Non-Volcanic Soils in the Sacramento Valley. Pages 38-49. In: C. W. Witham, E. T. Bauder, D. Belk, W. R. Ferren Jr., and R. Ornduff (eds,), Ecology, Conservation, and Management of Vernal Pool Ecosystems - Proceedings from a 1996 Conference, California Native Plant Society, Sacramento, California.

Hathaway, S. A. and M. A. Simovich. 1996. Factors affecting the distribution and co-occurrence of two southern California anostracans (Branchiopoda), *Branchinecta sandiegonensis* and *Streptocephalus woottoni*. *Journal of Crustacean Biology* 16(4):669-677.

HELIX Environmental Planning, Inc. 1998. 1998 Annual report – U.S. Fish and Wildlife protocol level wet season survey for San Diego and Riverside fairy shrimp (*Branchinecta sandiegonensis* and *Streptocephalus woottoni*). Prepared for: Rhodes Property.

HELIX Environmental Planning, Inc. 2000. 2000 Annual report U.S. Fish and Wildlife Service protocol level dry season survey for San Diego and Riverside fairy shrimp (*Branchinecta sandiegonensis* and *Streptocephalus woottoni*).

HELIX Environmental Planning, Inc. (Helix) 2003. Biological technical report.

HELIX Environmental Planning, Inc. (Helix) 2010a. *Rhodes Crossing Impact Summary*

HELIX Environmental Planning, Inc. (Helix) 2010b *Rhodes Crossing Habitat Management Plan*

HELIX Environmental Planning, Inc. (Helix) 2010c. *Rhodes Crossing Vernal/Road Pool Enhancement Plan*

Herzig, A. 1985. Resting eggs - a significant stage in the life cycle of crustaceans *Leptodora kindti* and *Bythotrephes longimanus*. *Verhandlungen der Internationalen Vereinigung fur theorietische und angewandte Limnologie* 22:3088-3098.

Holland, R. F. 1976. The vegetation of vernal pools: A survey. In: S. Jain (ed.), *Vernal pools: Their Ecology and Conservation.* University of California, Davis, Institute of Ecology Davis, California: 9

Holland, R. F. 1988. Vernal pools. In: M.G. Barbour and J. Major (eds.). Terrestrial vegetation of California. California Native Plant. Soc., Special Pub. # 9.

Holland, R. F. and S. Jain. 1977. Vernal pools. In: M. G. Barbour and J. Major (eds.), *Terrestrial Vegetation of California.* John Wiley and Sons, New York.

Holland, R. F. and S. Jain. 1988. Vernal pools. In: M. G. Barbour and J. Major (eds), *Terrestrial Vegetation of California*. California Native Plant Society Special Publication Sacramento, California. 9:515-531.

Holtz, J. 2003. A life history study of the San Diego fairy shrimp (*Branchinecta sandiegonensis*). Master's thesis, University of San Diego. http://www.sandiego.gov/planning/mscp/vpi/pdf/fairyshrimpreport.pdf.

Howell, J. T. 1931. III. The genus *Pogogyne.* Proceedings of the California Academy of Sciences Fourth Series 20: 105-128.

[IPCC] Intergovernmental Panel on Climate Change. 2007. Climate change 2007: the physical science basis. Summary for policymakers. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, IPCC Secretariat, World Meteorological Organization and United Nations Environment Programme, Geneva, Switzerland.

Jennersten, O. 1988. Pollination in *Dianthus deltoides* (Caryophyllaceae): Effects of habitat fragmentation on visitation and seed set.

Keeley, J. E. 1998. CAM photosynthesis in submerged aquatic plants. Botanical Review 64:121-175.

Keeler-Wolf, T., D. R. Elam, K. Lewis, and S. A. Flint. 1998. California vernal pool assessment. Preliminary report. California Department of Fish and Game. Wetlands Inventory and Conservation Unit, Sacramento, California. http://www.dfg.ca.gov/biogeodata/wetlands/pdfs/VernalPoolAssessmentPreliminaryReport.pdf.

Krapu, G. L. 1974. Foods of breeding pintails in North Dakota. Journal of Wildlife Management 38(3):408-417.

Leidy, R. A. and E. G. White. 1998. Toward an ecosystem approach to vernal pool compensation and conservation. In: C. W. Witham, E. T. Bauder, D. Belk, W. R. Ferren, Jr., and R. Ornduff (eds.), Ecology, conservation, and management of vernal pool ecosystems – proceedings from a 1996 conference. California Native Plant Society, Sacramento, California. 285 pp.

Oberbauer, T. A. and J. M. Vanderwier. 1991. The vegetation and geologic substrate association and its effect on development in southern California. In: P.L. Abbott and W. J. Elliott (eds.), Environmental perils San Diego Region. San Diego Association of Geologists.

Marine Corps Air Station Miramar. 2006. Vernal pool GIS data for MCAS Miramar provided to Carlsbad Fish and Wildlife Office in 2007; Carlsbad, California.

Munz, P. A. 1974. A Flora of Southern California. University of California Press, Berkeley, California.

Proctor, V. W. 1964. Viability of crustacean eggs recovered from ducks. Ecology 45:656-658.

Proctor, V. W., C. R. Malone, and V. L. DeVlaming. 1967. Dispersal of aquatic organism: viability of disseminules recovered from the intestinal tract of captive killdeer. Ecology 48:672-676.

Proctor, M., and P. Yeo. 1973. The pollination of flowers. William Collins Sons & Co. Ltd, London.

Rains M. C., G. E. Fogg, T. Harter, R. A. Dahlgren, and R. J. Williamson. 2006. The role of perched aquifers in hydrological connectivity and biogeochemical processes in vernal pool landscapes, Central Valley, California. Hydrological Processes 20:1157-1175.

RECON. 2005. Year 5 Annual Report for Dennery Canyon Vernal Pool, Coastal Sage Scrub, and Mule Fat Scrub Restoration and Preservation Plan. September 7.

Ripley, B. J., J. Holtz, and M. A. Simovich. 2004. Cyst bank life-history model for a fairy shrimp from ephemeral ponds. *Freshwater Biology*. 49:221-231.

Ripley, B. J and M. A. Simovich. 2008. Species richness on islands in time: variation in ephemeral pond crustacean communities in relation to habitat duration and size. *Hydrobiologia*.

San Diego, City of. 2003. Rhodes Crossing final environmental impact report. Project No. 3230, SCH No. 2002121089. December 1

San Diego, City of. 2004. Vernal pool inventory 2002-2003. Planning Department, City of San Diego, California.

Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2009. A manual of California vegetation, 2nd edition. California Native Plant Society, Sacramento, California.

Schaal, B. A. and W. J. Leverich. 1981. The demographic consequences of two-stage life cycles: survivorship and the time of reproduction. *American Naturalist*. 118(1):135-138.

Scheidlinger. 1981. San Diego mesa mint seeds float, which may result in limited dispersal opportunities when pools interconnect or lakes fill their basins in years of greater than average precipitation.

Schiller, J. R., P. H. Zedler, and C. H. Black. 2000. The effect of density-dependent insect visits, flowering phenology, and plant size on seed set of the endangered vernal pool plant *Pogogyne ambramsii* (Lamiaceae) in natural compared to created vernal pools. Wetlands 20:386–396.

Shanney, C., and A. J. Bohanak. *unpublished*

Simovich, M. A. and S. Hathaway. 1997. Diversified bet-hedging as a reproductive strategy of some ephemeral pool anostracans (Branchiopoda). *Journal of Crustacean Biology*. 17(1):38-44

Soulé, M. E. 1986. Conservation Biology: The Science of Scarcity and Diversity. Sinauer and Associates, Inc., Sunderland, Massachusetts: 584.

Swanson, G. A., M. I. Meyer and J. R. Serie. 1974. Feeding ecology of breeding blue-winged teals. Journal of Wildlife Management 38(3):396-407.

Templeton, A. R. and D. A. Levin. 1979. Evolutionary consequences of seed pools. *American Naturalist*. 114(2):232-249.

Thorne, R. F. 1984. Are California's vernal pools unique? In: S. Jain and P. Moyle (eds.), *Vernal Pools and Intermittent Streams*. University of California, Davis Institute of Ecology, Publication No. 28, Davis, California: 1-8

Thorp, R. W. 1990. Vernal pool flowers and host-specific bees. In: D. H. Ikeda and R. A. Schlising (eds.), Vernal Pool Plants: Their Habitat and Biology. Studies from the Herbarium, California State University, Chico No. 8, Chico, California. Pp. 109-122.

Thorp, R. W. 2007. Biology of specialist bees and conservation of showy vernal pool flowers. A review. In: R. A. Schlising and D.G. Alexander (eds.). Vernal pool landscapes. Studies from the Herbarium, # 14. California State University, Chico.

Thorp, R. W. and J. M. Leong. 1995. Native bee pollinators of vernal pool plants. Fremontia 23:3–7.

U.S. Fish and Wildlife Service. 1998. Vernal pools of southern California recovery plan. U.S. Fish and Wildlife Service, Portland, Oregon. 113+ pp.

U.S. Fish and Wildlife Service (Service). 2008. San Diego Fairy Shrimp (*Branchinecta sandiegonensis*) 5-year Review: Summary and Evaluation. Prepared by the Carlsbad Fish and Wildlife Office, Carlsbad, California. 56 pp. + Appendices.

U.S. Fish and Wildlife Service. 2010a. San Diego button-celery 5 year review: Summary and Evaluation. Prepared by the Carlsbad Fish and Wildlife Office, Carlsbad, California. 43 pp. + Appendices.

U.S. Fish and Wildlife Service. 2010b. San Diego mesa mint 5-Year Review: Summary and evaluation. Prepared by the Carlsbad Fish and Wildlife Office, Carlsbad, California. 45 pp. + Appendices.

Venable, D. L. 1989. Modeling the evolutionary ecology of seed banks. In: M. A. Leck, V. T. Parker, and R. L. Simpson (eds.), *Ecology of Soil Seed Banks*. Academic Press, San Diego, California. 67-87.

Western Riverside MSHCP. 2003. Species Account; *Eryngium aristulatum* var. *parishii* pp. 47-51. Western Riverside County Multiple Species Habitat Conservation Plan.

Zedler, P. H. 1987. The ecology of southern California vernal pools: a community profile. U.S. Fish and Wildlife Service. Biological Report 85(7.11). May. 136 pp.

Zedler, P. H. and C. Black. 1992. Seed Dispersal by a Generalized Herbivore: Rabbits as Dispersal Vectors in a Semiarid California Vernal Pool Landscape. Am. Midl. Nat. 128:1-10.

Personal Communications

Mason, G. July 24, 2012. Electronic correspondence regarding the locations and number of vernal pools on the Rhodes property, San Diego, California.

Appendix 1

Date	Type	Who	Issue
1998	Report	Helix Environmental(Consultant to Mr. Rhodes; Helix) – U.S. Fish and Wildlife USFWS (USFWS)	Endangered Species Act (ESA)10(a) permit reporting – San Diego Fairy Shrimp (SDFS) – wet season sampling
June 9, 2000	Report	Helix - USFWS	ESA 10(a) permit reporting - SDFS
June 8, 2001	Site Visit	USFWS, City of San Diego (City)	
June 22, 2001	Letter	City – Wildlife Agencies (WA) [Collectively USFWS and California Department of Fish and Game (CDFG)]	Requesting guidance on how to map resources, permit project, address the Vista Allegre portion of the project (i.e., southern 2 parcels), buffers
Aug 28, 2001	Letter	WA to City	Preliminary comments on project – need for ESA 10(a) permit, mapping of offsite watersheds, more San Diego mesa mint locations, 100-foot buffer from edge of watershed
Dec, 2002	Notice of Preparation (NOP) for Draft Environmental Impact Report (DEIR)	City	
Jan 22, 2003	Letter	WA to City	Comments on NOP
Aug 1, 2003	DEIR		
Sep 19, 2003	Letter	WA to City	Comments on DEIR – indirect effects, onsite configuration – recommended 2 large areas of conservation
Dec, 2003	Final EIR (FEIR)		
Dec 16, 2003	Letter	WA to Planning Commission	Comments on FEIR – again requesting biologically superior alternative
Jan 30, 2004	Meeting	USFWS/City	Camino del Sur relationship to Rhodes development– discussion about whether to include the road in the project
June 21, 2004	Letter	USFWS to City	Raised concerns regarding indirect effects to vernal pool resources from the project as proposed

Oct 12, 2004	Letter	City to USFWS	Sorry we can't help – disagree that indirect effects are significant – give us more info
Dec 2, 2004	Phone call	USFWS and Corps of Engineers (Corps)	Discussion regarding status of Corps permitting – Corps stated that use of Nationwide Permit (NWP) was authorized because the applicant requested such, but the Corps did not respond within the legal timeframes
Jan 4, 2005	Letter	USFWS to City	In response to request for more information regarding indirect impact assessment and preserve design considerations for vernal pools, we provided another letter to the City
Jan 6, 2005	Email	Helix to USFWS	Informing USFWS that Corps defaulted on NWP, no further action – no access to the site is authorized
Jan 6, 2005	Email	Corps to Helix	Disagree with the "default" strongly advising them that they may have ESA issues – need to verify delineation, requesting a site visit
Jan 18, 2005	City Permit		Plan development approved by City Council and recorded
Jan 21, 2005	Email	Helix to Corps	Disagreeing – asserting that their NWP 39 is valid
Jan 24, 2005	Email	Corps to Helix	Same as Jan 6
March 23, 2005	Letter	Corps to Mr. Rhodes	Concurring with NWP 39 (by default) but with a reminder that no impacts to vernal pools or listed species authorized
October 13, 2006			Injunction issued by Judge Brewster in the City of San Diego vernal pool lawsuit.
Dec 12, 2007	Federal Register		San Diego fairy shrimp critical habitat designated on the site
Jan 22, 2008	Letter	Corps to Mr. Rhodes	Suspended NWP due to need to consult on project – due to designation of critical habitat
Jan 23, 2008	Letter	Corps to USFWS	Request for consultation to address potential impacts to critical habitat
March 20, 2008	Letter	USFWS to Corps	Initiation response and request for additional info and a site visit

March 24, 2008	Site Visit		Vista Allegre now part of project, Mr. Rhodes will provide documentation – need to look at critical habitat – Helix will provide response to USFWS request for info
April 22, 2008	Meeting	At USFWS	Discussed mapping of critical habitat
May 22, 2008	Letter	Helix to USFWS	Request for consideration that some areas on the project site lack primary constituent elements of critical habitat
July 11, 2008	Meeting	At USFWS	Discussed Helix's proposed assessment of impacts to critical habitat; Mr. Rhodes willing to delete 6 lots, but not willing to redesign project as recommended by USFWS because of additional California Environmental Quality Act (CEQA)requirements – USFWS recommended working with City to include Camino del Sur project, help increase conservation on-site (e.g. have them buy lots 177-178)
Aug 7, 2008	Meeting	At USFWS	Discussed brush management, access, fencing, isolated pools cannot be used for mitigation, City mitigation for Camino del Sur (Mr. Rhodes did not want to lose any lots)
Sept 10, 2008	Email	City to USFWS and Corps	City not willing to mitigate the impacts to vernal pools from construction of Camino del Sur at the Rhodes property because CEQA review completed using a different site; still looking into whether the road could be included in the biological opinion for Mr. Rhodes.
Oct 10, 2008	Letter	Helix to USFWS and Corps	Follow up from previous 3 meetings – willing to remove 6 lots, and nothing more – will mitigate isolated pools at a 1:1 ratio – do not want to include Camino del Sur in biological opinion – request that agencies support removal from injunction and asked that USFWS write a "no effect" letter regarding listed vernal pool species or an expedited section 7.

Oct 16, 2008	Email	USFWS to Helix	Acknowledged letter and asked for information requested in Aug 7 meeting – brush management, fencing, critical habitat, acreage of road footprint, project description.
Nov 14, 2008	Letter	Sheppard Mullin Law Firm to USFWS	Responding to information requested in Aug 7 meeting
July 27, 2009	Email	Corps to USFWS	Responding to a phone call from USFWS – status of Corps permit applications for Camino del Sur and Rhodes project – attached January 22, 2008, letter from the Corps to Mr. Rhodes suspending the NWP for the Rhodes project.
Sept 11, 2009	Letter	Helix to CDFG	Request for a 1602 Streambed Alteration Agreement
Sept 11, 2009	Letter	Helix to Corps	Request for Authorization under Nationwide Permit 29
Nov 4, 2009	Meeting	Corps, USFWS, Helix, and Applicant (Mr. Rhodes and his lawyer)	Met to discuss status of consultation – Corps will send new request for initiation
Nov 9, 2009	Letter	Corps to USFWS	Request for consultation for impacts to gnatcatcher, SDFS and critical habitat
Dec 9, 2009	Letter	Helix to USFWS	Supporting materials for Corps request for consultation
Feb 24, 2010	Letter	USFWS	USFWS letter to Corps requesting more info – relationship of consultation to Camino del Sur Road
April 14, 2010	Email	Helix to USFWS and Corps	Revised Impact Summary
April 15, 2010	Email	Corps to Helix	Asking for clarification on what happens to Mr. Rhodes project if Camino del Sur is not built and requesting an updated wetland delineation.
April 21, 2010	Email	USFWS to Helix and Corps	Follow up regarding Camino del Sur – how impacts to watershed of pools within road right-of-way will be avoided and request for a figure
April 28, 2010	Email	Helix to USFWS and Corps	Response to previous emails – single family houses can be built
June 7, 2010	Email	Helix to Corps	Providing wetland delineation
June 30, 2010	Letter	Sheppard Mullin to USFWS	Letter requesting we expedite consultation
July 27, 2010	Email	Mr. Rhodes to USFWS	Follow up to make sure USFWS received June 30 letter

July 28, 2010	Email	Corps to USFWS	Update regarding their site visit, verification of wetland delineation – found more wetlands so need to update report and also requested cultural resources report and conceptual mitigation plan as neither have been provided
Aug 11, 2010	Letter	Helix to USFWS	Helix assessment (map) of areas supporting primary constituent elements of SDFS critical habitat
Aug 12, 2010	Email	Helix to USFWS	Provided Habitat Management Plan, vernal pool enhancement plan, updated impact summary, wetland delineation report, copies of City memos
Aug 13, 2010	Meeting	USFWS/Corps/Applicant	USFWS committed to review info provided, need to talk internally about critical habitat impacts, Mr. Rhodes will send memo on Camino del Sur – USFWS will try to compete Biological Opinion within 60 days of receiving requested info.
Aug 20, 2010	Email	USFWS to Corps	Follow up to meeting requesting more info
Sept 15, 2010	Email	Corps to USFWS	Response to USFWS comments dated Aug 20, 2010
Dec 29, 2010	Corps Public Notice		
Jan 21, 2011	Site visit	Corps, USFWS, and Helix	Found 6 more vernal pools
Oct 6, 2011	Letter	Corps to USFWS	Letter responding to Feb 24, 2010, USFWS letter requesting information for consultation
Jan 13, 2012	Email	Corps to USFWS	New impact map showing 6 new vernal pools
Feb 14, 2012	Email	Corps to USFWS	Request for written confirmation of timing of USFWS biological opinion – draft by July 27, 2012, Final by August
Feb 14, 2012	Email	USFWS to Corps	Agree to work with Corps to meet timeframes.
March 2012	Emails	USFWS and Alden	Regarding figures of project, cross sections, project description
March 2012	Emails	USFWS and City	Agreeing to address biological impacts from re-design in CEQA document for vernal pool Habitat Conservation Plan (HCP) at no cost to Mr. Rhodes.

May 30, 2012	Meeting	Corps, USFWS, Alden	USFWS walked through alternatives – sell area 2, redesign project to gain back isolated pools, City vernal pool HCP CEQA document can address additional impacts – Corps agreed to send project description.
June, 18, 2012	Email	Corps to USFWS	Notes from May 30, 2012, meeting. USFWS draft biological opinion by the end of July 2012 contingent on Corps providing USFWS updated project description accurately reflecting the existing acreage of vernal pools within the project site and conservation measures (from CEQA document) the Corps agrees to implement and enforce. Discussion on possible negative outcome of biological opinion if Applicant cannot show that impacts to critical habitat are being functionally offset. As of June 25, 2012, this information had not been provided to USFWS.
July 18, 2012	Meeting	Corps, USFWS, Applicant	Meeting to discuss additional conservation measures to address USFWS outstanding concerns that the project as proposed did not meet the no-jeopardy/no adverse modification standard.
July 20, 2012	Meeting	Corps, USFWS, Applicant	Meeting to discuss status of potential buy-out of Development Area 2A and update from City of San Diego regarding facilities and road issues of concern.
July 24-26, 2012	Emails	Corps, USFWS, Alden	Multiple emails to clarify project description and technical details
July 27, 2012	Email	USFWS to Corps and Mr. Rhodes	Draft biological opinion provided
July 27, 2012	Email	Corps to USFWS	Acknowledgement of receipt of draft biological opinion
August 27, 2012	Email	USFWS to Corps and Mr. Rhodes	Checking on status of comments
August 27, 2012	Email	Corps to USFWS and Mr. Rhodes	Corps and applicant have reviewed biological opinion, will be meeting and will provide comments by August 31
August 27, 2012	Email	USFWS to Corps and Mr. Rhodes	Requesting to be included in the proposed meeting.

September 10, 2012	Email	Corps to USFWS	Corps comments on draft biological opinion
September 10, 2012	Meeting	USFWS and Corps staff	Service requested copy of Mr. Rhodes comments on draft biological opinion, clarified the figure provided with comments on draft biological opinion, and discussed potential for Corps to allow vernal pool restoration to offset wetland impacts
September 10, 2012	Email	Corps to USFWS	Mr. Rhodes global comments on draft biological opinion provided
September 11, 2012	Email	Corps to USFWS	Language provided for proposed wetland mitigation requirement to offset Corps jurisdictional features with vernal pool habitat restoration.

Appendix 2

Pool Number	Habitat	San Diego fairy shrimp	San Diego button celery	San Diego mesa mint	Area (sq ft)	Acres	Indirect Impacts	Critical Habitat
1	Vernal Pool	Y			382	0.0088	Y	Y
2	Vernal Pool	Y			583	0.0134	Y	Y
3	Road Pool	Y			122	0.0028	Y	N
4	Road Pool	Y			94	0.0022	Y	N
5	Road Pool	Y			674	0.0155	Y	N
6	Road Pool	Y			117	0.0027	Y	N
7	Vernal Pool	Y			353	0.0081	Y	Y
8	Vernal Pool				500	0.0115	Y	Y
9	Vernal Pool	Y	Y		357	0.0082	Y	Y
10	Vernal Pool	Y			2728	0.0626	Y	Y
11	Vernal Pool	Y			208	0.0048	Y	Y
12	Vernal Pool	Y			314	0.0072	Y	Y
13	Vernal Pool	Y			706	0.0162	Y	Y
14	Vernal Pool	Y	Y		629	0.0144	N	Y
15	Vernal Pool				30	0.0007	Y	Y
16	Vernal Pool				39	0.0009	Y	Y
17	Vernal Pool				209	0.0048	Y	Y
18	Road Pool	Y			56	0.0013	Y	Y
19	Road Pool	Y			29	0.0007	Y	Y
20	Road Pool	Y			46	0.0011	Y	Y
21	Vernal Pool	Y	Y	Y	1260	0.0289	Y	Y
22	Vernal Pool	Y			408	0.0094	Y	Y
23	Vernal Pool	Y			768	0.0176	N	Y
24	Vernal Pool				545	0.0125	N	Y
25	Vernal Pool	Y			314	0.0072	N	Y
26	Vernal Pool		Y		303	0.0070	N	Y
27	Vernal Pool				272	0.0063	N	Y
28	Vernal Pool	Y			28	0.0006	N	Y
29	Vernal Pool				92	0.0021	N	Y
30	Vernal Pool	Y			159	0.0037	Y	Y
31	Vernal Pool				544	0.0125	Y	Y
32	Vernal Pool	Y			52	0.0012	Y	Y
33	Road Pool	Y			231	0.0053	Y	Y
34	Vernal Pool	Y			323	0.0074	Y	Y
35	Vernal Pool	Y			685	0.0157	Y	Y
36	Vernal Pool	Y			543	0.0125	Y	Y
37	Vernal Pool	Y			572	0.0131	Y	Y
38	Vernal Pool	Y			221	0.0051	Y	Y
39	Vernal Pool				139	0.0032	Y	Y
40	Vernal Pool				96	0.0022	Y	Y
43	Vernal Pool	Y			50	0.0012	Y	Y
44	Vernal Pool	Y			26	0.0006	Y	Y
45	Vernal Pool				79	0.0018	Y	Y
46	Vernal Pool				61	0.0014	Y	Y
47	Vernal Pool	Y			138	0.0032	Y	Y
48	Vernal Pool	Y			124	0.0028	Y	Y
50	Vernal Pool				34	0.0008	Y	Y
51	Vernal Pool				220	0.0051	Y	Y
52	Vernal Pool		Y		407	0.0093	Y	Y
53	Vernal Pool				145	0.0033	Y	Y
54	Vernal Pool				143	0.0033	Y	Y
55	Vernal Pool	Y		Y	204	0.0047	Y	Y
56	Vernal Pool	Y		Y	103	0.0024	Y	Y
57	Vernal Pool				94	0.0022	N	Y
58	Vernal Pool				184	0.0042	Y	Y
59	Vernal Pool			Y	283	0.0065	Y	Y
60	Vernal Pool	Y			127	0.0029	Y	Y
61	Vernal Pool	Y			60	0.0014	Y	Y
62	Vernal Pool				42	0.0010	Y	Y

Appendix 2

Pool Number	Habitat	San Diego fairy shrimp	San Diego button celery	San Diego mesa mint	Area (sq ft)	Acres	Indirect Impacts	Critical Habitat
63	Vernal Pool	Y			96	0.0022	Y	Y
64	Vernal Pool	Y			197	0.0045	N	Y
65	Vernal Pool	Y			37	0.0008	N	Y
66	Vernal Pool	Y	Y	Y	292	0.0067	N	Y
67	Vernal Pool				103	0.0024	N	Y
68	Vernal Pool	Y			136	0.0031	N	Y
69	Vernal Pool	Y	Y	Y	416	0.0096	N	Y
70	Vernal Pool	Y			325	0.0075	Y	Y
71	Vernal Pool	Y			101	0.0023	Y	Y
72	Vernal Pool	Y			146	0.0034	Y	Y
73	Vernal Pool	Y			65	0.0015	N	Y
74	Vernal Pool	Y			29	0.0007	N	Y
75	Vernal Pool	Y			91	0.0021	N	Y
76	Vernal Pool	Y			99	0.0023	N	Y
77	Vernal Pool				72	0.0017	N	Y
78	Vernal Pool				89	0.0020	N	Y
79	Vernal Pool				84	0.0019	N	Y
80	Vernal Pool				191	0.0044	N	Y
81	Vernal Pool	Y			444	0.0102	N	Y
82	Vernal Pool				62	0.0014	N	Y
83	Vernal Pool	Y			348	0.0080	N	Y
84	Vernal Pool				257	0.0059	N	Y
85	Vernal Pool	Y			249	0.0057	N	Y
86	Vernal Pool	Y			331	0.0076	N	Y
87	Vernal Pool				41	0.0009	Y	Y
88	Vernal Pool				184	0.0042	Y	Y
89	Vernal Pool	Y			157	0.0036	Y	Y
90	Vernal Pool				362	0.0083	Y	Y
91	Vernal Pool				59	0.0013	N	Y
92	Vernal Pool	Y			586	0.0134	N	Y
93	Vernal Pool	Y			31	0.0007	N	Y
94	Vernal Pool	Y			918	0.0211	N	Y
95	Vernal Pool				172	0.0039	N	Y
96	Vernal Pool	Y			879	0.0202	Y	Y
97	Vernal Pool	Y			359	0.0082	N	Y
98	Vernal Pool				38	0.0009	N	Y
99	Vernal Pool				254	0.0058	N	Y
100	Vernal Pool				133	0.0031	N	Y
101	Vernal Pool	Y			13	0.0003	N	Y
102	Vernal Pool				62	0.0014	N	Y
103	Vernal Pool	Y			335	0.0077	N	Y
104	Vernal Pool	Y			13	0.0003	N	Y
105	Vernal Pool	Y			136	0.0031	N	Y
106	Vernal Pool	Y			76	0.0018	N	Y
107	Vernal Pool				15	0.0003	N	Y
108	Vernal Pool				28	0.0006	N	Y
109	Vernal Pool				64	0.0015	N	Y
110	Vernal Pool				54	0.0012	Y	Y
111	Vernal Pool	Y			251	0.0058	Y	Y
112	Vernal Pool	Y			179	0.0041	Y	Y
113	Vernal Pool				502	0.0115	Y	Y
114	Vernal Pool				66	0.0015	Y	Y
115	Vernal Pool				78	0.0018	Y	Y
116	Vernal Pool	Y			418	0.0096	Y	Y
117	Vernal Pool				112	0.0026	Y	Y
118	Vernal Pool				102	0.0023	Y	Y
119	Vernal Pool	Y			236	0.0054	Y	Y
120	Vernal Pool				205	0.0047	N	Y
121	Vernal Pool				246	0.0056	N	Y

Appendix 2

Pool Number	Habitat	San Diego fairy shrimp	San Diego button celery	San Diego mesa mint	Area (sq ft)	Acres	Indirect Impacts	Critical Habitat
122	Vernal Pool				55	0.0013	Y	Y
123	Vernal Pool				52	0.0012	Y	Y
124	Vernal Pool				30	0.0007	Y	Y
125	Vernal Pool				54	0.0012	Y	Y
126	Vernal Pool				61	0.0014	Y	Y
127	Vernal Pool				93	0.0021	Y	Y
128	Vernal Pool				37	0.0008	Y	Y
129	Vernal Pool				145	0.0033	N	Y
130	Vernal Pool				27	0.0006	N	Y
131	Vernal Pool				23	0.0005	Y	Y
132	Vernal Pool				32	0.0007	Y	Y
133	Vernal Pool				96	0.0022	Y	Y
134	Vernal Pool				239	0.0055	Y	Y
135	Vernal Pool				132	0.0030	Y	Y
136	Vernal Pool				50	0.0011	Y	Y
137	Vernal Pool				28	0.0006	Y	Y
138	Vernal Pool				46	0.0011	Y	Y
139	Vernal Pool				50	0.0011	Y	Y
140	Vernal Pool				28	0.0006	Y	Y
141	Vernal Pool	Y			112	0.0026	Y	Y
142	Vernal Pool				20	0.0004	Y	Y
143	Vernal Pool				38	0.0009	Y	Y
144	Vernal Pool				20	0.0004	Y	Y
145	Vernal Pool				28	0.0006	N	Y
146	Vernal Pool				138	0.0032	Y	Y
147	Vernal Pool				48	0.0011	Y	Y
148	Vernal Pool	Y			153	0.0035	N	Y
149	Vernal Pool				78	0.0018	Y	Y
150	Vernal Pool				63	0.0015	N	Y
151	Vernal Pool				84	0.0019	N	Y
152	Vernal Pool				20	0.0004	N	Y
153	Vernal Pool				99	0.0023	N	Y
154	Vernal Pool				28	0.0006	N	Y
155	Vernal Pool	Y			11	0.0003	Y	Y

Appendix 3

Information and Conditions for Vernal Pool Enhancement/Restoration Plans

a. Implementation of the enhancement/restoration will be conducted under the direction of a qualified biologist (vernal pool restoration specialist) with at least three years of vernal pool restoration experience holding a valid Service permit for identifying fairy shrimp, to be approved by the Service;

b. To avoid impacts to these vernal pools, all conservation measures required at the project construction site to avoid and minimize impacts to adjacent vernal pools and their watersheds will also be implemented at the restoration site and thus specified in the restoration plan.

c. All extant vernal poolsand their watersheds will be enhanced as appropriate to achieve the same success criteria as the restored pools and surrounding uplands. Enhancement activities will include addition of vernal pool plant species and addition of coastal sage scrub/native grassland plant species in the surrounding uplands. All plant material used for enhancement will be collected from the Del Mar Mesa area;

d. All enhancement/restoration activities will commence the first summer-fall season prior to or concurrently with the initiation of project impacts;

e. All final specifications and topographic-based grading, planting and watering plans will have 0.5-foot contours for the vernal pools, watersheds and surrounding uplands (including adjacent mima mounds) at the restoration sites. The basis for this fine-scale resolution is the shallow depth (i.e., several inches) of the vernal pools that will be restored. The grading plans will also show the watersheds of extant vernal pools, and overflow pathways that hydrologically connect the restored pools in a way that mimics natural vernal pool complex topography/hydrology;

f. A hydraulic analysis that shows each proposed vernal pool and its watershed, and hydrologic connection between the pools. The restored pools and their watersheds will not impact the watersheds of any extant pools;

g. Inoculum from vernal pools on Del Mar Mesa will be used for enhancement and restoration. The plan will identify any proposed donor pools. No more than 10 percent of the basin area of any donor pool will be used for collection of inoculum. Collection of inoculum from Service approved donor pools will be done when the donor pools are dry to avoid damaging or destroying fairy shrimp cysts. Hand tools (i.e., shovels and trowels) will be used to remove the first two inches of soil from the pools. Whenever possible, the trowel will be used to pry up intact chunks of soil, rather than loosening the soil by raking and shoveling which can damage the cysts. The soil from each pool will be stored individually in labeled boxes that are adequately ventilated and kept out of

direct sunlight in order to prevent the occurrence of fungus or excessive heating of the soil, and stored off-site at an appropriate facility for vernal pool inoculum. Inoculum from different source pools will not be mixed for seeding any restored pools. The collected soils will be spread out and raked into the bottoms of the restored pools. Topsoil and plant materials salvaged from the upland habitat areas to be impacted will be transplanted to, and/or used as a seed/cutting source for, the upland habitat restoration;

h. Inoculum and planting will not be installed until the Service has approved of habitat restoration site grading. All planting will be installed in a way that mimics natural plant distribution, and not in rows. Inoculum will not be introduced into the restored pools until after they have been demonstrated to retain water for the appropriate amount of time to support San Diego fairy shrimp [i.e., at least 30 days (Hathaway and Simovich 1996, Ripley et. al. 2004)]. Inoculum will be placed in a manner that preserves, to the maximum extent possible, the orientation of the fairy shrimp cysts within the surface layer of soil (e.g., collected inoculum will be shallowly distributed within the pond so that cysts have the potential to be brought into solution upon inundation);

i. Plant palettes (species, size and number/acre) and seed mix (species and pounds/acre) will be included in the restoration/enhancement plan. The plant palette will include native species specifically associated with the on-site habitat type(s). If native plant species cannot be obtained from Del Mar Mesa, the Service must approve the donor site. The source and proof of local origin of all plant material and seed will be provided;

j. Native plants and animals will be established within the enhanced/ restored pools, their watersheds and surrounding uplands. This can be accomplished by redistributing topsoil containing seeds, spores, bulbs, eggs, and other propagules from affected pools and adjacent vernal pool and upland habitats; by the translocation of propagules of individual species; and by the use of commercially available native plant species. Any vernal pool inoculum or plant material from an off-site source must be approved by the Service. Topsoil and plant materials from the native habitats to be affected on-site will be applied to the watersheds of the enhanced and restored pools to the maximum extent practicable. Exotic weed control will be implemented within the enhancement/restoration areas to protect and enhance habitat remaining on site;

k. In the event that natural rain is inadequate to support plant establishment, artificial watering of the enhanced/restored pools and their watersheds may be done upon approval by the Service. Any artificial watering will be done in a manner that prevents ponding in the pools. Any water to be used will be identified and documented to be free of contaminants that could harm the pools;

l. All weeding within and immediately adjacent to the enhanced/restored pools will be performed by hand. No herbicide will be used within or adjacent to the restored and preserved vernal pools. Herbicide may be used in the uplands adjacent to pools only as approved by the Service. All workers conducting weed removal activities will be

educated to distinguish between native and non-native species so that local native plants are not inadvertently killed by weed removal activities;

m. A final implementation schedule that indicates when all vernal pool impacts, as well as vernal pool enhancement/restoration grading and planting will begin and end. A temporal loss of vernal pools should be avoided by initiating the restoration work prior to or concurrent with impacts. This will minimize the length of time inoculum is kept in storage and ensure that there is appropriate habitat to translocate it to.

n. Five years of monitoring and success criteria for vernal pool and upland habitat enhancement/restoration areas that includes quantitative hydrological, vegetation transects, viable cyst, hatched fairy shrimp, and gravid female measurements, and complete floral and fauna inventories, and photographic documentation. To minimize impacts to the vernal pool's soil surface during monitoring, cobbles should be oriented within the restored vernal pools to serve as stepping stone;

o. The restored vernal pools will support San Diego fairy shrimp. Restoration success for San Diego fairy shrimp will be determined by measuring the ponding of water, and density of viable cysts, hatched fairy shrimp, and gravid females, within the restored pools. Water measurements shall be taken in the restored pools to determine the depth, duration and quality (e.g., pH, temperature, total dissolved solids, and salinity) of ponding. Dry samples shall be taken in the restored pools to determine the density of viable cysts in the soils. Wet samples shall also be taken in the restored pools to determine the density of hatched fairy shrimp and gravid females. The pools must pond for a period of time similarly to reference vernal pools during an average rainfall year and at an appropriate depth and quality to support fairy shrimp. The hatched fairy shrimp, and gravid female density of the restored pools must not differ significantly ($p < 0.05$) from reference pools for, at least, 3 wet seasons before a determination of success can be made. The average viable cyst density of the restored pools must not differ significantly ($p < 0.05$) from reference pools at the end of the monitoring period before a determination of success can be made. Vernal pools selected as reference or control pools for evaluating restoration success shall be identified and described in the restoration plan. Alternate methods of determining success may be used upon approval by the Service;

p. Monitoring and success criteria for vernal pool and upland enhancement/restoration areas will include: coastal sage scrub/native grassland species richness and cover criteria for all five years of monitoring; 0 percent cover for weed species categorized as High or Moderate in the Cal-IPC Invasive Plant Inventory and relative cover of all other weed species is no more than 5 percent and 10 percent coverage in the pools basins and watersheds, respectively, for other exotic/weed species for all five years of the monitoring period. Container plant survival will be 80 percent of the initial plantings for the first five years. At the first and second anniversary of plant installation, all dead plants will be replaced unless their function has been replaced by natural recruitment.

The method used for monitoring will be described and a map of proposed sampling locations will be included. Photo points shall be used for qualitative monitoring and stratified-random sampling shall be used for all quantitative monitoring;

q. Verification that enhancement/restoration of the vernal pool habitat is complete will require written sign-off by the Service. If a performance criterion is not met for any of the restored/enhanced vernal pools or upland habitat in any year, or if the final success criteria are not met, the project proponent will prepare an analysis of the cause(s) of failure and, if deemed necessary by the Service, propose remedial actions for approval. If any of the enhanced/restored vernal pools or upland habitat have not met a performance criterion during the initial 5-year period, the project proponent's maintenance and monitoring obligations will continue until the Service deems the enhancement/restoration successful, or contingency measures must be implemented. Enhancement/restoration will not be deemed successful until at least two years after any significant contingency measures are implemented, as determined by the Service;

r. Annual reports will be submitted to the Service by December 1 of each year that assess both the attainment of yearly success criteria and progress toward the final success criteria. The reports will also summarize the project's compliance with all Service biological opinion conservation measures and terms and conditions;

Appendix B

Clean Water Act permits for Rhodes Crossing

Corps NWP for Rhodes Crossing (as amended)

SPL-2009-00733-MBS

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, U.S. ARMY CORPS OF ENGINEERS
5900 LA PLACE COURT, SUITE 100
CARLSBAD, CALIFORNIA 92008

December 12, 2014

Keith Rhodes
Rhodes and Grus Investments
4495 Point Loma Avenue
San Diego, California 92107

SUBJECT: Nationwide Permit Modification of Rhodes Crossing Development (Permit No. SPL-2009-00733-MBS)

Dear Mr. Rhodes:

Your request dated May 29, 2014 to amend your Department of the Army permit for the Rhodes Crossing Development (Permit No. SPL-2009-00733-MBS), which authorized you to discharge fill into 0.22 acre of waters of the U.S. in association with your project located in the northern portion of the City of San Diego, west of Interstate 15, at the current southern terminus of Carmel Mountain Road, San Diego County, California is authorized.

Under the provisions of 33 Code of Federal Regulations 330.5, special conditions 2, 4, and 5 of your April 5, 2013 nationwide permit verification are hereby modified. Changes below are shown in underline/strikeout format to indicate added and removed language.

2. ~~Prior to initiation of work in waters of the U.S.,~~ The Permittee shall record a Conservation Easement (CE), in a form approved by the Corps, which shall run with the land, obligating the Permittee, its successors and assigns to protect and maintain the 6.96-acre Restoration Areas 6 and 7 (as shown in attached Figure 3) as natural open space in perpetuity. The CE must include a 3rd party easement holder qualified to hold easements pursuant to California Civil Code section 815.3 and Government Code section 65965. The Permittee must provide monies in the form of an endowment (endowment amount to be determined by Property Analysis Record or similar methodology) for the purposes of fulfilling the 3rd party easement holder's responsibilities under the CE. The CE shall preclude establishment of fuel modification zones, paved public trails, drainage facilities, walls, maintenance access roads and/or future easements, except as provided in the Project Description (described herein). Further, to the extent practicable, any such facilities outside the CE shall be sited to minimize indirect impacts on the avoided, created, restored and enhanced wetland and non-wetland waters of the U.S. Prior to work in waters of the U.S., the Permittee shall submit a complete draft CE package to the Corps Regulatory Division for review. No work in waters of the U.S. is authorized until the Permittee receives, in writing (by letter or e-mail), Corps Project Manager verification that the draft CE package is complete. The Permittee shall receive written approval (by letter or e-mail) from the Corps of this CE prior to it being executed and recorded. ~~A recorded copy of the CE shall be furnished to the Corps prior to initiation of work in waters of the~~

~~U.S~~ No later than 30 calendar days after receiving Corps Regulatory Division approval of the final draft CE, the CE shall be executed and a recorded copy furnished to the Corps Regulatory Division.

4. The Permittee shall provide monies in the form of a non-wasting endowment [endowment amount to be determined by Property Analysis Record (PAR) or similar methodology] for review and approval by the Corps ~~prior to initiating work in waters of the U.S.~~ for the purpose of fulfilling the long-term responsibilities including maintenance activities (i.e. invasive non-native plant species and trash removal, restoration of areas disturbed or destroyed due to off-road vehicle use, or other trespassing or vandalism, repairs and maintenance to fencing and signage). The draft PAR shall be submitted to the Corps for review prior to work in waters of the U.S. Within 14 days of receipt of the Corps' revisions to the draft PAR, the Permittee shall make the necessary revisions (determined by the Corps) and submit the final PAR to the Corps for review and approval. The Permittee shall provide documentation verifying the full funding of the non-wasting endowment within 30 days of Corps approval of the final PAR.

5. Prior to impacts to waters of the U.S., the Permittee shall post financial assurance ("financial assurance") in an amount and form approved by the Corps. The purpose of this financial assurance is to guarantee the successful implementation, maintenance and monitoring of the vernal pool re-establishment and enhancement. Our preferred form of financial assurance is a letter of credit. For letters of credit, the credit must be issued by a federally insured financial institution rated investment grade or higher. For performance bonds, the corporate surety must appear on the Department of Treasury Circular 570, Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and Acceptable Reinsuring Companies. For a current list of Treasury-authorized companies, write or call the Surety Bond Branch, Financial Management Services, Department of the Treasury, Washington DC 20227; (202) 874-6850 or at the following website: http://www.fms.treas.gov/c570/c570.html. Land replacement costs (i.e., $230,000.00) shall be released once the CE is executed and a recorded copy is furnished to the Corps Regulatory Division and the compensatory mitigation site demonstrates hydrologic patterns similar to those of the control pools during two normal rain years. The remainder of the financial assurance shall be released once the compensatory mitigation has been determined by the Corps to be successful in accordance with its performance standards and special conditions of this permit. ~~Alternatively, the Corps will accept an irrevocable letter of credit in the same amount in lieu of a Performance Bond. The terms of the irrevocable letter of credit are subject to Corps approval.~~

The terms and conditions of Permit No. SPL-2009-00733-MBS, except as changed herein, remain in full force and effect.

Thank you for participating in the Regulatory Program. If you have any questions, please contact me at 760-602-4836 or via e-mail at Meris.Bantilan-Smith@usace.army.mil. Please complete the customer survey form at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey, which would help me to evaluate and improve the regulatory experience for others.

Sincerely,

Meris Bantilan-Smith
Senior Project Manager, South Coast Branch

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS LOS ANGELES DISTRICT
REGULATORY DIVISION, CARLSBAD FIELD OFFICE
6010 HIDDEN VALLEY ROAD, SUITE 105
CARLSBAD, CALIFORNIA 92011

REPLY TO
ATTENTION OF

April 5, 2013

Regulatory Division

Mr. Keith B. Rhodes
Rhodes and Grus Investments
4495 Point Loma Avenue,
San Diego, California 92107

DEPARTMENT OF THE ARMY NATIONWIDE PERMIT VERIFICATION

Dear Mr. Rhodes:

I am responding to your request (SPL-2009-00733-MBS) for a Department of the Army (DA) permit. Your proposed project, Rhodes Crossing Development, would result in a discharge of fill material into waters of the United States (U.S.). Therefore, pursuant to section 404 of the Clean Water Act (33 U.S.C. 1344; 33 C.F.R. parts 323 and 330), your proposed project requires a DA permit. The Rhodes Crossing Development Project is located in the northern portion of the City of San Diego, west of Interstate 15, at the current southern terminus of Carmel Mountain Road, San Diego County, California (as shown on Figure 1).

I have determined construction of the Rhodes Crossing Development complies with Nationwide Permit (NWP) No. 29, Residential Developments, and NWP No. 39, Commercial and Institutional Developments, if conducted as described in your application.

Specifically, and as shown on the attached figures, you are authorized to conduct the following regulated activities:

Permanently impact 0.22 acre of waters of the U.S. consisting of 0.05 acre of wetland and 0.17 acre of non-wetland waters (0.08 acre ephemeral stream and 0.09 acre intermittent stream). Project permanent impacts are associated with the construction of the Rhodes Crossing Development which is comprised of 150-single-family units; 584 multi-family units; 273,855 square feet of self-storage; 7,200 square feet of community commercial and 250,000 square feet of regional commercial activities. The regulated work consists of the following:

- *Drainage A*: Commercial development will permanently impact 0.01 acre of wetland waters of the U.S. in Drainage A.
- *Drainage B*: Commercial development will permanently impact 0.01 acre of non-wetland waters of the U.S. in Drainage B.
- *Drainage C*: Commercial development will permanently impact 0.04 acre of non-wetland waters of the U.S. in Drainage C.

- *Drainage D*: Residential development will permanently impact 0.03 acre of wetland waters of the U.S. and 0.06 acre of non-wetland waters of the U.S. in Drainage D.
- *Drainage E*: Residential development will permanently impact 0.01 acre of wetland waters of the U.S. and 0.02 acre of non-wetland waters of the U.S. within drainage E.
- *Drainage F*: Park development will permanently impact 0.04 acre of non-wetland waters of the U.S. in Drainage F.

Table 1. Summary of Impacts to Waters of the U.S. by Drainage

Project Drainage	Permanent Impacts	
	Wetland (acres)	Non-wetland (acres)
A	0.01	0
B	0	0.01
C	0	0.04
D	0.03	0.06
E	0.01	0.02
F	0	0.04
Sub-Total	**0.05**	**0.17**
Total	**0.22 acre**	

For this NWP verification letter to be valid, you must comply with all of the terms and conditions in Enclosure 1. Furthermore, you must comply with the following non-discretionary Special Conditions listed below:

Pre-Construction

1. Prior to initiating construction in waters of the U.S., the Permittee shall submit to the Army Corps of Engineers (Corps) a final detailed mitigation plan prepared in accordance with the Corps' Los Angeles District Mitigation Guidelines and Monitoring Requirements, dated April 19, 2004 and the Mitigation Rule (33 C.F.R. Part 332; 73 FR 19670-19687 (April 10, 2008)). The final mitigation plan shall address the permanent impacts to 0.05 acre of wetland waters of the U.S. and 0.17 acre of non-wetland waters of the U.S. through re-establishment of 0.27 acre of vernal pool wetland waters. All maps and drawings shall be in compliance with the Final Map and Drawing Standards for the Los Angeles District Regulatory Division dated September 21, 2009 (http://www.spl.usace.army.mil/regulatory/pn/SPL-RG_map-drawing-standard_final_w-fig.pdf). No work in waters of the U.S. is authorized until the Permittee receives, in writing (by letter or e-mail), Corps approval of the final mitigation plan. The Permittee shall complete site preparation and planting and initiate monitoring as described in the final, approved mitigation plan no later than six months after the initiation of impacts to waters of the U.S. Your responsibility to complete the required compensatory mitigation as set forth in this Special Condition will not be considered fulfilled until you have demonstrated compensatory mitigation project success and have received written verification of that success from the Corps.

2. Prior to initiation of work in waters of the U.S., the Permittee shall record a Conservation Easement (CE), in a form approved by the Corps, which shall run with the land, obligating the Permittee, its successors and assigns to protect and maintain the 6.96-acre Restoration Areas 6 and 7 (as shown in attached Figure 3) as natural open space in perpetuity. The CE must include a 3rd party easement holder qualified to hold easements pursuant to California Civil Code section 815.3 and Government Code section 65965. The Permittee must provide monies in the form of an endowment (endowment amount to be determined by Property Analysis Record or similar methodology) for the purposes of fulfilling the 3rd party easement holder's responsibilities under the CE. The CE shall preclude establishment of fuel modification zones, paved public trails, drainage facilities, walls, maintenance access roads and/or future easements, except as provided in the Project Description (described herein). Further, to the extent practicable, any such facilities outside the CE shall be sited to minimize indirect impacts on the avoided, created, restored and enhanced wetland and non-wetland waters of the U.S. The Permittee shall receive written approval (by letter or e-mail) from the Corps of this CE prior to it being executed and recorded. A recorded copy of the CE shall be furnished to the Corps prior to initiation of work in waters of the U.S.

3. At least **30 days prior** to initiating construction in waters of the U.S., the Permittee shall submit to the Corps a complete set of final detailed grading/construction plans showing all work and structures in waters of the U.S. All plans shall be in compliance with the Final Map and Drawing Standards for the Los Angeles District Regulatory Division dated September 21, 2009. All plan sheets shall be signed, dated, and submitted on paper no larger than 11x 17 inches. No work in waters of the U.S. is authorized until the Permittee receives, in writing (by letter or e-mail), Corps approval of the final detailed grading/construction plans. The Permittee shall ensure that the project is built in accordance with the Corps-approved plans.

4. The Permittee shall provide monies in the form of a non-wasting endowment [endowment amount to be determined by Property Analysis Record or similar methodology] for review and approval by the Corps prior to initiating work in waters of the U.S. for the purpose of fulfilling the long-term responsibilities including maintenance activities (i.e. invasive non-native plant species and trash removal, restoration of areas disturbed or destroyed due to off-road vehicle use, or other trespassing or vandalism, repairs and maintenance to fencing and signage).

5. Prior to impacts to waters of the U.S., the Permittee shall post financial assurance ("financial assurance") in an amount and form approved by the Corps. The purpose of this financial assurance is to guarantee the successful implementation, maintenance and monitoring of the vernal pool re-establishment and enhancement. Our preferred form of financial assurance is a letter of credit. For letters of credit, the credit must be issued by a federally insured financial institution rated investment grade or higher. For performance bonds, the corporate surety must appear on the Department of Treasury Circular 570, Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and Acceptable Reinsuring Companies. For a current list of Treasury-authorized companies, write or call the Surety Bond Branch, Financial Management Services, Department of the Treasury, Washington DC 20227; (202) 874-6850 or at the following website: http://www.fms.treas.gov/c570/c570.html. The financial assurance shall be released once the compensatory mitigation has been determined by the Corps to be successful in accordance with its performance standards and special

conditions of this permit. Alternatively, the Corps will accept an irrevocable letter of credit in the same amount in lieu of a Performance Bond. The terms of the irrevocable letter of credit are subject to Corps approval.

6. Prior to work in waters of the U.S. the Permittee shall clearly mark the limits of the workspace with flagging or similar means to ensure mechanized equipment does not enter avoided waters of the U.S. and riparian wetland/habitat areas shown on Figure 2. Adverse impacts to waters of the U.S. beyond the Corps-approved construction footprint are not authorized. Such impacts could result in permit suspension and revocation, administrative, civil or criminal penalties, and/or substantial, additional, compensatory mitigation requirements.

7. Prior to initiation of work in waters of the U.S. the Permittee shall provide written notification to the Corps. The notification shall include the following:
   a. Corps File Number (SPL-2009-00733-MBS);
   b. Name of company performing the work and on-site point of contact and their contact information;
   c. Size and type of equipment performing the work; and
   d. Schedule for beginning and ending the project.

Construction

8. Endangered Species Act: This Corps permit does not authorize you to take any threatened or endangered species, in particular the federally threatened coastal California gnatcatcher (*Polioptila californica californica*), federally endangered San Diego fairy shrimp (*Branchinecta sandiegonesis*) or adversely modify its designated critical habitat, federally endangered San Diego button-celery (*Eryngium aristulatum*), and the federally endangered San Diego mesa mint (*Pogogyne abramsii*). In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g. ESA Section 10 permit, or a Biological Opinion (BO) under ESA Section 7, with "incidental take" provisions with which you must comply). The enclosed U.S. Fish and Wildlife Service (USFWS) BO (FWS-SD-08B0401-12FC0578) contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BO. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached BO, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its BO and with the ESA.

9. Cultural Resources: Pursuant to 36 C.F.R. section 800.13, in the event of any discoveries during construction of either human remains, archeological deposits, or any other type of historic property, the Permittee shall notify the Corps' Archeology Staff within 24 hours (Steve Dibble at 213-452-3849 or John Killeen at 213-452-3861). The Permittee shall immediately suspend all work in any area(s) where potential cultural resources are discovered. The

Permittee shall not resume construction in the area surrounding the potential cultural resources until the Corps re-authorizes project construction, per 36 C.F.R. section 800.13.

10. Water Quality Certification: The Permittee shall ensure that water quality is maintained by incorporating the terms and conditions of the enclosed section 401 Water Quality Certification issued by the San Diego Regional Water Quality Control Board (Certification Number 04C-082) for your project, dated January 6, 2005 and amended on April 4, 2013. You must comply with the conditions specified in the Certification, as amended, as special conditions to this permit.

11. The Permittee shall discharge only clean fill materials suitable for the activities permitted herein. Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

Mitigation

12. The Permittee has proposed to mitigate for impacts to waters of the U. S., through implementation of the draft (conceptual) mitigation plan: "Rhodes Crossing Project Mitigation Plan" (dated March 4, 2013, and prepared by Alden Environmental Inc). According to the draft mitigation plan, Rhodes and Grus Investments is responsible for compensatory mitigation implementation, performance, and long-term management. The Permittee retains ultimate legal responsibility for meeting the requirements of the final mitigation plan. Detailed mitigation objectives, performance standards, and monitoring requirements are described in the above draft mitigation plan. Any requirements for financial assurances and/or long-term management provisions are also described in the above draft mitigation plan, as well as in special condition 5 above.

13. GIS DATA: Within 60 calendar days following written Corps approval of the final mitigation plan, you shall provide to this office GIS data (polygons only) and one figure depicting the boundaries of all compensatory mitigation sites, as authorized in the final mitigation plan referenced above. All GIS data and associated metadata shall be provided on a digital medium (CD or DVD) or via file transfer protocol (FTP), preferably using the Environmental Systems Research Institute (ESRI) shapefile format. GIS data for mitigation sites shall conform to the Mitigation_SPD.xlsx data table, as specified in the enclosed Final Map and Drawing Standards for the South Pacific Division Regulatory Program dated August 6, 2012, and shall include a text file of metadata, including datum, projection, and mapper contact information.

14. Within 60 calendar days of complete installation of all mitigation, the Permittee shall submit to the Corps a memorandum including the following information:
    a. Date(s) all mitigation was installed and monitoring was initiated;
    b. Schedule for future mitigation monitoring and reporting pursuant to final, Corps-approved mitigation plan;
    c. Color photographs (including map of photopoints) taken at each mitigation site before and after installation such that correct installation per final, Corps-approved mitigation plan can be verified;

d. One copy of "as built" drawings for the entire project, including all mitigation sites. Electronic submittal (Adobe PDF format) is preferred. All sheets must be signed, dated, and to-scale. If submitting paper copies, sheets must be no larger than 11 x 17 inches; and
e. Summary of compliance status with each special condition of this permit (including any noncompliance that previously occurred or is currently occurring and corrective actions taken or proposed to achieve compliance).

Post-Construction

15. Within 45 calendar days of completion of authorized work in waters of the U.S., the Permittee shall submit to the Corps a post-project implementation memorandum including the following information:
    a. Date(s) work within waters of the U.S. was initiated and completed;
    b. Summary of compliance status with each special condition of this permit (including any noncompliance that previously occurred or is currently occurring and corrective actions taken or proposed to achieve compliance);
    c. Color photographs (including map of photopoints) taken at the project site before and after construction for those aspects directly associated with permanent impacts to waters of the U.S. such that the extent of authorized fills can be verified;
    d. One copy of "as built" drawings for the entire project. Electronic submittal (Adobe PDF format) is preferred. All sheets must be signed, dated, and to-scale. If submitting paper copies, sheets must be no larger than 11 x 17 inches; and
    e. Signed Certification of Compliance (attached as part of this permit package).

Your verification is valid through March 18, 2017. All NWPs will expire on March 18, 2017. It is incumbent upon you to remain informed of changes to the NWPs. A public notice of the change(s) will be issued when any of the NWPs are modified, reissued, or revoked. Furthermore, if you commence or are under contract to commence this activity before the date on which the relevant NWP is reissued, modified, or revoked, you will have twelve (12) months from the date of the reissuance, modification, or revocation of the NWP to complete the activity under the present terms and conditions of the relevant NWP.

An approved jurisdictional determination (JD) has been conducted to determine the extent of Corps geographic jurisdiction, upon which this NWP verification is based. A preliminary JD is advisory in nature and is a written indication Corps geographic jurisdiction may be present on a particular site, but is not appealable. An approved JD is an official Corps determination of the precisely identified limits of Corps geographic jurisdiction on a particular site, and is appealable. Should you wish to appeal an approved JD, you may request an administrative appeal under Corps regulations at 33 C.F.R. part 331. Please refer to the previously mailed Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form for more information.

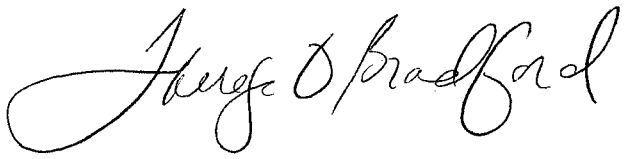
A NWP does not grant any property rights or exclusive privileges. Additionally, it does not authorize any injury to the property, rights of others, nor does it authorize interference with any existing or proposed Federal project. Furthermore, it does not obviate the need to obtain other Federal, state, or local authorizations required by law.

Thank you for participating in our regulatory program. If you have any questions, please contact Meris Bantilan-Smith at 760-602-4836 or via e-mail at Meris.Bantilan-Smith@usace.army.mil.

Please be advised you can now comment on your experience with Regulatory Division by accessing the Corps web-based customer survey form at: http://per2.nwp.usace.army.mil/survey.html.

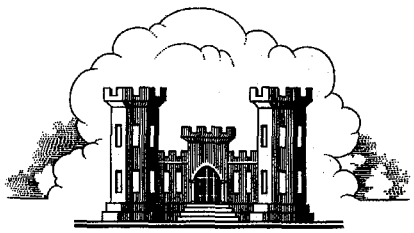
"Building Strong and Taking Care of People!"

Sincerely,



Therese O. Bradford
Chief, South Coast Branch

Enclosures



LOS ANGELES DISTRICT
U.S. ARMY CORPS OF ENGINEERS

CERTIFICATE OF COMPLIANCE WITH DEPARTMENT OF THE ARMY NATIONWIDE PERMIT

Permit Number: *SPL-2009-00733-MBS*

Name of Permittee: Mr. *Keith B. Rhodes, Rhodes and Grus Investments*

Date of Issuance: *April 5, 2013*

Upon completion of the activity authorized by this permit and the mitigation required by this permit, sign this certificate, and return it to the following address:

CORPS OF ENGINEERS LOS ANGELES DISTRICT
Regulatory Division, Carlsbad Field Office
ATTN: CESPL-RG-SPL-2009-00733-MBS
5900 La Place Court, Suite 100
Carlsbad, California 92008

Please note your permitted activity is subject to a compliance inspection by an Army Corps of Engineers representative. If you fail to comply with this Nationwide Permit, you may be subject to permit suspension, modification, or revocation procedures as contained in 33 C.F.R. § 330.5 or enforcement procedures such as those contained in 33 C.F.R. §§ 326.4 and 326.5.

I hereby certify the work authorized by the above referenced permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation was completed in accordance with the permit condition(s).

_____ _____

Signature of Permittee Date

ENCLOSURE 1: NATIONWIDE PERMIT NUMBER 29, RESIDENTIAL DEVELOPMENTS, AND NATIONWIDE PERMIT NUMBER 39, COMMERCIAL AND INSTITUTIONAL DEVELOPMENTS, TERMS AND CONDITIONS

1. Nationwide Permit 29 and Nationwide Permit 39 Terms:

Your activity is authorized under Nationwide Permit Numbers 29, Residential Developments, and 39, Commercial and Institutional Developments subject to the following terms:

NWP 29. Residential Developments: Discharges of dredged or fill material into non-tidal waters of the United States for the construction or expansion of a single residence, a multiple unit residential development, or a residential subdivision. This NWP authorizes the construction of building foundations and building pads and attendant features that are necessary for the use of the residence or residential development. Attendant features may include but are not limited to roads, parking lots, garages, yards, utility lines, storm water management facilities, septic fields, and recreation facilities such as playgrounds, playing fields, and golf courses (provided the golf course is an integral part of the residential development).

The discharge must not cause the loss of greater than 1/2-acre of non-tidal waters of the United States, including the loss of no more than 300 linear feet of stream bed, unless for intermittent and ephemeral stream beds the district engineer waives the 300 linear foot limit by making a written determination concluding that the discharge will result in minimal adverse effects. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters.

Subdivisions: For residential subdivisions, the aggregate total loss of waters of United States authorized by this NWP cannot exceed 1/2-acre. This includes any loss of waters of the United States associated with development of individual subdivision lots.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity. (See general condition 31.) (Sections 10 and 404)

NWP 39. Commercial and Institutional Developments: Discharges of dredged or fill material into non-tidal waters of the United States for the construction or expansion of commercial and institutional building foundations and building pads and attendant features that are necessary for the use and maintenance of the structures. Attendant features may include, but are not limited to, roads, parking lots, garages, yards, utility lines, storm water management facilities, and recreation facilities such as playgrounds and playing fields. Examples of commercial developments include retail stores, industrial facilities, restaurants, business parks, and shopping centers. Examples of institutional developments include schools, fire stations, government office buildings, judicial buildings, public works buildings, libraries, hospitals, and places of worship. The construction of new golf courses and new ski areas is not authorized by this NWP.

The discharge must not cause the loss of greater than 1/2-acre of non-tidal waters of the United States, including the loss of no more than 300 linear feet of stream bed, unless for intermittent and ephemeral stream beds the district engineer waives the 300 linear foot limit by making a written determination concluding that the

discharge will result in minimal adverse effects. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity. (See general condition 31.) (Sections 10 and 404)

Note: For any activity that involves the construction of a wind energy generating structure, solar tower, or overhead transmission line, a copy of the PCN and NWP verification will be provided to the Department of Defense Siting Clearinghouse, which will evaluate potential effects on military activities.

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as appropriate, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP.

2. Nationwide Permit General Conditions: The following general conditions must be followed in order for any authorization by an NWP to be valid:

1. 1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.
   (b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.
   (c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.
(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary.
(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed

activities will have “no effect” on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.
(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.
(e) Authorization of an activity by a NWP does not authorize the “take” of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with “incidental take” provisions, etc.) from the U.S. FWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word “harm” in the definition of “take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.
(f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.noaa.gov/fisheries.html respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for obtaining any “take” permits required under the U.S. Fish and Wildlife Service’s regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the U.S. Fish and Wildlife Service to determine if such “take” permits are required for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.
(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary.
(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district

engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.
(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.
(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.
(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:
(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).
(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.
(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.
    (1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment.
    (2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.
    (3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) – (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).
    (4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.
    (5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring

requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

    "When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

    _____
    (Transferee)

    _____
    (Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:
(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;
(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and
(c) The signature of the permittee certifying the completion of the work and mitigation.

31. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:
(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or
(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to

proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the United States expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(4) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must

include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of intermittent and ephemeral stream bed, and for all NWP 48 activities that require pre-construction notification, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

3. Regional Conditions for the Los Angeles District:

In accordance with General Condition Number 27, "Regional and Case-by-Case Conditions," the following Regional Conditions, as added by the Division Engineer, must be met in order for an authorization by any Nationwide to be valid:

1. For all activities in waters of the U.S. that are suitable habitat for federally listed fish species, the permittee shall design all road crossings to ensure that the passage and/or spawning of fish is not

hindered. In these areas, the permittee shall employ bridge designs that span the stream or river, including pier- or pile-supported spans, or designs that use a bottomless arch culvert with a natural stream bed, unless determined to be impracticable by the Corps.

2. Nationwide Permits (NWP) 3, 7, 12-15, 17-19, 21, 23, 25, 29, 35, 36, or 39-46, 48-52 cannot be used to authorize structures, work, and/or the discharge of dredged or fill material that would result in the "loss" of wetlands, mudflats, vegetated shallows or riffle and pool complexes as defined at 40 CFR Part 230.40-45. The definition of "loss" for this regional condition is the same as the definition of "loss of waters of the United States" used for the Nationwide Permit Program. Furthermore, this regional condition applies only within the State of Arizona and within the Mojave and Sonoran (Colorado) desert regions of California. The desert regions in California are limited to four USGS Hydrologic Unit Code (HUC) accounting units (Lower Colorado -150301, Northern Mojave-180902, Southern Mojave-181001, and Salton Sea-181002).

3. When a pre-construction notification (PCN) is required, the appropriate U.S. Army Corps of Engineers (Corps) District shall be notified in accordance with General Condition 31 using either the South Pacific Division PCN Checklist or a signed application form (ENG Form 4345) with an attachment providing information on compliance with all of the General and Regional Conditions. The PCN Checklist and application form are available at: http://www.spl.usace.army.mil/regulatory. In addition, the PCN shall include:
   a. A written statement describing how the activity has been designed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States;
   b. Drawings, including plan and cross-section views, clearly depicting the location, size and dimensions of the proposed activity as well as the location of delineated waters of the U.S. on the site. The drawings shall contain a title block, legend and scale, amount (in cubic yards) and area (in acres) of fill in Corps jurisdiction, including both permanent and temporary fills/structures. The ordinary high water mark or, if tidal waters, the mean high water mark and high tide line, should be shown (in feet), based on National Geodetic Vertical Datum (NGVD) or other appropriate referenced elevation. All drawings for projects located within the boundaries of the Los Angeles District shall comply with the most current version of the *Map and Drawing Standards for the Los Angeles District Regulatory Division* (available on the Los Angeles District Regulatory Division website at: www.spl.usace.army.mil/regulatory/); and

   c. Numbered and dated pre-project color photographs showing a representative sample of waters proposed to be impacted on the project site, and all waters proposed to be avoided on and immediately adjacent to the project site. The compass angle and position of each photograph shall be documented on the plan-view drawing required in subpart b of this regional condition.

4. Submission of a PCN pursuant to General Condition 31 and Regional Condition 3 shall be required for all regulated activities in the following locations:
   a. All perennial waterbodies and special aquatic sites within the State of Arizona and within the Mojave and Sonoran (Colorado) desert regions of California, excluding the Colorado River in Arizona from Davis Dam to River Mile 261 (northern boundary of the Fort Mojave Indian Tribe Reservation). The desert region in California is limited to four USGS HUC accounting units (Lower

Colorado -150301, Northern Mojave-180902, Southern Mojave-181001, and Salton Sea-181002).

b. All areas designated as Essential Fish Habitat (EFH) by the Pacific Fishery Management Council (i.e., all tidally influenced areas - Federal Register dated March 12, 2007 (72 FR 11092)), in which case the PCN shall include an EFH assessment and extent of proposed impacts to EFH. Examples of EFH habitat assessments can be found at: http://www.swr.noaa.gov/efh.htm.

c. All watersheds in the Santa Monica Mountains in Los Angeles and Ventura counties bounded by Calleguas Creek on the west, by Highway 101 on the north and east, and by Sunset Boulevard and Pacific Ocean on the south.

d. The Santa Clara River watershed in Los Angeles and Ventura counties, including but not limited to Aliso Canyon, Agua Dulce Canyon, Sand Canyon, Bouquet Canyon, Mint Canyon, South Fork of the Santa Clara River, San Francisquito Canyon, Castaic Creek, Piru Creek, Sespe Creek and the main-stem of the Santa Clara River.

5. Individual Permits shall be required for all discharges of fill material in jurisdictional vernal pools, with the exception that discharges for the purpose of restoration, enhancement, management or scientific study of vernal pools may be authorized under NWPs 5, 6, and 27 with the submission of a PCN in accordance with General Condition 31 and Regional Condition 3.

6. Individual Permits shall be required in Murrieta Creek and Temecula Creek watersheds in Riverside County for new permanent fills in perennial and intermittent watercourses otherwise authorized under NWPs 29, 39, 42 and 43, and in ephemeral watercourses for these NWPs for projects that impact greater than 0.1 acre of waters of the United States. In addition, when NWP 14 is used in conjunction with residential, commercial, or industrial developments the 0.1 acre limit would also apply.

7. Individual Permits (Standard Individual Permit or 404 Letter of Permission) shall be required in San Luis Obispo Creek and Santa Rosa Creek in San Luis Obispo County for bank stabilization projects, and in Gaviota Creek, Mission Creek and Carpinteria Creek in Santa Barbara County for bank stabilization projects and grade control structures.

8. In conjunction with the Los Angeles District's Special Area Management Plans (SAMPs) for the San Diego Creek Watershed and San Juan Creek/Western San Mateo Creek Watersheds in Orange County, California, the Corps' Division Engineer, through his discretionary authority has revoked the use of the following 26 selected NWPs within these SAMP watersheds: 03, 07, 12, 13, 14, 16, 17, 18, 19, 21, 25, 27, 29, 31, 33, 39, 40, 41, 42, 43, 44, 46, 49, and 50. Consequently, these NWPs are no longer available in those watersheds to authorize impacts to waters of the United States from discharges of dredged or fill material under the Corps' Clean Water Act section 404 authority.

9. Any requests to waive the 300 linear foot limitation for intermittent and ephemeral streams for NWPs 29, 39, 40 and 42, 43, 44, 51 and 52 or to waive the 500 linear foot limitation along the bank for NWP 13, must include the following:

a. A narrative description of the stream. This should include known information on: volume and duration of flow; the approximate length, width, and depth of the waterbody and characters observed associated with an Ordinary High Water Mark (e.g. bed and bank, wrack line, or scour marks); a description of the adjacent vegetation community and a statement regarding the wetland status of the

associated vegetation community (i.e. wetland, non-wetland); surrounding land use; water quality; issues related to cumulative impacts in the watershed, and; any other relevant information.

b. An analysis of the proposed impacts to the waterbody in accordance with General Condition 31 and Regional Condition 3;

c. Measures taken to avoid and minimize losses, including other methods of constructing the proposed project; and

d. A compensatory mitigation plan describing how the unavoidable losses are proposed to be compensated, in accordance with 33 CFR Part 332.

10. The permittee shall complete the construction of any compensatory mitigation required by special condition(s) of the NWP verification before or concurrent with commencement of construction of the authorized activity, except when specifically determined to be impracticable by the Corps. When mitigation involves use of a mitigation bank or in-lieu fee program, the permittee shall submit proof of payment to the Corps prior to commencement of construction of the authorized activity.

4. Further information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:
   ( ) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
   (X) Section 404 of the Clean Water Act (33 U.S.C. 1344).
   ( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.
   (a) This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
   (b) This permit does not grant any property rights or exclusive privileges.
   (c) This permit does not authorize any injury to the property or rights of others.
   (d) This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:
   (a) Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
   (b) Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
   (c) Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
   (d) Design or construction deficiencies associated with the permitted work.
   (e) Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the

circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

(a) You fail to comply with the terms and conditions of this permit.

(b) The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

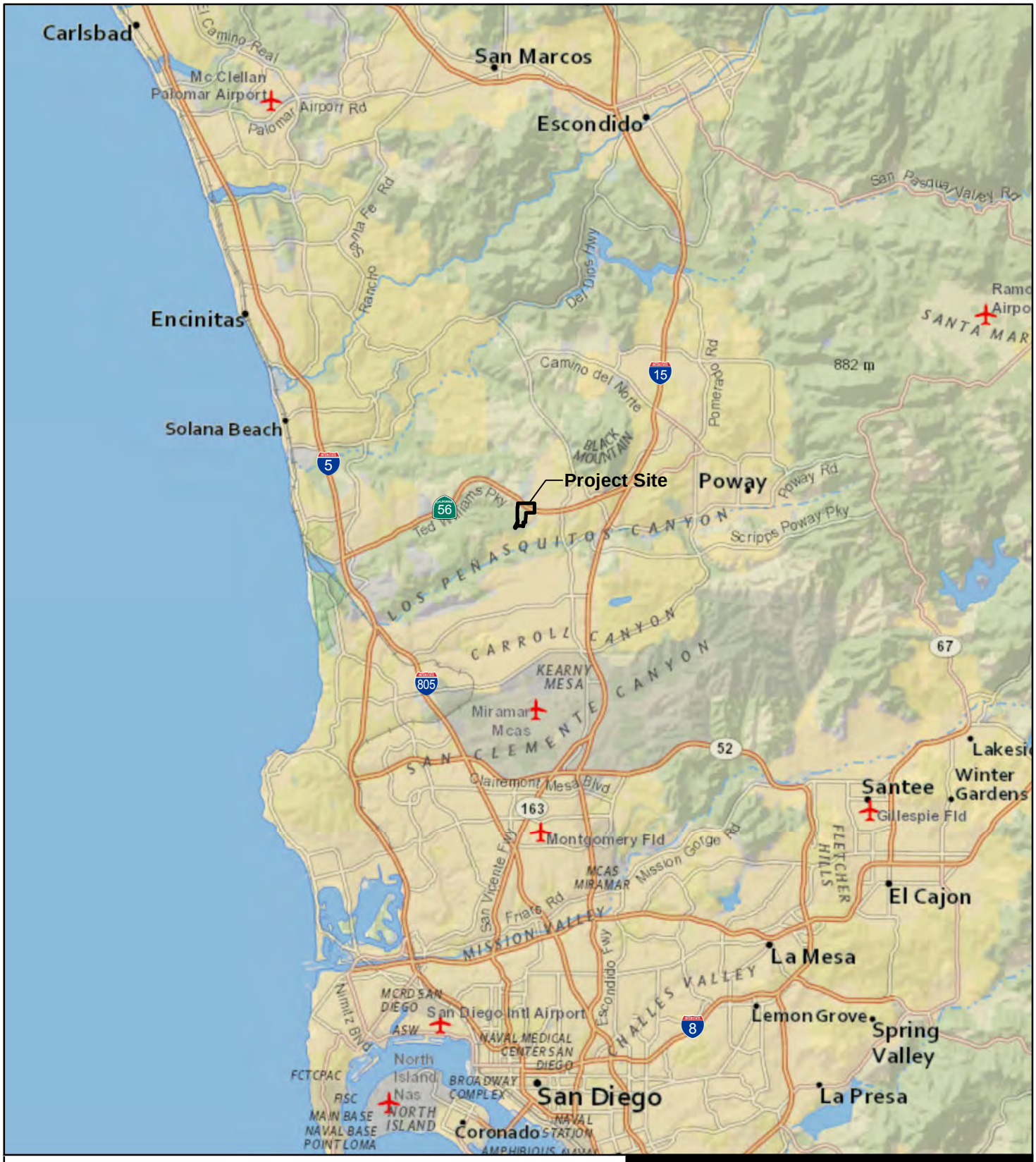
(c) Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 330.5 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measure ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. This letter of verification is valid for a period not to exceed two years unless the nationwide permit is modified, reissued, revoked, or expires before that time.

7. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition H below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

8. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished with the terms and conditions of your permit.



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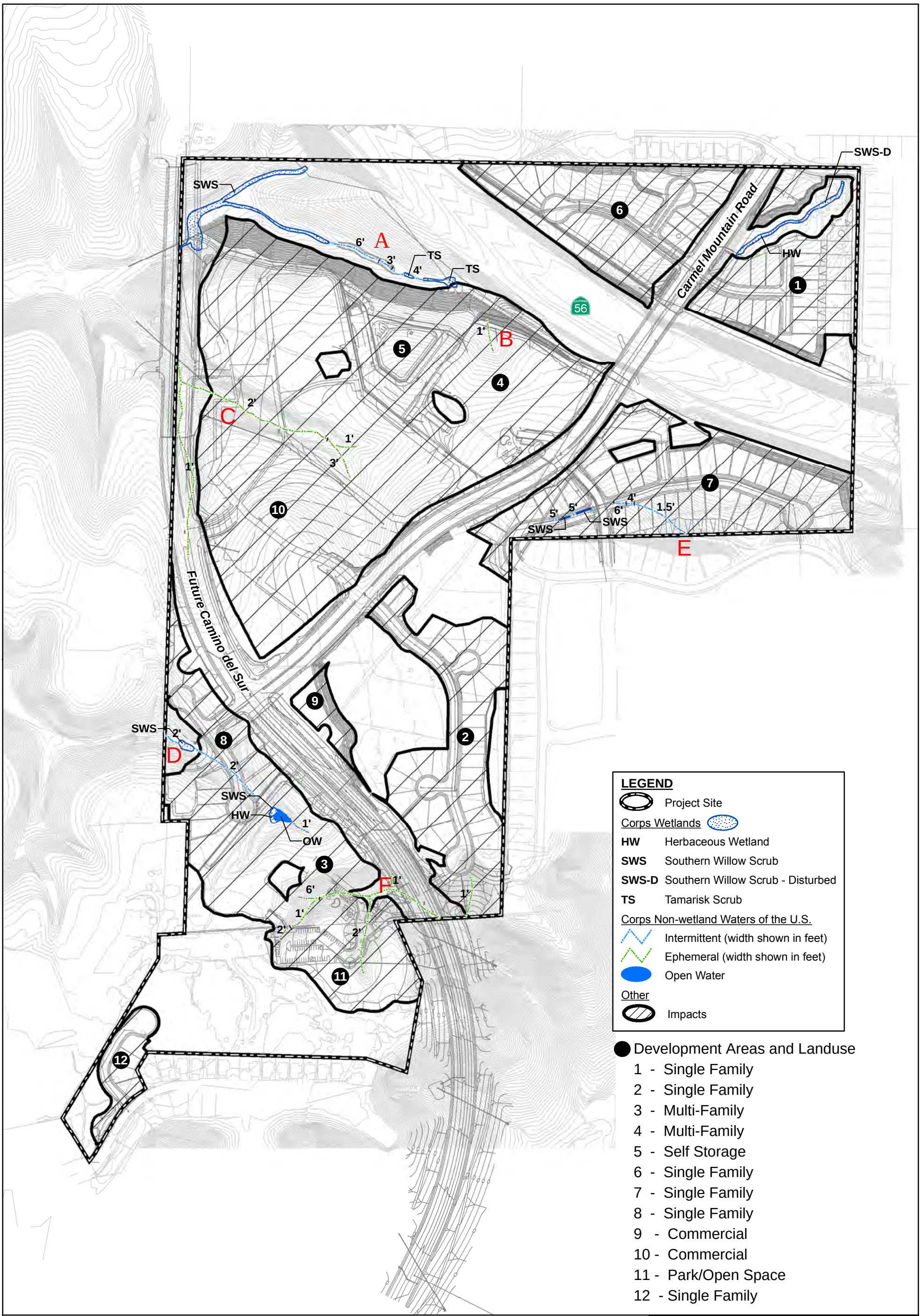
ALDEN
ENVIRONMENTAL, INC

Figure 1

Regional Location

RHODES CROSSING MITIGATION PLAN



LEGEND

- Project Site
- Corps Wetlands
- **HW** Herbaceous Wetland
- **SWS** Southern Willow Scrub
- **SWS-D** Southern Willow Scrub - Disturbed
- **TS** Tamarisk Scrub
- Corps Non-wetland Waters of the U.S.
- Intermittent (width shown in feet)
- Ephemeral (width shown in feet)
- Open Water
- Other
- Impacts

Development Areas and Landuse

1 - Single Family
2 - Single Family
3 - Multi-Family
4 - Multi-Family
5 - Self Storage
6 - Single Family
7 - Single Family
8 - Single Family
9 - Commercial
10 - Commercial
11 - Park/Open Space
12 - Single Family

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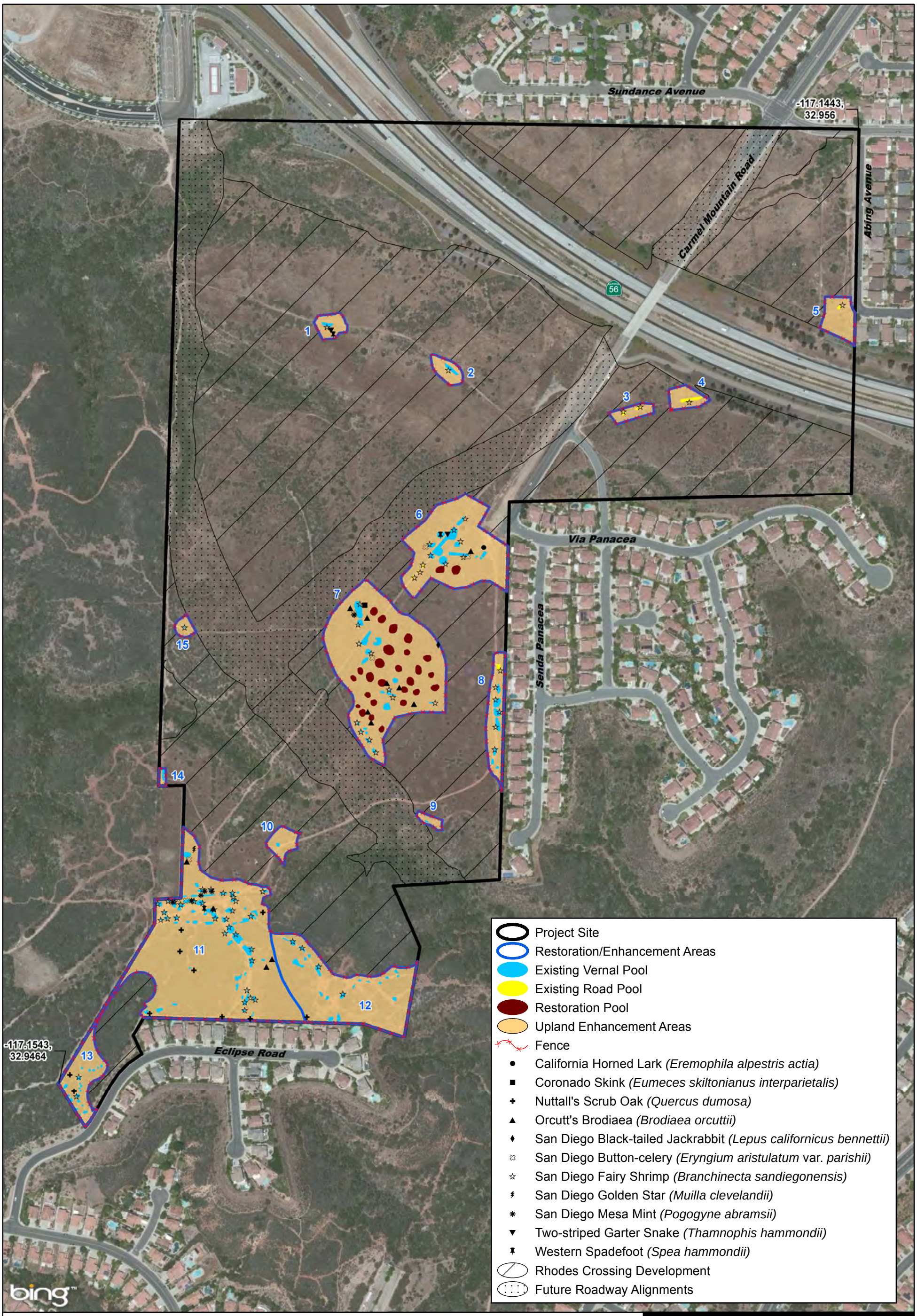
ALDEN ENVIRONMENTAL, INC

Corps Jurisdictional Delineation/ Impacts

RHODES CROSSING

Figure 2



ALDEN ENVIRONMENTAL, INC

Vernal Pool Enhancement and Restoration Areas

RHODES CROSSING MITIGATION PLAN

Figure 3

RWQCB 401 Cert for Rhodes Crossing (as amended)

No. 04C-082

California Regional Water Quality Control Board, San Diego Region

Amendment No. 1 to Clean Water Act Section 401
Water Quality Certification No. 04C-082

PROJECT: Rhodes Crossing Project Water Quality Certification No. 04C-082

APPLICANT: Keith B. Rhodes Living Trust
Attention: Mr. Keith Rhodes
4495 Point Loma Avenue
San Diego, CA 92107

The following changes have been made to Clean Water Act Section 401 Water Quality Certification No. 04C-082, Rhodes Crossing Project. Changes below are shown in redline/strikeout format to indicate added and removed language.

1. **Page 1, STANDARD CONDITION 3 has been modified as follows:**

   ~~The validity of any non-denial certification action (Actions 1 and 2) shall be conditioned upon total payment of the full fee required under 23 CCR section 3833, unless otherwise stated in writing by the certifying agency.~~ This Certification action is conditioned upon total payment of any fee required under chapter 28 (commencing with section 3830) of 23 CCR and owed by the applicant.

2. **Page 3, GENERAL CONDITION A.2 has been modified as follows:**

   Keith B. Rhodes Living Trust shall comply with the requirements of State Water Resources Control Board Water Quality Order No. ~~99-08-DWQ~~2009-0009-DWQ, the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activity.

3. **Page 3, GENERAL CONDITION A.12 has been added follows:**

   Water Quality Certification No. 04C-082 (Certification) is only valid if the Project begins no later than 5 (five) years from the date of issuance of this Certification Amendment No. 1. If the Project has not begun within 5 years from the date of issuance, then this Certification Amendment No. 1 shall expire 5 years from the date of issuance.

4. **Page 4, POST CONSTRUCTION STORM WATER MANAGEMENT CONDITION B.5 has been added as follows:**

Post-construction BMPs must treat 100 percent of the added impervious surface and all must be sized to comply with the following numeric sizing criteria:

a. Volume
Volume-based BMPs must be designed to mitigate (infiltrate, filter, or treat) either:

i. The volume of runoff produced from a 24-hour 85th percentile storm event, as determined from the local historical rainfall record (0.6 inch is the approximate average for the San Diego County area); or
ii. The volume of runoff, as determined from the local historical rainfall record, that achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the 85th percentile 24-hour runoff event.

b. Flow
Flow-based BMPs must be designed to mitigate (infiltrate, filter, or treat) either:

i. The maximum flow rate of runoff produced from a rainfall intensity of 0.2 inch of rainfall per hour; or
ii. The maximum flow rate of runoff produced by the 85th percentile hourly rainfall intensity, as determined from the local historical rainfall record, multiplied by a factor of two; or
iii. The maximum flow rate of runoff, as determined from the same reduction in pollutant loads and flows as achieved by mitigation of the 85th percentile hourly rainfall intensity multiplied by a factor of two.

5. **Page 4, POST CONSTRUCTION STORM WATER MANAGEMENT CONDITION B.6 has been added as follows:**

Post-construction BMPs must be designed, constructed, and maintained in accordance with the most recent California Stormwater Quality Association guidance which can be accessed at http://www.cabmphandbooks.com/.

6. **Page 4, MITIGATION PROVISION C.1 has been modified as follows:**

Mitigation for the permanent impact to ~~0.03~~ 0.05 acre of wetland and ~~0.19acre~~ 0.17 acre (2,461 linear feet) of ephemeral (non-wetland) streambed will be achieved ~~at a 1:1 ratio, by creating~~ through on-site restoration of ~~0.03~~ 0.30 acre of ~~wetlands~~ vernal pool habitat and enhancement of ~~0.19~~ 0.74 acre of

~~streambed~~vernal pool habitat. The mitigation is described in *Rhodes Crossing Mitigation Plan* (Mitigation Plan), prepared by Alden Environmental, and dated March 4, 2013. The Keith B. Rhodes Living Trust or other parties that assume future transferred liability under this Certification must implement the Mitigation Plan and any subsequent version reviewed and accepted by the San Diego Water Board. ~~the McGonigle Canyon Final Wetland Mitigation Plan by Helix Environmental Planning and dated October 9, 2001. Mitigation was completed in 2002 and is currently surpassing its success criteria~~.

7. **Page 5, MITIGATION PROVISION C.4 has been modified as follows:**

f) Other items specified in the *Rhodes Crossing Mitigation Plan*, prepared by Alden Environmental, dated March 4, 2013 and any subsequent versions reviewed and accepted by the San Diego Water Board.~~draft and final Wetland and Riparian Mitigation and Monitoring Plan~~.

8. **Page 5, MITIGATION PROVISION C.6 has been added as follows:**

The construction of proposed mitigation must be concurrent with Project grading and completed no later than 9 months following the initial discharge of dredge or fill material into on-site waters. Delays in implementing mitigation must be compensated for by an increased mitigation implementation of 10 percent of the cumulative compensatory mitigation for each month of delay.

9. **Page 5, MITIGATION PROVISION C.7 has been added as follows:**

Mitigation shall be considered acceptable once it has met the pre-determined success criteria for that site and shall be maintained, in perpetuity, in a manner that consistently meets the final success criteria identified in the *Rhodes Crossing Mitigation Plan*, prepared by Alden Environmental, dated March 4, 2013 and any subsequent versions reviewed and accepted by the San Diego Water Board.

10. **Page 6, REGIONAL WATER QUALITY CONTROL BOARD CONTACT PERSON has been modified as follows:**

~~Mike Porter~~Alan Monji
California Regional Water Quality Control Board, San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123
858-~~467-2726~~637-7140
~~portm@rb9.swrcb.ca.gov~~amonji@waterboards.ca.gov

11. **ATTACHMENT 1, APPLICANT RESPRESENTATIVE has been modified as follows:**

~~Dr. Stephen Neudecker~~Greg Mason
~~Helix Environmental Planning, Inc.~~Alden Environmental, Inc.
Phone: ~~619-462-1515~~619-284-3815
Facsimile: 619-~~462-0552~~284-3815
E-mail: ~~steven@helixepi.com~~gmason@aldenenv.com

12. **ATTACHMENT 1, FEDERAL AGENCY/PERMIT has been modified as follows:**

U.S. Army Corps of Engineers – ~~Terrence Dean~~Meris Bantilan-Smith, NWP 39

13. **ATTACHMENT 1, IMPACTED WATERS OF THE UNITED STATES has been modified as follows:**

The proposed project will permanently impact (fill) ~~0.03~~ 0.05 acre of wetland and ~~0.19acre~~ 0.17 acre (2,461 linear feet) of non-wetland waters of the U.S.

14. **ATTACHMENT 1, COMPENSATORY MITIGATION has been modified as follows:**

Proposed compensatory mitigation consists of ~~the 1:1 creation of 0.04 acre of wetland and the creation of 0.19 acre of streambed. The mitigation site is near the Rhodes Crossing project in McGonigle Canyon. The McGonigle Canyon Mitigation Site was created two years ago to meet the compensatory mitigation needs of the following projects: Torrey Glen, Camino Ruiz (Greystone segment), Camino Ruiz North (Rhodes segment), Torrey Ranch Garden Communities, La Jolla Crossroads, and Rhodes Crossing~~ 0.30 acres of vernal pool restoration and 0.74 acres of vernal pool enhancement. The mitigation is described in the ~~McGonigle Canyon Final Wetland Mitigation Plan by Helix Environmental Planning and dated October 9, 2001~~Rhodes Crossing Project Mitigation Plan, prepared by Alden Environmental, Inc., dated March 4, 2013 and any subsequent versions reviewed and accepted by the San Diego Water Board.

~~According to Helix Environmental Planning, the McGonigle Canyon Mitigation Site was graded and planted two years ago and the site is surpassing its success criteria.~~

~~1:1 mitigation is acceptable on this project because the mitigation is creation and there will be no temporal loss of functions and values because Rhodes Crossing will not be constructed for two years.~~

ATTACHMENT 1, BEST MANAGEMENT PRACTICES has been modified as follows:

During construction, this project will comply with the Best Management Practices (BMPs) stipulated in the State Water Resources Control Board Order No. ~~99-08~~2009-0009-DWQ, the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activity.

Post-construction BMPs ~~will be implemented~~ must be sized to comply with numeric sizing criteria contained in the *California Regional Water Quality Control Board, San Diego Region Order No. R9-2007-0001, NPDES No. CAS0108758, Waste Discharge Requirements for Discharges of Urban Runoff from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds of the County Of San Diego,* ~~the Standard Urban Storm Water Mitigation Plan (SUSMP) requirements, San Diego Regional Water Quality Control Board Order No. 2001-01 (the San Diego Municipal Storm Water Permit)~~. The post-construction BMPs are described in the Water Quality Technical Report for Rhodes Crossing by Latitude 33 Planning and Engineering and dated June 9, 2003. Post-construction BMPs must be designed, constructed, and maintained in accordance with the most recent California Stormwater Quality Association guidance.

15. **ATTACHMENT 2, DISTRIBUTION LIST has been modified as follows:**

~~Mr. Terrence Dean~~Meris Bantilan-Smith
U.S. Army Corps of Engineers
Regulatory Branch
~~16885 W. Bernardo Dr., Suite 300 A~~6010 Hidden Valley Road, Suite 105
~~San Diego~~Carlsbad, CA ~~92127~~92011
~~(858) 674-5388 (fax)~~(760)-602-4830

~~Dr. Stephen Neudecker~~Greg Mason
Alden Environmental, Inc.~~HELIX Environmental Planning~~
~~8100 La Mesa Blvd, Suite~~3245 University Ave #1188 ~~150~~
~~La Mesa, CA 91941~~San Diego, CA 92104

16. **ATTACHMENT 4, SITE MAP has been modified as follows:**

Replace Helix Site Plan, Figure 3 with Alden Environmental Rhodes Crossing Site Plan.

17. **ATTACHMENT 5, MITIGATION MAP has been modified as follows:**

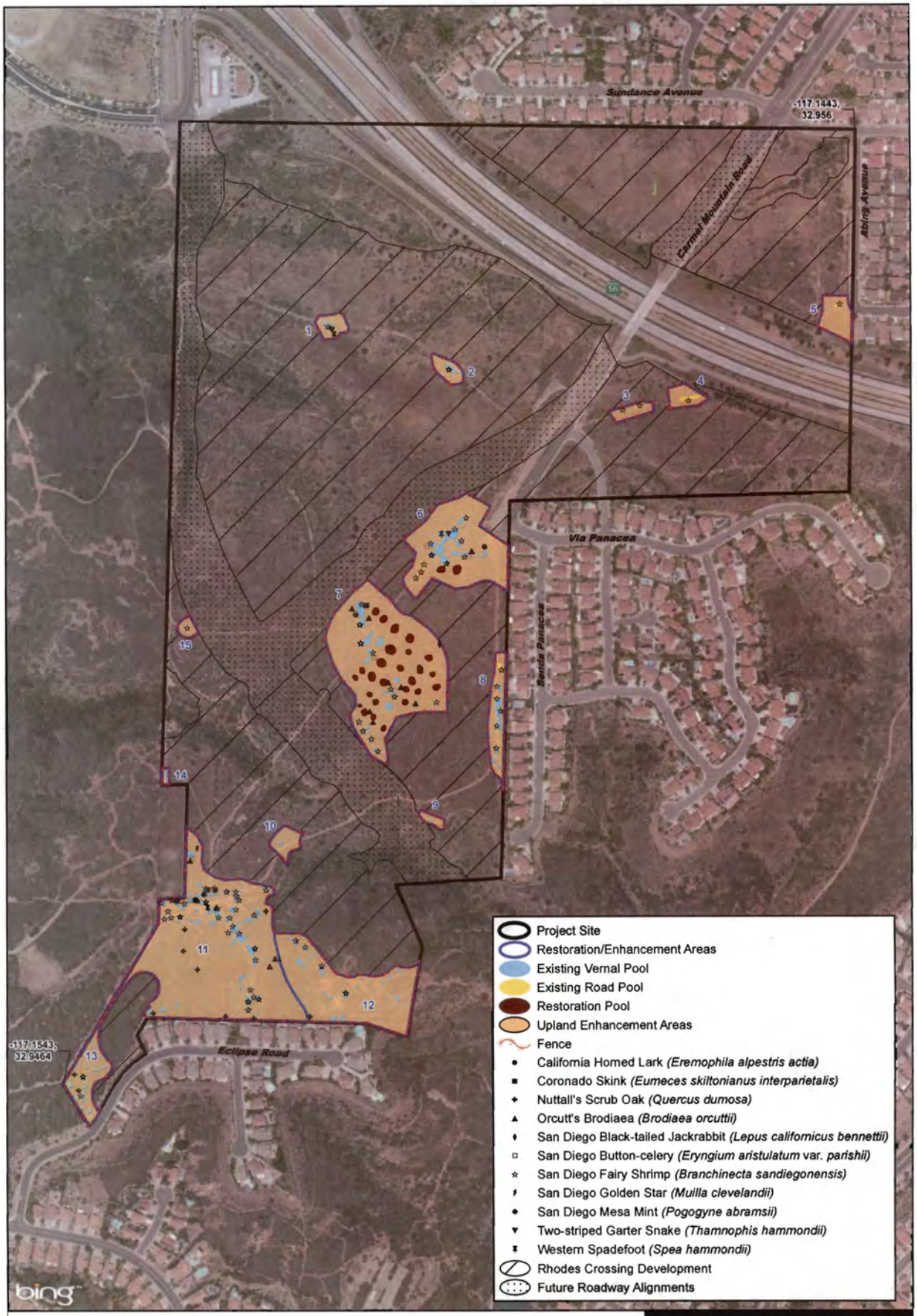
Replace Helix Figure 2, 3, and 4 with Alden Environmental Figure 3 and 4.

I, David W. Gibson, Executive Officer, do hereby certify the forgoing is a full, true, and correct copy of Amendment No.1 to Certification No. 04C-082 issued on April 5, 2013.

David W. Gibson
Executive Officer
Regional Water Quality Control Board

April 4, 2013
Date

WDID	9 000002537
CIWQS:	
Party No.	357778
Place No.	787209
Reg. M. No.	388406

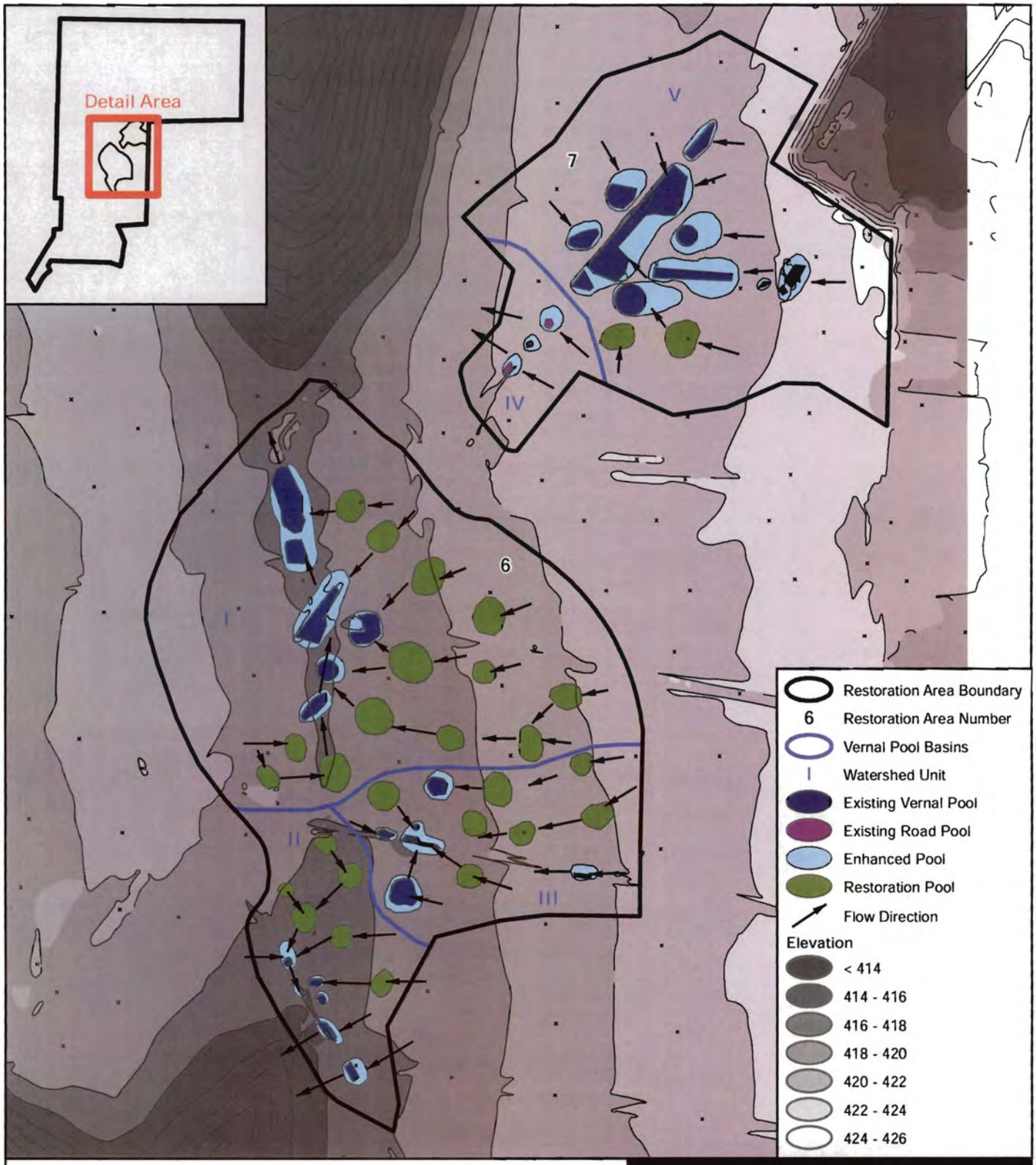


ALDEN ENVIRONMENTAL, INC

Figure 3

Vernal Pool Enhancement and Restoration Areas

RHODES CROSSING MITIGATION PLAN



ALDEN ENVIRONMENTAL, INC

Figure 4

Restoration Pool Hydrological Analysis

RHODES CROSSING MITIGATION PLAN

California Regional Water Quality Control Board

San Diego Region

Over 50 Years Serving San Diego, Orange, and Riverside Counties
Recipient of the 2004 Environmental Award for Outstanding Achievement from USEPA

Alan C. Lloyd, Ph.D
Secretary for Environmental Protection

Arnold Schwarzeneg
Governor

9174 Sky Park Court, Suite 100, San Diego, California 92123-4340
(858) 467-2952 • Fax (858) 571-6972
http:// www.waterboards.ca.gov/sandiego

Action on Request for
Clean Water Act section 401 Water Quality Certification
and Waiver of Waste Discharge Requirements
for Discharge of Dredged and/or Fill Materials

PROJECT: Rhodes Crossing Project (File No. 04C-082)

18-2004082.02 mg

APPLICANT: Mr. Keith B. Rhodes
Keith B. Rhodes Living Trust
4495 Point Loma Avenue
San Diego, CA 92107

ACTION:

☐ Order for Low Impact Certification

☐ Order for Denial of Certification

☑ Order for Technically-conditioned Certification

☑ Waiver of Waste Discharge Requirements

STANDARD CONDITIONS:

The following three standard conditions apply to all certification actions, except as noted under Condition 3 for denials (Action 3).

1. This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to section 13330 of the California Water Code and section 3867 of Title 23 of the California Code of Regulations (23 CCR).

2. This certification action is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR subsection 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

3. The validity of any non-denial certification action (Actions 1 and 2) shall be conditioned upon total payment of the full fee required under 23 CCR section 3833, unless otherwise stated in writing by the certifying agency.

ADDITIONAL CONDITIONS:

In addition to the three standard conditions, Keith B. Rhodes Living Trust shall satisfy the following:

A. General Conditions

1. Keith B. Rhodes Living Trust, shall, at all times, fully comply with the engineering plans, specifications and technical reports submitted with this application for 401 Water Quality Certification and all subsequent submittals required as part of this certification.

2. Keith B. Rhodes Living Trust, shall comply with the requirements of State Water Resources Control Board Water Quality Order No. 99-08-DWQ, the NPDES General Permit for Storm Water Discharges Associated with Construction Activity.

3. Keith B. Rhodes Living Trust, shall maintain a copy of this certification at the project site so as to be available at all times to site personnel and agencies.

4. Prior to the start of the project, Keith B. Rhodes Living Trust, shall educate all relevant personnel on the requirements in this certification, pollution prevention measures, and spill response.

5. Keith B. Rhodes Living Trust shall permit the Regional Board or its authorized representative at all times, upon presentation of credentials:

    a. Entry onto project premises, including all areas on which wetland fill or wetland mitigation is located or in which records are kept.

    b. Access to copy any records required to be kept under the terms and conditions of this certification.

    c. Inspection of any treatment equipment, monitoring equipment, or monitoring method required by this certification.

    d. Sampling of any discharge or surface water covered by this Certification.

6. Keith B. Rhodes Living Trust, shall notify the Regional Board within 24 hours of any unauthorized discharge to waters of the U.S. and/or State; measures that were implemented to stop and contain the discharge; measures implemented to clean-up the discharge; the volume and type of materials discharged and recovered; and additional BMPs or other measures that will be implemented to prevent future discharges.

7. Keith B. Rhodes Living Trust shall, at all times, maintain appropriate types and sufficient quantities of materials onsite to contain any spill or inadvertent release of materials that may cause a condition of pollution or nuisance if the materials reached a waters of the U.S. and/or State.

8. This Certification must be disclosed and transferred to another party when that party receives title to the property (in whole or part) for which Certification was issued. This Certification is not transferable to any person except after notice to the Executive Officer of the San Diego Regional Water Quality Control Board (Regional Board). The applicant shall submit this notice in writing at least 30 days in advance of any proposed transfer. The notice must include a written agreement between the existing and new owner containing a specific date for the transfer of this Certification's responsibility and coverage between the current discharger and the new discharger. This agreement shall include an acknowledgement that the existing owner is liable for compliance and violations up to the transfer date and that the new owner is liable from the transfer date on.

9. In the event of any violation or threatened violation of the conditions of this certification, the violation or threatened violation shall be subject to any remedies, penalties, process or sanctions as provided for under state law. For purposes of section 401(d) of the Clean Water Act, the applicability of any state law authorizing remedies, penalties, process or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into this certification.

10. In response to a suspected violation of any condition of this certification, the Regional Water Quality Control Board (RWQCB) may require the holder of any permit or license subject to this certification to furnish, under penalty of perjury, any technical or monitoring reports the RWQCB deems appropriate, provided that the burden, including costs, of the reports shall be a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.

11. In response to any violation of the conditions of this certification, the RWQCB may add to or modify the conditions of this certification as appropriate to ensure compliance.

B. POST CONSTRUCTION STORM WATER MANAGEMENT

1. All construction and post-construction Best Management Practices (BMPs) proposed in the application by Keith B. Rhodes Living Trust, for the Rhodes Crossing Project, shall be implemented and maintained by Keith B. Rhodes Living Trust, or the successor owners of the Rhodes Crossing.

2. Post-construction BMPs must be installed and functional prior to occupancy and/or planned use of project areas.

3. Keith B. Rhodes Living Trust, their designated party, or other parties that assume future transferred liability under this Certification, shall inspect and maintain post-construction structural BMPs per the manufacturers' specifications and/or engineering design specifications. An inspection and maintenance log shall be maintained for review by germane agencies. Copies of the inspection and maintenance log shall be provided to the Regional Board upon request.

4. On or before January 2, 2006, Keith B. Rhodes Living Trust or the successor owners of the Rhodes Crossing, shall submit a letter to the Regional Board and the City of San Diego describing where the post-construction inspection and maintenance log will be kept. Failure to maintain a post-construction inspection and maintenance log will be a violation of this Certification.

C. MITIGATION

1. Mitigation for the permanent impact to 0.03 acre of wetland and 0.19acre (2,461 linear feet) of ephemeral streambed will be achieved at a 1:1 ratio, by creating 0.03 acre of wetlands and 0.19 acre of streambed. The mitigation is described in the McGonigle Canyon Final Wetland Mitigation Plan by Helix Environmental Planning and dated October 9, 2001. Mitigation was completed in 2002 and is currently surpassing its success criteria.

2. Within 90 days of the issuance of this certification, Keith B. Rhodes Living Trust, shall provide a draft preservation mechanism (e.g. deed restriction, conservation easement, etc.) that will protect all mitigation areas and their buffers in perpetuity. The conservation easement or other legal limitation on the mitigation property shall be adequate to demonstrate that the site will be maintained without future development or encroachment on the site which could otherwise reduce the functions and values of the site for the variety of beneficial uses of waters of the U.S. that it supports. The conservation easement or other appropriate legal limitation shall prohibit, without exception, all residential, commercial, industrial, institutional, and transportation development, and any other infrastructure development that would not maintain or enhance the wetland functions and values of the site. Other infrastructure development to be prohibited includes, but is not limited to, additional utility lines, paved maintenance roads, and areas of maintained landscaping for recreation. The Keith B. Rhodes Living Trust, shall submit proof of a completed preservation mechanism within one year of issuance of this certification.

3. If at any time during the implementation and establishment of the mitigation area(s), and prior to verification of meeting success criteria, a catastrophic natural event (e.g., fire, flood) occurs and impacts the mitigation area, Keith B. Rhodes Living Trust, or their successors shall be responsible for the morphological repair and replanting of the damaged area(s).

4. Mitigation monitoring reports shall be submitted annually to the Regional Board until mitigation has been deemed successful. The final monitoring report shall be submitted no later than 30 days following the end of the monitoring period. Monitoring reports shall include, but not be limited to, the following:

    a) Names, qualifications, and affiliations of the persons contributing to the report;
    b) Tables presenting the raw data collected in the field as well as analyses of the physical and biological data;
    c) Qualitative and quantitative comparisons of current mitigation conditions with pre-construction conditions and previous mitigation monitoring results;
    d) Photodocumentation from established reference points;
    e) Survey report documenting boundaries of mitigation area; and
    f) Other items specified in the draft and final Wetland and Riparian Mitigation and Monitoring Plan.

5. For purposes of this certification, creation is defined as the creation of vegetated or unvegetated waters of the U.S. where they have never been documented or known to occur (e.g., conversion of nonnative grassland to freshwater marsh). Restoration is defined as the creation of waters of the U.S. where they previously occurred (e.g., removal of fill material to restore a drainage). Enhancement is defined as modifying existing waters of the U.S. to enhance functions and values (e.g., removal of exotic plant species from jurisdictional areas and replacing with native species).

D. REPORTING

1. All information requested in this Certification is pursuant to California Water Code (CWC) section 13267. Civil liability may be administratively imposed by the Regional Board for failure to furnish requested information pursuant to CWC section 13268.

2. All applications, reports, or information submitted to the Regional Board shall be signed and certified as follows:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

3. Keith B. Rhodes Living Trust, shall submit reports required under this certification, or other information required by the Regional Board, to:

   Executive Officer
   California Regional Water Quality Control Board
   San Diego Region
   Attn: 401 Certification; File No. 04C-082
   9174 Sky Park Court, Suite 100
   San Diego, California 92123

PUBLIC NOTIFICATION OF PROJECT APPLICATION:

On March 8, 2004, receipt of the project application was posted on the SDRWQCB web site to serve as appropriate notification to the public.

REGIONAL WATER QUALITY CONTROL BOARD CONTACT PERSON:

Mike Porter
California Regional Water Quality Control Board, San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123
858-467-2726
portm@rb9.swrcb.ca.gov

WATER QUALITY CERTIFICATION:

I hereby certify that the proposed discharge from the Rhodes Crossing Project (File No. 04C-082) will comply with the applicable provisions of sections 301 ("Effluent Limitations"), 302 ("Water Quality Related Effluent Limitations"), 303 ("Water Quality Standards and Implementation Plans"), 306 ("National Standards of Performance"), and 307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act. This discharge is also regulated under California Regional Water Quality Control Board, San Diego Region, Waiver of Waste Discharge Requirements (Waiver Policy) No. 17. Please note that this waiver is conditional and, should new information come to our attention that indicates a water quality problem, the regional Board may issue waste discharge requirements at that time.

Except insofar as may be modified by any preceding conditions, all certification actions are contingent on (a) the discharge being limited and all proposed mitigation being completed in strict compliance with the applicants' project description and/or on the attached Project Information Sheet, and (b) on compliance with all applicable requirements of the Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan).

John H. Robertus

1-6-2005

John H. Robertus
Executive Officer
Regional Water Quality Control Board

Date

Attachments:

1. Project Information
2. Distribution List
3. Location Map
4. Site Map
5. Mitigation Map

ATTACHMENT 1
PROJECT INFORMATION

Applicant:	Mr. Keith B. Rhodes, Keith B. Rhodes Living Trust 4495 Point Loma Avenue San Diego, CA 92107 Phone: 619-269-9094 Facsimile: 619-269-9103 E-mail: keithbrhodes@cox.net
Applicant Representative:	Dr. Stephen Neudecker Helix Environmental Planning, Inc. 8100 La Mesa Blvd., Suite 150 La Mesa, CA 91941-6476 Phone: 619-462-1515 Facsimile: 619-462-0552 E-mail: steven@helixepi.com
Project Name:	Rhodes Crossing Project (File No. 04C-082)
Project Location:	The Rhodes Crossing Project is located in central San Diego County, within northern City of San Diego, two miles west of I-15, at the terminus of Carmel Mountain Road, east of Deer Canyon and 3,000 feet north of the Los Penasquitos Canyon Preserve. The project is adjacent to the Rancho Penasquitos Community and Torrey Highlands Subarea Plans. The future extension of State Route 56 is currently being built across the northern portion of the subject site. The center of the project is at latitude 33°57'00" north, longitude 117°10'00" west . Reference maps: Thomas Brothers page 1189, coordinates: B5; USGS 7.5 Minute Series, Del Mar quadrangle map.
Type of Project:	Residential housing, self-storage, and commercial property development.
Project Description:	The 147-acre proposed project is the development of 112 single-family residential lots, 624 multi-family residential units, self-storage units and commercial development. SR-56, Camino del Sur, and Carmel Mountain Road are not part of this project.
Federal Agency/Permit:	U.S. Army Corps of Engineers – Terrence Dean, NWP 39
Other Required Regulatory Approvals:	California Department of Fish and Game 1603 Streambed Alteration Agreement
California Environmental Quality Act (CEQA) Compliance:	City of San Diego, Final EIR for Rhodes Crossing, dated December 2, 2003; Project No. 3230; SCH No. 2002121089. Notice of Determination filed April 2, 2004.

Receiving Water:	Deer Canyon Creek, which is tributary to the McGonigle Canyon Creek and an unnamed tributary to Los Penasquitos Canyon Creek, Penasquitos Hydrologic Unit, Miramar Reservoir hydrologic area (906.10).
Impacted Waters of the United States:	The proposed project will permanently impact (fill) 0.03 acre of wetland and 0.19acre (2461 linear feet of ephemeral streambed) of non-wetland waters of the U.S.
Dredge Volume:	None
Related Projects Implemented/to be Implemented by the Applicant(s):	None disclosed.
Avoidance/Minimization Measures:	The proposed project avoided jurisdictional waters as much as possible.
Compensatory Mitigation:	Proposed compensatory mitigation consists of the 1:1 creation of 0.04 acre of wetland and the creation of 0.19 acre of streambed. The mitigation site is near the Rhodes Crossing project in McGonigle Canyon. The McGonigle Canyon Mitigation Site was created two years ago to meet the compensatory mitigation needs of the following projects: Torrey Glen, Camino Ruiz (Greystone segment), Camino Ruiz North (Rhodes segment), Torrey Ranch Garden Communities, La Jolla Crossroads, and Rhodes Crossing. The mitigation is described in the McGonigle Canyon Final Wetland Mitigation Plan by Helix Environmental Planning and dated October 9, 2001. According to Helix Environmental Planning, the McGonigle Canyon Mitigation Site was graded and planted two years ago and the site is surpassing its success criteria. 1:1 mitigation is acceptable on this project because the mitigation is creation and there will be no temporal loss of functions and values because Rhodes Crossing will not be constructed for two years.
Best Management Practices:	During construction, this project will comply with the Best Management Practices (BMPs) stipulated in the State Water Resources Control Board Order No. 99-08-DWQ, the NPDES General Permit for Storm Water Discharges Associated with Construction Activity. Post-construction BMPs will be implemented to comply with the Standard Urban Storm Water Mitigation Plan (SUSMP) requirements, San Diego Regional Water Quality Control Board Order No. 2001-01 (the San Diego Municipal Storm Water Permit). The post-construction BMPs are

described in the Water Quality Technical Report for Rhodes Crossing by Latitude 33 Planning and Engineering and dated June 9, 2003.

Specific examples of the planned post-construction BMPs include, but are not limited to:

- Nineteen (19) BioClean Inlet Filter Inserts;
- Four (4) Continuous Deflection Separator (CDS) units;
- One (1) vegetated swale
- One (1) in-line extended water quality and quantity detention basin;
- Roof runoff directed to pervious landscaped areas;
- Slopes planted with native vegetation;
- Trash storage areas designed to reduce rainfall runoff;
- Efficient landscape irrigation and integrated pest management;
- Storm water quality education program for owners; and
- Stenciling or curb markings of MS4 inlets.

Public Notice: July 27, 2004 on the Regional Board internet website

Fees: Total Due: $12,815.00
Total Paid: $500.00 [check No. 1287];
$12,315.00 [check No. 1317]

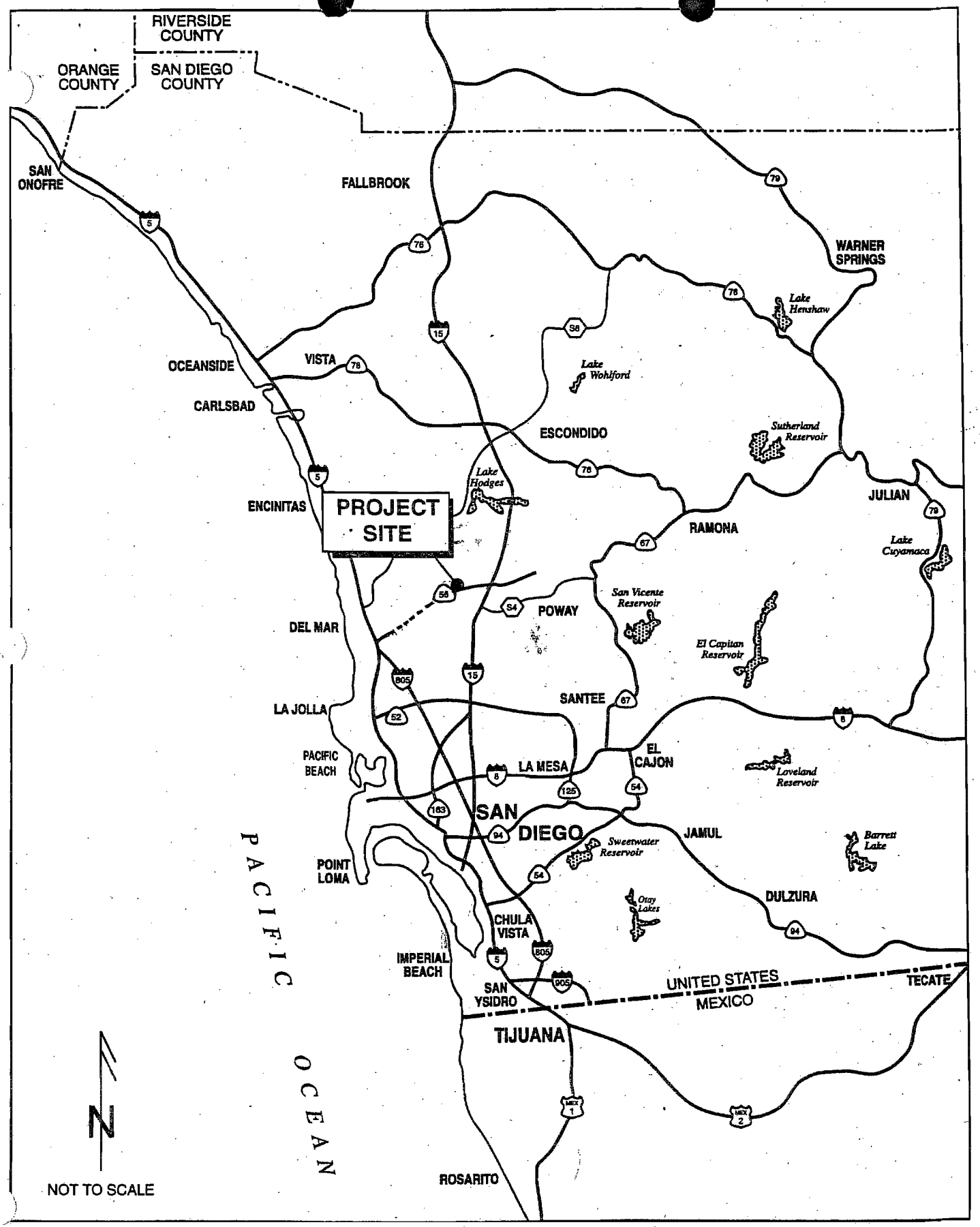
ATTACHMENT 2
DISTRIBUTION LIST

Mr. Terrence Dean
U.S. Army Corps of Engineers
Regulatory Branch
16885 W. Bernardo Dr., Suite 300 A
San Diego, CA 92127
(858) 674-5388 (fax)

Dr. Stephen Neudecker
HELIX Environmental Planning
8100 La Mesa Blvd, Suite 150
La Mesa, CA 91941

State Water Resources Control Board
Division of Water Quality

ATTACHMENT 3
LOCATION MAP

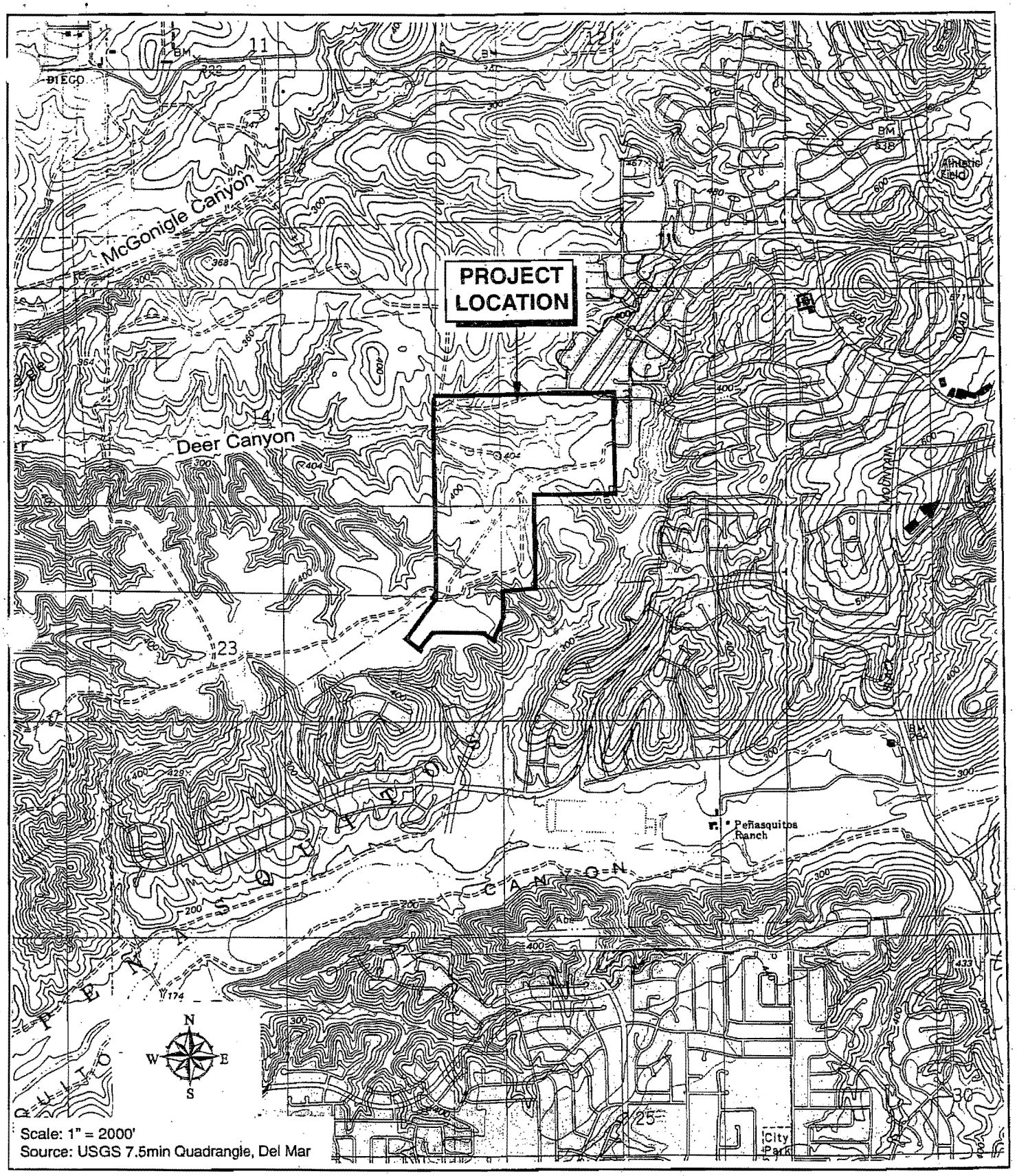


Regional Location Map

RHODES CROSSING

Figure 1

HELIX



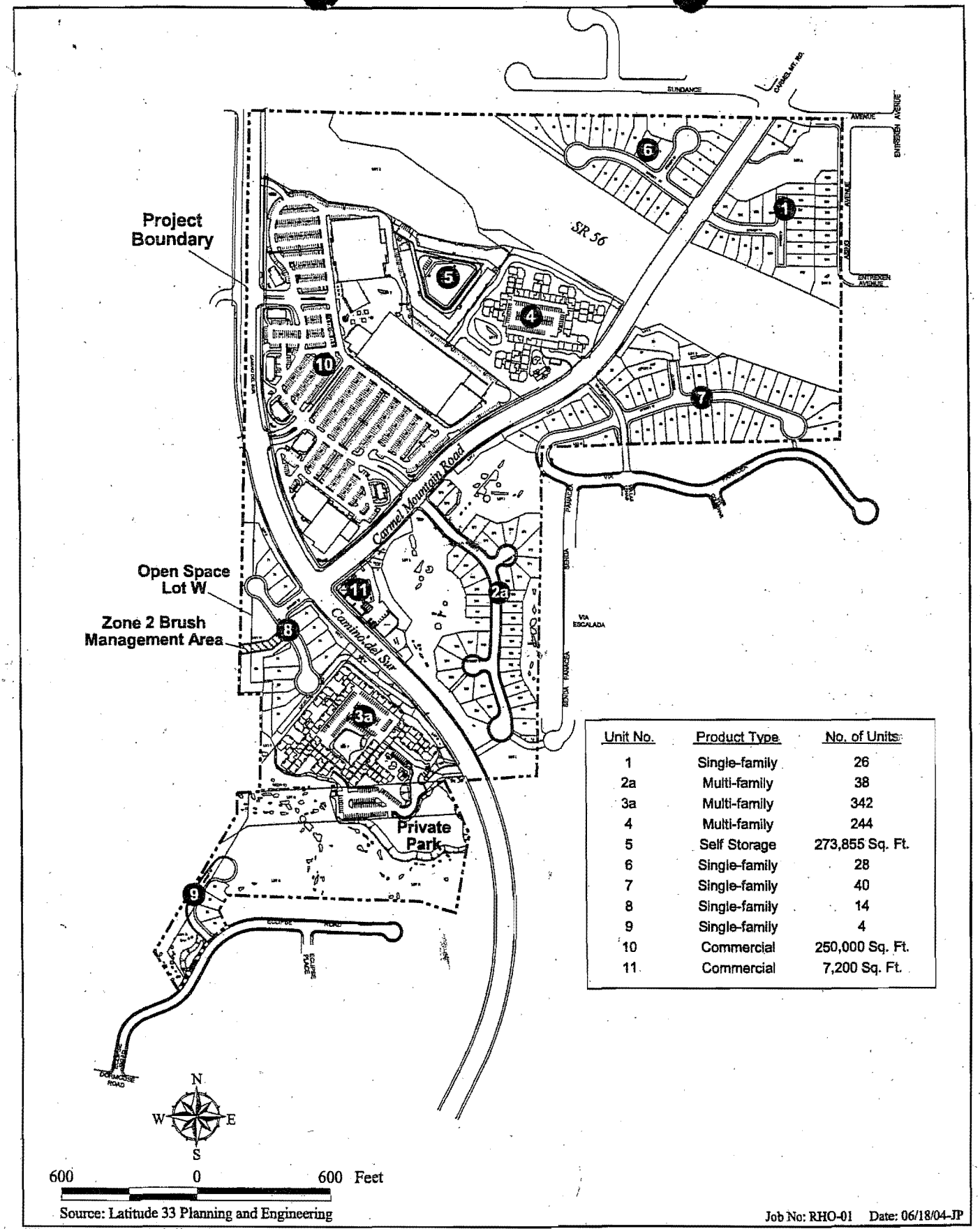
Project Vicinity Map

RHODES CROSSING

Figure 2

HELIX

ATTACHMENT 4
SITE MAP



Unit No.	Product Type	No. of Units
1	Single-family	26
2a	Multi-family	38
3a	Multi-family	342
4	Multi-family	244
5	Self Storage	273,855 Sq. Ft.
6	Single-family	28
7	Single-family	40
8	Single-family	14
9	Single-family	4
10	Commercial	250,000 Sq. Ft.
11	Commercial	7,200 Sq. Ft.

Source: Latitude 33 Planning and Engineering

Job No: RHO-01 Date: 06/18/04-JP

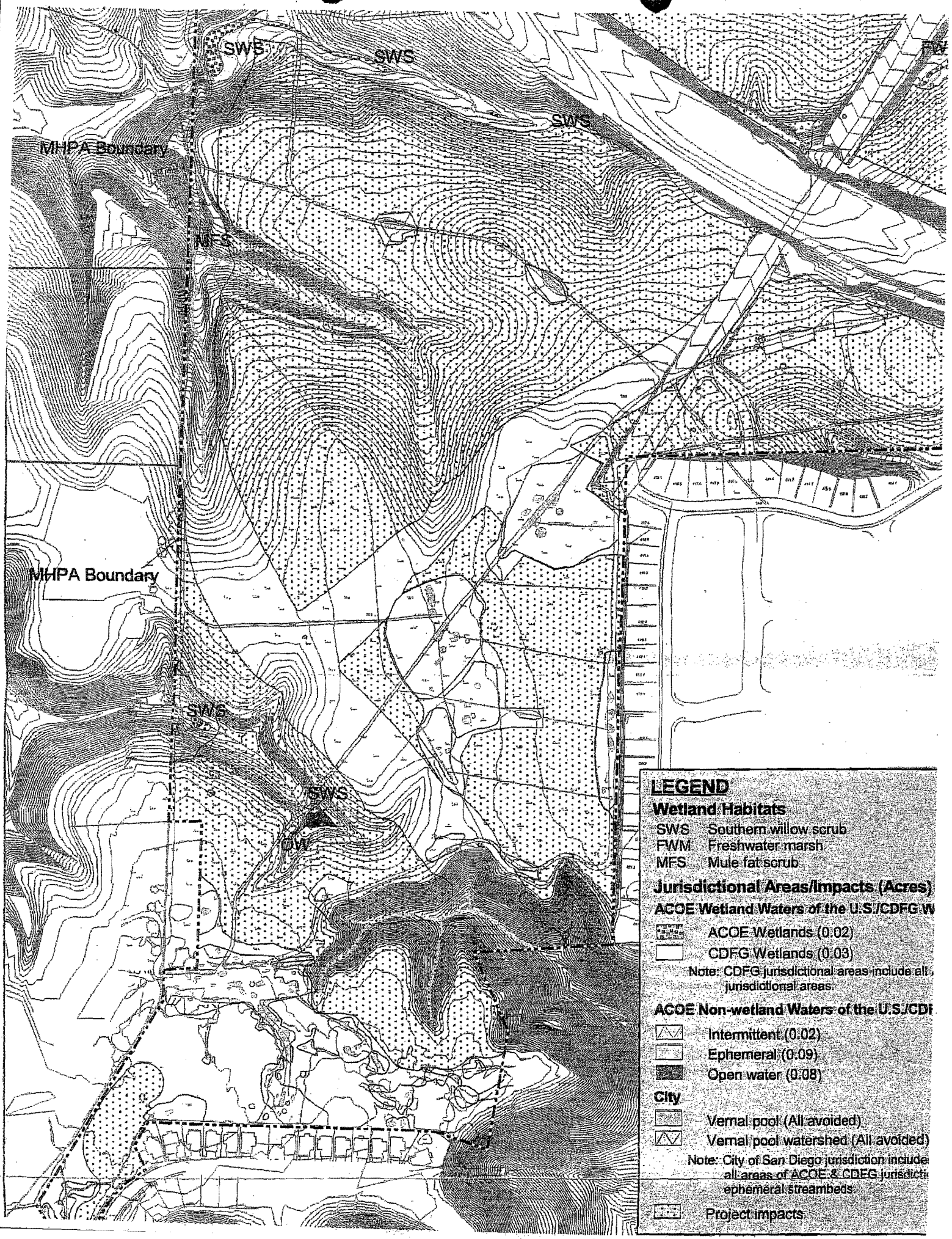
I:\GIS\R\RHO-01 Rhodes\Data\rho-01.apr\ACOE Permit - Site Plan

Site Plan

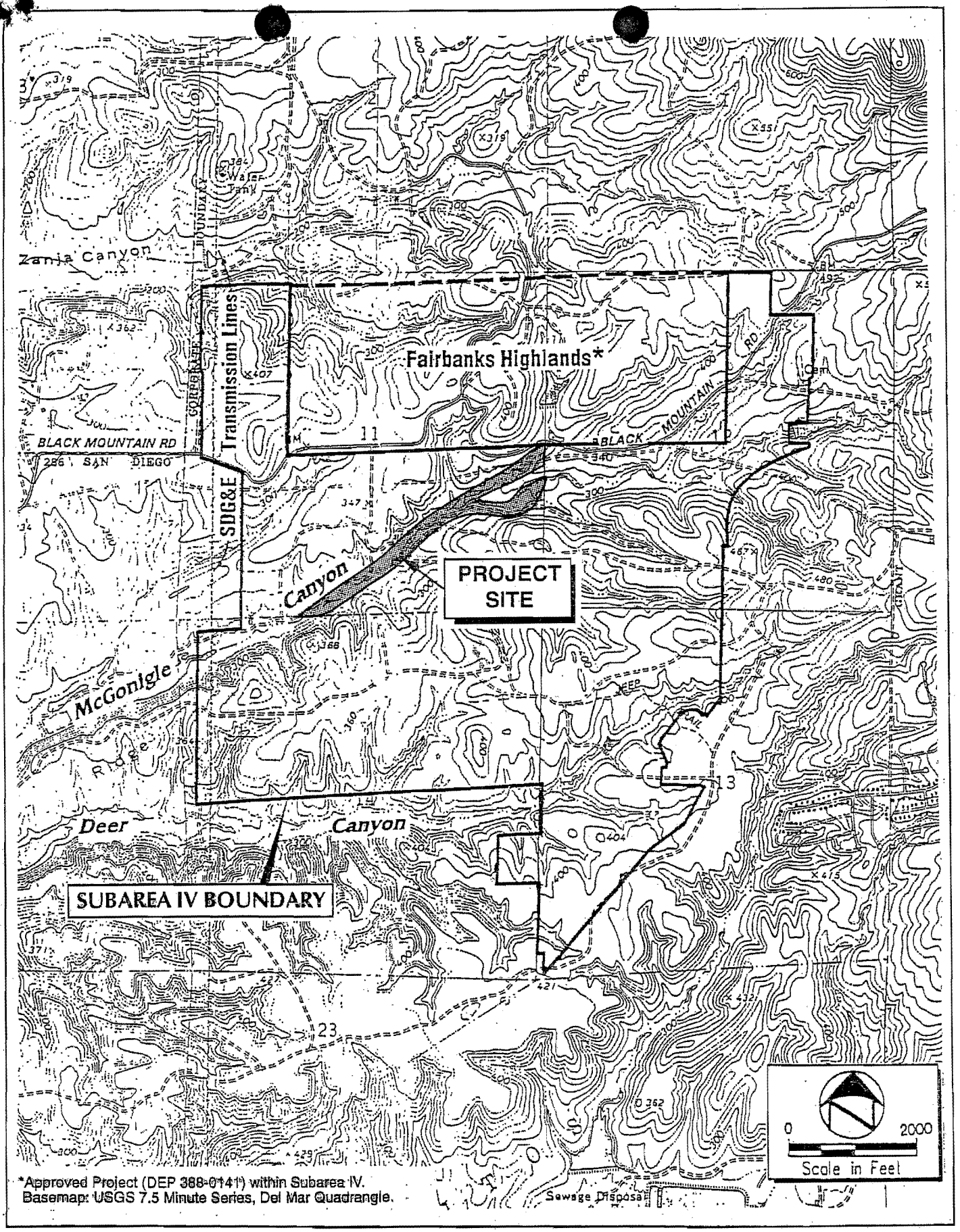
RHODES CROSSING HMP

HELIX

Figure 3


SWS
SWS
SWS
FW
MHPA Boundary
MFS
MHPA Boundary
SWS
SWS
OW
LEGEND
Wetland Habitats
SWS Southern willow scrub
FWM Freshwater marsh
MFS Mule fat scrub
Jurisdictional Areas/Impacts (Acres)
ACOE Wetland Waters of the U.S./CDFG W
ACOE Wetlands (0.02)
CDFG Wetlands (0.03)
Note: CDFG jurisdictional areas include all
jurisdictional areas.
ACOE Non-wetland Waters of the U.S./CDF
Intermittent (0.02)
Ephemeral (0.09)
Open water (0.08)
City
Vernal pool (All avoided)
Vernal pool watershed (All avoided)
Note: City of San Diego jurisdiction include
all areas of ACOE & CDFG jurisdicti
ephemeral streambeds
Project impacts

ATTACHMENT 5
MITIGATION MAP

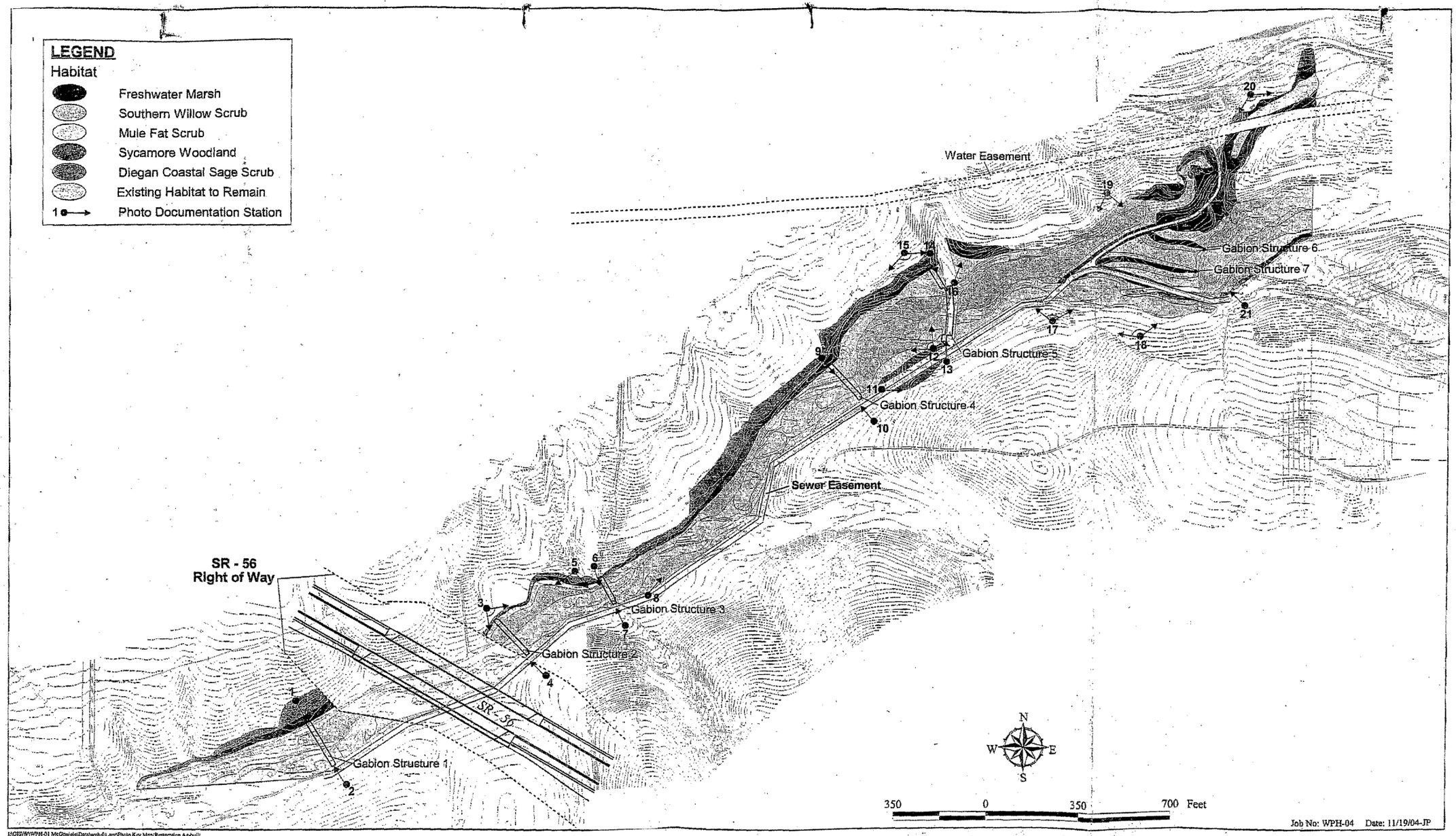


*Approved Project (DEP 368-0141) within Subarea IV.
Basemap: USGS 7.5 Minute Series, Del Mar Quadrangle.

Project Vicinity Map

McGONIGLE CANYON MITIGATION SITE
Figure 2

HELIX



Job No: WPH-04 Date: 11/19/04-JP

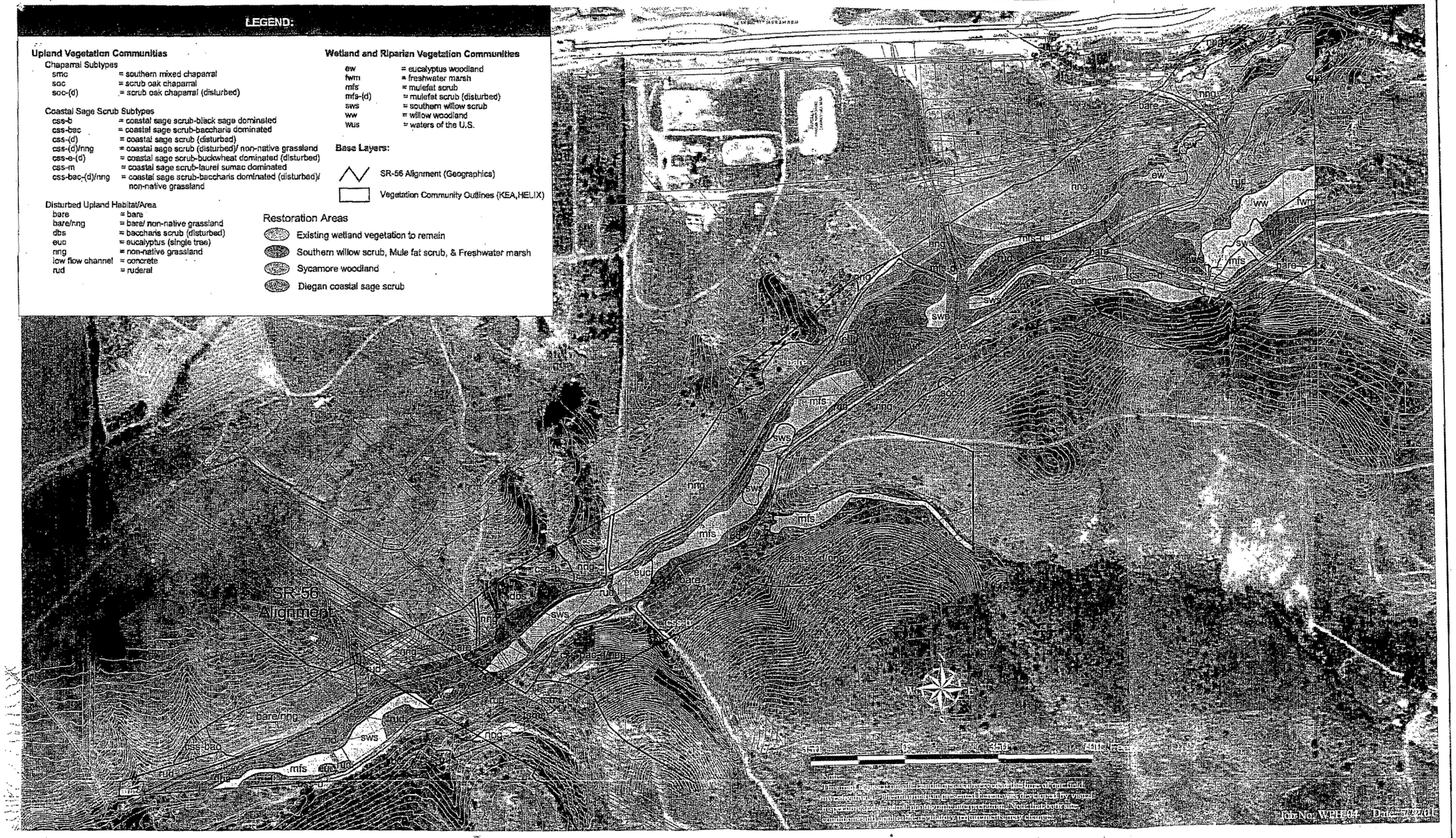
I:\GIS\WPH-01 McGonigle\Data\wph-01.apr\Photo Key Map/Restoration As-built

Restoration Vegetation As-Built

MCGONIGLE CANYON

Figure 3

HELIX



McGonigle Canyon Restoration Plan

McGONIGLE CANYON

Figure 4

HELIX

Appendix C

Streambed Alteration Agreement for Rhodes Crossing

State of California -The Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
www.wildlife.ca.gov

EDMUND G. BROWN, JR, Governor
CHARLTON H. BONHAM, Director

June 9, 2015

Mr. Keith B. Rhodes
Rhodes & Grus Investments
4495 Point Loma Avenue
San Diego, California 92107

Subject: Amendment 2 of Lake or Streambed Alteration Agreement
Notification No. 1600-2009-0286-R5
Rhodes Crossing Project

Dear Mr. Rhodes:

The Department of Fish and Wildlife (Department) has received your request to amend Streambed Alteration Agreement 1600-2009-0286-R5 (Agreement) and the required fee in the amount of $184.00 for a minor amendment. Your request to amend the Agreement includes the addition of an impact to 0.02 acre mulefat scrub vegetation that was inadvertently omitted in the previous amendment (Amendment 1, issued June 3, 2013).

The Department hereby agrees to amend the Agreement as requested.

Measure 1 is updated as follows:

1. The Applicant shall not impact/fill more than 0.24 acres of streambed. All impacts are considered permanent and consist of 0.03 acre southern willow scrub, 0.01 acre herbaceous wetland, 0.01 acre tamarisk scrub, 0.02 acre mulefat scrub, 0.12 acre streambed, and 0.05 acre open water.

Measure 2 is updated as follows:

2. The Applicant shall mitigate for impacts to 0.24 acre of streambed through the installation (re-establishment) of 28 of new vernal pools (totaling 0.27 acre) within areas on-site that contain appropriate clay soils and historically supported vernal pools, as described in the Rhodes Crossing Project Mitigation Plan prepared by Alden Environmental, Inc. and dated October 19, 2012 (Mitigation Plan). These newly restored vernal pools will support vernal pool plant indicator species and function as viable, self-sustaining vernal pool basins.

All other measures in the Agreement, as previously amended, remain in effect.

Copies of the Agreement and all amendments must be readily available at project worksites and must be presented when requested by a Department representative or agency with inspection authority.

If you have any questions regarding this matter, please contact Kelly Fisher at (858) 467-4207 or kelly.fisher@wildlife.ca.gov.

Sincerely,

Marilyn J. Fluharty
Senior Environmental Scientist

California Natural Resources Agency
DEPARTMENT OF FISH AND GAME
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
www.dfg.ca.gov

EDMUND G. BROWN, Jr., Governor
CHARLTON H. BONHAM, Director

June 3, 2013

Mr. Keith B. Rhodes
Rhodes & Grus Investments
4495 Point Loma Avenue
San Diego, California 92107

Subject: Extension and Amendment 1 of Lake or Streambed Alteration Agreement
Notification No. 1600-2009-0286-R5
Rhodes Crossing Project

Dear Mr. Rhodes:

The Department of Fish and Game (Department) has received your requests to extend and amend Streambed Alteration Agreement 1600-2009-0286-R5 (Agreement) and the required fees in the amounts of $224.00 for an extension and $168.00 for a minor amendment. Your request to amend the Agreement includes updating the vegetation types occurring within the impact area and revising the mitigation plan. While the impact footprint within the stream has not changed and the total area of impact remains 0.22 acre, the vegetation occurring within the impact sites has. Where previously there existed 0.03 acre southern willow scrub, 0.11 acre streambed, and 0.08 acre open water, there now exists 0.03 acre southern willow scrub, 0.01 acre herbaceous wetland, 0.01 acre tamarisk scrub, 0.12 acre streambed, and 0.05 acre open water. The mitigation strategy also has changed since the original Agreement was issued, and now consists of the on-site restoration of 0.27 acre vernal pool habitat, as described in the *Rhodes Crossing Project Mitigation Plan* prepared by Alden Environmental, Inc. and dated October 19, 2012.

The Department hereby grants your request to extend the Agreement from October 31, 2014 to June 30, 2018, and agrees to amend the agreement as follows.

Measure 1 is replaced with:

1. The Applicant shall not impact/fill more than 0.22 acres of streambed. All impacts are considered permanent and consist of 0.03 acre southern willow scrub, 0.01 acre herbaceous wetland, 0.01 acre tamarisk scrub, 0.12 acre streambed, and 0.05 acre open water.

Measure 2 is replaced with:

2. The Applicant shall mitigate for impacts to 0.22 acre of streambed through the installation (re-establishment) of 28 of new vernal pools (totaling 0.27 acre) within areas on-site that contain appropriate clay soils and historically supported vernal pools, as described in the Rhodes Crossing Project Mitigation Plan prepared by Alden Environmental, Inc. and dated October 19, 2012 (Mitigation Plan). These newly restored vernal pools will support vernal pool plant indicator species and function as viable, self-sustaining vernal pool basins.

Measure 4 is replaced with:

4. To ensure a successful re-establishment effort, the mitigation sites shall be monitored and maintained for 5 years. If the restored areas fail to meet the Year 5 standards after the full monitoring term, remedial measures will be developed and implemented, and the monitoring and maintenance period will be extended until all Year 5 standards are met. The monitoring period will be extended if a drought period prevents the pools from demonstrating the desired hydrologic patterns. At the completion of the monitoring period, the mitigation site shall have received no supplemental watering or irrigation for a period of two consecutive years. In order to be considered successful, the mitigation shall attain the following: 1.) species richness of each of the restored pools, relative to the average number of indicator species in the control pools, shall be 65%, with at least two indicator species present in each pool, after 3 years, and 100%, with at least three indicator species, after 5 years; 2.) vernal pool indicator plant species cover shall be at least 50% after 3 years and 90% after 5 years, in each of the restored pools; 3.) relative cover of Italian ryegrass (*Festuca perennis*) shall not exceed 5%, weed species categorized as High or Moderate in the California Invasive Plant Council 2006 Invasive Plant Inventory shall be less than 1%, and total cover of weed species shall not exceed 5%; 4.) at the end of the 5-year monitoring period, the restored pools shall demonstrate hydrologic patterns similar to those of the control pools; and 5.) the pools shall pond for sufficient time (estimated to be 7 to 10 days) to support San Diego fairy shrimp (*Brachinecta sandiegonensis*) during two seasons in the 5-year maintenance and monitoring period. A more thorough discussion of the Success Criteria, including goals for Years 1, 2, and 4 and the methods to be used to measure the success of the mitigation, is provided in the Mitigation Plan.

All other measures in the Agreement remain in effect.

Please sign and return one copy of this letter to acknowledge the amendment. Copies of the Agreement and this amendment must be readily available at project worksites and must be presented when requested by a Department representative or agency with inspection authority.

If you have any questions regarding this matter, please contact me at (858) 467-4207 or kfisher@dfg.ca.gov.

Sincerely,

Kelly Fisher

Ms. Kelly Fisher
Environmental Scientist

ACKNOWLEDGEMENT

I hereby agree to the above-referenced amendment.

Print Name: _____ Date: _____

Signature: _____

California Natural Resources Agency
DEPARTMENT OF FISH AND GAME
South Coast Region
4949 Viewridge Avenue
San Diego, California 92123
(858) 467-4201
www.dfg.ca.gov

ARNOLD SCHWARZENEGGER, Governor

November 4, 2009

Mr. Keith B. Rhodes
Keith B. Rhodes Living Trust
4495 Point Loma Avenue
San Diego, California 92107

Subject: Final Lake or Streambed Alteration Agreement
Notification No. 1600-2009-0286-R5
Rhodes Crossing Project

Dear Mr. Rhodes:

Enclosed is the final Streambed] Alteration Agreement ("Agreement") for the Rhodes Crossing Project] ("Project"). Before the Department may issue an Agreement, it must comply with the California Environmental Quality Act ("CEQA"). In this case, the Department, acting as a responsible agency, filed a notice of determination ("NOD") on November 4, 2009, based on information contained in the final Environmental Impact Report the lead agency prepared for the Project.

Under CEQA, filing a NOD starts a 30-day period within which a party may challenge the filing agency's approval of the project. You may begin your project before the 30-day period expires if you have obtained all necessary local, state, and federal permits or other authorizations,. However, if you elect to do so, it will be at your own risk.

If you have any questions regarding this matter, please contact Ms. Kelly Fisher at (858) 467-4207 or kfisher@dfg.ca.gov.

Sincerely,

Stephen M. Juarez
Environmental Program Manager

Enclosure

CALIFORNIA DEPARTMENT OF FISH AND GAME Page 1 of 8
South Coast Region
4949 Viewridge Avenue
San Diego, California 92123

Notification No. 1600-2009-0286-R5

AGREEMENT REGARDING PROPOSED STREAM OR LAKE ALTERATION

THIS AGREEMENT, entered into between the State of California, Department of Fish and Game, hereinafter called the Department, and Keith B. Rhodes, representing Keith B. Rhodes Living Trust (4495 Point Loma Avenue, San Diego, CA 92107; 619-269-9094) hereinafter called the Applicant, is as follows.

WHEREAS, pursuant to Section 1602 of California Fish and Game Code, the Applicant, on the 14th day of September, 2009, notified the Department that they intend to divert or obstruct the natural flow of, or change the bed, channel, or bank of, or use material from the bed of unnamed tributaries to Deer Canyon, tributary to Los Penasquitos Canyon, San Diego County, California (USGS Map: Del Mar; Range 3 West, Township 14 South, SBM; Calwater 4906.100000).

WHEREAS, the Department, represented by Kelly Fisher through a site visit on September 23, 2004, and based on information received by the Applicant, has determined that such operations may substantially adversely affect those existing fish and wildlife resources within the streambed of unnamed tributaries to Deer Canyon or adjacent riparian habitat, including: AMPHIBIANS - Pacific tree frog *(Hyla regilla)*, western toad *(Bufo boreas)*; REPTILES - western fence lizard *(Sceloporus occidentalis)*, side-blotched lizard *(Uta stansburiana)*, two-striped gartersnake *(Thamnophis hammondii)*; BIRDS - northern harrier *(Circus cyaneus)*, Cooper's hawk *(Accipiter cooperii)*, red-shouldered hawk *(Buteo lineatus)*, American kestrel *(Falco sparverius)*, killdeer *(Charadrius vociferus)*, Anna's hummingbird *(Calypte anna)*, western kingbird *(Tyrannus verticalis)*, western scrub jay *(Aphelocoma californica)*, Bewick's wren *(Thryomanes bewickii)*, bushtit *(Psaltriparus minimus)*, wrentit *(Chamaea fasciata)*, lesser goldfinch *(Carduelis psaltria)*, song sparrow *(Melospiza melodia)*, yellow warbler *(Dendroica petechia)*, common yellowthroat *(Geothlypis trichas)*; riparian vegetation which provides habitat for those species, and all other aquatic and wildlife resources in the project vicinity.

THEREFORE, the Department hereby proposes measures to protect fish and wildlife resources during the Applicant's work. The Applicant hereby agrees to accept and implement the following measures/conditions as part of the proposed work. The following provisions constitute the limit of activities agreed to and resolved by this Agreement. The signing of this Agreement does not imply that the Applicant is precluded from doing other activities at the site. However, activities not specifically agreed to and resolved by this Agreement shall be subject to separate notification pursuant to Fish and Game Code Sections 1600 *et seq*.

If the Applicant's work changes from that stated in the Notification specified above, this Agreement is no longer valid and a new Notification shall be submitted to the Department. Failure to comply with the provisions of this Agreement and with other pertinent code sections, including but not limited to Fish and Game Code Sections 5650, 5652, 5901, 5931, 5937, and 5948, may result in prosecution.

Nothing in this Agreement authorizes the Applicant to trespass on any land or property, nor does it relieve the Applicant of responsibility for compliance with applicable federal, state, or local laws or ordinances. A consummated Agreement does not constitute the Department's endorsement of the proposed operation, or assure the Department's concurrence with permits required from other agencies.

Term and Effective Date

This Agreement becomes effective the date of the Department's signature, and the construction/impacts portion terminates on October 31, 2014. The Agreement will remain in effect until the Department provides written confirmation that the mitigation requirements have been met. Any amendment shall be by written mutual consent of the Applicant and the Department, and shall be in compliance with the Department's regulations, policies, and procedures in effect as of the date of such amendment.

Extension

Pursuant to Section 1600 *et seq.*, the Applicant may request one extension of the Agreement; the Applicant shall request the extension of this Agreement prior to its termination. The one extension may be granted for up to five years from the date of termination of the Agreement and is subject to Departmental approval. The extension request and fees shall be submitted to the Department's South Coast Office at the above address, ATTN: Streambed Alteration Program – SAA #1600-2009-0286-R5. If the Applicant fails to request the extension prior to the Agreement's termination, then the Applicant shall submit a new Notification with fees and required information to the Department. Any construction/impacts conducted under an expired Agreement are a violation of Fish and Game Code Section 1600 *et seq.*

Project Description

The Applicant proposes to alter the stream/lake to construct the Rhodes Crossing Project, consisting of 112 single-family residences, 624 multi-family residences, 273,855 square feet of self storage, 257,200 square feet of mixed commercial development, and 24.7 acres of open space on approximately 88.3 acres of the 147-acre site. The proposed project will result in grading and fill in the streambed, and installation of rip-rap for dissipation at drainage outfalls. Native riparian habitats found on site include: southern willow scrub, freshwater marsh, open water, and streambed. The proposed project will result in impacts to 0.22 acres of streambed and riparian habitat, and will avoid impacts to 1.82 acres of streambed and riparian habitat.

Project Location

Project activities will occur within drainages occurring on the Rhodes Crossing project site. The project site is located west of Interstate 15, east of Interstate 5, and south of State Route 56, at the western terminus of Carmel Mountain Road, in the northern portion of the City of San Diego, San Diego County. Specific locations of the stream impacts within the project area are depicted on *Figure 4 Jurisdictional Impacts* included in the Notification Package.

Impacts

1. The Applicant shall not impact/fill more than 0.22 acres of streambed. All impacts are considered permanent and consist of 0.03 of acres southern willow scrub, 0.11 acres of streambed, and 0.08 acres of open water.

Compensatory Mitigation

2. The Applicant shall mitigate for impacts to 0.03 acres of southern willow scrub at a 2:1 replacement-to-impact ratio and for impacts to 0.11 acres of streambed and 0.08 acres of open water at a 1:1 ratio through the offsite creation of 0.25 acres of riparian scrub and/or woodland habitat. All offsite mitigation shall occur at the McGonigle Canyon site described in the Final Wetland Mitigation Plan (HELIX Environmental Planning, Inc., 2001).

3. The Applicant shall mitigate at a minimum 5:1 ratio for impacts beyond those authorized in this Agreement. In the event that additional mitigation is required, the type of mitigation shall be determined by the Department and may include creation, restoration, enhancement and/or preservation.

4. To ensure a successful revegetation effort, all plants shall be monitored and maintained as necessary for five years. All mitigation planting shall have a minimum of 100% survival the first year and 80% survival thereafter and/or shall attain 75% cover of native woody perennials after 3 years and 90% cover of native woody perennials after 5 years. If the survival and cover requirements have not been met, the Applicant is responsible for replacement planting to achieve these requirements. Replacement plants shall be monitored with the same survival and growth requirements for 5 years after planting. At the completion of the monitoring period, the mitigation site shall have received NO supplemental irrigation for a period of two consecutive years, nonnative plants shall not make up more than 5% of the entire cover of the site, no more than 5% of the site shall consist of bare ground and the site shall be free of invasive exotic plant species such as tamarisk.

5. An annual report shall be submitted to the Department by January 1 of each year for 5 years after the restoration/planting. This report shall include the survival, % cover, and height of both tree and shrub species. The number by species of plants replaced, an overview of the revegetation effort, and the method used to assess these parameters shall also be included. Photos from designated photo stations shall be included.

Avoidance and Minimization Measures

General

6. The agreed work includes activities associated with the Project Location and Project Description that is provided above. Specific work areas and mitigation measures are described on/in the plans and documents submitted by the Applicant, including the Notification Package for the Rhodes Crossing Project and shall be implemented as proposed unless directed differently by this Agreement.

7. The Applicant shall provide a copy of this Agreement to all contractors, subcontractors, and the Applicant's project supervisors. Copies of the Agreement shall be readily available at work sites at all times during periods of active work and must be presented to any Department personnel, or personnel from another agency, upon demand.

8. The Applicant shall notify the Department, in writing, at least five (5) days prior to initiation of construction (project) activities and at least five (5) days prior to completion of construction (project) activities. Notification shall be sent to the Department's South Coast Office at the address above, ATTN: Streambed Alteration Program – SAA # 1600-2009-0286-R5.

9. In the event that the project scope, nature, or environmental impact is altered by subsequent permit conditions by a local, state or federal regulatory authority, the Applicant shall either submit an Amendment request or re-Notify the Department of any project modification which conflicts with current conditions or project description.

Resource Protection

10. The Applicant shall use temporary construction fencing to identify the agreed limits of disturbance within the stream.

Biological Surveys and Time Restrictions

11. The Applicant shall not remove vegetation within the stream from March 15 to July 15 to avoid impacts to nesting birds. However, the Applicant may remove vegetation during this time if a qualified biologist conducts a survey for nesting birds within three days prior to the vegetation removal, and ensures no nesting birds shall be impacted by the project. These surveys shall include the areas within 200 feet of the edge of the proposed impact area(s). If active nests are found all project operations will cease until the young have fledged, are no longer being fed by the parents, and will no longer be impacted by the project. The Applicant shall submit the mapped survey results to the Department for review and approval prior to vegetation removal to ensure full avoidance measures are in place.

Structures

12. Storm drains lines/culverts shall be adequately sized to carry peak storm flows for the drainage to one outfall structure. The storm drain lines/culverts and the outfall structure shall be properly aligned within the stream and otherwise engineered, installed and maintained, to assure resistance to washout, and to erosion of the stream bed, stream banks and/or fill. Water velocity shall be dissipated at the outfall, to reduce erosion.

Equipment and Access

13. Any equipment or vehicles driven and/or operated within or adjacent to the stream shall be checked and maintained daily, to prevent leaks of materials that if introduced to water could be deleterious to aquatic life.

14. Stationary equipment such as cranes, motors, pumps, generators, and welders located within or adjacent to the stream shall be positioned over drip pans.

15. The clean-up of all spills shall begin immediately. The Department shall be notified immediately by the Applicant of any spills and shall be consulted regarding clean-up procedures.

Pollution, Sedimentation, and Litter

16. Preparation shall be made so that runoff from steep, erodible surfaces will be diverted into stable areas with little erosion potential. Frequent water checks shall be placed on dirt roads, cat tracks, or other work trails to control erosion.

17. Water containing mud, silt or other pollutants from aggregate washing or other activities shall not be allowed to enter a flowing stream or placed in locations that may be subjected to high storm flows.

18. Staging/storage areas for equipment and materials shall be located outside of the stream.

19. Structures and associated materials not designed to withstand high seasonal flows shall be removed to areas above the high water mark before such flows occur.

20. No debris, soil, silt, sand, bark, slash, sawdust, rubbish, construction waste, cement or concrete or washings thereof, asphalt, paint, oil or other petroleum products, or any other substances/materials associated with any project-related activity shall be allowed to contaminate the soil and/or enter into or be placed where they may be washed by rainfall or runoff into a stream or lake. Any of these substances/materials, placed within or where they may enter a stream or lake, by the Applicant or any party working under contract, or with the permission of the Applicant, shall be removed immediately upon observation of their presence. When operations are completed, any excess materials or debris shall be removed from the work area.

21. No rubbish shall be deposited within 150 feet of the high water mark of any stream or lake.

22. The Applicant shall comply with all litter and pollution laws. All contractors, subcontractors, and employees shall also obey these laws and it shall be the responsibility of the Applicant to ensure compliance.

23. No equipment maintenance shall be done within or near any stream/lake where petroleum products or other pollutants from the equipment may enter these areas under any flow.

24. Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic life, resulting from project related activities, shall be prevented from contaminating the soil and/or entering the waters of the state. Any of these materials, placed within or where they may enter a stream or lake, by Applicant or any party working under contract, or with the permission of the Applicant, shall be removed immediately.

Administrative

25. The Department reserves the right to suspend or cancel this Agreement under, but not limited to, one or more of the following circumstances:

a. the Department determines that the information provided by the Applicant in support of the Notification/Agreement is incomplete or inaccurate;

b. the Department obtains new information that was not known to it in preparing the terms and conditions of the Agreement;

c. the project or project activities as described in the Notification/Agreement change; and

d. the conditions affecting fish and wildlife resources change or the Department determines that project activities will result in a substantial adverse effect on the environment.

26. Before any suspension or cancellation of the Agreement, the Department will notify the Applicant in writing of the circumstances which the Department believes warrant suspension or cancellation. The Applicant will have seven (7) working days from the date of receipt of the Department's notification to respond in writing to the circumstances described in the notification. Upon receipt of the Department's notification, the Applicant shall cease all project activities specified in the notification until the Department informs the Applicant in writing that methods and/or measures have been identified, agreed upon, and shall be implemented to adequately address the reasons for the Department's notification.

27. All provisions of this agreement remain in force throughout the term of this Agreement. Any provisions of this Agreement may be amended at any time by mutual agreement of the parties. Any amendments to this Agreement shall be made in a separate writing, signed by the parties, and attached to this Agreement. Any approved amendments shall become part of this Agreement.

28. The Applicant agrees that it shall be responsible for any violations of this Agreement, whether committed by the Applicant or any person acting on behalf of the Applicant, including its agents, officers, and employees, representatives, or contractors and subcontractors, to complete the Project Activity authorized by this Agreement. This Agreement does not constitute the Department's endorsement of the authorized Project Activity.

29. It is understood the Department has entered into this Agreement for purposes of establishing protective features for fish and wildlife. The decision to proceed with the project is the sole responsibility of the Applicant, and is not required by this Agreement. It is further agreed all liability and/or incurred cost related to or arising from the Applicant's project and the fish and wildlife protective conditions of this Agreement remain the sole responsibility of the Applicant. The Applicant agrees to hold harmless the State of California and the Department against any related claim made by any party or parties for personal injury or any other damages.

30. The Department reserves the right to enter the project site at any time to ensure compliance with terms/conditions of this Agreement.

CONCURRENCE

Keith B. Rhodes

Keith B. Rhodes Date: 10-29-09
Name (signature)

Keith B. Rhodes
Name (printed)

Owner
Title

CALIFORNIA DEPARTMENT OF FISH AND GAME

Date: 5 Nov 09
Stephen M. Juarez
Environmental Program Manager
South Coast Region

Prepared October 23, 2009, by: Kelly Fisher, Environmental Scientist

Appendix D

Plant Species Observed

Appendix D
PLANT SPECIES OBSERVED

SCIENTIFIC NAME	COMMON NAME	VEGETATION COMMUNITY[1]
PTEROPSIDA – MARSILEALES		
Marsileaceae – Marsilea Family		
Pilularia americana	American pillwort	VP
ANGIOSPERMAE – MONOCOTYLEDONEAE		
Agavaceae – Agave Family		
Yucca schidigera	Spanish dagger	CSS
Alliaceae – Onion Family		
Brodiaea orcuttii[2]	Orcutt's brodiaea	NNG
Bloomeria (*Muilla*) *clevelandii*[2]	San Diego goldenstar	NNG
Cyperaceae-sedge Family		
Eleocharis macrostachya	pale spikerush	VP
Iridaceae – Iris Family		
Sisyrinchium bellum	blue-eyed grass	NNG
Juncaceae – Rush Family		
Juncus acutus var. *leopoldii*[2]	southwestern spiny rush	CSS
Juncus bufonius	toad rush	VP
Juncus dubius	Mariposa rush	
Poaceae (Gramineae) – Grass Family		
Avena sp.[3]	wild oats	NNG
Bromus diandrus[3]	ripgut grass	NNG, SWS, DIS, CC
Bromus hordeaceus[3]	soft chess	NNG
Bromus madritensis ssp. *rubens*[3]	red brome	NNG, CHP, DIS
Deschampsia danthonioides	annual hairgrass	VP
Elymus glaucus	blue wild rye	SWS
Festuca myuros[3]	fescue	CC
Gastridium ventricosum[3]	nitgrass	DIS, CHP
Heteropogon contortus[3]	common tanglehead	NNG
Lolium multiflorum[3]	ryegrass	NNG
Nassella lepida	needle grass	CSS
Polypogon monospeliensis[3]	rabbitfoot grass	VP
Stipa miliacea[3]	Smilo grass	SWS

Appendix D (continued)
PLANT SPECIES OBSERVED

SCIENTIFIC NAME	COMMON NAME	VEGETATION COMMUNITY[1]
ANGIOSPERMAE – DICOTYLEDONEAE		
Aizoaceae – Ice Plant Family		
Caropbrotus edulis[3]	hottentot fig	TS
Anacardiaceae – Sumac Family		
Malosma laurina	laurel sumac	CHP, CSS
Rhus integrifolia	lemonadeberry	CHP, NNG
Apiaceae – Carrot Family		
Apiastrum angustifolium	mock parsley	CHP
Apium graveolens[3]	celery	SWS
Asteraceae (Compositae) – Sunflower Family		
Ambrosia psilostachya	western ragweed	SWS
Anthemis cotula[3]	mayweed	DIS
Artemisia californica	California sagebrush	CHP, CSS, NNG
Baccharis pilularis ssp. *consanguinea*	coyote brush	CSS, CHP, SWS
Baccharis salicifolia	mule fat	SWS, MFS
Baccharis sarothroides	broom baccharis	CHP, CSS, NNG
Osmadenia tenella	osmadenia	DIS
Centaurea melitensis[3]	tocalote	NNG, DIS
Chrysanthemum coronarium[3]	garland chrysanthemum	DIS
Erigeron sp.	fleabane	DIS
Corethrogyne filaginifolia var. *virgata*	sand-aster	NNG
Cotula coronopifolia[3]	African brass-buttons	VP
Cynara cardunculus[3]	globe artichoke	NNG, DIS
Filago californica	California filago	DIS
Gnaphalium californicum	California everlasting	CSS, CHP
Helminthotheca echioides[3]	bristly ox-tongue	
Hemizonia fasciculata	tarweed	VP
Hypochoeris glabra[3]	smooth cat's ear	DIS
Isocoma menziesii var. *menziesii*	goldenbush	SWS
Lactuca serriola[3]	wild lettuce	DIS
Lasthenia californica	goldfields	DIS, CHP
Pluchea odorata	salt marsh fleabane	
Pseudognaphalium californicum	California everlasting	
Psilocarphus brevissimus	wooly marbles	VP
Psilocarphus tenellus	slender wooly-heads	VP
Silybum marianum[3]	milk thistle	
Sonchus asper[3]	prickly sow thistle	DIS
Stylocline gnaphalioides	everlasting nest-straw	DIS
Xanthium strumarium var. *canadense*[3]	cocklebur	SWS

Appendix D (continued)
PLANT SPECIES OBSERVED

SCIENTIFIC NAME	COMMON NAME	VEGETATION COMMUNITY[1]
ANGIOSPERMAE – DICOTYLEDONEAE (cont.)		
Brassicaceae (Cruciferae) – Mustard Family		
Brassica sp.[3]	wild mustard	NNG, DIS, TS
Cactaceae – Cactus Family		
Ferocactus viridescens[2]	San Diego barrel cactus	CSS, CHP
Opuntia littoralis	coastal prickly pear	CSS
Callitrichaceae – Water Starwort Family		
Callitriche marginata	long-stalk water-starwort	VP
Caryophyllaceae – Pink Family		
Spergula arvensis[3]	stickwort	CHP
Chenopodiaceae – Goosefoot Family		
Salsola australis[3]	tumble weed	DIS
Convolvulaceae – Morning-Glory Family		
Calystegia macrostegia	morning glory	CSS
Crassulaceae – Stonecrop Family		
Crassula aquatica	crassula	VP
Crassula connata	crassula	CSS, CHP, DIS
Ericaceae – Heath Family		
Xylococcus bicolor	mission manzanita	CHP
Comarostaphylis diversifolia ssp. *diversifolia*[2]	summer holly	CHP
Euphorbiaceae – Spurge Family		
Croton setiger	turkey mullein	NNG
Fabaceae (Leguminosae) – Pea Family		
Acmispon glaber	deerweed	NNG
Melilotus sp.	sweet-clover	DIS
Lupinus succulentus	arroyo lupine	CHP
Fagaceae – Oak Family		
Quercus berberidifolia	scrub oak	CHP
Quercus dumosa[2]	Nuttall's scrub oak	CHP

Appendix D (continued)
PLANT SPECIES OBSERVED

SCIENTIFIC NAME	COMMON NAME	VEGETATION COMMUNITY[1]
ANGIOSPERMAE – DICOTYLEDONEAE (cont.)		
Gentianaceae – Gentian Family		
Zeltnera venusta	California centaury	DIS
Geraniaceae – Geranium Family		
Erodium sp.[3]	filaree	CSS, NNG, DIS
Lamiaceae (Labiatae) – Mint Family		
Salvia mellifera	black sage	CSS, CHP
Lythraceae – Loosestrife Family		
Lythrum hyssopifolia[3]	grass poly	VP
Myrtaceae – Myrtle Family		
Callistemon rigidus[3]	red bottlebrush	SWS
Plantaginaceae – Plantain Family		
Plantago erecta	dot-seed plantain	CSS, CHP, DIS
Polemoniaceae – Phlox Family		
Navarretia hamata ssp. *leptantha*	navarretia	CHP
Polygonaceae – Buckwheat Family		
Eriogonum fasciculatum	California buckwheat	CSS, CHP
Rumex crispus[3]	curly dock	VP, SWS
Dichondra occidentalis[2]	western dichondra	CSS
Primulaceae – Primrose Family		
Anagallis arvensis[3]	scarlet pimpernel	DIS
Rhamnaceae – Buckthorn Family		
Ceanothus tomentosus ssp. *olivaceus*	Ramona lilac	CHP
Adolphia californica[2]	spine shrub	CSS
Rosaceae – Rose Family		
Adenostoma fasciculatum	chamise	CSS, CHP, NNG
Heteromeles arbutifolia	toyon	CHP

Appendix D (continued)
PLANT SPECIES OBSERVED

SCIENTIFIC NAME	COMMON NAME	VEGETATION COMMUNITY[1]
ANGIOSPERMAE – DICOTYLEDONEAE (cont.)		
Salicaceae – Willow Family		
Salix laevigata	red willow	SWS
Salix lasiolepis	arroyo willow	SWS
Salix gooddingii	southwestern willow	SWS, FWM
Saururaceae – Lizard-Tail Family		
Anemopsis californica	yerba mansa	
Scrophulariaceae – Figwort Family		
Mimulus aurantiacus	monkey-flower	CHP
Mimulus puniceus	red bush monkey-flower	CSS, CHP
Tamaricaceae – Tamarisk Family		
Tamarix ramosissima[3]	French tamarisk	SWS, TS
Typhaceae – Cattail Family		
Typha domingensis	southern cattail	SWS, TS, FWM

[1]Vegetation Community Codes: CHP=chaparrals; CSS=coastal sage scrub (including ecotone); DIS=disturbed/developed; FWM=freshwater marsh; MFS=mule fat scrub; NNG=non-native grassland; SWS=southern willow scrub; TS=tamarisk scrub; VP=vernal pool. Since this is a compilation of observations made from 1997 to 2014, the vegetation community information was not always available.
[2]Sensitive species
[3]Non-native species

Appendix E

Animal Species Observed or Detected

Appendix E
ANIMAL SPECIES OBSERVED OR DETECTED

SCIENTIFIC NAME	COMMON NAME	HABITAT[1]
INVERTEBRATES		
Butterflies		
Leptotes marina	marine blue	CSS
Crustaceans		
Anostraca – Fairy Shrimp		
Branchinecta sandiegonensis[2]	San Diego fairy shrimp	VP, RP
Podocopa – Marine Freshwater Ostracods		
Unidentified ostracod species	seed shrimp	VP
Cladocera – Water Fleas		
Daphnia sp.	water flea	VP
VERTEBRATES		
Amphibians		
Bufo boreas	western toad	VP
Spea hammondii[2]	western spadefoot	VP
Pseudaeris regilla	Pacific treefrog	VP
Reptiles		
Thamnophis hammondii[2]	two-striped garter snake	VP
Aspidoscelis hyperythra[2]	orange-throated whiptail	CSS
Phrynosoma blainvillii[2]	coast horned lizard	CHP
Uta stansburiana	side-blotched lizard	CSS
Birds		
Accipitridae – Kites, Eagles, Accipters, Buteos, Harriers		
Accipiter cooperii[2]	Cooper's hawk	CSS
Buteo jamaicensis	red-tailed hawk	
Buteo lineatus	red-shouldered hawk	SWS
Aegithalidae – Bushtit		
Psaltriparus minimus	bushtit	CSS, CHP
Charadriidae – Plovers		
Charadrius vociferus	killdeer	NNG

Appendix E (continued)
ANIMAL SPECIES OBSERVED OR DETECTED

SCIENTIFIC NAME	COMMON NAME	HABITAT[1]
VERTEBRATES (cont.)		
Birds (cont.)		
Columbidae – Pigeons and Doves		
Zenaida macroura	mourning dove	DIS, CSS
Columba livia	rock pigeon	
Sturnidae – Starlings		
Sturnus vulgaris	European starling	CSS
Trochilidae – Hummingbirds		
Calypte anna	Anna's hummingbird	CHP, CSS
Tyrannidae – Tyrant Flycatchers		
Tyrannus verticalis	western kingbird	CSS
Sayornis nigricans	black phoebe	
Sayornis saya	Say's phoebe	
Corvidae – Jays, Magpies, and Crows		
Aphelocoma californica	western scrub jay	CSS, CHP
Corvus brachyrhynchos	American crow	CSS
Corvus corax	common raven	
Cuculidae – Cuckoos, Roadrunner, and Anis		
Geococcyx californianus	greater roadrunner	
Emberizidae – Warblers, Sparrows, Blackbirds, and Relatives		
Geothlypis trichas	common yellowthroat	
Melospiza melodia	song sparrow	
Melozone crissalis	California towhee	CSS
Passerculus sandwichensis	savannah sparrow	
Pipilo maculatus	spotted towhee	
Setophaga coronata	yellow-rumped warbler	
Sturnella neglecta	western meadowlark	
Zonotrichia leucophrys	white-crowned sparrow	
Falconidae – Caracara and Falcons		
Falco sparverius	American kestrel	CHP
Fringillidae – Finches		
Carduelis psaltria	lesser goldfinch	CSS
Carpodacus mexicanus	house finch	CHP

Appendix E (continued)
ANIMAL SPECIES OBSERVED OR DETECTED

SCIENTIFIC NAME	COMMON NAME	HABITAT[1]
VERTEBRATES (cont.)		
Birds (cont.)		
Hirundinidae – Swallows		
Hirundo pyrrhonota	cliff swallow	CHP
Troglioditidae – Wrens		
Thryomanes bewickii	Bewick's wren	CSS
Troglodytes aegon	house wren	CSS
Mimidae – Mockingbirds and Thrashers		
Mimus polyglottos	northern mockingbird	CSS
Toxostoma redivivum	California thrasher	CSS
Muscicapidae – Kinglets, Gnatcatchers		
Chamaea fasciata	wrentit	CHP
Polioptila californica californica[2]	coastal California gnatcatcher	CSS
Phasianidae – Pheasants, Grouse, Quail		
Callipepla californica	California quail	CHP
Picidae – Woodpeckers		
Picoides nuttallii	Nuttall's woodpecker	CHP
Mammals		
Geomyidae – Pocket Gophers		
Thomomys bottae	Botta's pocket gopher	CHP
Leporidae – Rabbits and Hares		
Sylvilagus audubonii	desert cottontail	CSS, NNG
Lepus californicus bennettii[2]	San Diego black-tailed jackrabbit	NNG
Sciuridae – Squirrels, Chipmunks, and Marmots		
Spermophilus beecheyi	California ground squirrel	CSS
Canidae – Foxes, Wolves, and Relatives		
Canis latrans	coyote	(scat) CSS
Mustelidae – Weasels and Relatives		
Mephitis mephitis	striped skunk	CSS

Appendix E (continued)
ANIMAL SPECIES OBSERVED OR DETECTED

SCIENTIFIC NAME	COMMON NAME	HABITAT[1]
VERTEBRATES (cont.)		
Mammals (cont.)		
Cervidae – Cervids		
Odocoileus hemionus	mule deer	(scat) CSS

[1]Habitat Codes: CHP=chaparrals; CSS=coastal sage scrub (including ecotone); DIS=disturbed/developed; NNG=non-native grassland; RP=road pool; SWS=southern willow scrub; VP=vernal pool. Since this is a compilation of observations made from 1997 to 2014, the habitat information was not always available.
[2]Sensitive species

Appendix F

Explanation of Listing or Status Codes for Plant and Animal Species

Appendix F
EXPLANATION OF LISTING OR STATUS CODES
FOR PLANT AND ANIMAL SPECIES

U.S. Fish and Wildlife Service (USFWS)

FE Federally Listed Endangered
FT Federally Listed Threatened
FC Candidate for Federal Endangered Species Act Protection
BCC Bird of Conservation Concern—Represents USFWS' highest conservation priorities and draw attention to species in need of conservation action.

California Department of Fish and Wildlife (CDFW)

SE State Listed Endangered
SSC State Species of Special Concern—Declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.
WL Watch List—Birds that are/were: a) not on the current list of species of special concern but were on previous lists and have not been State listed under the California Endangered Species Act; b) previously State or federally listed and now are on neither list; or c) on the list of "Fully Protected" species.
FP Fully Protected refers to all vertebrate and invertebrate taxa of concern to the California Natural Diversity Data Base regardless of legal or protection status. These species may not be taken or possessed without a permit from the Fish and Game Commission and/or CDFW.

City of San Diego

MSCP Covered Species Covered Species are those species included in the Incidental Take Authorization issued to the City by the USFWS and CDFW as part of the City's MSCP Subarea Plan.

MSCP Narrow Endemic Species A species that is confined to a specific geographic region, soil type, and/or habitat. Narrow Endemic species are a subset of Covered Species.

Appendix F (continued)
EXPLANATION OF LISTING OR STATUS CODES
FOR PLANT AND ANIMAL SPECIES

California Native Plant Society (CNPS)

California Rare Plant Rank

1A = Presumed extirpated in California and either rare or extinct elsewhere.
1B = Rare, threatened, or endangered in California and elsewhere.

2A= Presumed extirpated in California but more common elsewhere.
2B= Rare, threatened, or endangered in California but more common elsewhere.
3 = More information is needed.
4 = A watch list for species of limited distribution.

Threat Rank

.1 = Seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)

.2 = Moderately endangered in California (20 to 80 percent occurrences threatened/moderate degree and immediacy of threat)

.3 = Not very threatened in California (less than 20 percent of occurrences threatened/ low degree and immediacy of threat or no current threats known)

Appendix G

Rhodes Crossing Project
Mitigation Plan

Rhodes Crossing Project
Mitigation Plan

February 23, 2015

Prepared for:

Rhodes and Grus Investments
4495 Point Loma Avenue
San Diego, CA 92107

Prepared by:

Alden Environmental, Inc.
3245 University Avenue, #1188
San Diego, CA 92104

ALDEN
ENVIRONMENTAL, INC

Rhodes Crossing Project
Mitigation Plan

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1.0 INTRODUCTION

This vernal/road pool enhancement and restoration plan provides mitigation for impacts associated with the Rhodes Crossing project including impacts to jurisdictional features, San Diego fairy shrimp (SDFS; *Branchinecta sandiegonensis*) Critical Habitat (CH), and potential indirect effects to vernal pools and the sensitive species they support. The measures identified herein are intended to meet the requirements of the project's Environmental Impact Report (EIR; Helix 2003a), U.S. Fish and Wildlife Service (USFWS) Biological Opinion (BO; USFWS 2012), U.S. Army Corps of Engineers (Corps) Nationwide Permit (NWP), California Department of Fish and Wildlife (CDFW) Section 1602 Streambed Alteration Agreement, and Regional Water Quality Control Board (RWQCB) Section 401 Water Quality Certification. All restoration and enhancement activities will occur on site.

This document is an update to a report prepared previously for the project by Helix Environmental Planning, Inc. (Helix 2010). Text from this earlier report has been revised and updated as necessary to reflect current site conditions, project features, and permit requirements.

2.0 PROJECT DESCRIPTION AND IMPACTS

2.1 PROJECT LOCATION

The Rhodes Crossing project is located in the northern portion of the City of San Diego (City), west of Interstate 15 (Figure 1) at the current southern terminus of Carmel Mountain Road. The project is located within the City's Rancho Peñasquitos and Torrey Highlands communities (Figure 2). The area lies entirely outside the City's current Multi-Habitat Planning Area (MHPA; [Figure 3]). The enhancement and restoration activities identified in this plan would occur on site, outside the proposed Rhodes Crossing project development footprint. This report uses restoration to mean the manipulation of the physical, biological, or chemical characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. Restoration is divided into 2 categories: rehabilitation and re-establishment. In this case, the category of restoration is re-establishment as the restoration activities would result in a gain in aquatic resource area and function.

2.2 PROJECT SUMMARY

The Rhodes Crossing project proposes amendments to the *Torrey Highlands Subarea IV Plan* and *Rancho Peñasquitos Community Plan* to alter the boundaries of, and the densities and land uses, within these plans. A Vesting Tentative Map, Planned Development Permit, Site Development Permit, and Conditional Use Permit are proposed to subdivide the site and provide development standards for the development of 144 single-family units; 584 multi-family units; 273,855 square feet of self-storage; 7,200 square feet of community commercial activities, and 250,000 square feet of regional commercial activities on approximately 84.1 acres within the 147-acre subdivision (Figure 3). A rezone and street/easement vacations are required to implement the project. Additional minor portions of the site would be graded in association with

the non-project related construction of the public roadways.
The current project is a result of several design changes that were intended to reduce project impacts to sensitive biological resources. The original development proposal covered the majority of the site and included impacts to vernal pools and San Diego fairy shrimp. The project has since been designed to avoid all vernal pools, road pools with fairy shrimp, and their watersheds. An additional 7 proposed lots were removed from the development plan during the Section 7 consultation with the USFWS to increase the vernal pool buffer in the preserved area in the center of the site.

2.3 SENSITIVE BIOLOGICAL RESOURCES ON SITE

2.3.1 Vernal Pools

Vernal pools are highly specialized habitats that support a unique flora and fauna. Vernal pools are associated with 2 important physical conditions: a subsurface hardpan or claypan that inhibits the downward percolation of water and topography characterized by a series of low hummocks (mima mounds) and depressions (vernal pools). These 2 physical conditions allow water to collect in the depressions during the rainy season. Water that has collected in these vernal pools gradually evaporates with the passing of the rainy season. As water evaporates, a gradient of low soil water availability to high soil water availability is created from the periphery of the pool margins to the center of the pool. The chemical composition of the remaining pool water becomes more concentrated as the pool water evaporates, creating a gradient of low ion concentration at the pool periphery to high ion concentration at the pool center. A temporal succession of plant species will occur at the receding pool margins, depending upon the physical and chemical microenvironmental characteristics of the pool. Vernal pools in a wet year will have a high proportion of native species that are endemic to this habitat. During these years, the exotic, ruderal species characteristic of the non-native grasslands that occur on the surrounding mima mounds will not invade these pools as they are unable to tolerate the physiological conditions. In years of scarce rainfall insufficient to saturate the soil and create a surface pool, the native endemic flora will not germinate, and the pool may be invaded by the exotic species.

A total of 144 vernal pools were mapped within the study area (Figure 3) with an overall surface area of approximately 0.71 acre. The vernal pools on site are of a low to moderate quality and exhibit overall low native plant species diversity and cover. Vernal pool indicator plant species (U.S. Army Corps of Engineers [Corps] 1997) observed within the vernal pools include San Diego mesa mint (*Pogogyne abramsii*), San Diego button-celery (*Eryngium aristulatum* var. *parishii*), woolly marbles (*Psilocarphus brevissimus*), long-stalk water-starwort (*Callitriche marginata*), crassula (*Crassula aquatica*), annual hairgrass (*Deschampsia danthonioides*), and American pillwort (*Pilularia americana*). The pools are located along trails and within areas previously used for agriculture. Because of their location adjacent to existing residential communities, the pools are subject to impacts from off-highway vehicle (OHV) and pedestrian activity.

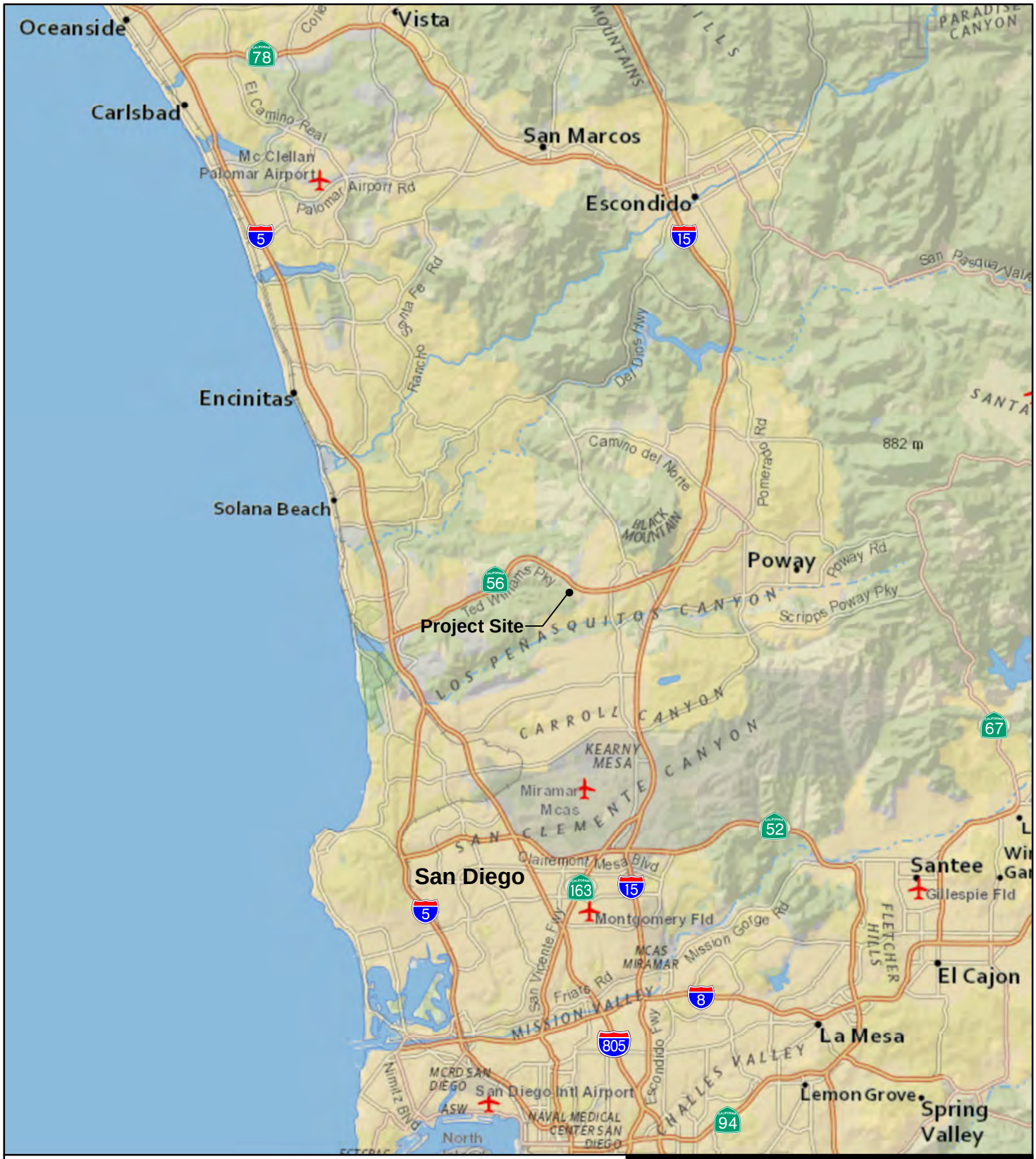

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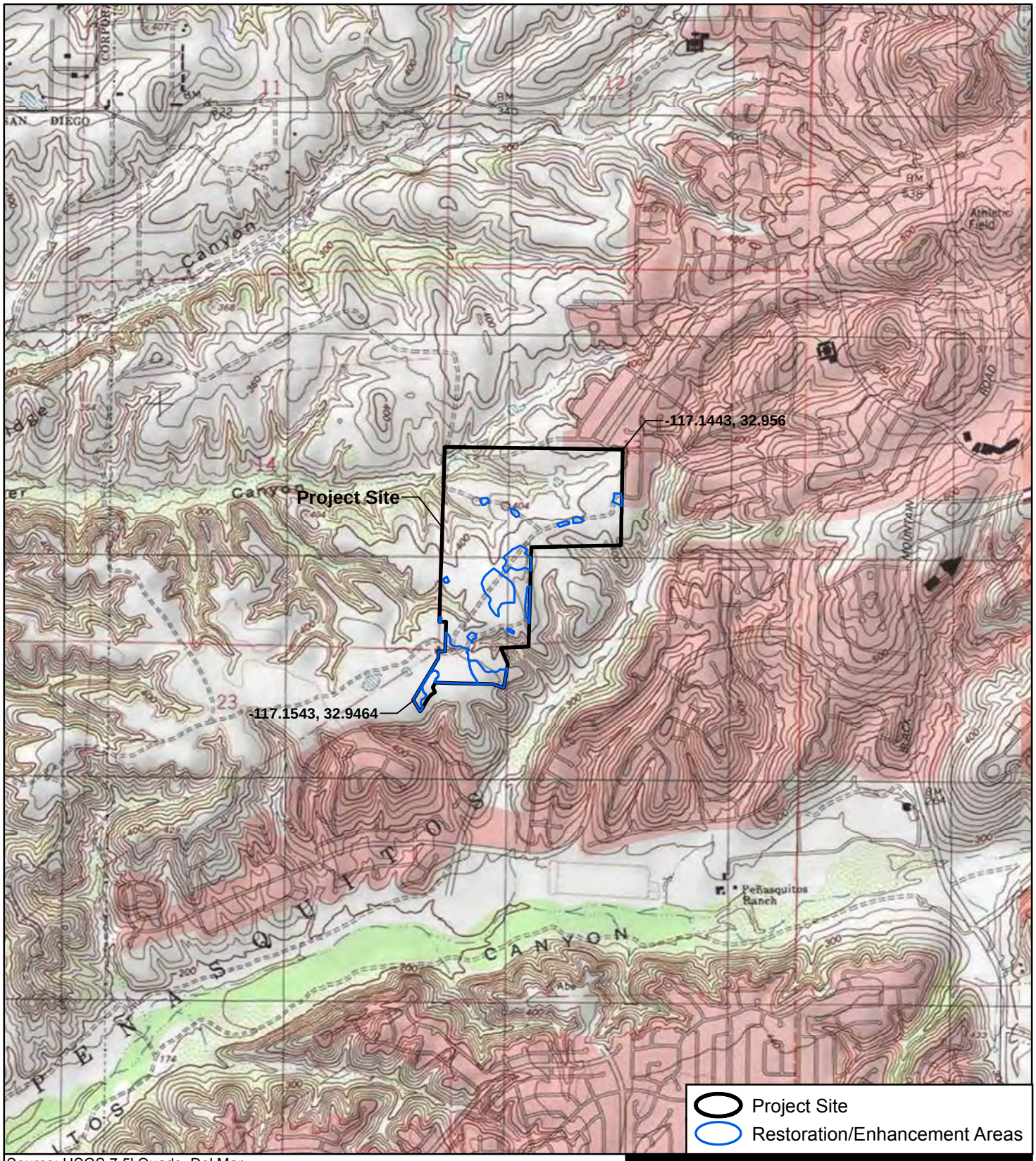
Figure 1

Regional Location

RHODES CROSSING MITIGATION PLAN



Source: USGS 7.5' Quads, Del Mar

N
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0 1,000 2,000
Feet

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Figure 2

Project Location

RHODES CROSSING MITIGATION PLAN

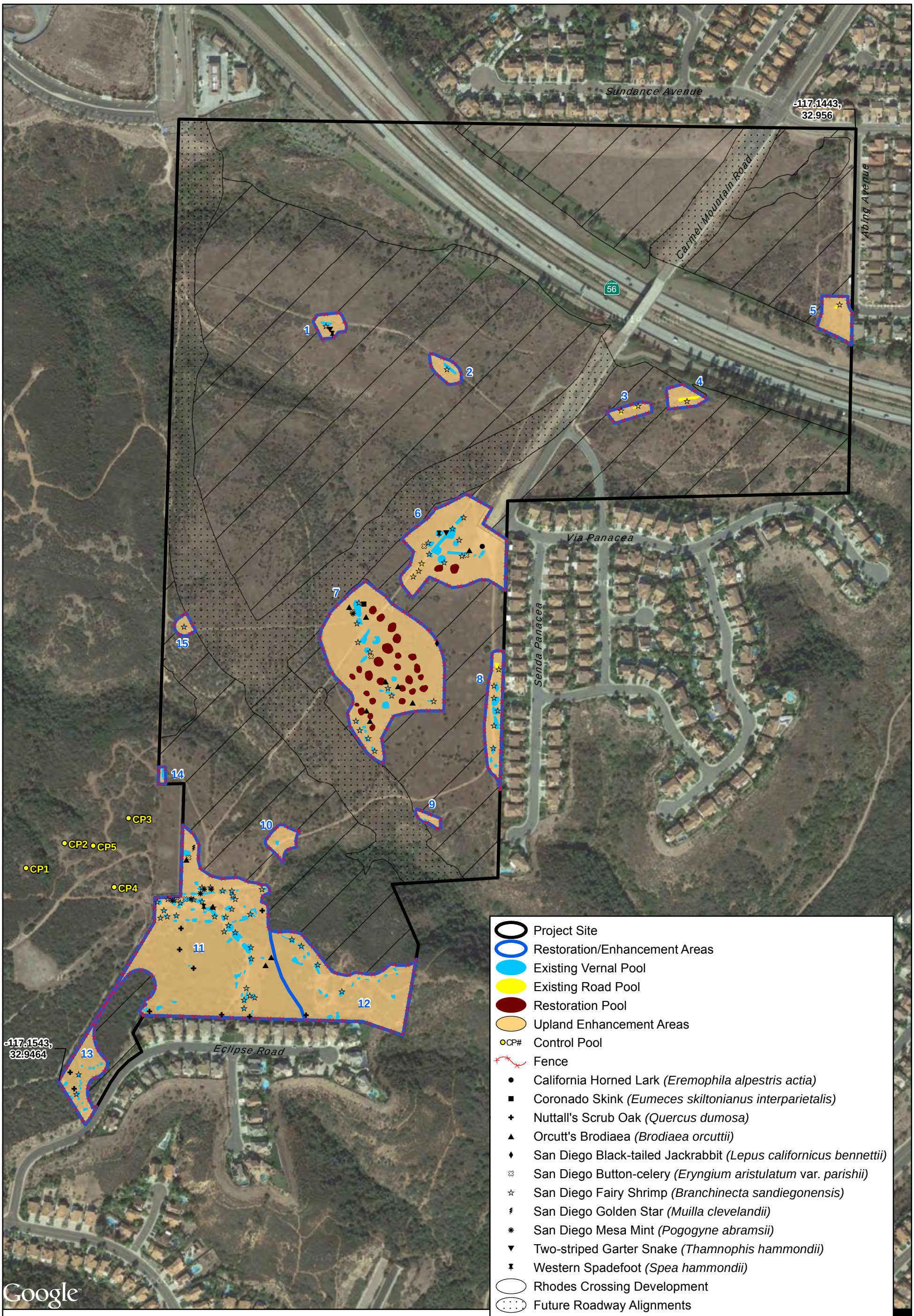


Figure 3

Vernal Pool Enhancement and Restoration Areas

RHODES CROSSING MITIGATION PLAN

N
W E
S
0 175 350
Feet

ALDEN ENVIRONMENTAL, INC

2.3.2 Road Pools

Eight (8) unvegetated, water-holding basins (road pools) supporting SDFS occur on site (Figure 3) with an overall surface area of approximately 0.03 acre. Road pools are distinguished from vernal pools by the absence of vernal pool indicator plant species. These pools are located along roads and trails in areas of heavy OHV activity, which has created or enhanced depressions and compacted the soil, making it very difficult for native vegetation to become established. This compaction allows water to pond readily even in a dry year when most natural vernal pools remain dry. All of the road pools lack vernal pool indicator plant species, and in many cases are devoid of vegetation.

2.3.3 Upland Habitat (Watershed)

The preserved watershed area surrounding the vernal/road pools is dominated by non-native grassland habitat. Non-native grassland is a dense to sparse cover of non-native grasses often associated with numerous species of showy-flowered, native, annual forbs. This vegetation community occurs in areas that have been previously disturbed by agricultural activities. Dominant species include oats (*Avena* sp.), red brome (*Bromus madritensis* ssp. *rubens*), ripgut (*Bromus diandrus*), ryegrass (*Lolium* sp.), and mustard (*Brassica* sp.). Other areas encompassed by the watersheds include Diegan coastal sage scrub (including disturbed), Diegan coastal sage scrub/southern mixed chaparral ecotone, southern mixed chaparral, chamise chaparral, and disturbed lands.

2.3.4 Sensitive Species

Sensitive plant species found within or adjacent to vernal pools on site include San Diego mesa mint, San Diego button-celery, Orcutt's brodiaea (*Brodiaea orcuttii*), and San Diego goldenstar (*Muilla clevelandii*; Figure 3). Sensitive animal species observed within or adjacent to vernal/road pools on site include SDFS, two-striped garter snake (*Thamnophis hammondii*), and western spadefoot (*Spea hammondii*; Figure 3).

2.4 IMPACTS TO SENSITIVE BIOLOGICAL RESOURCES

2.4.1 Vernal/Road Pools

The Rhodes Crossing project seeks to preserve the site's most important natural features, including all of the vernal pools (0.71 acre) and road pools (0.03 acre) on site, along with their associated watersheds (Helix 2003a). In so doing, direct impacts to vernal and road pool habitat would be avoided. Additionally, preservation of the surrounding watershed areas would avoid direct impacts to sensitive plant and animal species occurring within and near the vicinity of vernal/road pool habitat.

On the southern portion of the site, the vernal/road pools and their watersheds would connect a number of the pools to the Del Mar Mesa Vernal Pool Preserve located immediately off site to the west. This connectivity would improve the long-term viability of the pools. In addition, the project includes barriers between the preserved pools and the proposed development. These

barriers include block walls, heavy-gauge chain-link fencing, and wrought iron fencing. With these project design measures, impacts related to domestic pet and human activities are anticipated to be minimized.

The potential exists for water quality impacts on vernal and road pools due to the release of toxic materials and pesticides, herbicides, and fertilizers in urban runoff from parking lots and roads. In order to minimize the potential for indirect impacts related to contaminated runoff and changes in the hydrologic regime of the pools, proposed development grading generally has been designed such that the existing vernal/road pool watersheds would receive no additional runoff from developed areas. Much of the proposed development would be constructed downslope from the preserved vernal pool complexes. In these areas, surface water would flow away from the pool watersheds and toward developed areas. In some instances, development would occur at or near the same elevation as the preserved pools. In order to protect these pools and their watersheds, the surrounding development has been designed to slope away from the pools or to have a lower elevation area between development and the watersheds such that runoff is carried away from the pools. The exception to this would be along Street 'G' in the southwestern portion of the project site, where several small manufactured slopes would drain toward vernal pool watersheds. No residential lots or roadways would drain toward these watersheds. The slopes would be planted with native species and would not be irrigated. The amount of runoff draining towards the watersheds during storm events would essentially be the same as that prior to construction and is therefore not considered a significant impact.

There is potential for "leakage" from several vernal pools associated with cut slopes adjacent to the watersheds. The project would install non-permeable barriers as vertical elements inside cut slopes to ensure that this does not occur.

Finally, the project would revegetate slopes graded in the general vicinity of vernal and road pools with a vernal pool perimeter planting mix.

2.4.2 Rare Plants

All the sensitive species associated with the vernal pools would be preserved on site. There would be no direct impacts to listed vernal pool plant species.

2.4.3 Jurisdictional Features

Construction of the project will result in direct impacts to non-vernal pool Corps, RWQCB, and CDFW jurisdictional features. These features include wetlands, and ephemeral and intermittent streambeds. Table 1 presents the area of each impact type.

Table 1 **IMPACTS TO JURISDICTIONAL AREAS ON SITE** (acre[s])			
RESOURCE	**CORPS**		**CDFW/RWQCB**
	Wetland	**Non-wetland Waters of the U.S**	
Southern willow scrub	0.03	--	0.10
Mule fat scrub	--	--	0.02
Herbaceous wetland	0.01	--	0.01
Tamarisk scrub	0.01	--	0.01
Intermittent streambed	--	0.04	0.03
Ephemeral streambed	--	0.08	0.08
Open water	--	0.05	0.05
Vernal pools	--	--	--
TOTAL	**0.05**	**0.17**	**0.30**

The jurisdictional features to be impacted are small in size and somewhat disturbed with trash, weed species, and encroachment from adjacent development. Although these streams do not provide diverse habitat function they are representative headwater streams in arid landscapes and provide physical, chemical, and biological functions important to the integrity of aquatic ecosystems as a whole. In particular, low order streams provide flood attenuation, sediment delivery, secondary or tertiary sources of hydrology, and organic carbon to downstream riverine habitats. The streams on-site are natural moderate quality ephemeral and intermittent streams which accept urban runoff and natural flows from the surrounding developed and undeveloped lands.

2.4.4 San Diego Fairy Shrimp Critical Habitat

The Rhodes Crossing project will impact approximately 52 acres of USFWS designated SDFS CH as presented in the USFWS Biological Opinion (USFWS 2012).

3.0 MITIGATION REQUIREMENTS

The objective of this effort is to provide for full mitigation for permanent impacts to jurisdictional features (Table 1). This plan also provides mitigation for CH (52 acres) and potential indirect effects to vernal pool habitat per the City of San Diego. Mitigation requirements for the Rhodes Crossing project have been designated in the EIR, USFWS BO, Corps Nationwide Permit, RWQCB 401 Water Quality Certification, and CDFW Streambed Alteration Agreement. The project's direct impacts to jurisdictional wetlands and non-wetland waters of the U.S., indirect impacts to vernal pools, and direct impacts to designated SDFS CH will be offset through Permittee-responsible mitigation that includes:

(1) Enhancement of the on-site preserved pools through removal of all non-native invasive annual and perennial plants, trash and debris; throughout the 15 restoration areas located on the site (Figure 3);
(2) Re-establishment of 28 new vernal pools with 0.30 acre of surface area within the 6.96-acre restoration Areas 6 and 7; and
(3) Provision of long-term management through an endowment and dedication to an approved land management entity.

The proposed mitigation would re-establish vernal pool surface area and provide higher functions and values than those lost through project construction. The mitigation would begin before or concurrently with the proposed project impacts with success anticipated within a 7-year period. Compensatory mitigation implementation would occur no more than 6 months after project impacts to waters of the U.S. are initiated. Vernal pools are arguably the most threatened and rare of all wetland habitats in the region. The pools on site support listed San Diego fairy shrimp, San Diego button celery, and San Diego mesa mint. Numerous other vernal pool associated plant and animal species also occur within the vernal pools and would benefit from the proposed mitigation effort. The mitigation effort would preserve these species on site and increase their populations through habitat enhancement and restoration. The mitigation effort also includes restoration of the upland watershed area surrounding the pools, providing for improved habitat and water quality functions across a broad area. Overall, the mitigation effort would provide higher quality habitat than that impacted with superior functions and services.

3.1 POTENTIAL INDIRECT IMPACTS

The Rhodes Crossing project design avoids and preserves all the vernal and road pools on site. These pools are highly disturbed yet support several sensitive species. While the pools and their watersheds would be preserved, the EIR calls for enhancement of the on-site preserved pools as mitigation for potential indirect impacts from adjacent development to vernal pools and associated sensitive species.

Habitat enhancement involves minor restoration activities such as pool recontouring, weeding, and seeding. The vernal/road pool enhancement is intended to make minor alterations to the most disturbed pools to improve their quality such that they may better persist in the vicinity of the adjacent proposed development. In addition to vernal/road pools themselves, the surrounding upland habitat also will be enhanced to maintain the preserved watershed area.

All existing vernal/road pools located on site will be preserved and enhanced to meet the EIR mitigation measure.

3.2 JURISDICTIONAL IMPACTS

Mitigation for impacts to jurisdictional features (Table 1) would be met through re-establishment of vernal pool habitat in areas on site with appropriate clay soils that historically supported vernal pools. This re-establishment would be conducted as required in the Corps, RWQCB, and CDFW jurisdictional permits and agreements. The mitigation effort would restore a total of 0.27 acre of vernal pools to satisfy the permit requirements of these agencies.

3.3 SAN DIEGO FAIRY SHRIMP CRITICAL HABITAT

In addition, the USFWS BO calls for 0.30 acre of vernal pool re-establishment to mitigate for impacts to SDFS CH. Of this re-establishment, only 0.03 acre would be in addition to that required for jurisdictional impacts. The remaining 0.27 acre of re-established pools would satisfy both the jurisdictional impact and SDFS CH mitigation requirements. The combined total vernal pool re-establishment mitigation requirement is 0.30 acre.

4.0 DESCRIPTION OF THE PROPOSED MITIGATION SITE

4.1 LOCATION AND SIZE OF MITIGATION AREA

All the mitigation would be conducted on site within 15 identified preserve areas (Figure 3) with a combined area of approximately 19.25 acres (Table 2). All these areas support, or have the potential to support: non-native grassland, vernal pools, road pools with SDFS, San Diego mesa mint, San Diego button celery, and Diegan coastal sage scrub. The soils and topography are appropriate for vernal pool habitat.

4.2 OWNERSHIP STATUS

The on-site vernal/road pool enhancement areas are currently owned by three separate entities as shown on Figure 3. Contact information for each entity is provided below:

4.2.1 Lots 1, 6, & 7

KB Home, Coastal, Inc.
c/o Mr. Kurt Bausback
9915 Mira Mesa Blvd, Suite 120
San Diego, CA 92131

4.2.2 Lots 4, 5, & 10

Sea Breeze Properties, LLC
c/o Mr. Gary Levitt
3525 Del Mar Heights Road #246
San Diego, CA 92130

4.2.3 Remaining Lots

Rhodes and Grus Investments
c/o Mr. Keith Rhodes
4495 Point Loma Avenue
San Diego, CA 92107
Currently the proposed compensatory mitigation areas are not protected or preserved.

4.3 MITIGATION AREA EXISTING FUNCTIONS AND SERVICES

The on-site preserve areas are undeveloped with habitat consisting primarily of non-native grasslands over the mesa top. Most of the areas are within USFWS designated SDFS CH due to the presence of suitable fairy shrimp habitat elements including clay soils, presence of vernal pools, and flat topography. Sensitive plant species occurring in the preserve areas include San Diego mesa mint, San Diego button-celery, Orcutt's brodiaea (*Brodiaea orcuttii*), and Nuttall's scrub oak (*Quercus dumosa*; Figure 3; Helix 2010). San Diego mesa mint and San Diego button-celery (vernal pool associate species) are federally-listed as endangered and Multiple Species Conservation Program (MSCP) narrow endemic species. The remaining sensitive species are not federal- or state-listed as threatened or endangered, nor are they MSCP narrow endemic species. They are considered sensitive by the California Native Plant Society.

Sensitive animal species within the preserve areas include SDFS, California horned lark (*Eremophila alpestris actia*), Coronado skink (*Eumeces skiltonianus interparietalis*), two-striped garter snake (*Thamnophis hammondii*), western spadefoot (*Spea hammondii*), and San Diego black-tailed jackrabbit (*Lepus californicus bennettii*; Figure 3; Helix 2010). The SDFS is federally listed as endangered. The remaining animal species are local or regionally sensitive.

The existing pools currently provide moderate habitat functions and services as they are disturbed by non-native grasses and have historically been disturbed by agriculture, and by pedestrian and OHV usage. The existing pools show evidence of vehicular and other disturbances including tire ruts and steep pool edges. These disturbances alter the pool hydrological function and reduce the area of pool edge that can support a variety of vernal pool plant species. The surrounding watershed areas are dominated by non-native grassland habitat which provides a ready and ample seed source for weedy species to enter the pools.

4.4 MITIGATION SITE SUITABILITY

The proposed mitigation area is considered suitable for vernal pool restoration as a result of the presence of appropriate soils and topography on site and the presence of existing vernal pools. The site is flat to gently sloping, with less than a 5% average grade.

4.5 PRESENT AND PROPOSED USES OF THE MITIGATION SITE

The mitigation site is currently undeveloped and does not support any active uses. The proposed mitigation would occur in the 15 preserve areas on the site. The only proposed use for these areas is habitat preservation and management.

5.0 MITIGATION DESIGN

To meet Corps, USFWS, CDFW, City of San Diego, and RWQCB (hereafter referred to as "resource agencies") mitigation requirements, as appropriate, this plan recommends measures to restore vernal pool habitat by enhancing existing pools, enhancing the adjacent upland watershed habitat, and re-establishing 28 vernal pools with an approximate acreage of 0.30 acre (13,068 sq. ft.). It is anticipated that the functions and services of wetland habitat within the target area would be increased with the proposed mitigation measures.

5.1 VERNAL POOL ENHANCEMENT

Vernal/road pool enhancement will occur within all 15 preserve areas on site as mitigation for potential indirect impacts to vernal pool habitat and SDFS. A total of 144 existing vernal pools and 8 existing road pools ranging in size from 11.4 to 2,729.6 square feet will be enhanced. The combined area of these pools is approximately 32,118 square feet (0.74 acres; Table 2). Enhancement will include pool recontouring, removal of trash, and weeding of existing vernal pools. Specific implementation measures are detailed in Section 6.

In addition, the surrounding upland watershed (approximately 18 acres) within each preserve area will be enhanced and re-established. Watershed enhancement would consist of the control of invasive non-natives, and supplemental seeding and planting of native upland species.

Table 2
VERNAL/ROAD POOL ENHANCEMENT AREAS

NUMBER	Area (acres)	Pool Area (sqft)
1	0.22	382.4
2	0.21	583.7
3	0.19	216.3
4	0.24	674.9
5	0.42	116.8
6	2.46	6,207.9
7	4.50	5,227.1
8	0.64	2,812.0
9	0.09	34.3
10	0.24	145.6
11	6.43	11,376.5
12	2.73	2,977.7
13	0.74	1,131.7
14	0.04	220.2
15	0.11	11.4
TOTAL	**19.25**	**32,118.2**

5.2 VERNAL POOL RE-ESTABLISHMENT

Vernal pool re-establishment would occur entirely within Areas 6 (2.46 acres) and 7 (4.50 acres) (Figure 3). A total of 28 new vernal pools would be re-established to meet the project's overall 0.30-acre mitigation requirement for impacts to jurisdictional features (Table 1) and SDFS CH. Specific implementation measures are provided in Section 6. The re-established vernal pool surface area is intended to provide additional, vernal pool habitat that supports vernal pool plant indicator species (Corps 1997) and function as viable, self-sustaining vernal pool basins.

5.3 TARGET FUNCTIONS AND SERVICES

The goals of this mitigation effort are to enhance existing pools to mitigate for potential indirect project impacts and to re-establish 28 new vernal pools that would at a minimum replace the functions and services lost through impacts to jurisdictional (non vernal pool) features. With the completed restoration, it is expected that functions and services (water filtration, sensitive wildlife and plant habitat, etc.) that are currently being performed by the existing pools would be improved in the enhanced pools and increased in the re-established pools by the end of the 7-year mitigation effort. This realization of target functions and values would be documented by conducting quantitative and qualitative analyses throughout the 7-year monitoring period as well as California Rapid Assessment Method (CRAM) assessments prior to impacts, post re-establishment, and at the end of Years 3 and 7 of the mitigation effort.

The assessment will be conducted pursuant to the CRAM Vernal Pool Systems Field Book, Version 6.0. CRAM target values for the project are included in Section 8.

6.0 IMPLEMENTATION PLAN

The on-site habitat enhancement and restoration will consist of several components, including:

- Initial non-native grassland mowing and dethatching
- Enhancement of preserved pools
- Re-establishment of 0.30 acre of vernal pools in Areas 6 and 7
- Restoration of Diegan coastal sage scrub in all vernal pool watershed areas

6.1 RATIONALE FOR EXPECTING IMPLEMENTATION SUCCESS

The areas (6 and 7; Figure 3) selected for vernal/road pool enhancement currently support degraded vernal/road pools and (primarily) non-native habitat. This plan would enhance these existing pools and improve their habitat quality and function. Additionally, the vernal pool re-establishment would occur in Areas 6 and 7, which have sufficient area and suitable characteristics (soil, topography, hydrology) to support additional vernal pools.

Watershed ratios in previously conducted restoration efforts have been found to vary from as low as 4:1, and commonly 6:1 or 7:1 (RECON 1997). An initial hydrological analysis of Areas 6 and 7 was conducted to help determine if these areas would have sufficient watershed and surface

flow characteristics to support the proposed re-established (new) pool surface area, in addition to the existing and proposed enhanced pools. This analysis was conducted using the hydrological modeling capabilities of ArcGIS 10.1, and the Spatial Analyst and Arc Hydro GIS tools.

The model resulted in an approximately 6.4:1 watershed to pool ratio in Area 6, and 7:1 ratio in Area 7. This ratio includes the existing as well as the proposed enhanced and re-established pools. These ratios are similar to and larger than those found in several successful vernal pool restoration efforts and are anticipated to be sufficient for the proposed restoration effort.

In addition, the Institute for Ecohydrology Research prepared the Hydrological Study of the Rhodes Crossing Project Mitigation Plan (Attachment A) to further evaluate the potential for successful vernal pool restoration on the site. Specifically, the study was conducted to determine if there exists hydrological connectivity between Areas 6 and 7 that could be altered by construction (grading) of proposed roadway that would separate the two preserves.

The study included a field visit (January 16, 2015) to take detailed spatial and elevation measurements to create topographic computer models. These models were used to determine the catchment structures and flow patterns of surface water during the wet season. In addition, ground-penetrating radar was used to measure the presence and depth of soil layers that restrict water from infiltrating deep into the soil. Analysis of the topography and the soil water-restricting layer data was used to determine the structure of the catchment and directions of water flow. Further, a portion of the proposed road was included in the topographic model and the hydrological analysis repeated.

The study determined that Areas 6 and 7 are not connected hydrologically. The analysis of the proposed road identified it would create its own hydrological drainage. Overall, the patterns of water flow are generally from east to west and following the elevation gradient. This pattern places the water flows from Areas 6 and 7 parallel to each other. Some very localized flow patterns occur within the conservation areas that identify the source of upland water into existing natural vernal pools. Because the two conservation areas do not share hydrological connectivity, the development of the proposed road would not result in changes or loss of hydrological functioning. Based on these results, the site is anticipated to provide sufficient conditions within the proposed vernal pool mitigation areas for hydrological function of the constructed vernal pools.

6.2 RESPONSIBLE PARTIES

6.2.1 Project Proponent

Rhodes and Grus Investments (or the owner at the time of implementation) will be responsible for financing the installation, maintenance, and monitoring of the restoration/enhancement measures.

6.2.2 Restoration Specialist

Overall supervision of the installation, maintenance, and monitoring of this program will be the responsibility of a restoration specialist with a minimum of 5 years of vernal pool restoration experience and hold a valid USFWS permit to survey for the SDFS. The restoration specialist will educate all participants with regard to program goals and directly oversee all aspects of the project. In addition, the specialist will conduct all CRAM assessments, other monitoring data collection, and annual assessments, and prepare all required reports. If necessary, the restoration specialist will provide the project proponent and contractor with a brief report, including a written list of items in need of attention following each monitoring visit. The contractor will be responsible for carrying out all required measures in a timely manner. The restoration specialist will notify the contractor and responsible party if any requested remediation is not addressed.

6.2.3 Installation/Maintenance Contractor

The installation and maintenance contractor(s) will have vernal pool restoration experience and will, under the direction of the restoration specialist, be responsible for completion of grading, pre-planting weed control, planting, seeding, and maintenance. The restoration specialist will educate the contractor(s) on the installation and maintenance of vernal pool plant species.

After the installation is complete, maintenance personnel will initiate the 7-year maintenance program under the direction of the restoration specialist. Maintenance crews will service the entire enhancement area regularly following installation. Service will include but not be limited to weed control, trash removal, watering, fence repair, dead plant replacement, and re-seeding. All activities conducted will be seasonally appropriate and approved by the restoration specialist. The maintenance crew will meet the restoration specialist at the site when requested and will perform all checklist items in a timely manner as directed by the restoration specialist. The restoration specialist will ensure that maintenance personnel are capable of discerning between native plant species and non-native weed species.

6.3 CONTRACTOR EDUCATION

Prior to the commencement of site activities, the contractor(s) will review all aspects of this plan including permit requirements, site protection, maintenance inspections, landscape procedures, and monitoring. The restoration specialist will make the Contractor and all other contractors, subcontractors and the project supervisors aware of the agency permits and authorizations associated with the project. Copies of project permits will be kept onsite at all times during periods of active work and must be presented to any agency personnel upon demand.

6.4 IMPLEMENTATION SCHEDULE

Implementation of the restoration/enhancement program would commence in the fall following initiation of site development. This schedule assumes that weather and soil conditions are dry enough to conduct the restoration without causing irreparable damage to the vernal/road pool habitat and the surrounding watershed area. Pool grading cannot be conducted while the pool

soils are wet or damp, so it is expected that pool grading could not be conducted before June or July of a given year. Site dethatching could also only be carried out when soils are dry and capable of supporting machinery (usually June through November). No activities will be conducted within the pools until the following conditions have been met:

1. Pool disturbance will occur only when the soil is dry to the touch both at the surface and 1 inch below, and a visual check for color differences (i.e., darker soil indicating moisture) in the soil between the surface and 1 inch below indicates the soil is dry.

2. After a rain of greater than 0.2 inch, grading will occur only after the soil surface has dried sufficiently as described above and no sooner than 2 days (48 hours) after the rain event ends.

3. Grading will commence only when no rain is forecast during the anticipated grading period.

4. To prevent erosion and siltation from stormwater runoff due to unexpected rains, Best Management Practices (i.e., silt fences and fiber rolls) will be implemented as needed during grading.

5. If rain occurs during grading, work will stop and resume only after soils are dry as described above.

Initial activities will include marking of enhancement/restoration areas, topsoil salvage, weed and trash removal, and pool recontouring. Introduction of salvaged topsoil (if appropriate) and seeding of upland/inter-pool areas will start once the site has been cleared of all trash and debris. Pool enhancement and restoration will begin after the upland areas have been prepared.

Introduction of inoculum, container stock, and native seed will not occur until the USFWS and the Corps have approved of the habitat restoration site grading. All planting will be installed in a way that mimics natural plant distribution, and not in rows. Inoculum will not be introduced into the restored pools until after they have been demonstrated to retain water for the appropriate amount of time to support San Diego fairy shrimp (approximately 3 - 4 weeks). With USFWS and Corps approval, the pools may be artificially filled in order to determine their water holding capacity prior to inoculation. Water to be used to fill the pools will be raw water and will not have been treated with chloramine/chlorine.

Inoculum will be placed in a manner that preserves, to the maximum extent possible, the orientation of the fairy shrimp cysts within the surface layer of soil (e.g., collected inoculum will be distributed within the pond so that cysts have the potential to be brought into solution upon inundation). The entire enhancement and restoration effort is anticipated to be complete within 6 weeks of starting. Monitoring of the restoration effort will begin following installation. The monitoring program will continue for a 7-year period. Field surveys will be completed on a bi-weekly (every other week) basis during the rainy season and monthly during the dry season each year with an annual report being prepared and distributed by September. The results of the annual reports will be used to determine the success of the restoration effort and to determine any

remedial actions necessary. At the end of the 7-year period, a final report will be produced. A general checklist showing the phases and responsible parties is included in Table 3.

6.5 SITE PREPARATION

The intent of this plan is to enhance and restore vernal/road pool habitat as well as the surrounding watershed areas. Compacted roads and upland areas will be de-compacted to increase soil permeability and the potential for establishment of native coastal sage scrub habitat. All weeds, refuse, debris, and deleterious soil will be removed and disposed of in a licensed landfill.

6.5.1 Dethatching

Non-native grassland habitat within the on-site mitigation areas will be mowed and dethatched prior to initiation of other activities. The dethatching will remove dead grass stems (primarily wild oats [*Avena fatua*]) that have accumulated on the ground over time and that can inhibit the establishment and growth of native species. Dethatching consists of mowing or weed-whipping standing grass stalks, and raking, collecting, and removing the grass straw and other cut weeds from the site. All material will be removed from the site and be disposed of in a legal manner. Prior to dethatching, areas supporting native plants would be flagged for avoidance.

6.5.2 Vernal Pool Inoculum Salvage

Restoration of the native vernal pool habitat on site requires reintroduction of vernal pool plant and animal species. Enhanced pools will not receive inoculum from other pools. To help ensure that the re-established pools support a viable vernal pool flora and fauna, vernal pool topsoil will be collected from existing pools on site for use in the newly re-established pools. Hand tools (i.e., shovels and trowels and/or light machinery) would be used to remove the first 1 to 2 inches of soil from the existing pools. In no instance will more than 10 percent of the surface soil be removed from existing pools. Soil would be placed in boxes of sturdy, moving grade cardboard, with lids. Typically the size of each box is 12 inches x 15 inches x 10 inches (depth). Butcher paper (or similar) will be placed in the bottom of the boxes to reduce leaks. Boxes should only be filled to 3/4 of capacity or approximately 3/4 cubic feet each, to allow for safe movement. The collected inoculum from each pool would be labeled and kept separate from inoculum collected from other pools. The amount of inoculum collected from a given pool depends upon its size, slopes, and quality. Each box must be labeled with the pool number, box number, and date of collection. Boxes would be moved to a secure, dry, enclosed storage facility. Boxes should be stored off the floor, on pallets or similar.

Table 3 VERNAL POOL PLAN CHECKLIST						
Construction Phase	**Task**	**Applicable Parties**				
		Project Proponent[1]	**Grading Contractor**	**Installation Contractor**	**Maintenance Contractor**	**Restoration Specialist**
Pre-construction	Order seed and container stock[1]			X		
	Attend pre-construction meeting	X	X	X		X
	Document pre-impact conditions, including a CRAM assessment					X
	Confirm no change to San Diego fairy shrimp distribution on site					X
	Identify site limits and staging area					X
	Salvage topsoil and plant material			X		X
Installation	Delineate mitigation boundaries			X		X
	Remove non-native vegetation			X		X
	Restore vernal pool topography		X			X
	Install container stock and seed and replace vernal pool topsoil			X		X
	Prepare/submit as-built report					X
Seven-year Maintenance & Monitoring Period	Conduct maintenance monitoring and annual monitoring; Conduct Year 3 & 7 CRAM assessment					X
	Maintain site for remainder of 7 years - until signed off by resource agencies				X	X

[1] Must provide all source locations and receive authorization of final seed and plant lists prior to ordering

Off-site inoculum may also be necessary for the restoration effort. If it is deemed that off-site inoculum is necessary, the restoration specialist will contact the appropriate resource agencies (Corps and USFWS) for approval. Inoculum will be collected in limited quantity, coordinated with the USFWS, from source pools, such that no appreciable damage occurs to source pools. No more than 10 percent of the basin area of any donor pool will be used for collection of inoculum. Prior to collecting inoculum at any of the exempted donor pools, the donor pools should be surveyed to document that they are free of versatile fairy shrimp (*Branchinecta lindahli*).

6.5.3 Road De-compaction

All dirt roads and trails (excluding basins) within the restoration/enhancement areas will be ripped to a depth of 6 to 8 inches prior to seeding with a native Diegan coastal sage scrub seed mix. Road shoulders will be feathered back to original grades where possible. Following road de-compaction, an upland seed mix will be applied at the beginning of the rainy season to maximize the potential for germination.

6.5.4 Fencing

Prior to and during implementation of the vernal pool restoration effort, a temporary orange construction fence will restrict access to the restoration/enhancement areas. Permanent fences and walls will be constructed along the boundaries between the enhancement areas and adjacent development preventing OHV and pedestrian use of the preserve area (except for potential development of a trail in the southern portion of the site). The permanent barriers will be constructed as part of the Rhodes Crossing and other adjacent projects proposed by the current land owners and are not a component of this restoration plan. Descriptions of these proposed barriers (including locations) are provided in the Habitat Management Plan (HMP; Helix 2010). Steel signs will be attached to the fences and walls that will provide notice, in both English and Spanish, that the area is an ecological preserve and that trespassing is prohibited.

Additionally, specific development project (non-mitigation) construction monitoring measures called for in the EIR, agency permits, and USFWS BO (Terms and Conditions 2.1, 2.2, and 2.3) will be conducted by the entity responsible for project related permit compliance and is not included as a part of this mitigation plan.

6.6 POOL ENHANCEMENT AND RE-ESTABLISHMENT

Existing degraded pools within the mitigation areas (Figure 3) will be enhanced to replicate hydrologic conditions of existing, high quality vernal pool habitat in the Del Mar Mesa area. Enhancement within the existing pools will include minor recontouring, trash and tire rut removal, inoculation, and incorporation in the overall vernal pool weeding program (Section 6). Only pools with clear signs of previous disturbance (road ruts) will be recontoured to replicate natural pool topographic conditions.

The re-established pools (Figure 3) in Areas 6 and 7 will be formed to replicate hydrologic conditions of existing vernal pool habitat on Del Mar Mesa. These new pools also will be

incorporated in the weeding and maintenance effort. All re-established pools will be inoculated with appropriate vernal pool flora and fauna. Care will be taken to minimize the introduction of weed seeds into the re-established vernal pools. None of the collected inoculum will be mixed between pools. In addition, the inoculum placed in any pool will come from a single pool and will not be mixed with any other inoculum collected elsewhere.

Grading will be required to carry out the vernal pool enhancement and restoration activities. An engineered grading plan for the on-site mitigation areas will not be developed; rather, grading will be a field-directed exercise and micro elevations and micro grading will be determined and directed by the restoration specialist with final contours and watershed drainage patterns established in the field. A set of Conceptual Vernal Pool Topography Plans for: Rhodes Crossing has been prepared for the mitigation effort and is included as Attachment B to this plan. The conceptual plans show the general plan view of the pools, proposed pool grading limits, elevation contours (0.5 foot), seed mix, container stock plant palette, and irrigation and fencing notes.

A post-construction hydrologic analysis depicts the vernal pool restoration area and its watershed following project implementation and vernal pool restoration (Figure 4). Pools will be graded to have maximum depths of 4 to 6 inches with the goal of having appropriate ponding for SDFS. Pools are planned to have slopes of 12:1 to 15:1 to provide smooth, micro-topographic variance for vernal pool plants. Material removed during pool excavation will be used to create mima mounds.

Vernal pool grading will be carried out under the supervision of the restoration specialist. The restoration specialist will mark all areas to be graded. Existing sensitive habitats and plants will be marked as avoidance areas. Access routes will be identified and marked. No access will occur through the adjacent Caltrans preserve. An on-site meeting will be held with the restoration specialist and all installation personnel to identify sensitive areas and devise a strategy for avoidance prior to initiation of restoration activities. A staging area will be established outside of the on-site vernal pool restoration area. Grading shall be implemented using rubber-tired loaders, small bulldozers, and tractors. All vehicles and construction equipment will be restricted to the staging areas when not required for restoration activities.

6.7 UPLAND RESTORATION

6.7.1 Seed Mix

Upland seeding will take place in all disturbed, ripped, graded, and re-contoured areas (excluding basins) within the restoration/enhancement areas (Figure 3). Restoration of this habitat is critical to the overall success of the pool restoration/enhancement plan. Without vegetative cover to control erosion, the pools may fill with materials washed in from the adjacent upland areas. Within the upland area, the target vegetation habitat will be Diegan coastal sage scrub. The species included in the mix were selected because they are native and occur either on the project site or in the project vicinity (Del Mar Mesa). The Diegan coastal sage scrub mix is presented in Table 4. The seed will be sourced from the Del Mar Mesa area, as close to the site as possible. If seed is unavailable from the project vicinity, the restoration specialist may substitute species as

necessary, with approval of the Corps and USFWS. The source and proof (tags) for all seed will be provided.

Table 4 **DIEGAN COASTAL SAGE SCRUB SEED MIX**	
SPECIES	**POUNDS/ACRE**
Coyote bush (*Baccharis pilularis*)	3
Monkey-flower (*Mimulus aurantiacus*)	3
California sage brush (*Artemisia californica*)	3
Chia (*Salvia columbariae*)	1
Black sage (*Salvia mellifera*)	3
Fascicled tarweed (*Deinandra fasciculata*)	3
Deerweed (*Acmispon glaber*)	2
Dot-seed plantain (*Plantago erecta*)	3
Flat-top buckwheat (*Eriogonum fasciculatum*)	5
Golden yarrow (*Eriophyllum confertiflorum*)	3
California everlasting (*Gnaphalium californicum*)	3
Goldfields (*Lasthenia californica*)	2
Lemonadeberry (*Rhus integrifolia*)	1
San Diego needlegrass (*Stipa lepida*)	6
Chamise (*Adenostoma fasciculatum*)	4
TOTAL	**45**

Seed will be applied via a hydroseed application technique. A hydroseed slurry will be evenly applied in two stages such that an even, homogeneous distribution is made in each area. The first stage will include the seed, a small amount of fiber mulch, and dye. This application will help ensure that maximum seed/soil contact is made. A second layer will be applied immediately following the first. The second layer will include additional fiber mulch, dye, and a tackifier. The tackifier will serve to help bind seed and soil until germination. Hydroseed specifications are presented in Table 5.

Table 5 **HYDROSEED APPLICATION SPECIFICATIONS**		
Material	**First Application**	**Second Application**
Seed	As called for per site	N/A
Long fiber wood mulch	500 lbs/acre	1,000 lbs/acre
Dye	As necessary	As necessary
Tackifier	N/A	90 lbs/acre
Water	Sufficient to maintain slurry	Sufficient to maintain slurry

Hand seeding may be conducted in focused areas to help ensure targeted application of seed. Areas not treated with the hydroseed slurry will be hand seeded following hydroseeding to make sure all areas are seeded. These areas will be determined at the time of seeding and will include

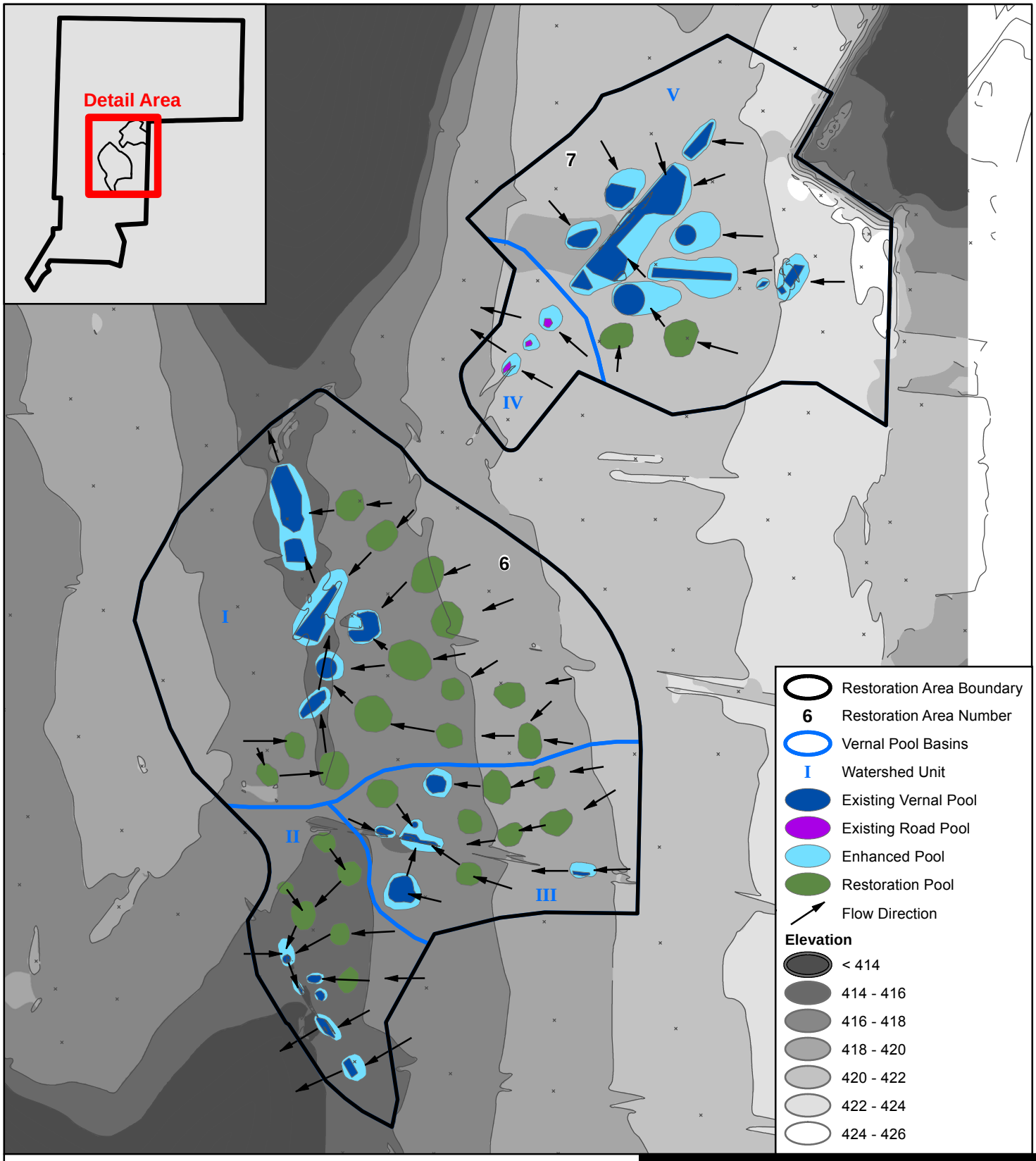


Figure 4

Restoration Pool Hydrological Analysis

RHODES CROSSING MITIGATION PLAN

N
W
E
S
0
65
130
Feet

ALDEN
ENVIRONMENTAL, INC

areas where hydroseeding may not be possible, where existing native plants may be negatively affected by the hydroseed slurry, or where it is thought that certain species may be appropriate in small areas. Seed of different species will only be mixed when they are to be applied to the same location. Individual species may be seeded separately as directed by the project restoration specialist. Hand broadcasters will be used to help ensure a consistent application of seed. An inert carrier (sand, saw dust) may also be mixed with the seed to help maintain consistency. Seeding will not be conducted during windy conditions. Seed will be raked into soil after application to help increase seed/soil contact.

6.7.2 Container Stock

In addition to seed, native container stock will be planted in the upland areas (Table 6). The container stock will be sourced from the Del Mar Mesa area, as close to the site as possible. If container stock is unavailable from the project vicinity, the restoration specialist may substitute species as necessary, with approval of the Corps and USFWS. The source and proof for all plant material will be provided. All container stock will be inspected and approved by the restoration specialist prior to being installed. Specifically, the restoration specialist will ensure that:

- The correct number, size, and species ordered are delivered;
- Plants are healthy and showing no sign of disease;
- Roots fill the containers, but are not root bound;
- There is no breakage of plants;
- Plants show no evidence of pests;
- Plants are in a state suitable for outplanting.

The restoration specialist will reject any plants not meeting these requirements.

Table 6
DIEGAN COASTAL SAGE SCRUB CONTAINER STOCK SPECIES[1]

Species	Number Per Acre
Laurel sumac (*Malosma laurina*)	10
Coastal prickly pear (*Opuntia littoralis*)	10
Chamise (*Adenostoma fasciculatum*)	15
Lemonadeberry (*Rhus integrifolia*)	5
San Diego needlegrass (*Stipa lepida*)	300
California sage brush (*Artemisia californica*)	50
California buckwheat (*Eriogonum fasciculatum*)	50
TOTAL	**440**

[1] All container stock is 1 gallon except for *Stipa pulchra* which are plugs

The installation contractor will be responsible for planting all container stock within four days following delivery. Container stock staged on site will be placed in a protected area and watered regularly prior to planting. Container stock will be planted in such a way as to mimic a natural species distribution. The project restoration specialist will specify the locations for all planting. Plants will be placed in natural groupings with appropriate spacing for the given species/target habitat type. Holes for each plant will be dug twice as deep and twice as wide as the container size. The hole will then be refilled to the halfway point, slightly compacted, and filled with water. Once all the water has soaked into the soil, the container stock will be planted such that the container plant soil level is slightly above ground level. Loose soil will be used to fill in the areas around the root ball and help ensure that there are no air spaces. Remaining soil will be used to create a watering basin around the plant.

6.7.3 Material Salvage

The seed and container stock identified above is intended to be implemented without using any native plant/soil material salvaged from the adjacent development projects. If salvaged upland soil/plant material is made available to the mitigation project during the installation phase it will be incorporated into the upland watershed areas in Areas 6 & 7, to the extent practicable.

6.8 IRRIGATION PLAN

No broadcast irrigation is planned or considered appropriate for this project. Runoff from any spray irrigation could alter the hydrology or water chemistry of the surrounding vernal pools. Irrigation runoff entering pools could cause vernal pool plant seed germination or fairy shrimp cysts to leave diapause at a time of year not appropriate, and therefore cause the death of these individuals.

Any artificial watering of the pool watersheds will be done in a manner that prevents water from entering into the pools. Any water to be used will be identified and documented to be free of contaminants that could harm the pools.

Container stock and grass plugs will be watered at the time of planting, and then periodically during the installation and maintenance period. A water truck will be brought to the site, and water will be moved to the container stock by hose or watering can. The water truck will remain on designated roads, and will not enter the restoration sites. Each planting will be individually watered by hand, in a way such that runoff from the planting does not occur.

6.9 WILDLIFE HABITAT ENHANCEMENT

In addition to seeding and planting, the restoration effort will include additional measures intended to increase the potential for wildlife usage of the site, particularly in the early years prior to full establishment.

6.9.1 San Diego Fairy Shrimp

The majority of the restoration/enhancement areas are within designated CH for the SDFS. The habitat restoration effort is intended to improve the quality of the habitat for this and other vernal pool associated species through vernal pool habitat restoration and enhancement of the primary constituent elements (PCEs) of SDFS habitat. PCEs for this species include:

1. Vernal pools with shallow to moderate depths that hold water for sufficient lengths of time necessary for incubation, maturation, and reproduction of the SDFS, in all but the driest years;

2. Topographic features characterized by mounds, swales, and depressions within a matrix of surrounding uplands that result in complexes of continuously, or intermittently, flowing surface water in the swales connecting the pools described in PCE 1, providing for dispersal and promoting hydro periods of adequate length in the pools (i.e., the vernal pool watershed); and

3. Flat to gently sloping topography, and any soil type with a clay component and/or an impermeable surface or subsurface layer known to support vernal pool habitat (including Carlsbad, Chesterton, Diablo, Huerhuero, Linne, Olivenhain, Placentia, Redding, and Stockpen soils).

All of these PCEs occur within the restoration/enhancement areas. The activities proposed in this plan will improve and increase the presence of PCEs 1 and 2 noted above. Specifically, the project will increase the amount of vernal pools supporting SDFS on site by as much as 0.30 acre in new, re-established pools. Additionally, the enhancement of the existing pools will improve their potential to support the SDFS.

6.9.2 Small Animal Cover

As an aid to wildlife establishment within the restoration area, shelter for small animal species will be created. The first type of shelter involves placement of 20 half-inch thick plywood boards, measuring 2 x 4 feet. These boards will provide shade, cover, and nesting locations for species including mice, lizards, snakes, and numerous invertebrate species (i.e., insects, spiders, etc.). The boards also provide an opportunity to monitor the wildlife usage of the site. During regularly scheduled monitoring visits, the restoration specialist will be able to lift each board and note the species present. There are no specific monitoring requirements or performance standards for the boards. The boards are intended to be left in place and allowed to break down naturally.

Additionally, shrub and brush material available on site will be collected by hand and stacked into low brush piles to provide additional cover for small animals. Each pile will be approximately 4 to 6 feet in diameter and 2 to 3 feet in height, provided sufficient material is available. This can be especially beneficial during the initial stages of the effort when there will be no cover available for small animals to utilize. The brush piles will be distributed throughout the restoration area. The final number and size of piles will depend upon the amount of material

available on site. There are no specific monitoring requirements or performance standards for the brush piles.

6.9.3 Pollinator Support

Pollinator species may include bats, birds, and a host of insects that are integral in a diverse, self-sustaining habitat. The upland habitat seed mixes include a variety of species with overlapping flowering periods to help support a range of pollinators that will stimulate continued seed production and provide pollen and nectar sources for foraging wildlife. To help facilitate presence of insect pollinator species a total of 10 bee blocks (Sarver 2007, Xerces 2012) will be prepared and scattered throughout the areas 6 and 7. The bee blocks will provide nesting locations for native wood and cavity-nesting bees during the initial plant establishment period when there will be little substrate for bees to utilize. Bee species from the Apidae, Colletidae, Halictidae, and Megachilidae families are expected to use the blocks. The bee blocks will be made by drilling holes (3/32 inch to 3/8 inch in diameter) into the side of untreated 4 inch x 8 inch by 12 inch blocks of wood. The holes will be drilled approximately 3/4 inch on center. The depth of the holes will vary depending on the diameter of the hole. For holes less than 1/4 inch in diameter, hole depth will be approximately 3 to 4 inches. Depths will be 5 to 6 inches for holes greater than 1/4 inch in diameter. The bee blocks will be oriented to face the morning sun (east to southeast).

The restoration effort also will include support for ground-nesting bees in the form of small, shallow sand pits. A total of 12 sand pits will be installed within the restoration/enhancement areas, with at least 4 of those within the vernal pool restoration area. Each pit will be approximately 2 feet deep and 4 feet in diameter. The pits will be filled with a mix of sand, native soil, and organic material (plant chippings). In addition to ground nesting bees, several other insect species may use these pits as foraging and nesting areas. Birds also may use the pits for taking dust baths for feather maintenance, parasite control, and temperature regulation.

6.10 AS-BUILT CONDITIONS

The revegetation specialist shall prepare and submit a topographic map using six inch contours showing the as-built conditions of the vernal pool restoration/enhancement areas within 6 weeks of completion of site preparation and planting. Areas of grading, seeding, and planting shall be shown on the map.

6.11 COST ESTIMATE

The cost to carry out the implementation and maintenance and monitoring tasks described in this plan is estimated to be approximately $500,000. The actual cost to implement will be determined at the time of implementation. A Property Analysis Record (PAR) also will be prepared to determine the non-wasting endowment amount required to fund the long-term (post 7-year maintenance and monitoring period) management.

7.0 MAINTENANCE PLAN

7.1 HABITAT MAINTENANCE ACTIVITIES

A 7-year maintenance program is proposed to help ensure the successful establishment and persistence of the restored habitat. The maintenance program will involve removal of trash, weed control, fence and signage repair/replacement, and any remedial measures deemed necessary for restoration program success (e.g., re-seeding and recontouring). Long-term management will be conducted according to the HMP for the site (Helix 2010).

7.1.1 Trash Removal

The maintenance contractor will remove any trash encountered within the restoration/enhancement areas during every maintenance event and dispose of it in a legally acceptable fashion.

7.1.2 Weed Control

Particular maintenance emphasis in the vernal pool restoration area will be placed on pro-active weed control. All weed species observed within the vernal pool restoration area during restoration activities will be considered invasive and targeted for removal. All workers conducting weed removal activities will be educated to distinguish between native and non-native species, with special attention paid to rare and endangered plant species. All weeding within the re-established and enhanced pools will be performed by hand and with hand tools. Care will be taken within pools to avoid removing vernal pool plant species and to reduce soil disturbance. Weeds will be removed from the restoration limits and disposed of in a legal manner. All weeds will be removed prior to reaching 12 inches in height or before reaching seed. Leaf and branch drop of native species should be left in place and not removed from the site.

Weeds in the uplands of the vernal pool restoration area will be removed by hand or with small machinery (e.g., line trimmers) whenever possible, but focused herbicide application may be used if needed and requested by the vernal pool restoration specialist. Herbicides will only be applied by workers licensed to use those chemicals.

Additionally, no herbicide will be used within 5 feet of any vernal pools. Herbicides will not be used during wet or windy conditions. Care will be taken not to saturate the soils with herbicide, and any herbicide used will not be allowed to be blown into pools.

7.1.3 Container Stock Irrigation

Container stock, native grass plugs, and transplanted sensitive plants will be hand watered at least twice a month, if necessary, during the first 2 years of maintenance and monitoring. Hand watering may not be necessary during the rainy months. Water will be applied in such a way that run off does not occur.

7.2 HABITAT MAINTENANCE SCHEDULE

Regular maintenance, trash removal, and weed control of the vernal pool restoration area will be conducted during the first 7 years following implementation of the mitigation program or until the mitigation program is deemed successful. Maintenance personnel will visit the site at least monthly for the 7-year maintenance and monitoring period. Additional visits will be conducted as directed by the restoration specialist during the rainy season (generally December through May) each year to keep weeds under control.

8.0 PERFORMANCE STANDARDS

As discussed above, vernal pool restoration is being conducted as mitigation for impacts to Corps jurisdictional wetland/streambed features and USFWS designated SDFS CH. In addition, vernal pool enhancement is being conducted to satisfy the mitigation requirement in the project EIR.

The following sections provide performance standards to determine the successful completion of the 7-year mitigation and monitoring program. Attainment of these standards indicates the mitigation areas are progressing toward the habitat functions and services specified for this plan. Methods used to measure these performance standards are described in the following text. If the restored areas fail to meet the Year 7 standards after the full monitoring term, a specific set of remedial measures will be developed, implemented, and the monitoring and maintenance period would be extended until all Year 7 standards are met or as otherwise provided in this document. If the site does not meet Year 7 standards, the monitoring and maintenance period would be extended a full year until all are met and the Corps provides written verification. Only when the entire mitigation site has attained the Year 7 standards will the entire site be signed off.

8.1 RE-ESTABLISHED VERNAL POOLS

8.1.1 Control Pools

To measure the success of the re-established vernal pools, a total of 5 preserved (non-enhanced or restored) off-site vernal pools will be used as control pools. The off-site pools are located just east of the Rhodes Crossing site in land preserved as part of the City's MHPA (Figure 3). The pools selected are relatively undisturbed, similar in depth and size to the re-established pools, support native vernal pool flora, and are generally representative of vernal pool habitat on Del Mar Mesa. The 5 off site control pools vary in area from approximately 200 to 580 square feet, with an average of approximately 400 square feet. In general, vernal pools on Del Mar Mesa support a diverse range of endemic vernal pool species. Vernal pool plant indicator species and native vernal pool associated species observed in the Del Mar Mesa area are presented in Table 7. These will serve as target species for the vernal pool re-establishment effort.

In addition to the off-site pools, 5 of the on-site preserved pools will be selected as control pools during the Year 1 annual monitoring event. The on-site control pools will be of similar depth and vegetative makeup as the restoration pools.

Success of the re-established vernal pools will be determined by comparing species richness and vegetative cover with the control pools. A transect/quadrat sampling method would be used to monitor the re-established pools (described in Section 9.1). Permanent transects and decimeter quadrats will be established within the off-site control pools, and will be established in the on-site control pools and the restored pools. A single transect will be placed in each monitored pool that will extend 5 feet beyond each edge of the pool and run generally along the longest distance across the pool ponding area. Each year, species richness and vegetative cover within the quadrats will be measured and recorded. This data will be used to determine if the restored pools have met the performance standards described below.

Table 7
CONTROL POOL VERNAL POOL PLANT SPECIES

SCIENTIFIC NAME	COMMON NAME
Vernal Pool Indicators[1]	
Callitriche marginata	long-stalk water-starwort
Centunculus minimus	chaffweed
Crassula aquatica	dwarf pygmyweed
Deschampsia danthonoides	annual hairgrass
Elatine brachysperma	waterwort
Eryngium aristulatum var. *parishii*	San Diego button-celery
Isoetes orcuttii	quillwort
Lilaea scilloides	flowering quillwort
Navarretia fossalis	spreading navarretia
Pilularia americana	American pillwort
Plagiobothrys acanthocarpus	popcorn flower
Plantago elongata	dot-seed plantain
Pogogyne abramsii	San Diego mesa mint
Psilocarphus brevissimus	woolly marbles
Other Native Vernal Pool Associates	
Eleocharis macrostachya	pale spike-sedge
Juncus bufonius	common toad-rush

[1] Based on Corps Vernal Pool Plant Indicator List (Corps 1997)

8.1.2 Re-established Vernal Pool Indicator Species Richness

The re-established vernal pools would support vernal pool plant indicator species (Corps 1997) and function as viable, self-sustaining vernal pool basins. Only native vernal pool indicator species and selected native vernal pool associates will be included in species richness (the number of species in a given area) in the re-established vernal pool quadrats. Annual performance goals expressed as a percent of vernal pool indicator species in control pools are addressed in Table 8. Acceptable species richness within each re-established pool at the end of the 7-year monitoring period is 100 percent of the average control pool vernal pool species richness. Meeting the 100 percent criterion

by Year 7 would show that pools are functioning and that they would be expected to continue functioning. If the species richness criterion for a given year is not met, corrective measures (e.g., reseeding, excavation of a portion of a basin, introducing new inoculum, berming of a pool edge, etc.) may be taken to help ensure eventual achievement of long-term goals.

Table 8
RE-ESTABLISHED VERNAL POOL SPECIES RICHNESS PERFORMANCE STANDARDS

Year	Number of Indicator Species Relative to Control Pools (percent)[1]	Minimum Number of Indicator Species Present in each pool
1	10	1
2	25	1
3	40	2
4	55	2
5	70	3
6	85	3
7	100	3

[1]Greater than or equal to amount shown.

8.1.3 Re-established Vernal Pool Indicator Species Cover

In addition to species richness, cover of native vernal pool and associated wetland plants within the re-established pools will be used to determine project success. At the end of the 7-year monitoring period, the total cover of vernal pool plant species in each re-established vernal pool should be 100 percent of the average total cover value for the control pools. Yearly performance goals have been set to track the progress of the mitigation effort (Table 9). After the first year, the relative cover in each of the re-established vernal pools should be at least 5 percent of the average relative cover measured in the control pools for the same year. This percentage is expected to increase annually relative to the control pools. For Years 2 through 7, the percentage should be 35, 50, 70, and 90 percent, respectively. If the annual goals for relative cover are not being met, additional measures would be taken as necessary to help ensure final success including the addition of supplemental inoculum.

Table 9 RE-ESTABLISHED VERNAL POOL PLANT COVER PERFORMANCE STANDARDS	
Year	**Cover of Indicator Species Relative to Control Pools (percent)**[1]
1	5
2	20
3	35
4	55
5	70
6	80
7	90

[1]Greater than or equal to amount shown.

8.1.4 Re-established Vernal Pool Weed Cover

Non-native weed species anticipated to encroach upon the vernal pools include Italian ryegrass, grass poly (*Lythrum hyssopifolia*), curly dock (*Rumex crispus*), rabbitsfoot grass (*Polypogon monspeliensis*), filaree (*Erodium* spp.), pacific bent grass (*Agrostis avenacea*), and nit grass (*Gastridium ventricosum*). Of these weed species, Italian ryegrass is considered to be the most significant competitor to native vernal pool species. Elimination of this species would be the main focus of the vernal pool weed control effort. Relative cover of Italian ryegrass shall not exceed one percent during the 7-year monitoring period. Control of weed species categorized as High or Moderate in the California Invasive Plant Council (Cal-IPC) 2006 Invasive Plant Inventory shall be conducted such that at the end of the 7-year monitoring period the total cover of such weed species in each re-established vernal pool is less than 1 percent and total cover of weed species does not exceed 5 percent (Table 10). If weed cover criteria are not being met, additional maintenance effort would be required. Table 11 includes Cal-IPC listed species likely to occur within the mitigation project area.

Table 10 COVER LIMITS FOR NON-NATIVE SPECIES IN RE-ESTABLISHED VERNAL POOLS	
Cal-IPC Moderate or High species	<1%
Other non-native species	<5%
Absolute cover for all non-native species (Cal-IPC and others combined)	<5%

Table 11 CALIFORNIA INVASIVE PLANT COUNCIL MODERATELY TO HIGHLY INVASIVE PLANT SPECIES[1]	
SCIENTIFIC NAME	**COMMON NAME**
Avena spp.	wild oats
Brassica nigra	black mustard
Bromus diandrus	ripgut brome
Bromus madritensis ssp. *rubens*	red brome
Centaurea melitensis	tocalote
Foeniculum vulgare	fennel
Hirschfeldia incana	shortpod mustard
Festuca Perennis	Italian ryegrass
Lythrum hyssopifolia	grass poly
Vulpia myuros	rattail fescue

[1]California Invasive Plant Council (Cal-IPC) 2006 Invasive Plant Inventory

8.1.5 Enhanced Vernal Pool Performance Standards

The enhancement effort in the preserved pools is far less intensive than in the re-established pools, consisting of pool recontouring where necessary and targeted weed removal. The goal of this effort is to help improve pool function (hydrology, wildlife, and plants) by removing tire ruts and other damage to preserved pools. To help direct this effort, performance standards have been established for the enhanced pools. The success goals for the enhanced pools include: continued presence of SDFS in pools where it previously occurred; stable or increasing presence of native vernal pool plant indicator species; and 0 percent cover of Cal-IPC list A-1 and A-2 species. The maintenance and monitoring effort will be directed to meet these goals; however, if the project fails to meet some or all of these goals and it can be shown that the maintenance effort was adequately performed, the vernal pool enhancement component of the mitigation effort may still be deemed successful, provided the other performance standards are met.

8.1.6 Fairy Shrimp Performance Standards

Restoration success for San Diego fairy shrimp will be determined by measuring the ponding of water, and density of viable cysts, hatched fairy shrimp, and gravid females, within the restored pools. The hatched fairy shrimp, and gravid female density of the restored pools must not differ significantly from the control pools for 3 wet seasons.

8.2 TARGET HYDROLOGICAL REGIME

Vernal pools restored under this mitigation program are primarily designed to emulate the conditions found in existing vernal pools on Del Mar Mesa, as measured through the use of control pool son Del Mar Mesa. The re-established pools would be excavated and situated to capture rainfall and runoff from the open space preserve. Restoration of the natural topography

and the removal of weeds would restore the normal hydrological functions within the re-established vernal pool complex.

During the 7-year monitoring period, water depth in the control pools and the re-established vernal pools on site will be measured every 2 weeks during each rainy season throughout the monitoring period. The depth and extent of ponding (surface area) will be recorded during each site visit in each re-established vernal pool. At the end of the 7-year monitoring period, the monitored pools will demonstrate hydrologic patterns similar to those of the control pools. The monitoring period will be extended if a drought period prevents the pools from demonstrating the desired hydrologic patterns. The re-established pools must pond for sufficient time (estimated to be similar to the control pools) to support SDFS during 3 winters in the 7-year maintenance and monitoring period.

8.3 CRAM REFERENCE SITE/TARGET VALUES

A vernal pool CRAM will be conducted in off-site control pools prior to implementation of this plan. A CRAM analysis also will be conducted on 5 re-established vernal pools onsite. The purpose of CRAM is to provide a rapid, standardized, and scientifically defensible assessment of the status of a wetland according to the most recent version of CRAM (currently Version 6.0; California Wetlands Monitoring Workgroup 2012b). As part of that assessment using the CRAM Vernal Pool Systems Module, a variety of landscape context, hydrology, and structure attributes and associated metrics were assessed. The CRAM will assess the functions and services of the vernal pool system over time.

The CRAM data collected in the off-site control pools will be used to establish functional hydrology and biotic structure target goals for the re-established vernal pools in years 1, 4, and 7 of the maintenance and monitoring period. The average CRAM scores for hydrology and biotic structure in the re-established vernal pools in years 1, 4, and 7 should be 30%, 60%, and 90% that of the average control pool hydrology and biotic structure CRAM scores, respectively (Table 12).

Table 12
CRAM PERFORMANCE STANDARDS[1]

CRAM Attribute	Year 1	Year 4	Year 7
Hydrology	30%	60%	90%
Biotic Structure	30%	60%	90%

[1] Relative to average control pool CRAM attribute score

8.4 UPLAND HABITAT PERFORMANCE STANDARDS

The target habitat for the upland restoration effort is Diegan coastal sage scrub. During annual monitoring, species richness in the upland habitat restoration area will be determined only by visual assessment in Years 1 and 2 and by visual assessment and transect data in Years 3 through 7. No specific richness criteria are established for Years 1 or 2, but annual performance

standards for species richness in Years 3 through 7 are provided in Table 13. If the species richness goal for a given year is not met, corrective measures (including reseeding and planting) may be implemented to help ensure achievement of long-term restoration goals.

Table 13
COASTAL SAGE SCRUB RESTORATION AREA
SPECIES RICHNESS PERFORMANCE STANDARDS

YEAR[1]	NUMBER OF SPECIES
3	4
4	5
5	6
6	7
7	8

[1]No performance standards for Years 1 and 2

In addition to species richness, project success will be determined based on native and non-native (weed) plant cover. Table 14 presents vegetative cover performance standards for Years 3 through 7 in the upland restoration area. No specific richness criteria are established for Years 1 or 2 in the upland restoration area. As within the re-established vernal pools, control of weed species categorized as High or Moderate in the Cal-IPC (2006) Invasive Plant Inventory shall be conducted such that at the end of the 7-year monitoring period, the relative cover of these weed species within the upland restoration area is zero and relative cover of all other weed species does not exceed 5 percent. If annual goals for vegetative cover are not met, remedial measures, including reseeding, planting, and weeding, may be implemented to help ensure final success.

Table 14
COASTAL SAGE SCRUB RESTORATION AREA
VEGETATIVE COVER PERFORMANCE STANDARDS
(percent)[1]

YEAR	NATIVE SPECIES	WEEDS[2]
3	20	10
4	20	10
5	35	5
6	45	5
7	50	5

[1]Relative cover of species listed as High or Moderate in the California Invasive Plant Council (Cal-IPC) 2006 Invasive Plant Inventory shall be zero at the end of the five-year monitoring period

[2]Numbers shall be less than or equal to that shown

8.5 PERFORMANCE STANDARDS SUMMARY

A summary of the project's performance standards is presented below in Table 15.

Table 15
PERFORMANCE STANDARDS SUMMARY

RE-ESTABLISHED POOL SPECIES RICHNESS		
Year	**Number of Indicator Species Relative to Control Pools (percent)**	**Minimum Number of Indicator Species Present in each Pool**
1	10	1
2	25	1
3	40	2
4	55	2
5	70	3
6	85	3
7	100	3

RE-ESTABLISHED POOL PLANT COVER	
Year	**Cover of Indicator Species Relative to Control Pools (percent)**
1	5
2	20
3	35
4	55
5	70
6	80
7	90

RE-ESTABLISHED POOL WEED COVER	
Cal-IPC Moderate or High species	<1%
Other non-native species	<5%
Non-native species absolute cover for (Cal-IPC and others)	<5%

RE-ESTABLISHED POOL CRAM VALUE	
Year	**CRAM SCORE**
7	90% Control Pool Score

COASTAL SAGE SCRUB SPECIES RICHNESS	
Year[1]	**Species Richness**
3	4
4	5
5	6
6	7
7	8

Table 15 (cont.) **PERFORMANCE STANDARDS SUMMARY**		
COASTAL SAGE SCRUB RESTORATION VEGETATIVE COVER		
Year[1]	**Native Cover**	**Non-native Cover**
	20	10
4	20	10
5	35	5
6	45	5
7	50	5

[1]No performance standards for Years 1 and 2

9.0 MONITORING PLAN

9.1 MONITORING METHODS

Monitoring will be carried out under the direction of the restoration specialist to assess the progress of the enhancement effort and determine any appropriate remedial measures. Additional monitoring identified in the USFWS BO (Terms and Conditions 2.5) associated with construction of the adjacent approved development projects is not included in this plan. Vernal pool related monitoring called for as part of the adjacent construction effort will be conducted by the entity(ies) that will be responsible for compliance with construction requirements.

9.1.1 Vernal Pools

Maintenance Monitoring

Monthly inspections of the restoration and maintenance efforts will be performed during Year 1, every other month during Year 2, and every 3 months during the remainder of the monitoring period. As conditions warrant, additional site visits may be required during the initial installation/establishment period.

Fairy Shrimp Monitoring

Wet season fairy shrimp monitoring visits will be conducted every other week during the rainy season of each year to monitor pool hydrology. Wet season fairy shrimp surveys will be conducted according to the 1997 USFWS fairy shrimp sampling protocol. These surveys will be conducted in all of the re-established pools, the control pools, and in a minimum of 10 selected enhanced pools. During each of these visits, depth, extent, and duration of inundation of all pools (mitigation and control) will be measured. Water quality data (temperature, pH, total dissolved solids, and salinity) also will be recorded. Depth measurements will be taken following the onset of winter rains and would continue until May 15 or until all pools are dry.

Dry season sampling also will be conducted during the dry season each year. Fairy shrimp egg presence and density will be measured. Plant and animal species observed in each pool during the monitoring visits would be recorded.

The purpose of the fairy shrimp surveys is to determine presence/absence of San Diego in the re-established pools, in particular the estimated population size of hatched fairy shrimp, and estimates on the number of gravid female. The presence of other faunal species occupying the pools also would be noted during the surveys. The results of the fairy shrimp surveys would be included in the annual monitoring reports.

Annual Monitoring

An annual monitoring visit will be conducted each year near the end of the rainy season when most vernal pool species are visible. The exact timing of annual monitoring will be dependent upon the time and amount of rainfall received each year. Monitoring will use standard techniques and be based on transect/quadrat sampling. The transect monitoring will be conducted in all of the re-established pools, the control pools, and in a minimum of 10 preserved/enhanced pools (selected randomly). Permanent transects will be established from pool edge to pool edge through the deepest portion of each pool. Each transect would be marked with rebar stakes at both ends and labeled with caps indicating the pool number. Decimeter quadrats will be measured every 50 centimeters along each transect. Each plant species present within each quadrat will be recorded, with the cover of each species estimated. Furthermore, the total vernal pool, native, and non-native covers for each quadrat will be estimated. A species list will be recorded for each pool, consisting of all species observed in the annual sampling transect and any other species observed in each pool during annual monitoring events. This species list will be used to determine pool species richness.

Photo documentation points will be established for the preserve area, and photographs taken of each pool during the annual monitoring event. Representative photos will be provided in the annual monitoring report.

In addition to the regular monitoring, an annual monitoring visit will be conducted each year near the end of the rainy season when most vernal pool species are visible. The exact timing of annual monitoring will be dependent upon the timing and amount of rainfall received each year. All plant species present within each pool will be identified and recorded. Species richness and relative vegetative cover also will be visually estimated within each pool for native vernal pool indicator plants as well as non-native plants.

Photo documentation points will be established for the preserve areas, and photographs will be taken of each pool during the annual monitoring event. Representative photos will be provided in the annual monitoring report.

9.1.2 Upland Habitat

The status of the upland area will be noted during each monitoring visit throughout the year. Overall health and vigor of the upland habitat as well as the amount of weeds present will be qualitatively recorded. Species cover and richness will be visually estimated. All plants observed will be categorized by origin (native/non-native) and stratum (herb, shrub, and tree). Photographs will be taken each year from the same location to monitor change over time.

9.2 ANNUAL REPORTS

As part of the monitoring program, annual reports prepared by the restoration specialist will be prepared and submitted evaluating the success of the effort to date, along with any recommendations for future work that may be deemed necessary. Each annual monitoring report will include data collected throughout the year in addition to the annual monitoring visit. To detect the overall trend of the site, the annual monitoring report will contain comparisons of the monitoring data for the years that data are collected.

9.3 REMEDIAL MEASURES/ADAPTIVE MANAGEMENT

If the effort is not progressing as desired, corrective measures may be implemented. Corrective measures may include, but are not limited to, importing new inoculum from an off-site source, recontouring of non-functioning pools and re-seeding with collected or commercially available seed. For example, if a pool does not pond water sufficiently it will be deepened, recontoured and recompacted during the dry season. Pools exhibiting appropriate hydrological characteristics but low species cover and richness will be re-seeded with vernal pool plant species. Prior to conducting any significant remedial measures, the appropriate agencies will be notified.

9.4 MONITORING SCHEDULE

As described above, regular maintenance and biological monitoring visits will be conducted throughout the 7-year maintenance and monitoring period. The first annual botanical monitoring event will occur in the first spring following installation. Reports will be prepared and submitted by September of each year to help ensure adequate time remaining in the dry season to make any necessary alterations to the preserve areas.

10.0 COMPLETION OF PROGRAM

10.1 NOTIFICATION OF COMPLETION

The permittee shall notify the agencies upon the mitigation site obtaining the year 7 performance standards through the submittal of the final (Year 7) monitoring report.

10.2 AGENCY CONFIRMATION

After receipt of the final monitoring report, the agencies may inspect the compensatory mitigation site to determine if the vernal pool enhancement and re-establishment has been conducted in accordance with this plan.

10.3 LONG-TERM MANAGEMENT

Prior to initiation of project impacts, a complete draft Conservation Easement for Restoration Areas 6 and 7 shall be provided to the Corps for review and approval prior to work in waters of the U.S. This easement will be in favor of an entity approved by the Corps. This easement will state that no other easements or activities (e.g., fuel modification zones, public trails, drainage facilities, walls, maintenance access roads) that would result in soil disturbance and/or vegetation removal will be allowed within the biological conservation easement area. No later than 30 calendar days after receiving Corps approval of the final draft conservation easement, the conservation easement shall be executed and a final copy furnished to the Corps. These areas will be turned over in fee-title to a non-profit organization committed to the preservation of sensitive lands. Long-term management of the vernal pool mitigation areas would be the responsibility of the organization accepting the fee-title. As of the writing of this report, no entity has been chosen to accept long-term responsibility of the restoration areas. Long-term management would be conducted according to the HMP.

11.0 CONTINGENCY MEASURES

11.1 INITIATING PROCEDURES

An integral part of a successful mitigation program is the ability to detect problems with the mitigation early in the process, determine the cause of the problem, and attempt to modify the mitigation program to accommodate emerging issues or situations. Minor problems, such as trash, vandalism, isolated instances of plant mortality, or small-scale weed or pest infestations will be rectified as they are discovered during routine site monitoring and would not warrant the implementation of contingency measures.

If a performance standard is not met for all or any portion of the mitigation site in any year, or if the final performance standards are not met, the Restoration Specialist will prepare an analysis of the cause(s) of failure, and if determined necessary by the participating agencies, propose remedial action for approval. These measures may include supplemental site grading, manipulation, planting, changes to the plant palette, adjustment of the management of the site or re-evaluate species composition or other design changes.

Should the mitigation area fail as a result of a natural disaster such as an earthquake or flood, the project proponent will still be held responsible for any additional measures that are required to re-establish the mitigation site. The Permittee is responsible to have the site meet performance standards in order to receive sign-off, regardless of the problems encountered.

11.2 FUNDING MECHANISM

The Permittee shall be responsible for all costs associated with any remedial measures.

11.3 RESPONSIBLE PARTIES

The Permittee shall be the responsible party for any remedial measures.

12.0 REFERENCES CITED

California Invasive Plant Council (Cal-IPC). 2006. California Invasive Plant Inventory. February.

Helix Environmental Planning, Inc. 2003a. Rhodes Crossing Final EIR (Project No. 3230). December.

2010a. Rhodes Crossing Vernal/Road Pool Enhancement Plan. August 11.

2010b. Habitat Management Plan for Rhodes Crossing. August.

RECON. 1997. Dennery Canyon Vernal Pool, Coastal Sage Scrub, and Mule Fat Scrub Restoration and Preservation Plan.

Sarver, Matthew J., ed. 2007. Farm Management for Native Bees: a Guide for Delaware. Dover, DE: USDA NRCS and Delaware Department of Agriculture.

U.S. Army Corps of Engineers (Corps). 1997. Vernal Pool Plant Indicator Species List. November.

USFWS 2012. Rhodes Crossing Project Biological Opinion. September 17.

Xerces 2012. Invertebrate Conservation Fact Sheet, Nests for Native Bees. Xerces Society. http://www.xerces.org/wp-content/uploads/2008/10/nests_for_native_bees1.pdf, Portland, Oregon.

Attachment A

Hydrological Study of The Rhodes Crossing Project Mitigation Plan

HYDROLOGY STUDY OF THE RHODES CROSSING PROJECT MITIGATION PLAN, SAN DIEGO COUNTY, CALIFORNIA

PREPARED FOR:
ALDEN ENVIRONMENTAL, INC.
3245 UNIVERSITY AVE. #1188
SAN DIEGO, CALIFORNIA
92104

PREPARED BY:
INSTITUTE FOR ECOHYDROLOGY RESEARCH
2106 SARATOGA PLACE
DAVIS, CALIFORNIA

FEBRUARY 7, 2015

CONTENTS

SECTION 1

SUMMARY

This report reflects a study that was conducted to determine if there exists hydrological connectivity between two proposed conservation areas that could be mitigation for a proposed housing development at Rhodes Crossing, San Diego, California. Further, a concern over the proposed development of a road bisecting the two preserves could result in changing or severing any hydrological connectivity. The two areas, Conservation Area 6 and 7 occur on a mesa bounded by housing to the east, native coast scrub and chaparral vegetation to the south and west, and urban development to the north. Within the site there are existing vernal pool wetlands that support special status plants and animals. The hydrology of the vernal pools is dependent on the topography of the site and soils that have a water-restricting layer that results in seasonal inundation of surface depressions.

A field study was conducted on January 16, 2015 to take detailed spatial and elevation measurements that would be used to create topographic computer models. These models would be used to determine the catchment structures and flow patterns of surface water during the wet season. In addition, ground-penetrating radar was used to measure the presence and depth of sol layers that restrict water from infiltrating deep into the soil. Analysis of the topography and the soil water-restricting layer data was used to determine the structure of the catchment and directions of water flow. Further, a portion of the proposed road was included in the topographic model and the hydrological analysis repeated.

The existing conditions indicate there are three distinct catchments with three separate drainages. The elevation contours show an east to west direction of decreasing elevation. Local surface water flows determined the two conservation areas are not connected hydrologically . The analysis of the proposed road identified it would create its' own hydrological drainage. Overall, the patterns of water flow are generally from east to west and following the elevation gradient. This pattern places the water flows from the two conservation areas parallel to each other. Some very localized flow patterns occur within the conservation areas that identify the source of upland water into existing natural vernal pools. Because the two conservation areas do not share hydrological connectivity the development of the proposed road would not result in changes or loss of hydrological functioning.

SECTION 2

INTRODUCTION

The Rhodes Crossing Project (Project) proposes a suburban housing development including associated access roads (**Figure 2-1**). The proposed project occurs at a site that has coastal sage scrub and chaparral vegetation with vernal pool wetlands interspersed in some areas. These vegetation types provide habitat for a range of plant and animal special status species. To mitigate for losses of some habitat as a result of the Project a mitigation plan (**Figure 2-2**) was developed including preserving some areas of existing vernal pools and creating some vernal pools to provide additional habitat. The mitigation plan identified two areas (Sites 6 and 7 in Figure 2-2) for preservation and vernal pool creation. As part of the regulatory review of the Project, the U.S. Fish and Wildlife Service and the U.S. Army Corps of Engineers developed some concerns about proposed project impacts on the mitigation sites. Specifically, the proposed development of a road bisecting the two mitigation sites (see **Figure 2-1**). Federal agency staff indicated the development of the proposed road between mitigation sites 6 and 7 could, potentially, negatively impact the natural surface or subsurface hydrology of the vernal pools (Mr. Greg Mason, Alden Environmental personal communication 2014; U.S. Fish and Wildlife Service staff personal communication 2014, 2015). In question was whether or not the two mitigation sites had an existing hydrological connection and by developing a road between the two sites there could be a negative potential change to one or both sites. Accordingly, the federal agencies did not believe there were sufficient data to determine whether or not there could be a hydrological connected.

This report is based on a field study of the site that measured the surface topography and subsurface soil topography of water-restricting soil layers important to the functioning of vernal pools. The data collected were used to determine the existing physical conditions of the site relative the hydrological functioning. The data were then modified to model the presence of the proposed road between the two sites and how the road would affect the existing conditions with respect to hydrological connectivity. The approach of this study is based on existing knowledge of the hydrological functioning of vernal pools in relation to the soils and landscape. An overview of the hydrological functioning of vernal pools is given below to provide context.

Figure 2-1 Proposed Project Design for Rhodes Crossing, San Diego, CA

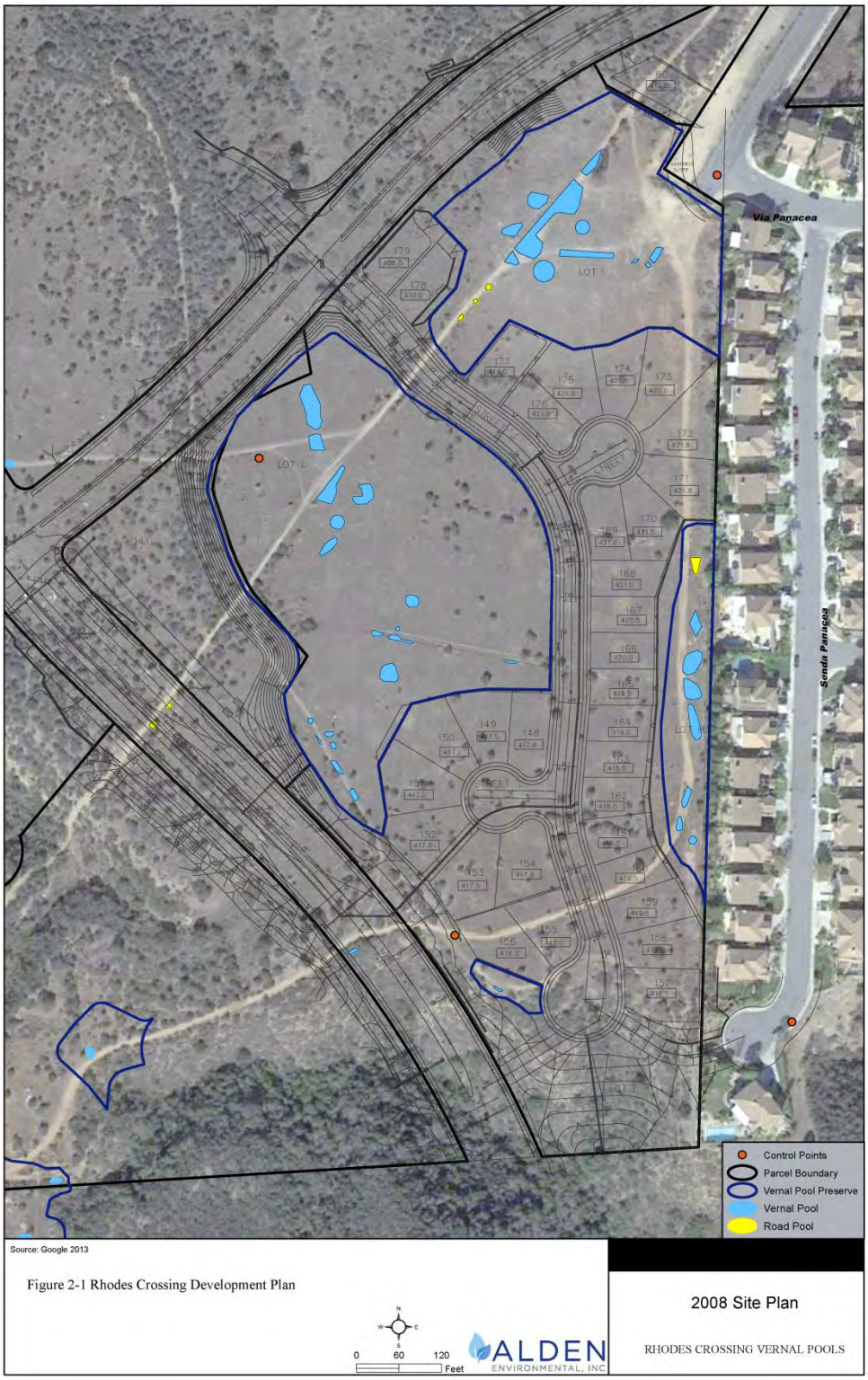
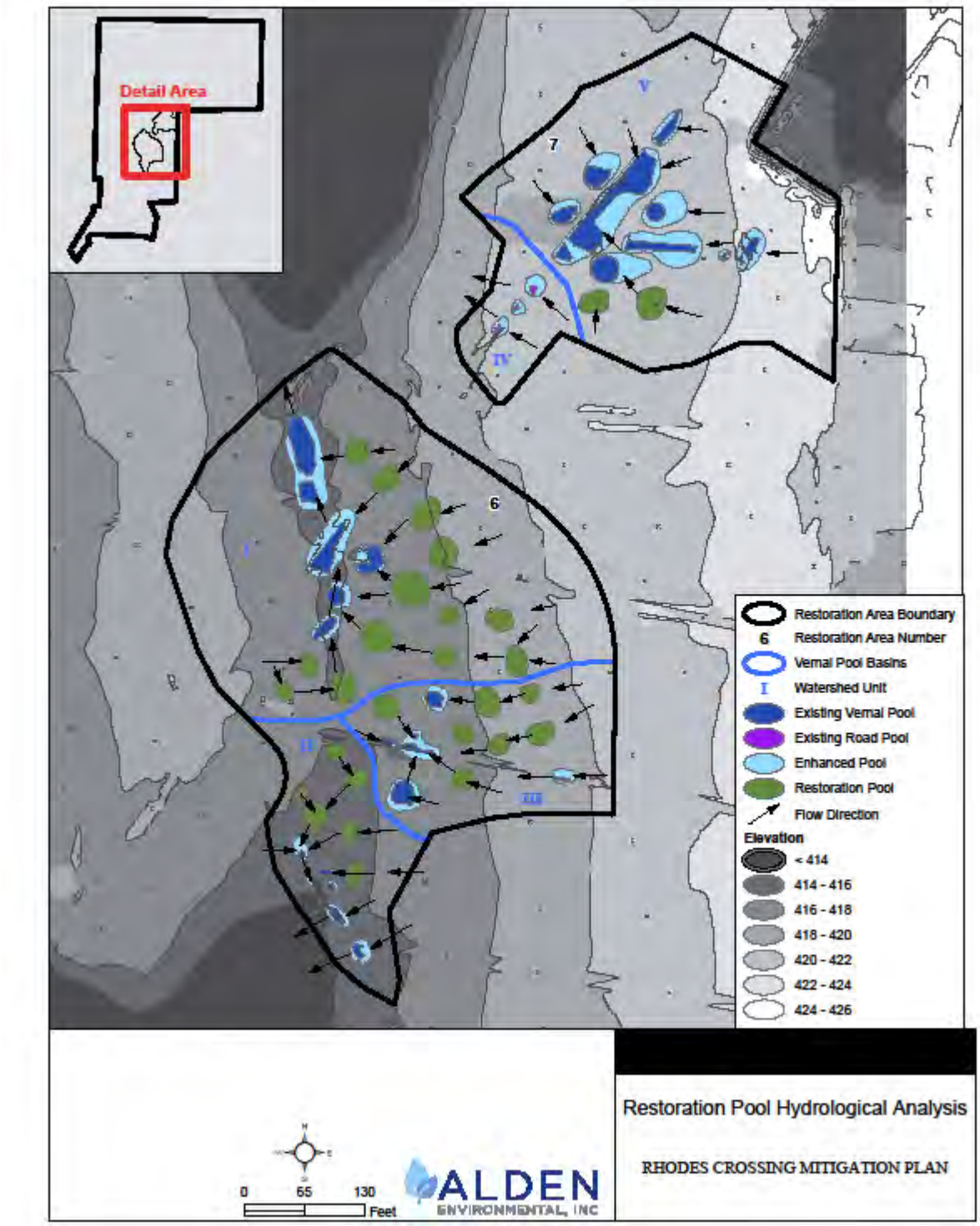


Figure 2-2 Copy of Figure 4 from Rhodes Crossing Project Mitigation Plan



2.1 BACKGROUND ON VERNAL POOL SOILS AND LANDSCAPE STRUCTURE

Hardpan vernal pools are a common type of vernal pool in California (Smith and Verrill 1995). These are characterized by having a loam soil near in the upper soil column (**A**) and a water-restricting layer created by the presence of a clay soil horizon (**2Bt**) overlaying an indurated horizon called a hardpan (**3Bqm)** or **(Cm (USDA 1973))**. This type of soil can form seasonal, perched water table which appear as vernal pools within surface soil depressions (Rains et al. 2006, McCarten et al. 2008). **Figure 2-3** shows a cross-section of a vernal pool basin which is a depression in the topography of the landscape.

Figure 2-3 Cross-Section of Hardpan Vernal Pool

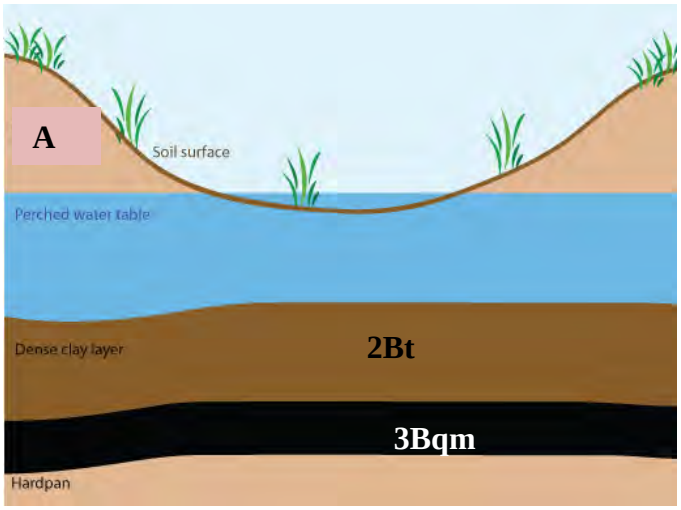
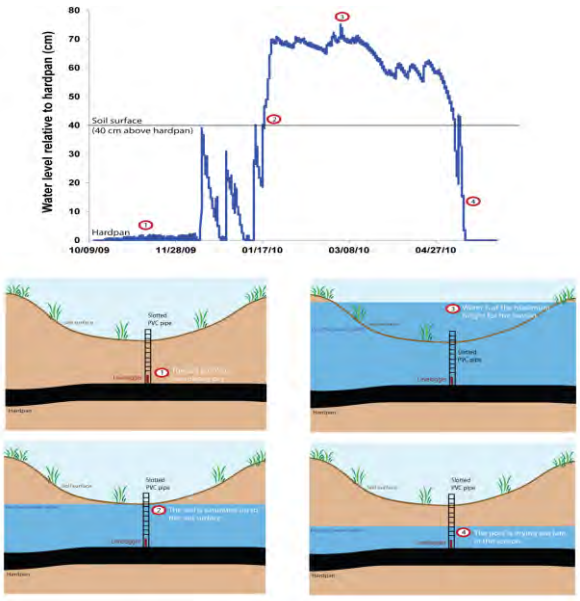


Figure 2-3 shows a typical profile of the Redding soil series (NRCS 2014) which is the same as the soil occurring at the Rhodes Crossing project site where some vernal pools are already present.

During the wet season, water level fluctuates within a vernal pool depending on the seasonal timing and quantity of rainfall and it can be represented by hydrograph (**Figure 2-4**). Early season rainfall infiltrates the soil column and begins the process of saturating the soil forming the seasonal shallow water table. Additional rainfall increases the water level in the soil until it exceeds the surface soil elevation within a vernal pool basin. The amount of water needed to saturate the soil depends on the depth to the hardpan and thickness of the loam (**A**) and clay (2Bt) soil layers. The clay layer typically has 40-50 % air space when completely dry and,

therefore, requires sufficient water input to fill the air spaces to saturate the soil before there is surface water within the pool basin. For example, one foot of soil over the hardpan will require approximately six inches of water to cause saturation to the vernal pool basin soil surface.

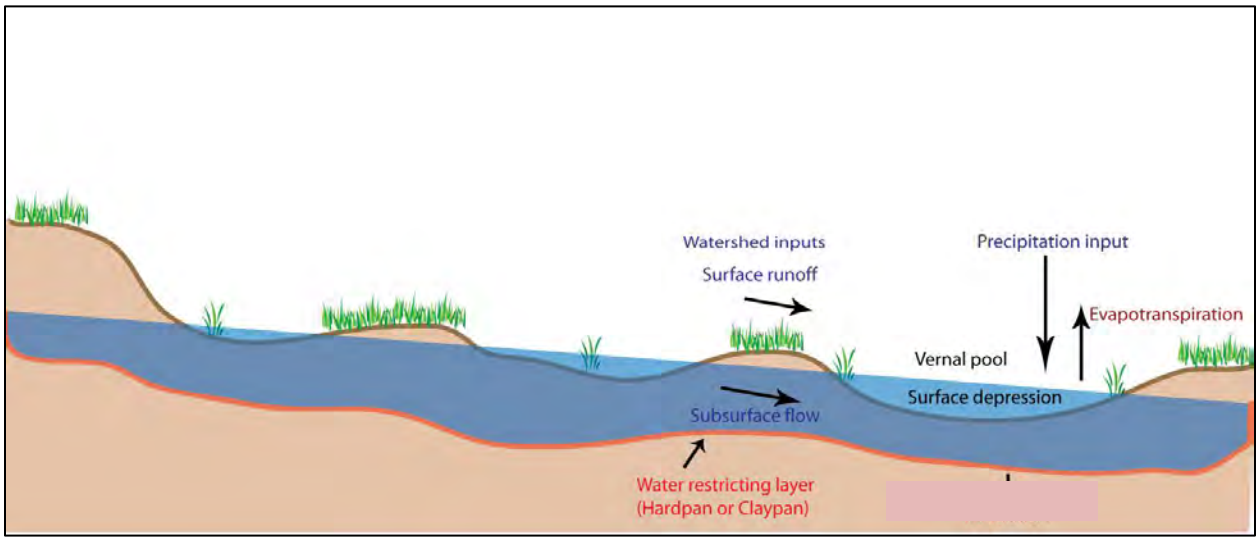
Figure 2-4 Hydrograph of Hardpan Vernal Pool Showing Stages of Wetting and Drying



Research on Redding and Red Bluff soil series hardpan vernal pools in the Sacramento Valley of California (Rains et al. 2006, McCarten et al. 2008) identified the importance of the uplands within a catchment to contribute water via subsurface flows downslope into vernal pools. The connectivity of the uplands with vernal pools downslope is observable in the formation of cascading vernal pools which interconnect through subsurface water flow and during wet years by surface connection by shallow connecting swales.

Figure 2-5 shows a cross-section of a hardpan vernal pool landscape with cascading vernal pools that receive water from direct rainfall and from primarily subsurface water flow. The connectivity has been demonstrated using stable isotopes by Rains et al. (2006) and the rate of saturated soil water flow in a vernal pool landscape was measured in a saline water solution by McCarten and Christman (unpublished) that found saturate water flowed at a rate of 0.5 meters per day.

Figure 2-5 Vernal pool landscape cross-section showing perched water table.



Determining the hydrological connectivity within a vernal pool landscape depends on the surface topography and the topography of the requisite water-restricting layers. Detailed measurements are needed to understand the local direction of seasonal water flow from uplands downslope into vernal pool depressions. The relationship of the water-restricting layer to the surface topography depends on the soil forming processes and geomorphology of the site. Typically, clay layers within a vernal pool soil system parallel the surface topography but can vary in depth while a hardpan will be flat relative to the soil surface. Also, land use, including excavation and grading can modify the depth of soil above a water-restricting layer.

SECTION 3

EXISTING CONDITIONS

3.1 EXISTING CONDITIONS AND HYDROLOGICAL FUNCTIONING

A field study was conducted on January 9, 2015 to gather field data that could be used to measure surface topography and topography of the water-restricting soil layers. These data were analyzed to determine the existing direction of water flow associated with the project area including mitigation Sites 6 and 7.

3.1.1 Methods

Surface Topography Measurements

The field data included using high precision Real Time Kinematic global positioning (GPS) that provides +/- 1 cm spatial and +/- 2 cm elevation topographic points. The GPS data were then used to generate a detailed topographic map of the site. An analysis of the surface topography determined the range of elevation gradients. The topography was used to identify local catchments that are bounded by elevation changes in the landscape. These data were further analyzed to produce a vector flow map showing the direction of gravitation flow of surface water and potentially subsurface water flowing over a water-restricting layer in the soil. In addition, ground-penetrating data were collected to determine the presence and depth of water-restricting layers in the soil including soil horizons with relatively high percent clay and cemented layers called hardpans.

Soil Water-Restricting Layer Measurements

The soil at the project site is Redding gravelly loam which typically has a loam in the upper 4 to 15 inches, a clay loam in the upper 15 to 30 inches and a hardpan below 30 inches. Both the clay loam and hardpan form a water-restricting layer reducing water infiltration deeper into the ground. Ground-penetrating radar (GPR) can measure the presence and depth of the clay and hardpan layers in the soil. Changes in the density of the soil layers result in observable changes in the radar signal sent from the GPR antenna then reflected back to the receiver.

3.2 FINDINGS FROM FIELD MEASUREMENTS

3.2.1 Topography of the Site

Figure 3-1 shows the project site aerial photo with 0.5 foot topography contour lines. The site ranges in elevation from a high point of approximately 423 msl on the east side to about 416 msl associated with a drainage sloping northwest. Catchments are subunits of the larger watershed. **Figure 3-2** shows three distinct, planar catchments in the project site. Each of these catchments has separate points of drainage which are shown as three blue lines. The two northern catchments drain to the northwest. The southern site catchment drains to the southwest. **Figure 3-3** shows vector flow arrows that indicate the direction of localized surface water flows based on local elevation changes. The general direction of gravitational, surface flows is from east to west. Conservation Area 6 shows many of the arrows directed toward the center which is the location of some existing vernal pools. Some of this water may not flow out of the catchment and remain internally. West of the dirt path the vector flow arrows show a west to northwest direction this is consistent with the catchment drainage line. Similarly, Conservation Area 7 has some internal flow toward the existing vernal pools. It is probable that these areas with local internal water collection are the key to existing vernal pools and the upland contributions provide the additional source of water necessary to result in surface water.

Figure 3-1 Rhodes Crossing development area showing Conservation Areas 6 & 7, the proposed road corridor, and elevation contours.

Figure 3-2 Rhodes Crossing site showing three distinct catchments. Conservation Area 6 is mostly within a single catchment. Conservation Area 7 is bisected by two separate catchments.

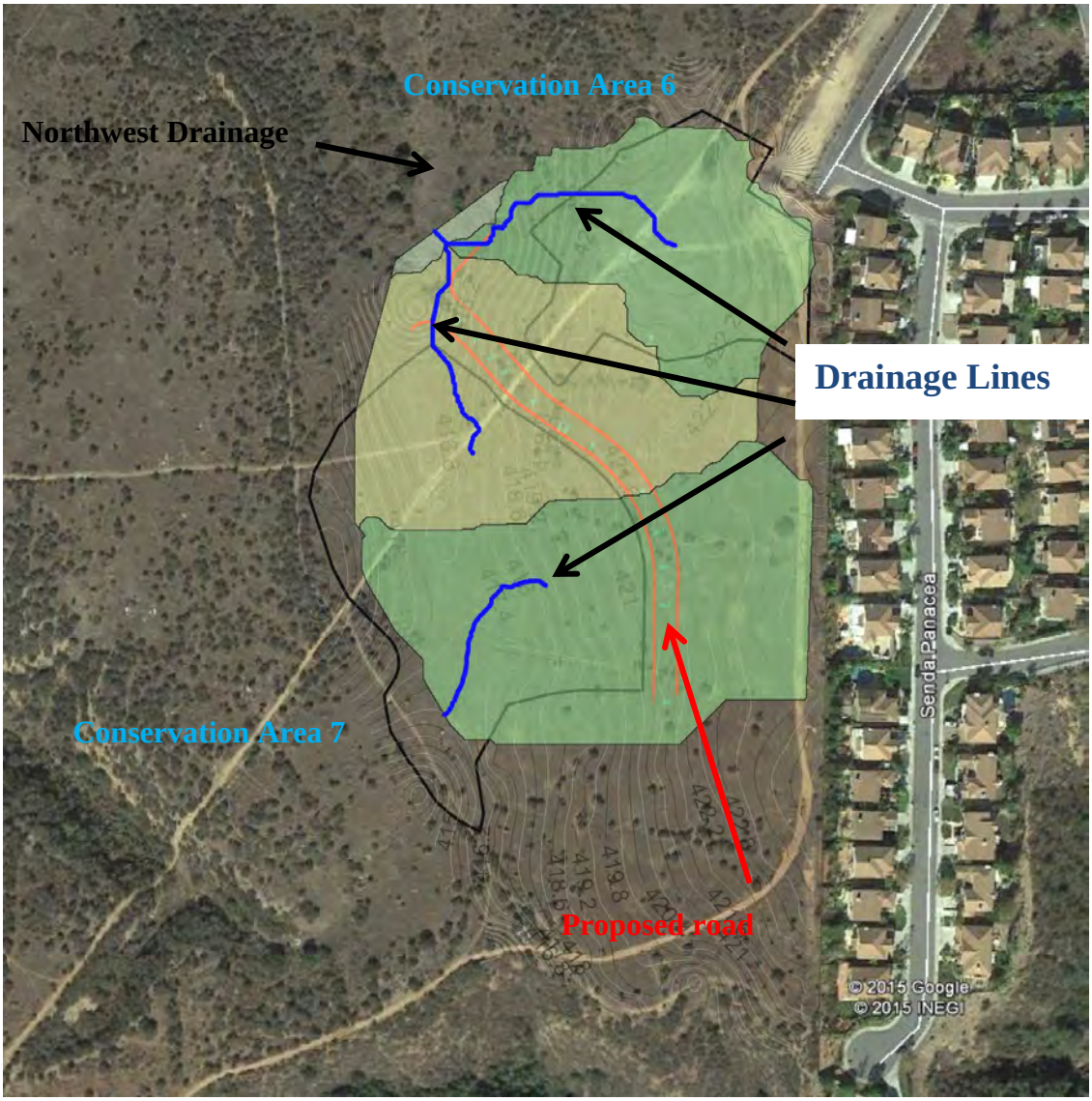


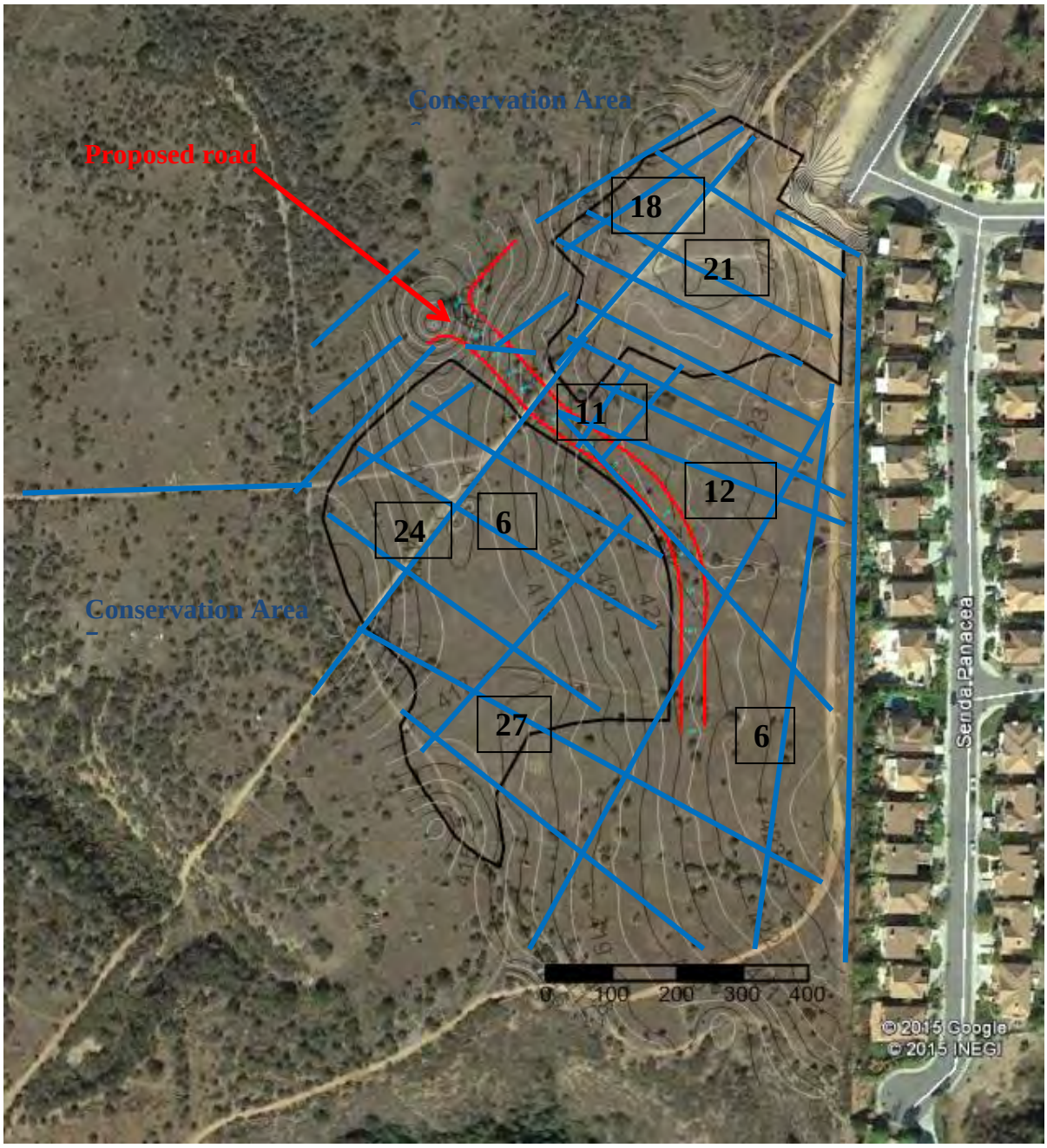
Figure 3-3 Rhodes Crossing site showing vector flow arrows indicating the direction of local gravitational surface water flow.

3.2.2 Subsurface Water-Restricting Layers

Twenty-nine GPR transects were taken (**Figure 3-4**). These transects were representative of elevation gradients, existing vernal pools, disturbed and less disturbed areas of the site. The GPR soil profiles showed a lot of consistency across the site. For example, **Figure 3-5A**, shows the typical cross-section of a soil profile. The prominent blue-red lines (representing the positive and negative energy wave), indicate where there has been an increase in the density of the medium above it. The energy wave moving from the air above the soil surface to the soil surface creates a distinct set of lines. Below the soil surface the lines are not as prominent until they encounter a change in soil density. The change in density in the Redding soils occurring at the site are due to an increase in percent clay associated with the B horizon. **Figure 3-5B** identifies where there is an increase in percent clay relative to the soil surface. It is within this zone that water infiltration is slower due to the smaller pore size of the clay. Where this layer begins is where the soil will begin to saturate following rains and initiate the formation of a perched water table. A hardpan occurs in the Redding soils deeper below the surface.

Surface depressions are the locations of vernal pools and swales. Due to a change in surface topography, the clay loam water-restricting layer is closer to the surface as shown in **Figure 3-5A** and **Figure 3-5B**. At the project site the hardpan maintains a relatively continuous depth below the soil surface while the clay loam varied with depth and correlated with topography. Figures 3-6 3-7, 3-8, and 3-9 shows a GPR transects in the upland. There is consistency in the depth to the clay loam and hardpan. The clay loam is closer to the surface in the disturbance area shown in **Figure 3-9** which had been graded in the past. The consistency of depth of the clay loam ranged from 0.5 feet to about 1.5 feet depending on surface disturbance and change in surface topography such as from a vernal pool depression to the upland. The hardpan was consistently at a depth of about 1.7 feet to 2 feet and extending to below 3 feet deep.
The consistency in the depth of the clay loam and the hardpan occurred if the GPR transect was taken from upland then downslope (such as east to west), into vernal pools or if it was taken from south to north and maintaining an elevation.

Figure 3-4 Ground-Penetrating Radar Transects. GPR transect numbers mentioned in the text and figure is indicated on the map.



Ground-Penetrating Radar Transects

Figure 3-5A GPR transect 21 Soil profile from GPR along transect through Conservation Area 6. The clay water-restricting layer is closer to the soil surface within the vernal pool depression.

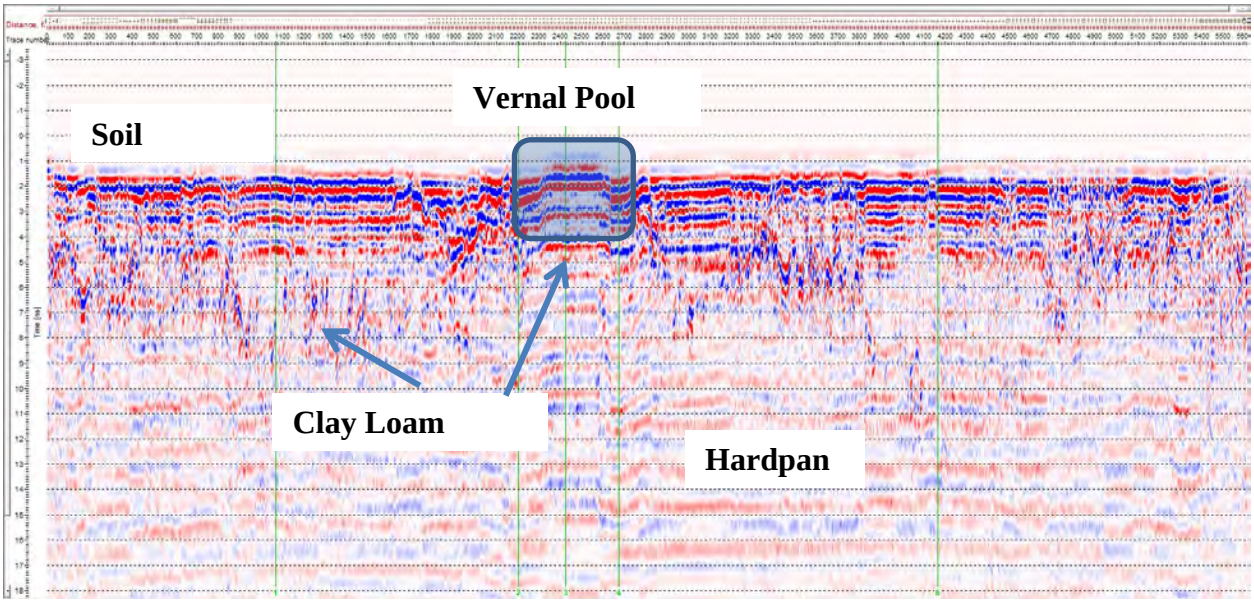


Figure 3-5B Same GPR transect as Figure 1 and showing the depth and thickness of the first clay loam layer that would reduce water infiltration in the soil causing water-restriction and surface inundation.

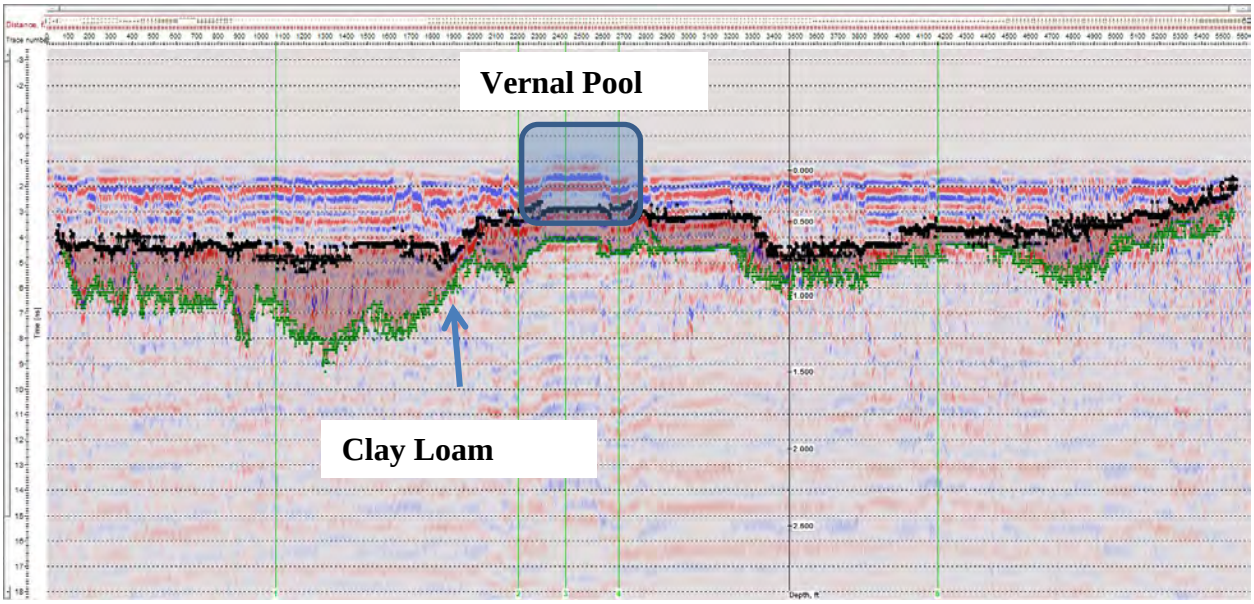


Figure 3-6 GPR Transect 6 north to south along the eastern part of the site. A clay horizon begins about 1 foot below the surface and extending to about 1 ½ feet below the surface. The duripan begins between 1 ½ to 2 feet below the surface.

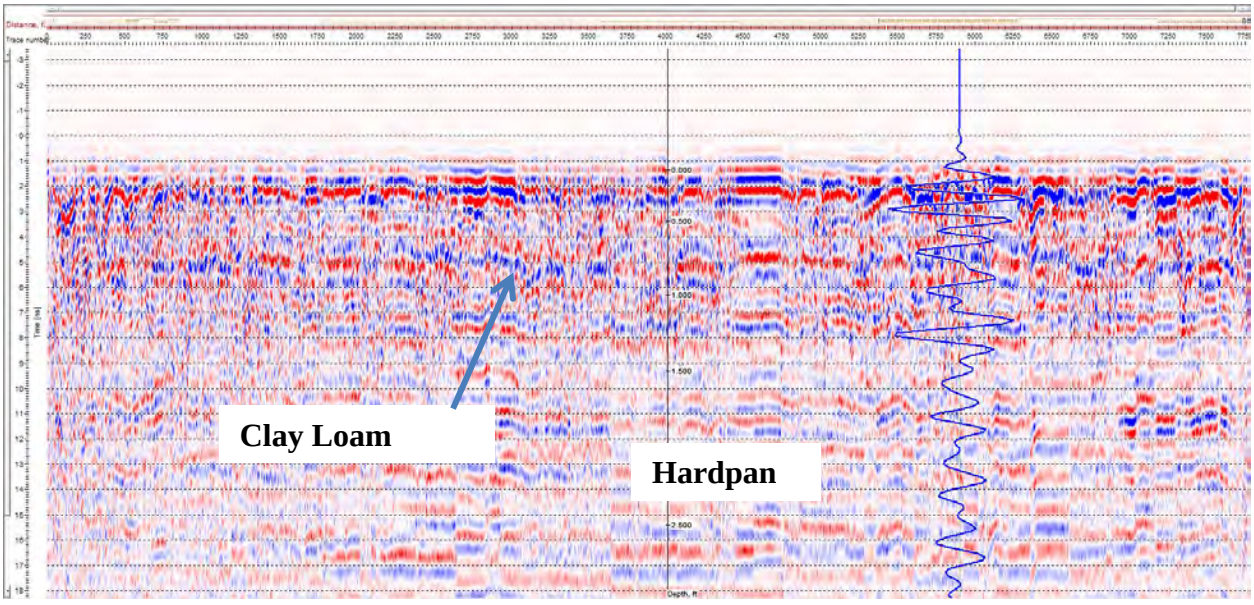


Figure 3-7 GPR Transect 11 Crossing Area of Proposed Road. The clay horizon varies in depth from within ½ foot below the surface to about 2 feet below the surface but it is continuous.

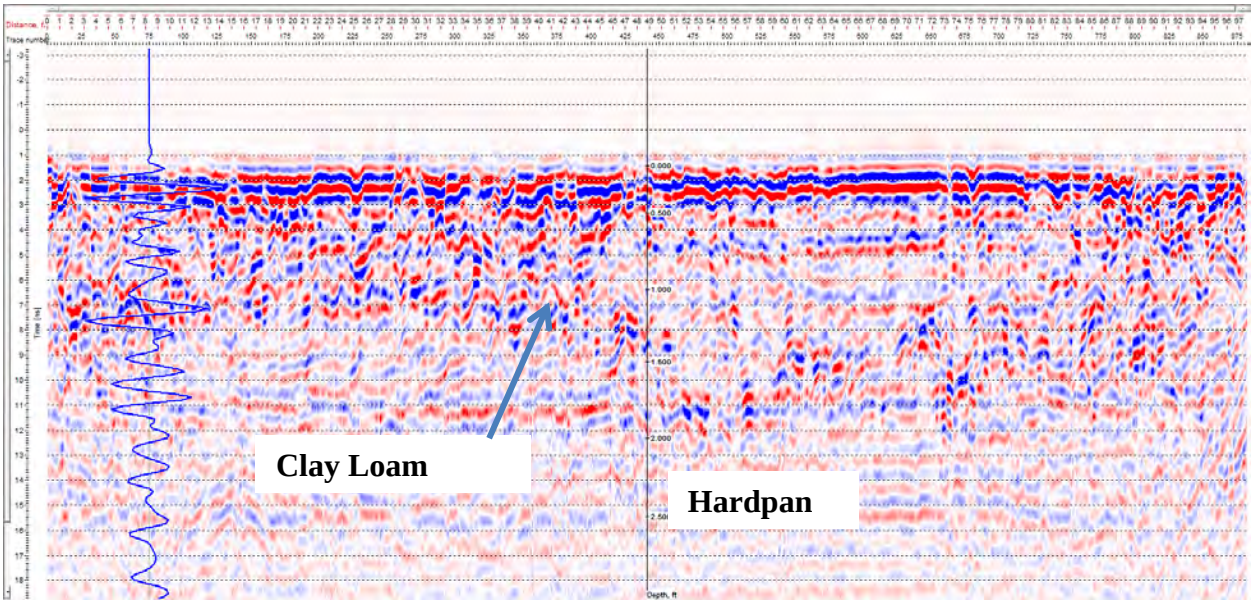


Figure 3-8 GPR transect 12 covers the area from east to west along the route of the proposed road. A hardpan horizon is present just above 2 feet below the soil surface and is continuous. The clay horizon varies from about 1 ½ feet below the surface then increases in height to within ½ foot below the surface.

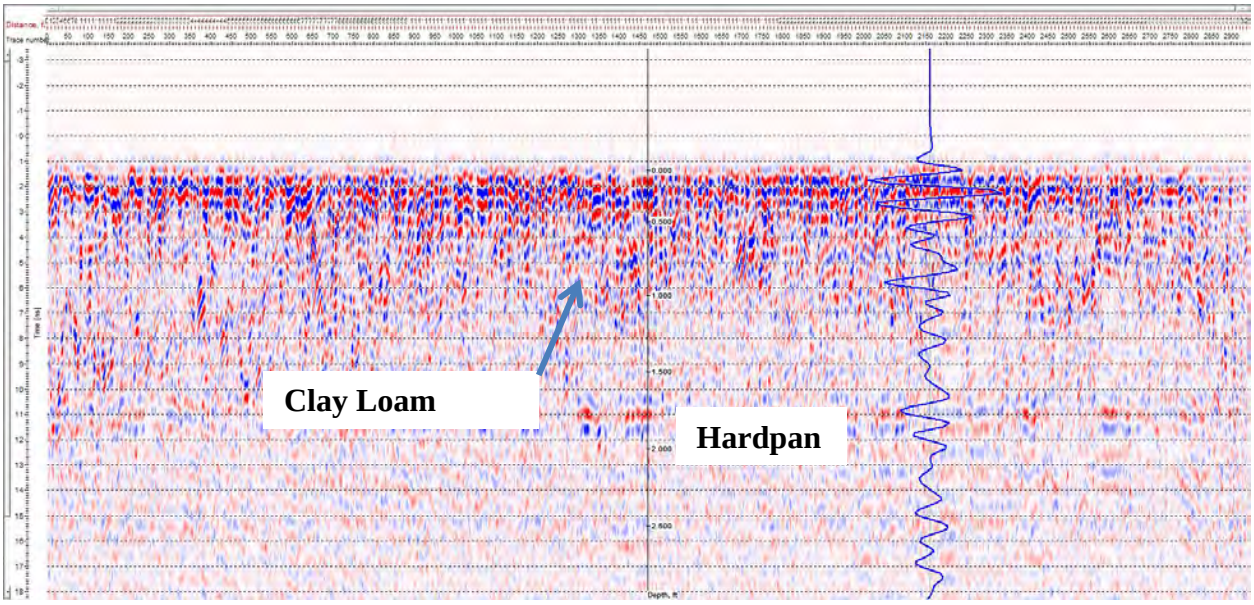


Figure 3-9 GPR transect 27 in disturbed uplands associated with Conservation Area 7**.** The clay zone is very close to the surface due to grading in the past.

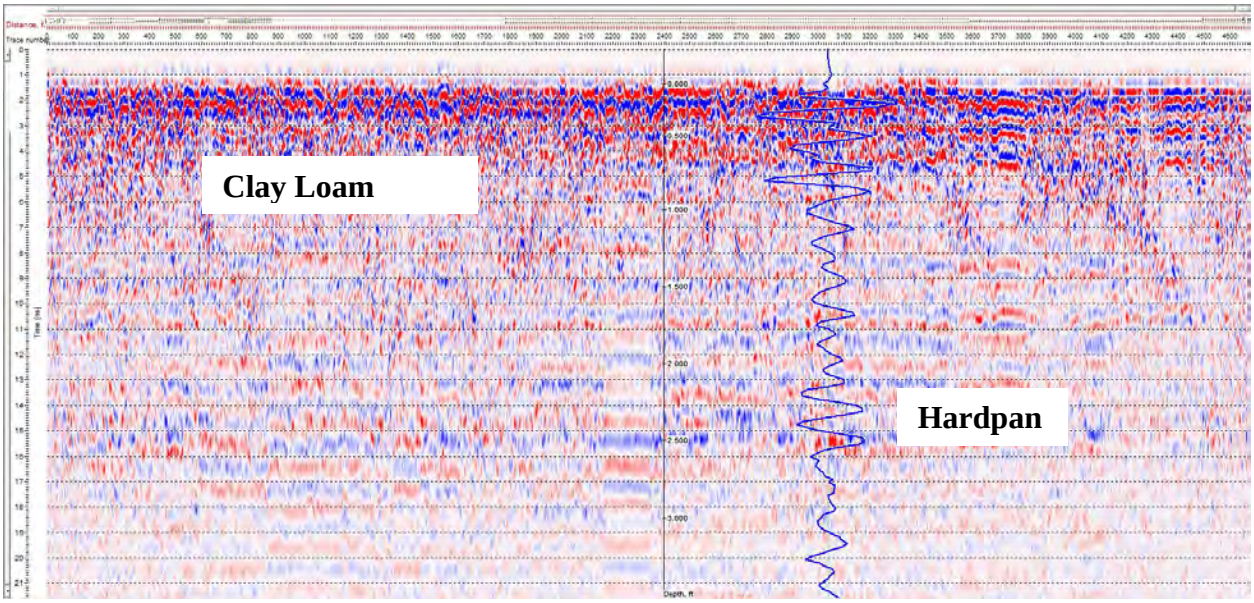


Figure 3-10 GPR transect 18 through Conservation Area 6 from west to east. This transect passed through three separate vernal pool depressions. The clay horizon is within ½ foot of the surface.

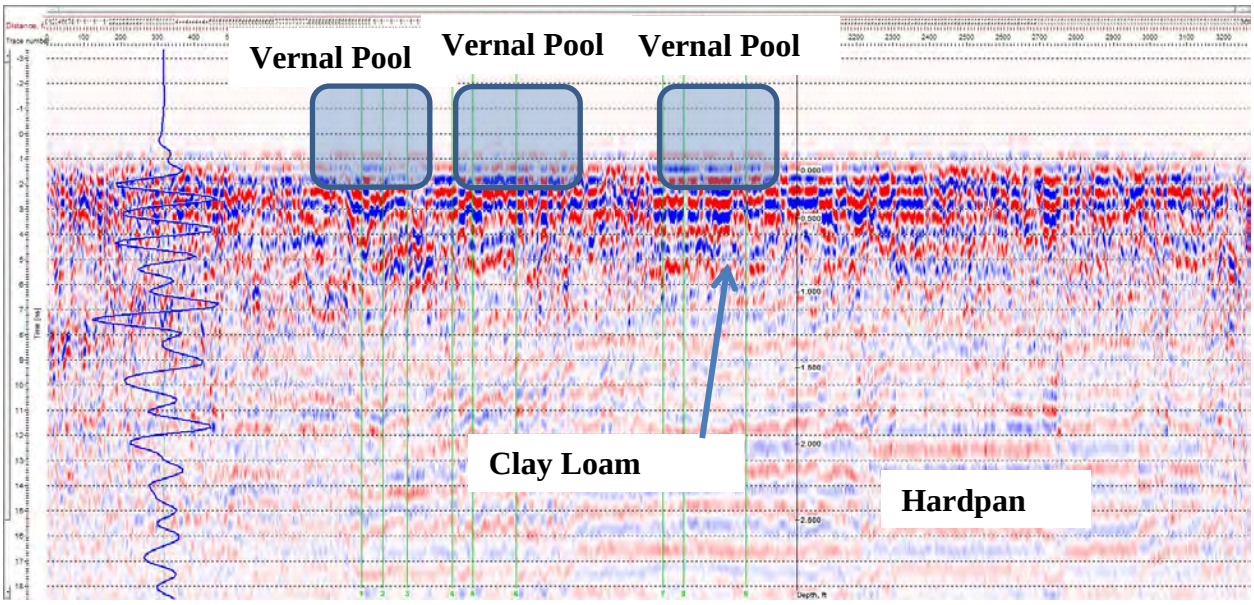
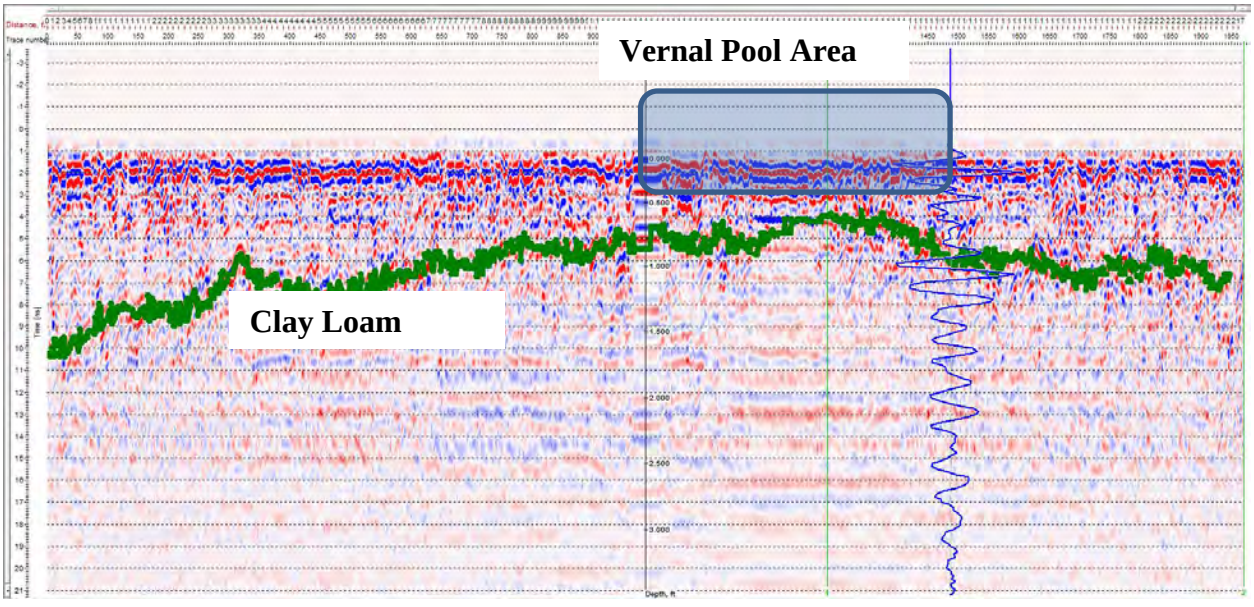


Figure 3-11 GPR transect 24 through Conservation Area 7 from south to north. This transect was from the uplands and travelled downslope in the area of a single large vernal pool adjacent to the path.



SECTION 4

PROPOSED PROJECT AND EFFECTS TO PROPOSED MITIGATION DESIGN

4.1 TOPOGRAPHY AFTER PROPOSED ROAD CONSTRUCTION

The proposed road between the two Conservation Areas (see **Figures 2-1 and 2-2**) will change the elevation of the existing contours. A portion of the proposed road was digitized into the elevation model for the existing conditions (**Figure 4-1**). The proposed road changes from existing grade of about 421 feet msl on the east side of Conservation Area 7 the drops to an elevation of about 404 feet msl northwest of the boundary of this area (**Figure 4-1**). **Figure 4-2** shows how the proposed road could create new catchment drainage. The development of road curbs, street and housing area drainage systems would probably not result in a free flow of water into the new road drainage system. **Figure 4-3** shows the vector flow arrows indicating the localized direction of surface water flow. The vector arrows within the Conservation Areas do not change based on the scale used in the existing conditions.

The topographic changes from the road do not appear to change the surface water flow patterns within the conservation areas based on the comparison of the existing conditions with the addition of the road. The model used in this study did not include the proposed housing and other infrastructure that will be built. In addition, **Figure 2-1** shows there will be houses and connecting roads on the east side Conservation Area 7 and South side of Conservation Area 6. These developments would eliminate upland water flow from the east side that is currently shown in the figures. The result of the overall development will be the two conservation areas will be self-contained systems.

The shallow clay loam soil layers that function as water-restricting layers would be lost in the upland outside the conservation areas. Because the water-restricting layers mapped at the site correlate directly with the topography, their presence does not differ from the findings of the surface topography. Had the surface topography and correlated water-restricting layers shown a direction of flow from northeast to southwest bisecting the two conservation areas with the proposed road could have negatively impacted the hydrological functioning of area 7.

Figure 4-1 Rhodes Crossing showing contour map after the construction of the proposed road bisecting Conservation Areas 6 & 7.

Figure 4-2 Changes that could result in the catchments as a result of the proposed road.

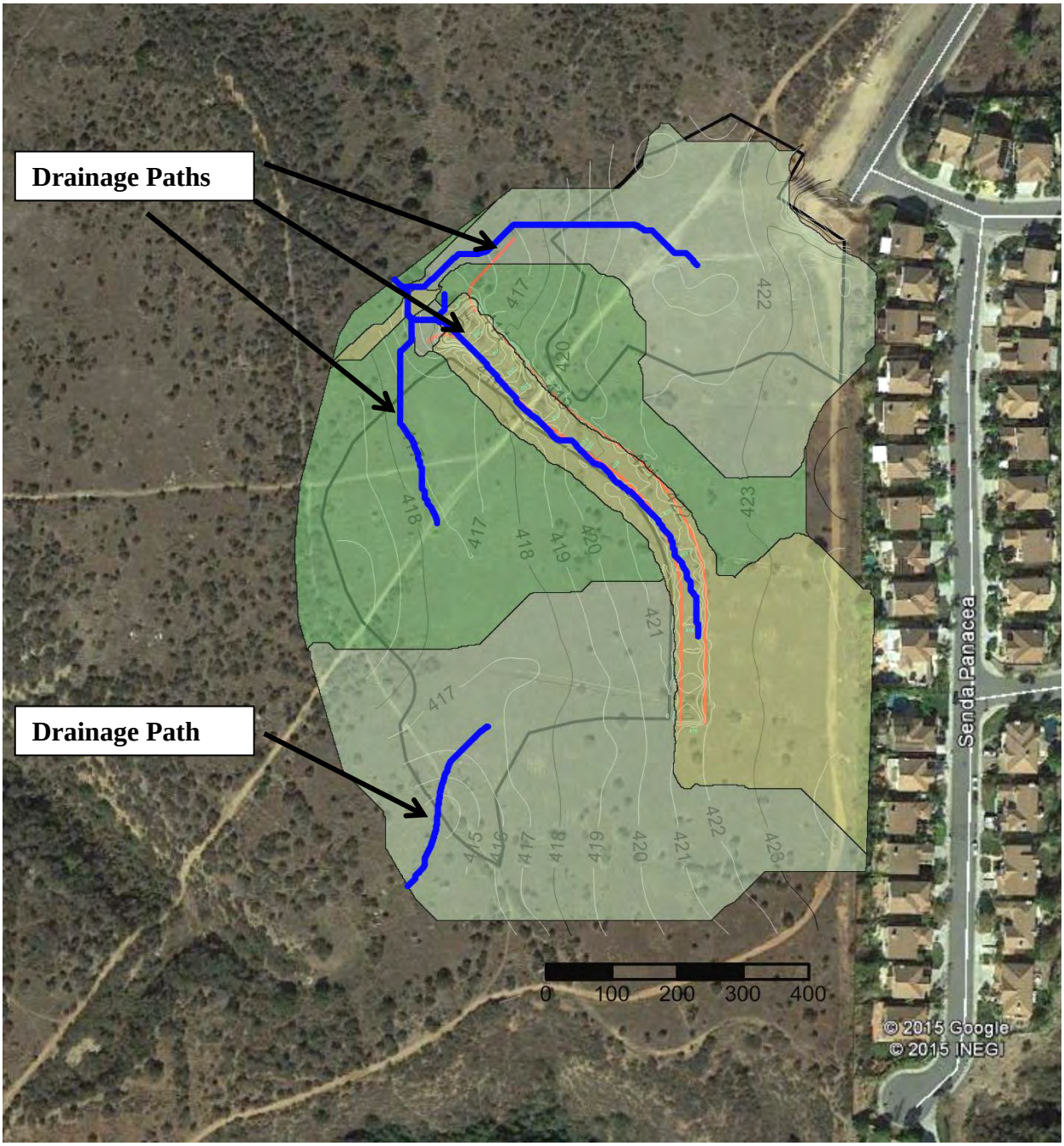


Figure 4-3 Vector flow arrows showing the local flow directions following the proposed road development.

SECTION 5

REFERENCES

Christman, MA and NF McCarten. 2014. A six-year study of hardpan vernal pools at Mather Field, CA. Plant Ecology *In review.*

McCarten N, MC Rains, and T Harter. 2008. Seasonal, variably saturated flows in a vernal pool wetland ecosystem. University of California, Davis. American Geophysical Union.

McCarten N, M Rains, and T Harter. 2010. Ecohydrology of vernal pool wetland ecosystems. HydroEco2009, International Multidisciplinary Conference on Hydrology and Ecology: Ecosystems Interfacing with Groundwater and Surface Water, Vienna, Austria.

NRCS 2014. Web Soil Survey. *http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm*

Rains, MC, RA Dahlgren, GE Fogg, T Harter, and RJ Williamson. 2006. Geological control of physical and chemical hydrology in California vernal pools. Wetlands. 28:347-362.

Smith, D.W. and W.L. Verill. 1998. Vernal pool-soil-landform relationships in the Central Valley of California. . In C.W. Witham, E.T. Bauder, D. Belk, W.R. Ferren Jr., and R. Ornduff (Editors). Ecology, Conservation, and Management of Vernal Pool Ecosystems – Proceedings from a 1996 Conference. California Native Plant Society, Sacramento, CA. 1998

U.S. Department of Agriculture (USDA). 1973. Soil Survey, San Diego Area, California.

Attachment B

Conceptual Vernal Pool Topography Plans for:

Rhodes Crossing

(provided under separate cover)

Technical Appendices
H-M
Biological Technical Report for the Merge 56 Development Project

Prepared for:

Sea Breeze Properties, LLC
3525 Del Mar Heights Road, #246
San Diego, CA 92130

Prepared by:

Alden Environmental, Inc.
3245 University Avenue, #1188
San Diego, CA 9210

ALDEN
ENVIRONMENTAL, INC

Appendix H

Merge 56
Development Project
Vernal Pool Mitigation
Documentation

Appendix H1

Conceptual Vernal Pool Mitigation Plan

Merge 56 Development Project
Conceptual Vernal Pool Mitigation Plan

May 25, 2016

Prepared for:

Sea Breeze Properties, LLC
3525 Del Mar Heights Road, #246
San Diego, CA 92130

Prepared by:

Alden Environmental, Inc.
3245 University Avenue, #1188
San Diego, CA 92104

ALDEN
ENVIRONMENTAL, INC

Merge 56 Development Project
Conceptual Vernal Pool Mitigation Plan

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1.0 INTRODUCTION

This plan provides conceptual mitigation for vernal/road pool and San Diego fairy shrimp (SDFS; *Branchinecta sandiegonensis*) impacts associated with the Merge 56 Development Project. The measures identified herein are intended to meet the requirements of the project's Biological Technical Report (BTR; Alden 2016), U.S. Fish & Wildlife Service (USFWS), and the City of San Diego. Other project related mitigation requirements are not addressed in this document.

2.0 DEVELOPMENT PROJECT DESCRIPTION AND IMPACTS

2.1 DEVELOPMENT PROJECT LOCATION

The Merge 56 Development project is situated in the communities of Torrey Highlands and Rancho Peñasquitos immediately adjacent to the State Route 56 (SR-56) right-of-way in the City (Figures 1 & 2). Regional access to the site is from SR-56, Interstate 5, and Interstate 15; local access is from the southern termini of Camino Del Sur and Carmel Mountain Road.

2.2 DEVELOPMENT PROJECT SUMMARY

The Merge 56 Development Project includes two main components: 1) a Mixed Use component (i.e., commercial, office, hotel, and residential development) and; 2) a Public Roadway component including improvements to Camino Del Sur and Carmel Mountain Road City Circulation Element roads).

2.2.1 Mixed Use Component

The Mixed Use component comprises approximately 30.4 acres of private commercial and residential development. Commercial uses would occupy approximately 14 acres of the Mixed Use site, while multi-family residential uses would occupy approximately 6 acres, and single-family residential development would occupy approximately 10.4 acres. Roads and slopes would occupy the balance of the Mixed Use site. The impact footprint for the Mixed Use site is shown on Figure 3.

2.2.2 Public Roadway Component

The Public Roadway component is a public project that includes the extension of Camino Del Sur and Carmel Mountain Road (Figure 3). Camino Del Sur and Carmel Mountain Road are capital improvement projects identified in the Torrey Highlands and Rancho Peñasquitos Public Facilities Financing Plans. Camino Del Sur would be constructed from its current terminus at the intersection with Torrey Santa Fe Road, south to its planned intersection with Carmel Mountain Road, as a four-lane roadway. South of its planned intersection with Carmel Mountain Road, Camino Del Sur would transition to a two-lane roadway to its existing terminus north of Dormouse Road. Camino Del Sur has been designed to avoid direct impacts to the USFWS National Wildlife Refuge immediately to the west by pulling the roadway slope back and constructing a retaining wall.

The existing segment of Carmel Mountain Road would be realigned and extended south of SR-56 to its planned intersection with Camino Del Sur as a two-lane roadway. A 16-inch public water main and an eight-inch diameter recycled water line would be installed within the Carmel Mountain Road right-of-way. Additionally, sidewalks and unpaved trails will be incorporated into the City roadway elements.

2.3 IMPACTS TO SENSITIVE BIOLOGICAL RESOURCES

2.3.1 Vernal Pools

A total of 8 vernal pools with a combined surface area of 0.038 acre would be impacted by the Merge 56 Development project (Table 1; Figure 3). These impacts include 2 vernal pools (0.022 acre) in the Mixed Use Component and 6 vernal pools (0.016 acre) in the Public Roadway Component.

Table 1
VERNAL/ROAD POOL IMPACTS

Project Component	Pool Type		Total
	Vernal Pool	Road Pool	
Mixed Use	0.022	-	**0.022**
Public Roadway	0.016	0.003	**0.019**
Total	**0.038**	**0.003**	**0.041**

2.3.2 Road Pools

Road pools are unvegetated, water-holding basins that, in the Project study area, support federal listed endangered SDFS. Road pools are distinguished from vernal pools by their absence of vernal pool indicator plant species. Vehicular activity has created or enhanced depressions and compacted the soil, making it very difficult for native vegetation to become established. This compaction allows water to pond readily, even in a dry year when most natural vernal pools remain dry. There are 2 road pools in the Public Roadway component with a combined area of 0.003 acre (Table 1, Figure 3). There are no impacted road pools in the Mixed Use component.

2.3.3 Upland Habitat (Watershed)

The watershed area surrounding the impacted vernal/road pools is dominated by non-native grassland habitat. Non-native grassland is a dense to sparse cover of non-native grasses often associated with numerous species of showy-flowered, native, annual forbs. This vegetation community occurs in areas that have been previously disturbed by agricultural activities. Dominant species include oats (*Avena* sp.), red brome (*Bromus madritensis* ssp. *rubens*), ripgut (*Bromus diandrus*), ryegrass (*Festuca perenne*), and mustard (*Brassica* sp.). The watersheds also encompass disturbed habitat.

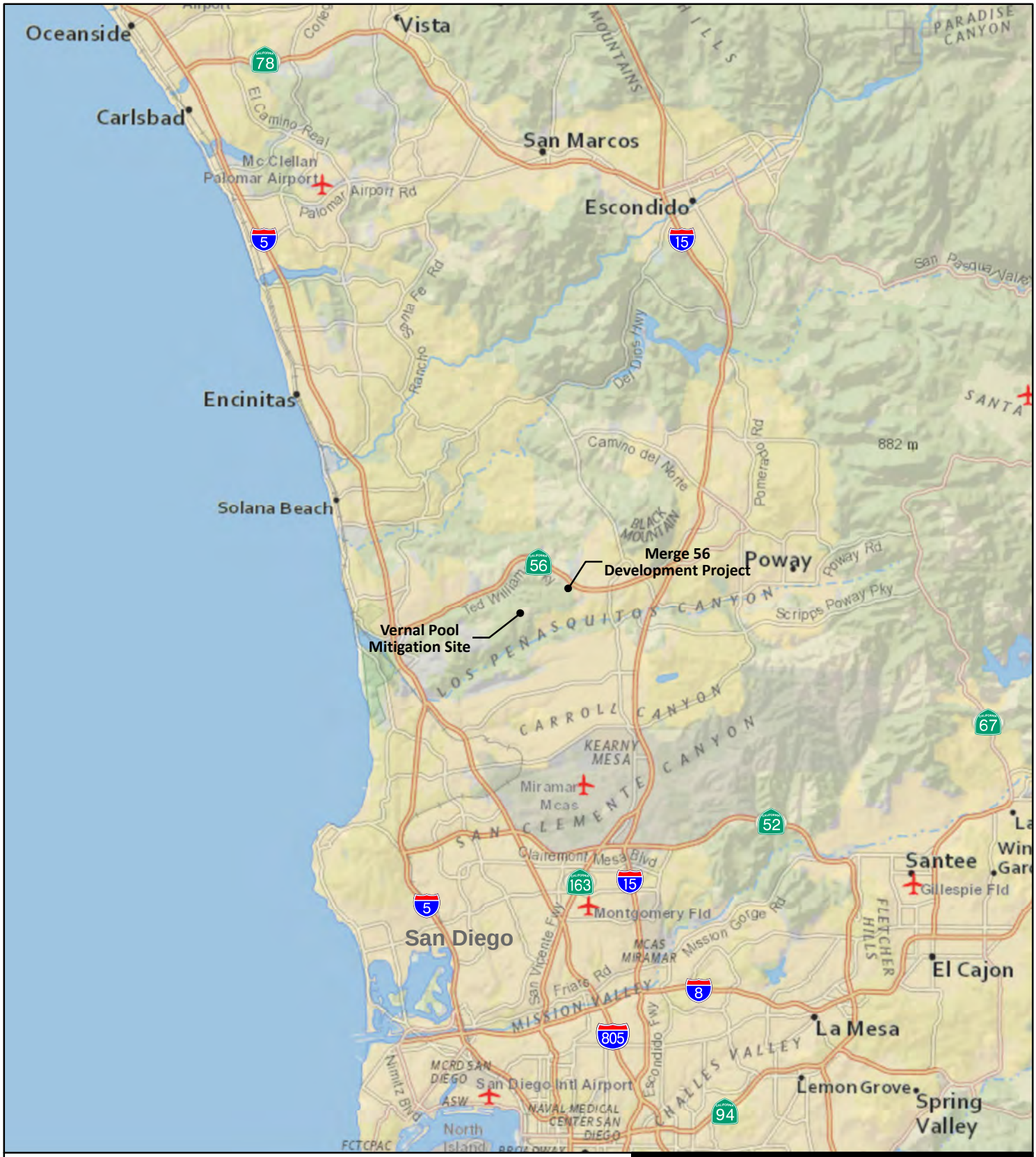

Figure 1

Regional Location

MERGE 56 DEVELOPMENT PROJECT
VERNAL POOL MITIGATION PLAN

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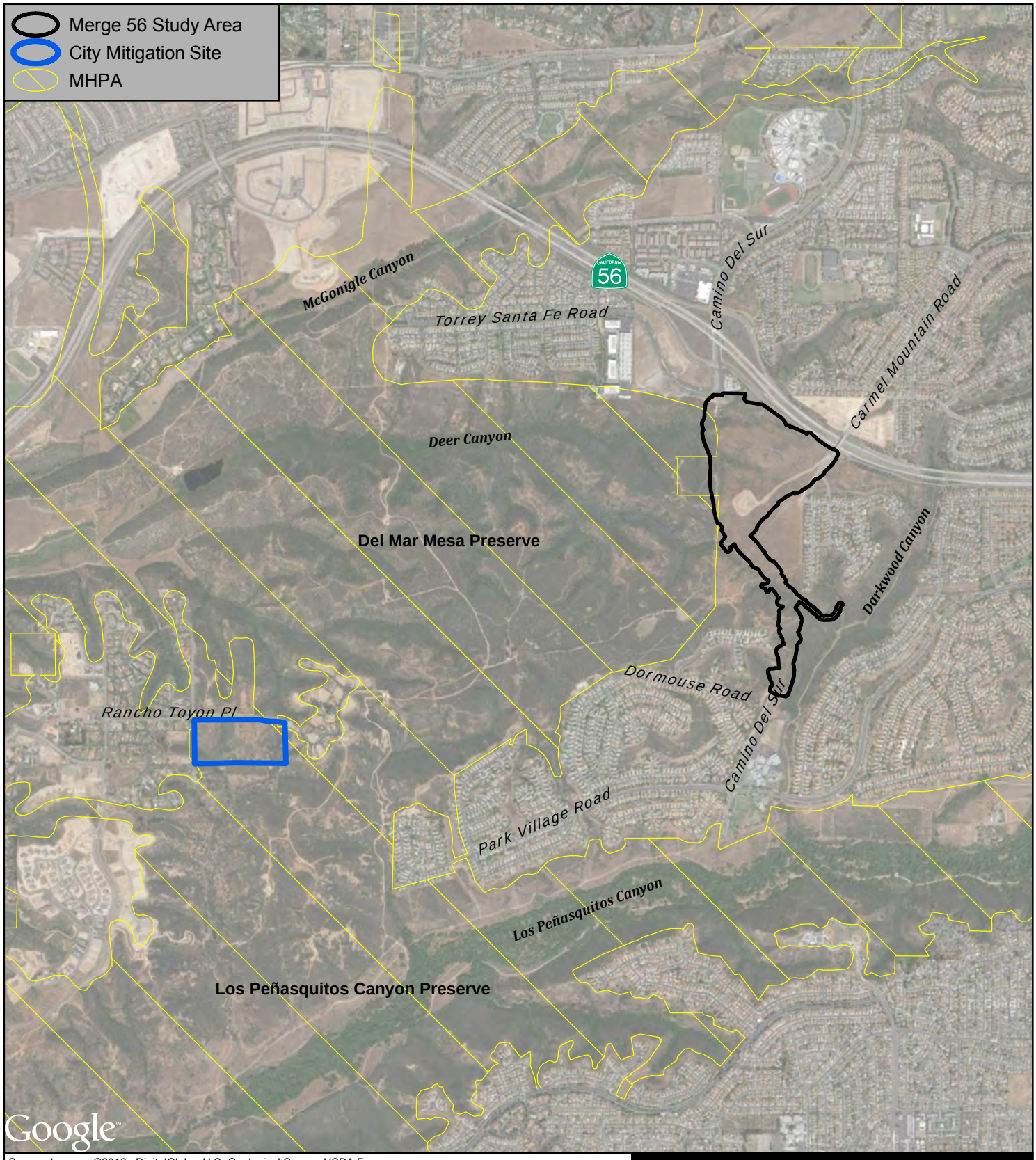
ENVIRONMENTAL, INC



Source: Imagery ©2016 , DigitalGlobe, U.S. Geological Survey, USDA Farm Service Agency

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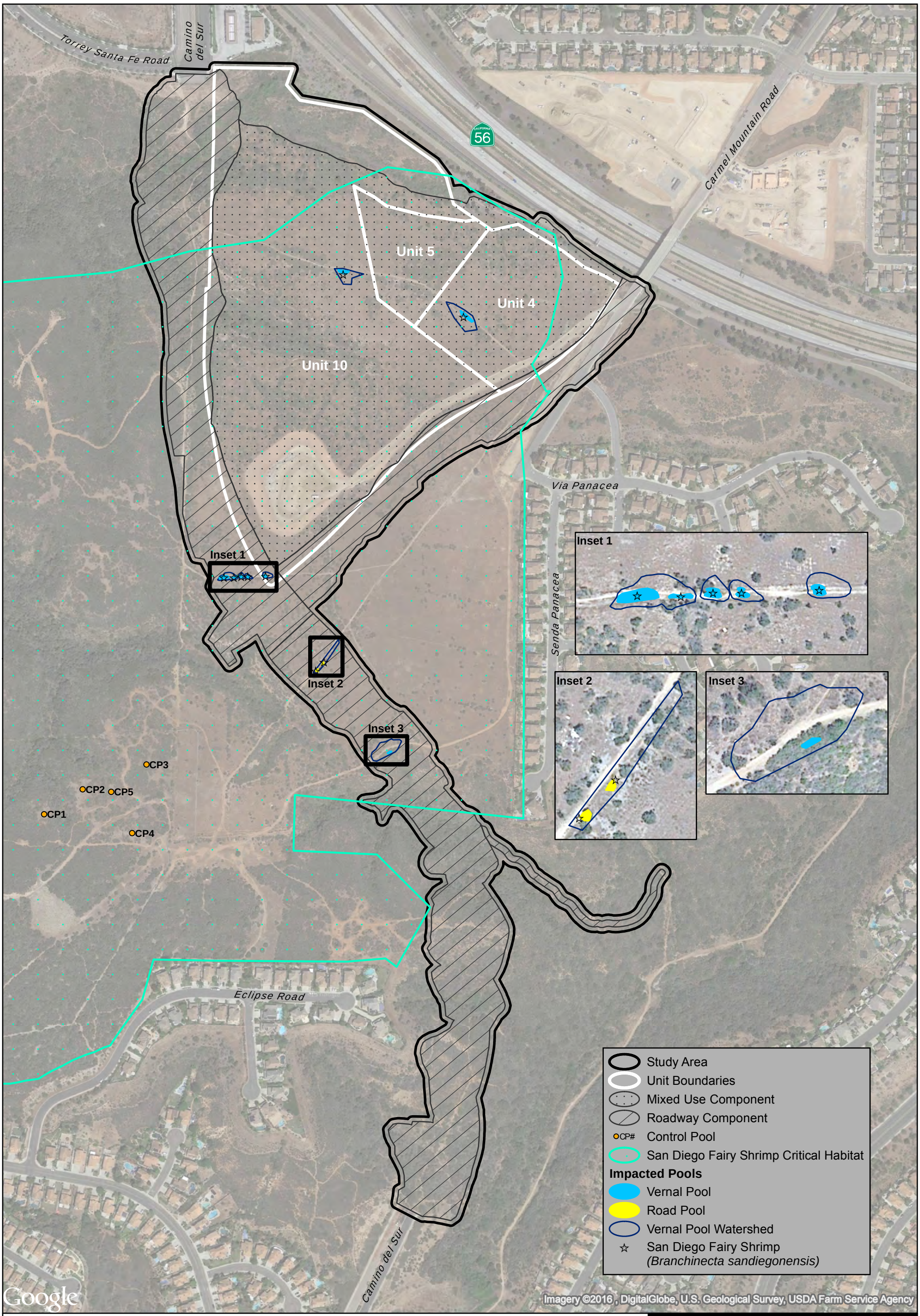
ALDEN ENVIRONMENTAL, INC

Figure 2

Project Location

MERGE 56 DEVELOPMENT PROJECT
VERNAL POOL MITIGATION PLAN



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ALDEN ENVIRONMENTAL, INC

Figure 3

Vernal/Road Pool Impacts

MERGE 56 DEVELOPMENT PROJECT
VERNAL POOL MITIGATION PLAN

2.3.4 Sensitive Species

Aside from the SDFS, there were no other sensitive species impacts associated with impacted vernal/road pools.

3.0 MITIGATION REQUIREMENTS

The proposed mitigation for impacts to vernal and road pools would create vernal pool surface area and provide higher functions and values than those lost through project construction. In addition to the specific mitigation for pool impacts, the effort includes creation of additional "Surplus" pools. The created surplus pools would be retained by the City to be used as mitigation for future City project impacts to vernal pool habitat.

The mitigation would begin before or concurrently with the proposed project impacts with success anticipated within a 5-year period. The mitigation effort also includes restoration of the upland watershed area surrounding the pools, providing for improved habitat and water quality functions. Overall, the mitigation effort would provide higher quality habitat than that impacted with superior functions and services.

3.1 VERNAL POOLS

Mitigation for impacts to 0.038 acre of vernal pool habitat will be met through creation of vernal pool habitat at a minimum 3:1 ratio. At this ratio (3:1), a total of 0.066 acre of created vernal pools is required (Table 2) for the Mixed Use Component and 0.048 acre of created vernal pools for the Public Roadway Component. The mitigation also includes a 5-year maintenance and monitoring period and a long term habitat management plan.

Table 2
MITIGATION REQUIREMENTS

Mitigation Type	Impact	Ratio	Required
Mixed Use Component			
Vernal Pool	0.022	3:1	0.066
Road Pool	-	-	-
Subtotal	**0.022**		**0.066**[1]
Public Roadway Component			
Vernal Pool	0.016	3:1	0.048
Road Pool	0.003	3:1	0.009
Subtotal	**0.019**		**0.057**[1]
City Surplus			
Vernal Pool	**-**	**-**	**0.070**[2]
TOTAL	**0.041**		**0.193**

[1] To be met entirely through pool creation
[2] Surplus creation, not a mitigation requirement

3.2 ROAD POOLS

Impacts to the 2 road pools (0.003 acre) supporting SDFS would be mitigated through implementation of the vernal pool habitat restoration effort described in this plan. The mitigation involves creation of vernal pools that support the SDFS at a 3:1 ratio. At this ratio, a total of 0.009 acre of created vernal pool surface area is required for road pool mitigation for the Public Roadway Component (Table 2). The mitigation also includes a 5-year maintenance and monitoring period and a long term habitat management plan.

3.3 SURPLUS POOLS

While not a mitigation requirement, this plan includes the creation of an additional 0.070 acre of vernal pool habitat (Table 2). This surplus vernal pool habitat will be retained by the City. The surplus created pools will be incorporated into the same 5-year maintenance and monitoring period as the created mitigation pools.

4.0 DESCRIPTION OF THE PROPOSED MITIGATION SITE

The mitigation site is an approximately 20 acre City-owned parcel located on Del Mar Mesa in the City of San Diego (APN 308-020-19; Figure 4). The site occurs within the MHPA, is suitable for vernal pool habitat restoration, and is of sufficient size to meet the mitigation needs of both the Public and Private project components. The vernal pool creation would occur in approximately 2.3 acre area on a flat mesa in the northeastern portion of the City's parcel. The site currently supports a single existing vernal pool. Soil in the vernal pool restoration area is mapped as Redding gravelly loam. This is one of the soil series identified as supporting vernal pools in Southern California. In addition, the pool area is flat with a slope of approximately 2% from north to south, well within the range of suitability for vernal pool occurrence.

5.0 MITIGATION DESIGN

To meet USFWS and City mitigation requirements for both the Public Road Way and private Mixed Use project components, this plan recommends measures to create vernal pool habitat. The target vernal pool mitigation for each project component and possible site is described in the following text. Specific implementation measures are provided in Section 6. The created vernal pool surface area is intended to provide habitat that supports vernal pool plant indicator species (Corps 1997) and function as viable, self-sustaining vernal pool basins.

5.1 PUBLIC ROADWAY COMPONENT

A total of 6 new vernal pools with a combined area of 0.057 acre would be installed to meet the Public Roadway Component mitigation requirement (Table 2; Figure 4). While not a mitigation requirement, the existing pool (0.021 acre) would be enhanced and incorporated into the overall restoration effort.

An approximately 0.7 acre area surrounding the Public Roadway Component created pools also would be restored to native upland habitat.

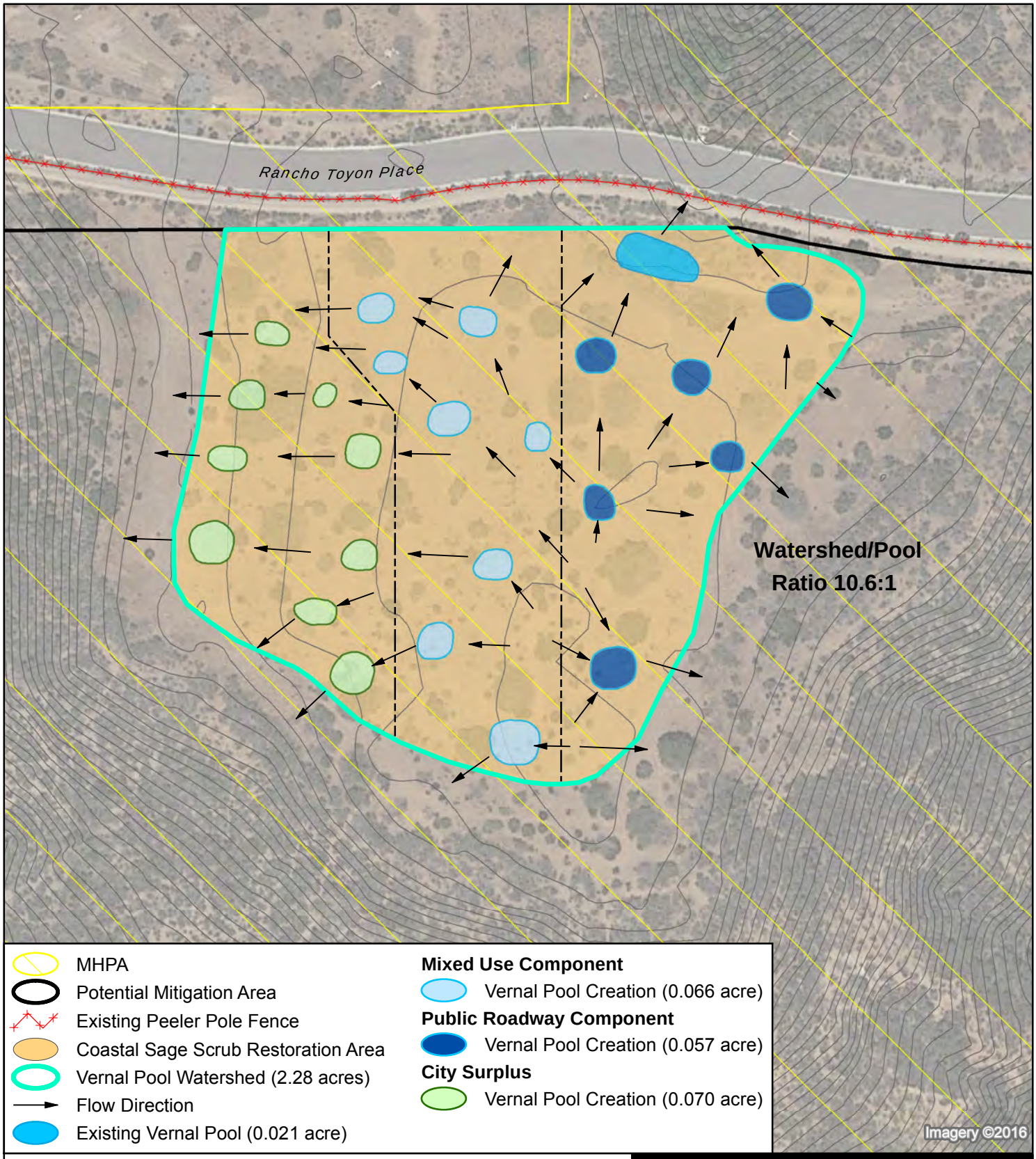

Figure 4

Vernal Pool Mitigation Site

MERGE 56 DEVELOPMENT PROJECT
VERNAL POOL MITIGATION PLAN

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ALDEN ENVIRONMENTAL, INC

5.2 MIXED USE COMPONENT

A total of 8 new vernal pools, with a combined surface area of 0.066 acre, would be created to meet the Mixed Use Component mitigation requirement. An approximately 0.8 acre area surrounding the Mixed Use Component created pools also would be restored to native upland habitat.

5.3 SURPLUS POOLS

The effort includes the creation of 9 surplus vernal pools with a combined surface area of 0.070 acre (Figure 4) to be retained by the City. An approximately 0.6 acre area surrounding surplus created pools also would be restored to native upland habitat. The surplus vernal pool and upland habitat restoration is in addition to the project mitigation requirements.

5.4 TARGET FUNCTIONS AND SERVICES

The goals of this mitigation effort are to provide mitigation for vernal/road pool impacts associated with the Public Roadway and Mixed Use components of the Merge 56 project. The vernal pool creation and enhancement identified in this plan would, at a minimum, replace the functions and services lost through the project impacts. With the completed mitigation, it is expected that functions and services (water filtration, sensitive wildlife and plant habitat, etc.) that are currently being performed by the existing pools would be surpassed in the created/enhanced pools by the end of the 5-year mitigation effort. This realization of target functions and values would be documented by conducting quantitative and qualitative analyses throughout the 5-year monitoring period.

6.0 IMPLEMENTATION PLAN

The mitigation effort will consist of several components, including:

- Initial weed/trash removal
- Creation of vernal pools
- Enhancement of existing pool
- Restoration of native upland habitat (2.1 acre) in the vernal pool watershed areas

6.1 RESPONSIBLE PARTIES

6.1.1 Project Proponent

Sea Breeze Properties, LLC (Project Proponent) will be responsible for financing the installation, maintenance, and monitoring of the mitigation measures as well as the City surplus pools. Reimbursement from the City for the public portion of the effort may be pursued by the Project Proponent. Any reimbursement of costs will be determined through consultation between the Project Proponent and the City.

6.1.2 Restoration Specialist

Overall supervision of the installation, maintenance, and monitoring of this program will be the responsibility of a restoration specialist with a minimum of 5 years of vernal pool restoration experience and hold a valid USFWS permit to survey for the SDFS. The restoration specialist will educate all participants with regard to program goals and directly oversee all aspects of the project. In addition, the specialist will collect monitoring data, conduct annual assessments, and prepare all required reports. If necessary, the restoration specialist will provide the project proponent and contractor with a brief report, including a written list of items in need of attention following each monitoring visit. The contractor will be responsible for carrying out all required measures in a timely manner. The restoration specialist will notify the contractor and responsible party if any requested remediation is not addressed.

6.1.3 Installation/Maintenance Contractor

The installation and maintenance contractor(s) will have vernal pool restoration experience and will, under the direction of the restoration specialist, be responsible for completion of grading, pre-planting weed control, planting, seeding, and maintenance. The restoration specialist will educate the contractor(s) on the installation and maintenance of vernal pool plant species.

After the installation is complete, maintenance personnel will initiate the 5-year maintenance program under the direction of the restoration specialist. Maintenance crews will service the entire enhancement area regularly following installation. Service will include but not be limited to weed control, trash removal, watering, fence repair, dead plant replacement, and re-seeding. All activities conducted will be seasonally appropriate and approved by the restoration specialist. The maintenance crew will meet the restoration specialist at the site when requested and will perform all checklist items in a timely manner as directed by the restoration specialist. The restoration specialist will ensure that maintenance personnel are capable of discerning between native plant species and non-native weed species.

6.2 CONTRACTOR EDUCATION

Prior to the commencement of site activities, the contractor(s) will review all aspects of this plan including permit requirements, site protection, maintenance inspections, landscape procedures, and monitoring. The restoration specialist will make the Contractor and all other contractors, subcontractors and the project supervisors aware of the agency permits and authorizations associated with the project. Copies of project permits will be kept onsite at all times during periods of active work and must be presented to any agency personnel upon demand.

6.3 IMPLEMENTATION SCHEDULE

Implementation of the restoration/enhancement program would commence in the summer/fall season. This schedule assumes that weather and soil conditions are dry enough to conduct the mitigation without causing irreparable damage to the site. Pool grading cannot be conducted while the soils are wet or damp, so it is expected that pool grading could not be conducted before June or July of a given year. No activities will be conducted within the pools until the following conditions have been met:

1. Pool disturbance will occur only when the soil is dry to the touch both at the surface and 1 inch below, and a visual check for color differences (i.e., darker soil indicating moisture) in the soil between the surface and 1 inch below indicates the soil is dry.

2. After a rain of greater than 0.2 inch, grading will occur only after the soil surface has dried sufficiently as described above and no sooner than 2 days (48 hours) after the rain event ends.

3. Grading will commence only when no rain is forecast during the anticipated grading period.

4. To prevent erosion and siltation from stormwater runoff due to unexpected rains, Best Management Practices (i.e., silt fences and fiber rolls) will be implemented as needed during grading.

5. If rain occurs during grading, work will stop and resume only after soils are dry as described above.

Initial activities will include marking of work areas, weed and trash removal, and pool construction. Introduction of salvaged topsoil (if appropriate) and seeding of upland/inter-pool areas will start once the site has been cleared of all trash and debris. All planting will be installed in a way that mimics natural plant distribution, and not in rows.

Inoculum will not be introduced into the restored pools until after they have been demonstrated to retain water for the appropriate amount of time to support San Diego fairy shrimp (approximately 3 - 4 weeks). With USFWS and City approval, the pools may be artificially filled in order to determine their water holding capacity prior to inoculation. Water to be used to fill the pools will be raw water and will not have been treated with chloramine/chlorine.

Inoculum will be placed in a manner that preserves, to the maximum extent possible, the orientation of the fairy shrimp cysts within the surface layer of soil (e.g., collected inoculum will be distributed within the pond so that cysts have the potential to be brought into solution upon inundation). The entire enhancement and restoration effort is anticipated to be complete within 8 weeks of starting. Monitoring of the restoration effort will begin following installation. The monitoring program will continue for a 5-year period. Field surveys will be completed on a bi-weekly (every other week) basis during the rainy season and monthly during the dry season each year with an annual report being prepared and distributed by September. The results of the annual reports will be used to determine the success of the restoration effort and to determine any remedial actions necessary. At the end of the 5-year period, a final report will be produced. A general checklist showing the phases and responsible parties is included in Table 3.

6.4 SITE PREPARATION

The intent of this plan is to create vernal pool habitat and restore the surrounding watershed area. Disturbed areas will be de-compacted to increase soil permeability and the potential for establishment of native coastal sage scrub habitat. Weeds, refuse, debris, and deleterious soil will be removed and disposed of in a licensed landfill.

6.4.1 Dethatching

Non-native habitat within the pool watershed/upland restoration area will be mowed and dethatched prior to initiation of other activities. The dethatching will remove dead weed material that may have accumulated on the ground over time and that can inhibit the establishment and growth of native species. Dethatching consists of mowing or weed-whipping standing grass stalks, and raking, collecting, and removing the grass straw and other cut weeds from the site. All material will be removed from the site and be disposed of in a legal manner. Prior to dethatching, areas supporting native plants would be flagged for avoidance.

6.4.2 Vernal Pool Inoculum Salvage

Creation of vernal pool habitat requires reintroduction of vernal pool plant and animal species. To help ensure that the created pools support a viable vernal pool flora and fauna, vernal pool topsoil will be collected from the impacted pools for use in the new pools. Hand tools (i.e., shovels and trowels and/or light machinery) will be used to remove the first 1 to 2 inches of soil from the impacted pools. Soil will be placed in boxes of sturdy, moving grade cardboard, with lids. Typically the size of each box is 12 inches x 15 inches x 10 inches (depth). Butcher paper (or similar) will be placed in the bottom of the boxes to reduce leaks. Boxes should only be filled to 3/4 of capacity or approximately 3/4 cubic feet each, to allow for safe movement. The collected inoculum from each pool would be labeled and kept separate from inoculum collected from other pools. The amount of inoculum collected from a given pool depends upon its size and quality. Each box must be labeled with the pool number, box number, and date of collection. Boxes would be moved to a secure, dry, enclosed storage facility. Boxes should be stored off the floor, on pallets or similar.

Additional off-site inoculum may be necessary for the restoration effort. If it is deemed that off-site inoculum is necessary, the restoration specialist will contact the appropriate resource agencies (USFWS and City) for approval. Inoculum will be collected in limited quantity, coordinated with the USFWS, from source pools, such that no appreciable damage occurs to source pools. No more than 10 percent of the basin area of any donor pool will be used for collection of inoculum. Prior to collecting inoculum at any of the exempted donor pools, the donor pools should be surveyed to document that they are free of versatile fairy shrimp (*Branchinecta lindahli*).

6.4.3 Fencing

There is an existing peeler pole fence running along the northern portion of the City mitigation parcel. As such, no additional fencing is proposed as part of the mitigation effort.

Signs will be installed along the existing fence at approximately 50 foot intervals. The signs will provide notice, in both English and Spanish, that the area is an ecological preserve and that trespassing is prohibited.

Table 3 VERNAL POOL PLAN CHECKLIST						
Construction Phase	**Task**	**Applicable Parties**				
		Project Proponent	**Grading Contractor**	**Installation Contractor**	**Maintenance Contractor**	**Restoration Specialist**
Pre-construction	Order seed and container stock			X		
	Attend pre-construction meeting	X	X	X		X
	Confirm no change to San Diego fairy shrimp distribution on site					X
	Identify site limits and staging area					X
	Salvage topsoil and plant material			X		X
Installation	Delineate mitigation boundaries			X		X
	Remove non-native vegetation			X		X
	Create vernal pool topography		X			X
	Install container stock and seed and replace vernal pool topsoil			X		X
	Prepare/submit as-built report					X
Five-year Maintenance & Monitoring Period	Conduct maintenance monitoring and annual monitoring;					X
	Maintain site for remainder of 5 years - until signed off by resource agencies				X	X
	Maintain site for remainder of 5 years - until signed off by resource agencies				X	X

6.5 POOL ENHANCEMENT AND CREATION

The single existing pool (0.021 acre) within the mitigation site will be enhanced to replicate hydrologic conditions of existing, high quality vernal pool habitat in the vicinity. Enhancement within this pool will include minor recontouring, trash and tire rut removal, inoculation, and incorporation in the overall vernal pool weeding program (Section 6). This enhancement is being conducted to help support the overall effort and is not a mitigation requirement.

The created pools will be formed to replicate hydrologic conditions of existing vernal pool habitat in the project vicinity. The pools will be inoculated with appropriate vernal pool flora and fauna. Care will be taken to minimize the introduction of weed seeds into the new vernal pools. None of the collected inoculum will be mixed between pools. In addition, the inoculum placed in any pool will come from a single pool and will not be mixed with any other inoculum collected elsewhere.

Grading will be required to carry out the vernal pool creation activities. An engineered grading plan for the on-site mitigation area will be developed; however, actual grading will be a field-directed exercise and micro elevations and micro grading will be determined and directed by the restoration specialist with final contours and watershed drainage patterns established in the field. Pools will be graded to have maximum depths of 4 to 6 inches with the goal of having appropriate ponding for SDFS. Pools are planned to have slopes of 12:1 to 15:1 to provide smooth, micro-topographic variance for vernal pool plants. Material removed during pool excavation will be used to create mima mounds.

Vernal pool grading will be carried out under the supervision of the restoration specialist. The restoration specialist will mark all areas to be graded. Existing sensitive habitats and plants will be marked as avoidance areas. Access routes will be identified and marked. An on-site meeting will be held with the restoration specialist and all installation personnel to identify sensitive areas and devise a strategy for avoidance prior to initiation of restoration activities. A staging area will be established outside of the mitigation area on Rancho Toyon Place. Grading shall be implemented using rubber-tired loaders, small bulldozers, and tractors. All vehicles and construction equipment will be restricted to the staging area when not required for restoration activities.

6.6 UPLAND RESTORATION

6.6.1 Seed Mix

Upland seeding will take place in an approximately 2.1 acre upland area adjacent to the created vernal pools. Restoration of this habitat is critical to the overall success of the pool mitigation effort. Without vegetative cover to control erosion, the pools may fill with materials washed in from the adjacent upland areas. Within the upland area, the target vegetation habitat will be Diegan coastal sage scrub. The species included in the mix were selected because they are native and occur either on the project site or in the project vicinity. The native scrub mix is presented in Table 4. The seed will be sourced from as close to the sites as possible. If seed is unavailable from the project vicinity, the restoration specialist may substitute species as necessary, with approval of the City and USFWS. The source and proof (tags) for all seed will be provided.

Table 4 UPLAND NATIVE SEED MIX	
SPECIES	**POUNDS/ACRE**
Coyote bush (*Baccharis pilularis*)	3
Monkey-flower (*Mimulus aurantiacus*)	3
California sage brush (*Artemisia californica*)	3
Chia (*Salvia columbariae*)	1
Black sage (*Salvia mellifera*)	3
Fascicled tarweed (*Deinandra fasciculata*)	3
Deerweed (*Acmispon glaber*)	2
Dot-seed plantain (*Plantago erecta*)	3
Flat-top buckwheat (*Eriogonum fasciculatum*)	5
Golden yarrow (*Eriophyllum confertiflorum*)	3
California everlasting (*Gnaphalium californicum*)	3
Goldfields (*Lasthenia californica*)	2
Lemonadeberry (*Rhus integrifolia*)	1
San Diego needlegrass (*Stipa lepida*)	6
Chamise (*Adenostoma fasciculatum*)	4
TOTAL	**45**

Seed will be applied via a hydroseed application technique. A hydroseed slurry will be evenly applied in two stages such that an even, homogeneous distribution is made in each area. The first stage will include the seed, a small amount of fiber mulch, and dye. This application will help ensure that maximum seed/soil contact is made. A second layer will be applied immediately following the first. The second layer will include additional fiber mulch, dye, and a tackifier. The tackifier will serve to help bind seed and soil until germination. Hydroseed specifications are presented in Table 5.

Table 5 HYDROSEED APPLICATION SPECIFICATIONS		
Material	**First Application**	**Second Application**
Seed	As called for per site	N/A
Long fiber wood mulch	500 lbs/acre	1,000 lbs/acre
Dye	As necessary	As necessary
Tackifier	N/A	90 lbs/acre
Water	Sufficient to maintain slurry	Sufficient to maintain slurry

Hand seeding may be conducted in focused areas to help ensure targeted application of seed. Areas not treated with the hydroseed slurry will be hand seeded following hydroseeding to make sure all areas are seeded. These areas will be determined at the time of seeding and will include areas where hydroseeding may not be possible, where existing native plants may be negatively affected by the hydroseed slurry, or where it is thought that certain species may be appropriate in small areas. Seed of different species will only be mixed when they are to be applied to the same location. Individual species may be seeded separately as directed by the project restoration specialist. Hand broadcasters will be used to help ensure a consistent application of seed. An inert carrier (sand, saw dust) may also be mixed with the seed to help maintain consistency.

Seeding will not be conducted during windy conditions. Seed will be raked into soil after application to help increase seed/soil contact.

6.6.2 Container Stock

In addition to seed, native container stock will be planted in the upland areas (Table 6). The container stock will be sourced from as close to the site as possible. If container stock is unavailable from the project vicinity, the restoration specialist may substitute species as necessary, with approval of the City. The source and proof for all plant material will be provided. All container stock will be inspected and approved by the restoration specialist prior to being installed. Specifically, the restoration specialist will ensure that:

- The correct number, size, and species ordered are delivered;
- Plants are healthy and showing no sign of disease;
- Roots fill the containers, but are not root bound;
- There is no breakage of plants;
- Plants show no evidence of pests;
- Plants are in a state suitable for outplanting.

The restoration specialist will reject any plants not meeting these requirements.

Table 6
UPLAND NATIVE CONTAINER STOCK SPECIES[1]

Species	Number Per Acre
Laurel sumac (*Malosma laurina*)	10
Coastal prickly pear (*Opuntia littoralis*)	10
Chamise (*Adenostoma fasciculatum*)	15
Lemonadeberry (*Rhus integrifolia*)	5
San Diego needlegrass (*Stipa lepida*)	300
California sage brush (*Artemisia californica*)	50
California buckwheat (*Eriogonum fasciculatum*)	50
TOTAL	**440**

[1]All container stock is 1 gallon except for *Stipa pulchra* which are plugs

The installation contractor will be responsible for planting all container stock within four days following delivery. Container stock staged on site will be placed in a protected area and watered regularly prior to planting. Container stock will be planted in such a way as to mimic a natural species distribution. The project restoration specialist will specify the locations for all planting. Plants will be placed in natural groupings with appropriate spacing for the given species/target habitat type. Holes for each plant will be dug twice as deep and twice as wide as the container size. The hole will then be refilled to the halfway point, slightly compacted, and filled with water. Once all the water has soaked into the soil, the container stock will be planted such that the container plant soil level is slightly above ground level. Loose soil will be used to fill in the areas around the root ball and help ensure that there are no air spaces. Remaining soil will be used to create a watering basin around the plant.

6.6.3 Material Salvage

The seed and container stock identified above is intended to be implemented without using any native plant/soil material salvaged from nearby development projects. If salvaged upland soil/plant material is made available to the mitigation project during the installation phase it will be incorporated into the upland watershed areas to the extent practicable.

6.7 IRRIGATION PLAN

No broadcast irrigation is planned or considered appropriate for this project. Runoff from any spray irrigation could alter the hydrology or water chemistry of the surrounding vernal pools. Irrigation runoff entering pools could cause vernal pool plant seed germination or fairy shrimp cysts to leave diapause at a time of year not appropriate, and therefore cause the death of these individuals.

Any artificial watering of the pool watersheds will be done in a manner that prevents water from entering into the pools. Any water to be used will be identified and documented to be free of contaminants that could harm the pools.

Container stock and grass plugs will be watered at the time of planting, and then periodically during the installation and maintenance period. If a water source is not available on Rancho Toyon Place then a water truck may be brought to the site. Container stock will be watered by hose or watering can. If utilized, the water truck will remain on Rancho Toyon Place, and will not enter the mitigation site. Each planting will be individually watered by hand, in a way such that runoff from the planting does not occur.

6.8 WILDLIFE HABITAT ENHANCEMENT

In addition to seeding and planting, the restoration effort will include additional measures intended to increase the potential for wildlife usage of the site, particularly in the early years prior to full establishment.

6.8.1 San Diego Fairy Shrimp

The habitat restoration effort is intended to improve the quality of the habitat for the SDFS and other vernal pool associated species through vernal pool habitat restoration and enhancement of the primary constituent elements (PCEs) of SDFS habitat. PCEs for this species include:

1. Vernal pools with shallow to moderate depths that hold water for sufficient lengths of time necessary for incubation, maturation, and reproduction of the SDFS, in all but the driest years;

2. Topographic features characterized by mounds, swales, and depressions within a matrix of surrounding uplands that result in complexes of continuously, or intermittently, flowing surface water in the swales connecting the pools described in PCE 1, providing for dispersal and promoting hydro periods of adequate length in the pools (i.e., the vernal pool watershed); and

3. Flat to gently sloping topography, and any soil type with a clay component and/or an impermeable surface or subsurface layer known to support vernal pool habitat (including Carlsbad, Chesterton, Diablo, Huerhuero, Linne, Olivenhain, Placentia, Redding, and Stockpen soils).

All of these PCEs occur now, or have historically occurred within and adjacent to the mitigation site. The activities proposed in this plan will improve and increase the presence of PCEs 1 and 2 noted above. Specifically, the project will increase the amount of vernal pools supporting SDFS on site.

6.8.2 Small Animal Cover

As an aid to wildlife establishment within the restoration area, shelter for small animal species will be created. The first type of shelter involves placement of 5 half-inch thick plywood boards, measuring 2 x 4 feet at the mitigation site. These boards will provide shade, cover, and nesting locations for species including mice, lizards, snakes, and numerous invertebrate species (i.e., insects, spiders, etc.). The boards also provide an opportunity to monitor the wildlife usage of the site. During regularly scheduled monitoring visits, the restoration specialist will be able to lift each board and note the species present. There are no specific monitoring requirements or performance standards for the boards. The boards are intended to be left in place and allowed to break down naturally.

Additionally, shrub and brush material available on site (if any) will be collected by hand and stacked into low brush piles to provide additional cover for small animals. Each pile will be no more than 4 to 6 feet in diameter and 2 to 3 feet in height. This can be especially beneficial during the initial stages of the effort when there will be no cover available for small animals to utilize. The final number and size of piles will depend upon the amount of material available on site. There are no specific monitoring requirements or performance standards for the brush piles.

6.8.3 Pollinator Support

Pollinator species may include bats, birds, and a host of insects that are integral in a diverse, self-sustaining habitat. The upland habitat seed mix includes a variety of species with overlapping flowering periods to help support a range of pollinators that will stimulate continued seed production and provide pollen and nectar sources for foraging wildlife. To help facilitate presence of insect pollinator species a total of 5 bee blocks (Sarver 2007, Xerces 2012) will be prepared and scattered in the mitigation site. The bee blocks will provide potential nesting locations for native wood and cavity-nesting bees during the initial plant establishment period when there will be little substrate for bees to utilize. Bee species from the Apidae, Colletidae, Halictidae, and Megachilidae families are expected to use the blocks. The bee blocks will be made by drilling holes (3/32 inch to 3/8 inch in diameter) into the side of untreated 4 inch by 8 inch by 12 inch blocks of wood. The holes will be drilled approximately 3/4 inch on center. The depth of the holes will vary depending on the diameter of the hole. For holes less than 1/4 inch in diameter, hole depth will be approximately 3 to 4 inches. Depths will be 5 to 6 inches for holes greater than 1/4 inch in diameter. The bee blocks will be oriented to face the morning sun (east to southeast).

6.9 AS-BUILT CONDITIONS

The restoration specialist shall prepare and submit a topographic map showing the as-built conditions of the vernal pool restoration/enhancement areas within 8 weeks of completion of site preparation and planting. Areas of grading, seeding, and planting shall be shown on the map.

6.10 COST ESTIMATE

The cost to carry out the implementation and maintenance and monitoring tasks described in this plan is estimated to be approximately $500,000. The actual cost to implement will be determined at the time of implementation. A Property Analysis Record (PAR) also will be prepared to determine the non-wasting endowment amount required to fund the long-term (post 5-year maintenance and monitoring period) management. Long term management for the site is described in a separate Habitat Management Plan (HMP) prepared for the project.

7.0 MAINTENANCE PLAN

7.1 HABITAT MAINTENANCE ACTIVITIES

A 5-year maintenance program is proposed to help ensure the successful establishment and persistence of the restored habitat. The maintenance program will involve removal of trash, weed control, fence and signage repair/replacement, and any remedial measures deemed necessary for restoration program success (e.g., re-seeding and recontouring).

7.1.1 Trash Removal

The maintenance contractor will remove any trash encountered within the mitigation area during every maintenance event and dispose of it in a legally acceptable fashion.

7.1.2 Weed Control

Particular maintenance emphasis in the vernal pool mitigation area will be placed on pro-active weed control. All weed species observed during site activities will be considered invasive and targeted for removal. All workers conducting weed removal activities will be educated to distinguish between native and non-native species, with special attention paid to rare and endangered plant species. All weeding within the pools will be performed by hand and with hand tools. Care will be taken within pools to avoid removing vernal pool plant species and to reduce soil disturbance. Weeds will be removed from the restoration limits and disposed of in a legal manner. All weeds will be removed prior to reaching 12 inches in height or before reaching seed. Leaf and branch drop of native species should be left in place and not removed from the site.

Weeds in the uplands of the mitigation area will be removed by hand or with small machinery (e.g., line trimmers) whenever possible, but focused herbicide application may be used if needed and requested by the vernal pool restoration specialist. Herbicides will only be applied by workers licensed to use those chemicals.

Additionally, no herbicide will be used within 5 feet of any vernal pool. Herbicides will not be used during wet or windy conditions. Care will be taken not to saturate the soils with herbicide, and any herbicide used will not be allowed to be blown into pools.

7.1.3 Container Stock Irrigation

Container stock, native grass plugs, and transplanted sensitive plants will be hand watered at least twice a month, if necessary, during the first 2 years of maintenance and monitoring. Hand watering may not be necessary during the rainy months. Water will be applied in such a way that run off does not occur.

7.2 HABITAT MAINTENANCE SCHEDULE

Regular maintenance, trash removal, and weed control will be conducted during the first 5 years following implementation of the mitigation program or until the mitigation program is deemed successful. Maintenance personnel will visit the site at least monthly for the 5-year maintenance and monitoring period. Additional visits will be conducted as directed by the restoration specialist during the rainy season (generally December through May) each year to keep weeds under control.

8.0 PERFORMANCE STANDARDS

As discussed above, vernal pool creation is being conducted as mitigation for impacts to vernal/ road pools that support the SDFS.

The following sections provide performance standards to determine the successful completion of the 5-year mitigation and monitoring program. Attainment of these standards indicates the mitigation areas are progressing toward the habitat functions and services specified for this plan. Methods used to measure these performance standards are described in the following text. If the restored areas fail to meet the Year 5 standards after the full monitoring term, a specific set of remedial measures will be developed, implemented, and the monitoring and maintenance period would be extended until all Year 5 standards are met or as otherwise provided in this document. If the site does not meet Year 5 standards, the monitoring and maintenance period would be extended a full year until all are met. Only when both the City Roadway and the Mixed Use Components have attained the Year 5 standards will the mitigation effort be signed off.

8.1 CREATED VERNAL POOLS

8.1.1 Control Pools

To measure the success of the created vernal pools, a total of 5 preserved (non-enhanced or restored) off-site vernal pools will be used as control pools. The off-site pools are located just east of the Rhodes Crossing site in land preserved as part of the City's MHPA (Figure 3). The pools selected are relatively undisturbed, similar in depth and size to the created pools, support native vernal pool flora, and are generally representative of vernal pool habitat in the region. The 5 off site control pools vary in area from approximately 200 to 580 square feet, with an average of approximately 400 square feet. Vernal pool plant indicator species and native vernal pool

associated species observed in the Del Mar Mesa area are presented in Table 7. These will serve as target species for the vernal pool re-establishment effort.

Success of the created vernal pools will be determined by comparing species richness and vegetative cover with the control pools. A transect/quadrat sampling method will be used to monitor the mitigation pools (described in Section 9). Permanent transects and decimeter quadrats also will be established within the off-site control pools. A single transect will be placed in each monitored pool that run generally along the longest distance across the pool ponding area. Each year, species richness and vegetative cover within the quadrats will be measured and recorded. This data will be used to determine if the restored pools have met the performance standards described below.

Table 7
CONTROL POOL VERNAL POOL PLANT SPECIES

SCIENTIFIC NAME	COMMON NAME
Vernal Pool Indicators[1]	
Callitriche marginata	long-stalk water-starwort
Centunculus minimus	chaffweed
Crassula aquatica	dwarf pygmyweed
Deschampsia danthonoides	annual hairgrass
Elatine brachysperma	waterwort
Eryngium aristulatum var. *parishii*	San Diego button-celery
Isoetes orcuttii	quillwort
Navarretia fossalis	spreading navarretia
Pilularia americana	American pillwort
Plagiobothrys acanthocarpus	popcorn flower
Plantago elongata	dot-seed plantain
Pogogyne abramsii	San Diego mesa mint
Psilocarphus brevissimus	woolly marbles
Triglochin scilloides	flowering quillwort
Other Native Vernal Pool Associates	
Eleocharis macrostachya	pale spike-sedge
Juncus bufonius	common toad-rush

[1]Based on Corps Vernal Pool Plant Indicator List (Corps 1997)

8.1.2 Vernal Pool Indicator Species Richness

The created vernal pools would support vernal pool plant indicator species (Corps 1997) and function as viable, self-sustaining vernal pool basins. Only native vernal pool indicator species and selected native vernal pool associates will be included in species richness (the number of species in a given area) in the created vernal pool quadrats. Annual performance goals expressed as a percent of vernal pool indicator species in control pools are addressed in Table 8. Acceptable species richness within each pool at the end of the 5-year monitoring period is 100 percent of the average control pool vernal pool species richness. Meeting the 100 percent criterion by Year 5 would show that pools are functioning and that they would be expected to continue functioning. If the species richness criterion for a given year is not met, corrective measures (e.g., reseeding, excavation of a

portion of a basin, introducing new inoculum, berming of a pool edge, etc.) may be taken to help ensure eventual achievement of long-term goals.

Table 8
VERNAL POOL SPECIES RICHNESS PERFORMANCE STANDARDS

Year	Number of Indicator Species Relative to Control Pools (percent)[1]	Minimum Number of Indicator Species Present in each pool
1	10	1
2	25	1
3	40	2
4	55	2
5	70	3

[1]Greater than or equal to amount shown.

8.1.3 Vernal Pool Indicator Species Cover

In addition to species richness, cover of native vernal pool and associated wetland plants within the created pools will be used to determine project success. At the end of the 5-year monitoring period, the total cover of vernal pool plant species in each created vernal pool should be 100 percent of the average total cover value for the control pools. Yearly performance goals have been set to track the progress of the mitigation effort (Table 9). After the first year, the relative cover in each of the created vernal pools should be at least 5 percent of the average relative cover measured in the control pools for the same year. This percentage is expected to increase annually relative to the control pools. For Years 2 through 5, the percentage should be 35, 50, 70, and 90 percent, respectively. If the annual goals for relative cover are not being met, additional measures would be taken as necessary to help ensure final success including the addition of supplemental inoculum.

Table 9
VERNAL POOL PLANT COVER PERFORMANCE STANDARDS

Year	Cover of Indicator Species Relative to Control Pools (percent)[1]
1	5
2	20
3	35
4	55
5	70

[1]Greater than or equal to amount shown.

8.1.4 Vernal Pool Weed Cover

Non-native weed species anticipated to encroach upon the vernal pools include Italian ryegrass, grass poly (*Lythrum hyssopifolia*), curly dock (*Rumex crispus*), rabbitsfoot grass (*Polypogon monspeliensis*), filaree (*Erodium* spp.), pacific bent grass (*Agrostis avenacea*), and nit grass (*Gastridium ventricosum*). Of these weed species, Italian ryegrass is considered to be the most significant competitor to native vernal pool species. Elimination of this species would be the main focus of the vernal pool weed control effort. Relative cover of Italian ryegrass shall not exceed one percent during the 5-year monitoring period. Control of weed species categorized as High or Moderate in the California Invasive Plant Council (Cal-IPC) 2006 Invasive Plant Inventory shall be conducted such that at the end of the 5-year monitoring period the total cover of such weed species in each created vernal pool is less than 1 percent and total cover of weed species does not exceed 5 percent (Table 10). If weed cover criteria are not being met, additional maintenance effort would be required. Table 11 includes Cal-IPC listed species likely to occur within the mitigation project area.

Table 10
COVER LIMITS FOR NON-NATIVE SPECIES IN VERNAL POOLS

Cal-IPC Moderate or High species	<1%
Other non-native species	<5%
Absolute cover for all non-native species (Cal-IPC and others combined)	<5%

Table 11
CALIFORNIA INVASIVE PLANT COUNCIL MODERATELY TO HIGHLY INVASIVE PLANT SPECIES[1]

SCIENTIFIC NAME	COMMON NAME
Avena spp.	wild oats
Brassica nigra	black mustard
Bromus diandrus	ripgut brome
Bromus madritensis ssp. *rubens*	red brome
Centaurea melitensis	tocalote
Foeniculum vulgare	fennel
Hirschfeldia incana	shortpod mustard
Festuca Perennis	Italian ryegrass
Lythrum hyssopifolia	grass poly
Vulpia myuros	rattail fescue

[1]California Invasive Plant Council (Cal-IPC) 2006 Invasive Plant Inventory

8.1.5 Enhanced Vernal Pool Performance Standards

The enhancement effort in the preserved pool is far less intensive than in the created pools, consisting of targeted weed removal. The goal of this effort is to help improve pool function (hydrology, wildlife, and plants) by removing tire ruts and other damage. To help direct this effort, performance standards have been established for the enhanced pool. The success goals for the enhanced pools include: stable or increasing presence of native vernal pool plant indicator species; and 0 percent cover of Cal-IPC list A-1 and A-2 species. The maintenance and monitoring effort will be directed to meet these goals; however, if the project fails to meet some or all of these goals and it can be shown that the maintenance effort was adequately performed, the vernal pool enhancement component of the mitigation effort may still be deemed successful, provided the other performance standards are met.

8.1.6 Fairy Shrimp Performance Standards

Restoration success for SDFS will be determined by measuring the ponding of water, and density of viable cysts, hatched fairy shrimp, and gravid females, within the created pools. The hatched fairy shrimp and gravid female density of the restored pools must not differ significantly from the control pools for 3 wet seasons.

8.2 TARGET HYDROLOGICAL REGIME

Vernal pools under this mitigation program are primarily designed to emulate the conditions found in existing vernal pools in the region, as measured through the use of the control pools. The created pools will be excavated and situated to capture rainfall and runoff from the adjacent area. Restoration of the natural topography and the removal of weeds would restore the normal hydrological functions within the created vernal pool complex.

During the 5-year monitoring period, water depth in the control pools and the mitigation vernal pools will be measured every 2 weeks during each rainy season throughout the monitoring period. The depth and extent of ponding (surface area) will be recorded during each site visit in each created vernal pool. At the end of the 5-year monitoring period, the monitored pools will demonstrate hydrologic patterns similar to those of the control pools. The monitoring period will be extended if a drought period prevents the pools from demonstrating the desired hydrologic patterns. The created pools must pond for sufficient time (estimated to be similar to the control pools) to support SDFS during 3 winters in the 5-year maintenance and monitoring period.

8.3 UPLAND HABITAT PERFORMANCE STANDARDS

During annual monitoring, species richness in the upland habitat restoration areas will be determined only by visual assessment in Years 1 and 2 and by visual assessment and transect data in Years 3 through 5. No specific richness criteria are established for Years 1 or 2, but annual performance standards for species richness in Years 3 through 5 are provided in Table 12.

If the species richness goal for a given year is not met, corrective measures (including reseeding and planting) may be implemented to help ensure achievement of long-term restoration goals.

Table 12 NATIVE UPLAND SPECIES RICHNESS PERFORMANCE STANDARDS	
YEAR[1]	**NUMBER OF SPECIES**
3	4
4	5
5	6

[1]No performance standards for Years 1 and 2

In addition to species richness, project success will be determined based on native and non-native (weed) plant cover. Table 13 presents vegetative cover performance standards for Years 3 through 5 in the upland restoration areas. No specific richness criteria are established for Years 1 or 2 in the upland restoration areas. As within the created vernal pools, control of weed species categorized as High or Moderate in the Cal-IPC (2006) Invasive Plant Inventory shall be conducted such that at the end of the 5-year monitoring period, the relative cover of these weed species within the upland restoration areas is zero and relative cover of all other weed species does not exceed 5 percent. If annual goals for vegetative cover are not met, remedial measures, including reseeding, planting, and weeding, may be implemented to help ensure final success.

Table 13 COASTAL SAGE SCRUB VEGETATIVE COVER PERFORMANCE STANDARDS (percent)[1]		
YEAR	**NATIVE SPECIES**	**WEEDS**[2]
3	20	10
4	20	10
5	35	5

[1]Relative cover of species listed as High or Moderate in the California Invasive Plant Council (Cal-IPC) 2006 Invasive Plant Inventory shall be zero at the end of the five-year monitoring period

[2]Numbers shall be less than or equal to that shown

8.4 PERFORMANCE STANDARDS SUMMARY

A summary of the project's performance standards is presented below in Table 14.

Table 14
PERFORMANCE STANDARDS SUMMARY

CREATED POOL SPECIES RICHNESS		
Year	**Number of Indicator Species Relative to Control Pools (percent)**	**Minimum Number of Indicator Species Present in each Pool**
1	10	1
2	25	1
3	40	2
4	55	2
5	70	3

CREATED POOL PLANT COVER	
Year	**Cover of Indicator Species Relative to Control Pools (percent)**
1	5
2	20
3	35
4	55
5	70

UPLAND NATIVE SPECIES RICHNESS	
Year[1]	**Species Richness**
3	4
4	5
5	6

UPLAND NATIVE VEGETATIVE COVER		
Year[1]	**Native Cover**	**Non-native Cover**
3	20	10
4	20	10
5	35	5

[1]No performance standards for Years 1 and 2

9.0 MONITORING PLAN

9.1 MONITORING METHODS

Monitoring will be carried out under the direction of the restoration specialist to assess the progress of the enhancement effort and determine any appropriate remedial measures.

9.1.1 Vernal Pools

Maintenance Monitoring

Monthly inspections of the restoration and maintenance efforts will be performed during Year 1, every other month during Year 2, and every 3 months during the remainder of the monitoring period. As conditions warrant, additional site visits may be required during the initial installation/establishment period.

Fairy Shrimp Monitoring

Wet season fairy shrimp monitoring visits will be conducted every other week during the rainy season of each year to monitor pool hydrology. During each of these visits, depth, extent, and duration of inundation of all pools (mitigation and control) will be measured. Water quality data (temperature, pH, total dissolved solids, and salinity) also will be recorded. Depth measurements will be taken following the onset of winter rains and would continue until May 15 or until all pools are dry.

Dry season sampling also will be conducted during the dry season each year. Fairy shrimp egg presence and density will be measured. Plant and animal species observed in each pool during the monitoring visits would be recorded.

The purpose of the fairy shrimp surveys is to determine presence/absence of San Diego fairy shrimp in the created pools, in particular the estimated population size of hatched fairy shrimp, and estimates on the number of gravid female. The presence of other faunal species occupying the pools also would be noted during the surveys. The results of the fairy shrimp surveys would be included in the annual monitoring reports.

Annual Monitoring

An annual monitoring visit will be conducted each year near the end of the rainy season when most vernal pool species are visible. The exact timing of annual monitoring will be dependent upon the time and amount of rainfall received each year. Monitoring will use standard techniques and be based on transect/quadrat sampling. Permanent transects will be established from pool edge to pool edge through the deepest portion of each pool. Each transect would be marked with rebar stakes at both ends and labeled with caps indicating the pool number. Decimeter quadrats will be measured every 50 centimeters along each transect. Each plant species present within each quadrat will be recorded, with the cover of each species estimated. Furthermore, the total vernal pool, native, and non-native covers for each quadrat will be estimated. A species list will be recorded for each pool, consisting of all species observed in the annual sampling transect and

any other species observed in each pool during annual monitoring events. This species list will be used to determine pool species richness.

Photo documentation points will be established for the preserve area, and photographs taken of each pool during the annual monitoring event. Representative photos will be provided in the annual monitoring report.

Photo documentation points will be established and photographs will be taken of each pool during the annual monitoring event. Representative photos will be provided in the annual monitoring report.

9.1.2 Upland Habitat

The status of the upland areas will be noted during each monitoring visit throughout the year. Overall health and vigor of the upland habitat as well as the amount of weeds present will be qualitatively recorded. Species cover and richness will be visually estimated. All plants observed will be categorized by origin (native/non-native) and stratum (herb, shrub, and tree). Photographs will be taken each year from the same location to monitor change over time.

9.2 ANNUAL REPORTS

As part of the monitoring program, annual reports prepared by the restoration specialist will be prepared and submitted evaluating the success of the effort to date, along with any recommendations for future work that may be deemed necessary. Each annual monitoring report will include data collected throughout the year in addition to the annual monitoring visit. To detect the overall trend of the site, the annual monitoring report will contain comparisons of the monitoring data for the years that data are collected.

9.3 REMEDIAL MEASURES/ADAPTIVE MANAGEMENT

If the effort is not progressing as desired, corrective measures may be implemented. Corrective measures may include, but are not limited to, importing new inoculum from an off-site source, recontouring of non-functioning pools and re-seeding with collected or commercially available seed. For example, if a pool does not pond water sufficiently it will be deepened, recontoured and recompacted during the dry season. Pools exhibiting appropriate hydrological characteristics but low species cover and richness will be re-seeded with vernal pool plant species. Prior to conducting any significant remedial measures, the appropriate agencies will be notified.

9.4 MONITORING SCHEDULE

As described above, regular maintenance and biological monitoring visits will be conducted throughout the 5-year maintenance and monitoring period. The first annual botanical monitoring event will occur in the first spring following installation. Reports will be prepared and submitted by September of each year to help ensure adequate time remaining in the dry season to make any necessary alterations to the preserve areas.

10.0 COMPLETION OF PROGRAM

10.1 NOTIFICATION OF COMPLETION

The permittee shall notify the City and appropriate regulatory agencies upon the mitigation site obtaining the year 5 performance standards through the submittal of the final (Year 5) monitoring report.

10.2 AGENCY CONFIRMATION

After receipt of the final monitoring report, the City may inspect the mitigation site to determine if the vernal pool enhancement and creation has been conducted in accordance with this plan.

10.3 LONG-TERM MANAGEMENT

The mitigation parcel is owned by the City and is located within the MHPA. As such, no conservation easement is required. Long-term management (after the 5-year maintenance and monitoring period) of the vernal pool mitigation area would be the responsibility of the City of San Diego, or other entity approved and authorized by the City. A separate HMP also has been prepared to guide the long-term management of the site. Final management responsibility will be determined through consultation between the City of San Diego and the project proponent.

11.0 CONTINGENCY MEASURES

11.1 INITIATING PROCEDURES

An integral part of a successful mitigation program is the ability to detect problems with the mitigation early in the process, determine the cause of the problem, and attempt to modify the mitigation program to accommodate emerging issues or situations. Minor problems, such as trash, vandalism, isolated instances of plant mortality, or small-scale weed or pest infestations will be rectified as they are discovered during routine site monitoring and would not warrant the implementation of contingency measures.

If a performance standard is not met for all or any portion of the mitigation site in any year, or if the final performance standards are not met, the Restoration Specialist will prepare an analysis of the cause(s) of failure, and if determined necessary by the participating agencies, propose remedial action for approval. These measures may include supplemental site grading, manipulation, planting, changes to the plant palette, adjustment of the management of the site or re-evaluate species composition or other design changes.

Should the mitigation area fail as a result of a natural disaster such as an earthquake or flood, the project proponent will still be held responsible for any additional measures that are required to re-establish the mitigation site. The Permittee is responsible to have the site meet performance standards in order to receive sign-off, regardless of the problems encountered.

11.2 FUNDING MECHANISM

The Project Proponent shall be responsible for all costs associated with any remedial measures during the 5-year maintenance and monitoring period. As noted in Section 6.1.1, reimbursement from the City for the public portion of the effort may be pursued by the Project Proponent. Any reimbursement of costs will be determined through consultation between the Project Proponent and the City.

11.3 RESPONSIBLE PARTIES

The Project Proponent shall be the responsible party for any remedial measures.

12.0 REFERENCES CITED

California Invasive Plant Council (Cal-IPC). 2006. California Invasive Plant Inventory. February.

Alden Environmental, Inc. 2016. Biological Technical Report for the Merge 56 Development Project.

Sarver, Matthew J., ed. 2007. Farm Management for Native Bees: a Guide for Delaware. Dover, DE: USDA NRCS and Delaware Department of Agriculture.

U.S. Army Corps of Engineers (Corps). 1997. Vernal Pool Plant Indicator Species List. November.

Xerces 2012. Invertebrate Conservation Fact Sheet, Nests for Native Bees. Xerces Society. http://www.xerces.org/wp-content/uploads/2008/10/nests_for_native_bees1.pdf, Portland, Oregon.

Appendix H2

Vernal Pool Habitat Management Plan

Merge 56 Development Project
Vernal Pool Habitat Management Plan

May 25, 2016

Prepared for:

Sea Breeze Properties, LLC
3525 Del Mar Heights Road, #246
San Diego, CA 92130

Prepared by:

Alden Environmental, Inc.
3245 University Avenue, #1188
San Diego, CA 92104

ALDEN
ENVIRONMENTAL, INC

Merge 56 Development Project
Vernal Pool Habitat Management Plan

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1.0 INTRODUCTION

This Habitat Management Plan (HMP) has been prepared for the off-site vernal pool mitigation area for the Merge 56 Development Project, in accordance with requirements identified in the Project's Biological Technical Report and Conceptual Vernal Pool Mitigation Plan (Alden Environmental, Inc. [Alden] 2016a & 2016b). Specifically, the preserve area provides vernal pool mitigation for the both the Public Roadway and Mixed Use components of the project. The area also includes supplemental pools created for the City of San Diego. This HMP provides long term management for the overall preserve area.

This HMP addresses applicable management guidelines for the City of San Diego's (City) Multi-Habitat Planning Area (MHPA) and applicable U.S. Fish and Wildlife Service (USFWS) requirements.

The main purpose of this HMP is to identify methods and means necessary to maintain and enhance habitat (and related wildlife) values of the preserve area in perpetuity. The HMP provides framework for long-term management of the preserve area, following successful implementation of the mitigation effort. It defines methods and schedules to sustain habitat function and value following restoration, determines the parties responsible for management, and identifies associated costs and source of funding. The ultimate goal of this HMP is to preserve long-term viability and function and value of native habitats on site along with the listed and sensitive species they support. Achieving this goal also would benefit and improve the quality of life for local residents through preservation and enhancement of a more diverse and balanced environment.

For information on biological conditions existing prior to development, please refer to the Biological Technical Report for Merge 56 Development Project (Alden 2016a).

2.0 PRESERVE AREA DESCRIPTION

The mitigation site is an approximately 20-acre City-owned parcel located within the MHPA on Del Mar Mesa in the City of San Diego (APN 308-020-19; Figures 1 and 2). The vernal pool mitigation occurs in an approximately 2.3-acre area on a flat mesa in the northeastern portion of the City parcel.

2.1 SENSITIVE RESOURCES WITHIN THE PRESERVE AREA

Upon successful completion of the vernal pool mitigation effort, the site will support 24 vernal pools with a combined area of approximately 0.214 acre (Table 1; Figure 3). This includes pools created for the Public Roadway Component, Mixed Use Component, and the City surplus pools. The preserved/enhanced pool also is included in this total. The specific target pool acreages in the mitigation plan are included in Table 1.

Table 1 MITIGATION REQUIREMENTS	
Habitat Type	**Impact**
Mixed Use Component	
Created Vernal Pools	0.066
Public Roadway Component	
Created Vernal Pools	0.057
City Surplus	
Created Vernal Pools	0.070
Other	
Preserved/Enhanced Vernal Pool	0.021
TOTAL	**0.214**

In addition, the mitigation area will support approximately 2.1 acres of restored coastal sage scrub habitat surrounding the created vernal pools.

3.0 RESPONSIBLE PARTIES

3.1 PROJECT PROPONENT

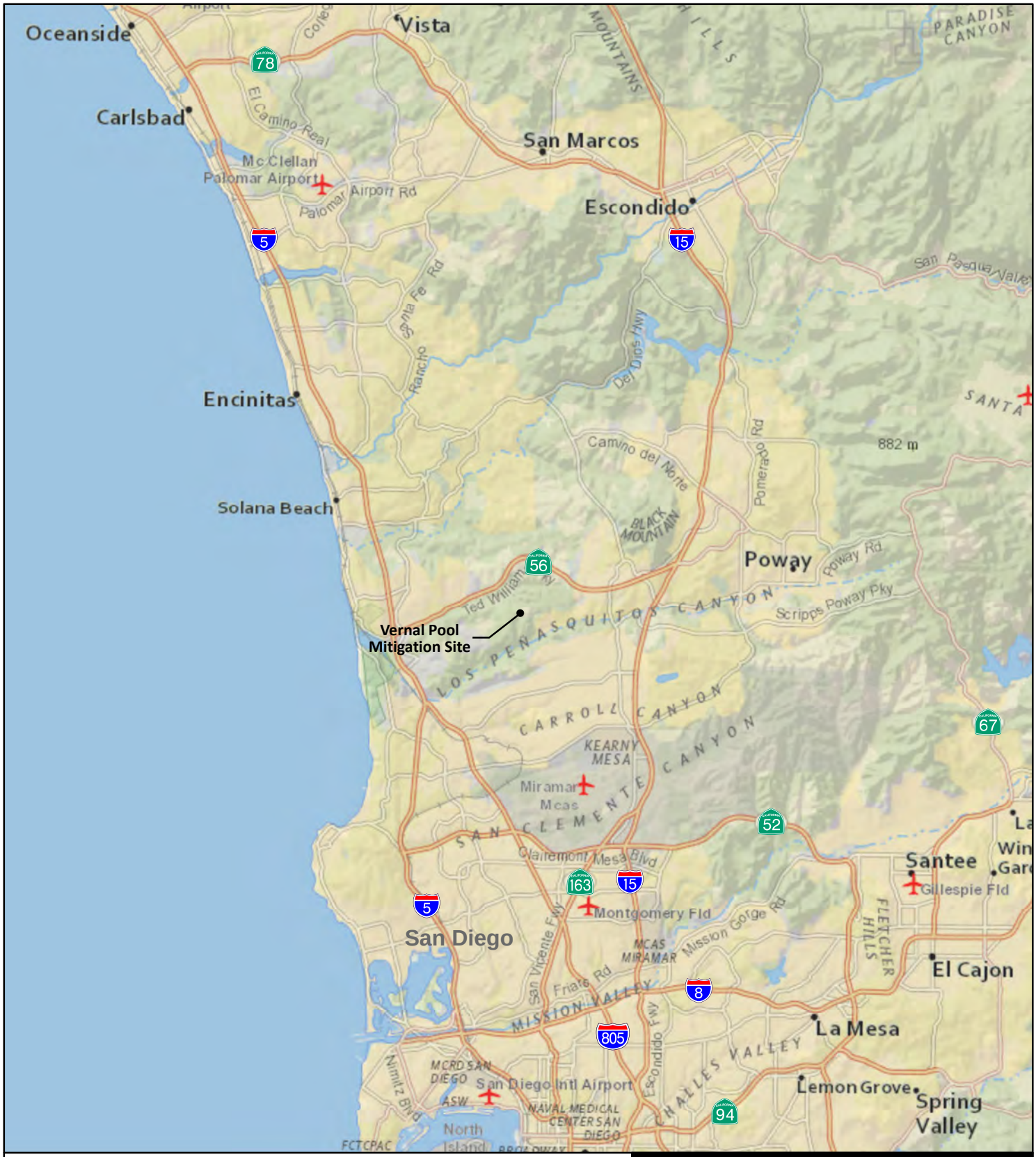
The site is owned and managed by the City. As such, the City will maintain ultimate responsibility for the long-term management of the site. The City may, at it's discretion, elect to have a an outside entity take over the management activities identified in this plan.

Long-term HMP tasks involve activities associated with the management and maintenance of the preserve area in perpetuity, including habitat monitoring/mapping, exotic species control, public awareness programs, and general monitoring and reporting. Additional descriptions of the long-term efforts are provided below in Section 5.0.

The Project proponent, Sea Breeze Properties, LLC, in conjunction with the City, will be responsible for identifying an initial funding mechanism to implementation the requirements of this HMP. As the mitigation effort is the result of a combined public (City Roadway Component) and private (Mixed Use Component) project, the actual funding separation will be determined through consultation with the City.

3.2 HABITAT MANAGER

An individual or organization acceptable to the project proponent and City shall serve as Habitat Manager for the general management effort. This person may be a City employee or from an outside entity. If an outside entity is engaged, the person(s) actively managing the open space must satisfy criteria for a Habitat Manager (as described below), and a Project Manager must be designated. The Habitat Manager shall posses the following qualifications:



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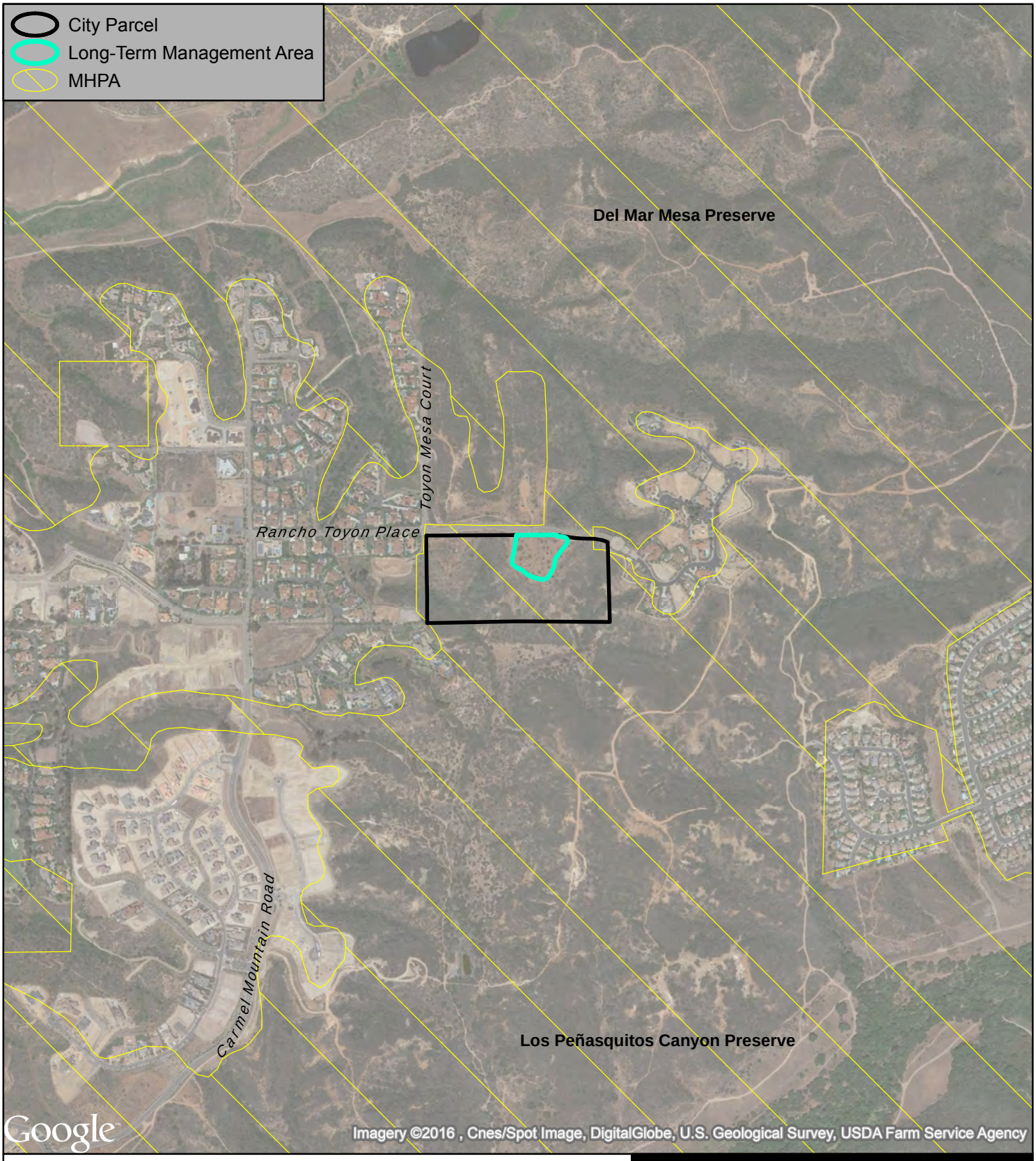
Miles

ALDEN
ENVIRONMENTAL, INC

Figure 1

Regional Location

MERGE 56 DEVELOPMENT PROJECT
VERNAL POOL HABITAT MANAGEMENT PLAN



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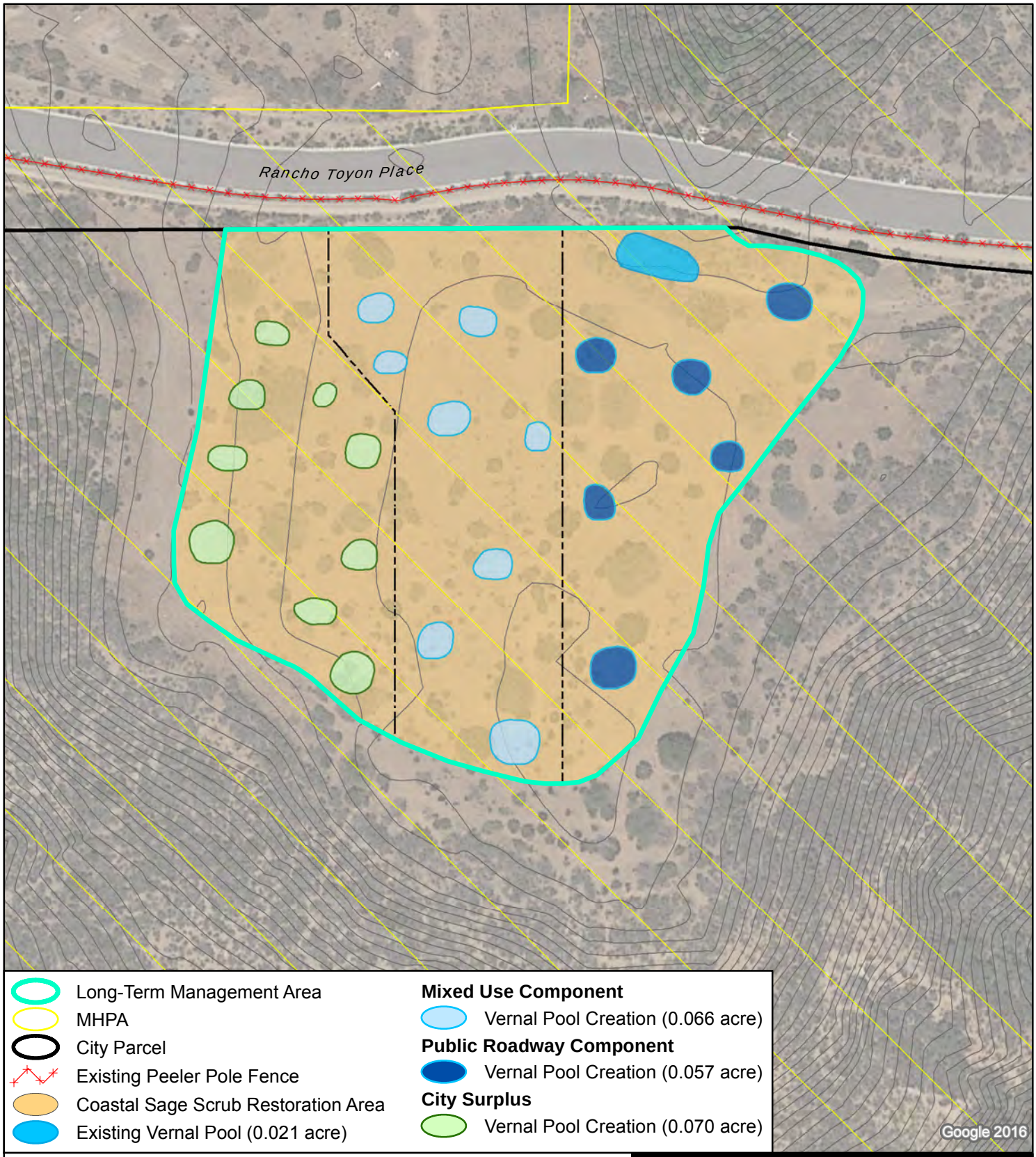
ALDEN ENVIRONMENTAL, INC

Figure 2

Project Location

MERGE 56 DEVELOPMENT PROJECT
VERNAL POOL HABITAT MANAGEMENT PLAN



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ALDEN ENVIRONMENTAL, INC

Figure 3

Preserve Area
Biological Resources

MERGE 56 DEVELOPMENT PROJECT
VERNAL POOL HABITAT MANAGEMENT PLAN

- A B.S. or B.A. degree in wildlife management, natural resources, ecology, zoology, botany, biology, or similar degree.
- A minimum of 2 years experience in field biology in southern California (preferably San Diego County).
- Demonstrated experience in similar projects, or in projects requiring similar skills.
- Experience in working with community groups.

The Habitat Manager (1) will be responsible for the implementation of this HMP; and (2) will carry out the HMP's requirements and objectives. The Habitat Manager's primary responsibility will be to maintain the integrity of all preserved and restored habitats. In order to fulfill that responsibility, the Habitat Manager shall:

- Be an advocate of the preserved open space and its protection.
- Be familiar with this HMP and supporting documentation.
- Be responsible for all points noted in this HMP as being within his/her responsibility or judgment, as discussed in applicable sections of this document.
- Maintain all documents transferred by the project proponent (as previously noted), and be knowledgeable about the resources addressed in these reports.
- Educate the surrounding community about the presence and need for the open space and be responsive to any community concerns or problems regarding the open space.
- Provide direction to the community on the importance and maintenance of open space.
- Document all field visits, and notify maintenance personnel in a timely manner of all concerns, problems, and suggested solutions. Forward all applicable monitoring and management data to the City MSCP staff for incorporation into the MSCP database.
- Coordinate with the manager(s) of adjacent preserves (i.e., MHPA) on management practices and tasks related to preservation and maintenance of the subregional open space system and apply pertinent adaptive management recommendations received from the regional monitoring source. Specifically, this will include activities such as the removal of exotic and pest species, and ensuring compatibility with the overall open space management plan proposed as part of the MSCP Subarea Plan.

4.0 FUNDING MECHANISM

4.1 GENERAL FUNDING

It is anticipated that a Property Record Analysis (PAR) will be prepared to estimate the funding necessary and that a one-time endowment will be provided to ensure long-term management occurs in perpetuity. Long-term HMP tasks involve activities associated with the management and maintenance of the preserve, including habitat monitoring/mapping, exotic species control, public involvement programs, and general monitoring and reporting. The costs for the City Roadway Component (public), Mixed Use Component (private), and City Surplus Vernal Pools will be provided separately in the PAR.

The project proponent will work with the City to determine the funding mechanism and endowment amount sufficient to cover the costs of the long-term management activities identified in this HMP. Final allocation of the costs associated with establishing this funding responsibility for the three components (Mixed Use, City Roadways, and City Surplus Vernal Pools) will be determined through consultation between the City and the Project Proponent.

5.0 MANAGEMENT SPECIFICATIONS

5.1 GENERAL MANAGEMENT

The overall preserve area is intended to serve as a habitat preserve, and as such, is not compatible with many uses. Activities specifically prohibited include grazing, hunting, off-road vehicle use, dumping, construction activities and staging, vegetation clearing, and removal of natural resources. Exceptions to these prohibitions include selective hand-clearing of vegetation to the extent required by written order of the fire authorities for the express purpose of reducing an identified fire hazard or weed problem. A number of individual open space management tasks are described below and in Table 2, with these efforts to be conducted at appropriate time intervals, depending on their specific characteristics.

Table 2 LONG-TERM MANAGEMENT TASKS	
Task Description	**Approximate Implementation Date/Frequency**
Spring habitat mapping	Map update every 5 years in spring
General monitoring	Quarterly
Vernal pool monitoring	Twice each year (generally February through April), for a period of 10 years. Each year thereafter, one visit (generally February).
Upland habitat monitoring	In conjunction with the vernal pool monitoring
Exotic plant control	Minimum of once a year within and adjacent to the preserved vernal/road pools (January/February) beginning with the first year of active management
Exotic animal control	As needed
Fire response planning	As needed
Annual reports	Annually/January 15
Barrier and sign inspection/repair	In conjunction with regular monitoring visits
Educational brochure	Once – within 3 months of active management
Trash removal	In conjunction with regular monitoring visits

5.2 HABITAT MONITORING

Improving and maintaining the health and diversity of habitat contained within the preserve area are the basis for successful management. To assist the Habitat Manager in prioritizing management tasks and to provide information to the general public, City, and researchers regarding the overall state of the open space area, the Habitat Manager will monitor and document habitat types and conditions on a regular basis. These activities will include the ongoing surveys and tasks described below.

5.2.1 Long-term Habitat Monitoring and Documentation

Vegetation communities and boundaries may change over time due to natural processes such as fire, flood, and succession. In addition, the preserve area could be susceptible to indirect impacts from adjacent development, particularly along the development/preserve margins. Any changes within the preserve area may affect the functions and values provided by the existing vegetation communities, with monitoring and documentation of such changes in both existing and restored habitats therefore important to successful long-term management. Specifically, information obtained from regularly monitoring and documenting changes in open space habitats will assist the Habitat Manager in determining and prioritizing future management tasks.

Methods

Spring Habitat Mapping

The Habitat Manager will conduct spring habitat mapping to note changes in vegetation communities. Updated vegetation maps should be prepared every 5 years.

General Monitoring

The preserve area will be visually inspected for changes during quarterly maintenance and monitoring visits, and all observations will be documented. Substantial changes will be monitored more closely to determine the necessity of additional measures. Recommendations from such activities will be submitted to the City for review and information prior to implementation. Vegetation and sensitive species mapping should be conducted during regular site monitoring, and updated maps should be submitted to the City every 5 years.

In addition, the Habitat Manager will assess the condition of the preserve area visually and note any problems in need of attention. The preserve area fences and signs will be inspected and any necessary repairs noted. All applicable monitoring data will be forwarded to the City for incorporation into the MSCP database.

If substantial changes are noted, the area in question will be monitored more closely to determine if additional measures are appropriate. Any recommendations resulting from such activities will be submitted to the City for review and approval prior to implementation.

Vernal Pool Monitoring

The vernal pools within the preserve area will be visited to assess their condition. Each pool will be visually monitored and a species list created. The list will note the presence of exotic species and estimate cover for each species present.

Upland Habitat Monitoring

The condition of the upland habitats on site will be visually assessed. A general species list will be created for each habitat type and the vegetation map will be updated to reflect site conditions.

Schedule

Spring Habitat Mapping

The Habitat Manager will update spring habitat mapping every 5 years following completion of the Mitigation Plan using a current aerial photograph.

General Monitoring

The condition and extent of existing and restored habitats within the preserve will be monitored and documented during regular site visits.

Vernal Pool Monitoring

The vernal pools within the preserve area will be visited twice during the rainy season (generally February and April) each year for a period of 10 years. Each year thereafter, the vernal pools within the preserve area will be visited once during the rainy season (generally February). The exact timing of the visits will depend on seasonal rainfall. The visits should be timed to best

identify vernal pool plant and animal species. These visits are in addition to the general monitoring visits described above.

Upland Habitat Monitoring

Monitoring of the upland vegetation communities within the preserve area will occur in conjunction with the regularly scheduled monitoring visits.

5.3 SENSITIVE SPECIES MONITORING

Preservation of sensitive plant and animal populations within the preserve area is one step in achieving the overall long-term conservation of these species. Monitoring of sensitive species located within open space has 2 purposes: (1) to identify short-term threats to species persistence; and (2) to identify longer-term trends that may suggest that a population is in decline. Adaptive management measures may be required to intervene when either natural or man-made disturbances or effects appear to be adversely influencing a sensitive species.

5.3.1 Methods

It is the responsibility of the Habitat Manager to evaluate the status of the preserved species within preserve area and to institute protective measures if any individual species becomes threatened. Monitoring of sensitive species populations will vary based on the target species and be conducted in conjunction with regularly scheduled visits. Not all monitoring parameters can be identified within the context of this plan because some parameters will be dependent on a detailed assessment of field conditions. In each assessment, however, the Habitat Manager will observe and document sensitive species locations and conditions.

Fairy Shrimp Monitoring

A USFWS permitted biologist will conduct non-protocol wet season fairy shrimp surveys in the preserved and restored vernal pools within the preserve area. Only pools holding water during regularly scheduled site visits will be surveyed.

Monitoring for Other Sensitive Species

All sensitive species observed during site visits will be noted and recorded on updated maps.

5.3.2 Schedule

Fairy Shrimp Monitoring

Monitoring for fairy shrimp will occur in conjunction with the vernal pool monitoring described above.

Monitoring for Other Sensitive Species

Monitoring for other sensitive plant and animal species populations will be conducted opportunistically during all site visits.

5.4 CONTROL OF EXOTIC SPECIES

Exotic plant and animal species through urban edge effects could result in degradation of both native habitats and associated wildlife populations. The Habitat Manager will implement the following measures to control introduction of exotic plants and animals in the preserve area.

5.4.1 Exotic Plant Control

There are numerous exotic plant species known to occur within vernal pool and upland habitats in the preserve area. Annual weed removal will be focused on removal of highly invasive species that would pose a threat to the vernal pool habitat. Removal of these species will be conducted using mechanical line trimmers and focused herbicide application in the upland areas. Only hand removal of weeds will be allowed within the vernal pools.

Schedule

Removal of exotic plant species will be conducted annually in January/February. The Habitat Manager may modify this schedule as necessary to accommodate annual fluctuations in weed growth.

5.4.2 Exotic Animal Control

Several exotic animal species may be present now or in the future (either in the preserve or adjacent area), including Argentinean ant (*Iridomyrmax humilis*) and European starling (*Sturnus vulgaris*). The Argentinean ant displaces native ants that comprise the principal food source for horned lizards, while European starlings compete with native species for food sources. Escaped pets from neighboring residential areas also may pose a problem within the preserve.

Methods/Schedule

Exotic animal species will be noted during all site visits. If a population of an exotic animal species poses a threat to the preserve area, a control/eradication program will be coordinated with the City, if appropriate. Control and eradication efforts will be implemented at the most appropriate time(s) of year and will reflect current field conditions and observations regarding the target species. No exotic animal species control is expected to be necessary and will be implemented only under extreme conditions.

5.5 FIRE MANAGEMENT

Fire is an important element in the ecology of southern California and presents a potential hazard to buildings located adjacent to open space area. Fuel management zones for the nearby development areas would occur entirely outside of the preserved area. As such, no regular fuel modification is anticipated within the preserve area.

5.5.1 Fire Response Planning

Access would be provided from the project site to open space area in the event of fire. When requested, the Habitat Manager will coordinate with the local fire marshal to discuss appropriate access locations and measures to minimize impacts to sensitive biological resources in the event of a fire.

5.6 ANNUAL REPORT

An annual report summarizing the status of the preserve area, results of the annual surveys, and all major actions taken since the last assessment will be provided to the City each year. This annual report will include: (1) information on the extent and overall health of the various habitats present within the preserve area; (2) any changes to the health or distribution of sensitive plant and animal species observed (provided on a map); (3) any observed changes resulting from natural or man-made causes; (4) summary of any management issues/tasks addressed during the last year; and (5) tasks or recommendations for changes in management identified for the next year. In addition, the annual report will include: (1) results of floral and faunal surveys; (2) photographs of the site from fixed photo points; (3) summary of the endowment; (4) funds generated, expenses incurred in performing site management, and year-end balance; (5) locations of sensitive species plotted on a site map; and (6) site maps providing information on the cumulative area of exotic species, trespass, dumping, and other concerns. This report also will compare the most recent data with that collected in previous years, and will outline appropriate remedial measures if habitat or sensitive species issues are noted.

5.7 OPEN SPACE BARRIERS

The existing peeler pole fence along the northern parcel boundary is the only barrier to discourage unauthorized access and protect sensitive resources within the preserve area. Additional barrier installation is not a component of this HMP nor is it the responsibility of the Habitat Manager.

Methods/Schedule

Inspection of the fence will occur during regularly scheduled visits. In the event that the fence is damaged or removed, the Habitat Manager will notify the City for repair/replacement. If appropriate, the Habitat Manager also would inform the Code Enforcement and/or Police Department of the City of the damage.

5.8 PUBLIC AWARENESS

Acceptance of the preserve area as a valuable amenity by the community is an important consideration for the long-term viability of associated open space resources. To that end, steps will be taken to encourage participation by local residents and community members in the stewardship of the preserve area. It is also a goal of this plan that community members take pride in the maintenance and protection of the preserves. The community can help police the preserve area and assist the Habitat Manager, who cannot be present 24 hours a day, in preventing vandalism and unauthorized activities from occurring.

5.8.1 Measures

The following measures will be taken to maximize public awareness and acceptance of the open space:

- Steel signs attached to the fence at approximately 50 foot intervals will provide notice, in both English and Spanish, that the area is an ecological preserve and that trespassing is prohibited. Maintenance/replacement of these signs will be the responsibility of the Habitat Manager.

- The Habitat Manager will inform adjacent residents (or other applicable individuals) that any damage to or alteration of the fence or the site would violate the Municipal Code, and be subject to possible action, fine, and/or criminal charges.

- The Habitat Manager will prepare and distribute an educational brochure to inform nearby residents and businesses of the sensitivity of the habitat, and how to minimize impacts to habitat. The brochure will include information regarding responsible pet care, proper landscape maintenance techniques, brush management, water quality, human intrusion, and lighting and noise requirements. It also will inform residents of the importance of not collecting plants or animals within the habitat. In order to help enforce the requirements, contact information for the City Neighborhood Code Compliance will be included in the brochure.

5.8.2 Schedule

Within 3 months of the start of habitat management activities, the Habitat Manager will ensure all signs have been installed and distribute educational brochures to the current residents adjacent to the preserve area.

5.9 ADDITIONAL MANAGEMENT CONCERNS

5.9.1 Trash Removal

The Habitat Manager will be responsible for the removal of trash from the preserve area. Trash removal would typically occur on an as-needed basis and would be conducted as an element of regularly scheduled site visits. In cases of excessive trash disposal within the preserve area, the Habitat Manager may enlist the help of community volunteer groups, as discussed above.

5.9.2 Illegal Occupancy

Illegal occupancy is a common problem in open space area within San Diego County. The Habitat Manager will regularly survey the site for encampments and report them to the City and applicable law enforcement agencies.

5.9.3 Poaching/Collecting

Removal of any plants, animals, rocks, minerals, or other natural resources will be prohibited within the preserve area. Anyone found removing natural resources would be informed, in a non-confrontational manner, that these activities are illegal. The Habitat Manager should maintain a log of all incidences of collecting within the preserve. Should a situation turn confrontational or if requests to discontinue illegal activities are ignored, the Habitat Manager shall report the offender(s) to the City and applicable law enforcement agencies.

The Habitat Manager may, at his/her discretion, allow seed collection and plant cuttings to be used for revegetation efforts within or outside of the preserve area. Any such activities will take place under the direct supervision of the Habitat Manager, and the amount of collected plant materials will be limited to ensure protection of on-site resources.

5.9.4 Lighting

Lighting from the developed adjacent projects proposed future projects will not be directed toward the preserve area. The design of all project adjacent lighting features will conform to the guidelines in the City MSCP Subarea Plan Adjacency Guidelines (City 1997a). The Habitat Manager will notify any neighbors who are in violation of these lighting restrictions. If the issue is not resolved, the Habitat Manager shall report the offender(s) to the City and applicable law enforcement agencies.

5.9.5 Fencing

In addition to the peeler-pole fence described above, additional fencing may be used as a short- or long-term tool to protect habitat if encroachment becomes a problem and other means to deter unauthorized access (e.g., signing and notices to local residents) are not effective. Fencing may also be used for the following specific purposes:

- Vernal pool areas.
- Protection of any revegetated habitat area (e.g., as required to replace habitat after catastrophic natural events such as fires).
- Prevention of unauthorized vehicle access.
- Prevention of unauthorized trail formation within the preserve area.

Any proposed use of fencing within the preserve area (except the barriers described above) will be identified by the Habitat Manager based on observed site conditions and related issues (e.g., unauthorized access). The Habitat Manager would then submit proposed fencing needs and locations to the City for approval prior to installation.

6.0 REFERENCES

City of San Diego (City). 1997a. Multiple Species Conservation Program. City of San Diego MSCP Subarea Plan. March.

1997b. City of San Diego MSCP Implementing Agreement Documents.

Alden Environmental, Inc. (Alden). 2016a. Conceptual Vernal Pool Mitigation Plan for the Merge 56 Development Project.

2016b. Biological Technical Report for the Merge 56 Development Project.

Appendix I

Mitigation Documentation for El Cuervo Norte

Appendix I1

Fifth Annual Wetlands Mitigation Monitoring Report for El Cuervo Norte

DUDEK

Fifth Annual Wetlands Mitigation Monitoring Report for the

El Cuervo Norte Wetland Mitigation Project

Los Penasquitos Canyon Preserve, San Diego, California




May 2010

PREPARED FOR
City of San Diego
Engineering and Capital Projects Department
600 B Street, Suite 800
San Diego, CA 92101
Contact: Brad Johnson

PREPARED BY
Dudek
605 Third Street
Encinitas, CA 92024
Contacts: Michael Sweesy, Landscape Architect #3319/
Habitat Restoration Specialist and
Christopher Oesch, Habitat Restoration Biologist

FIFTH ANNUAL WETLANDS MITIGATION MONITORING REPORT
for the
EL CUERVO NORTE WETLAND MITIGATION PROJECT
Los Peñasquitos Canyon Preserve, San Diego, California

Prepared for:

City of San Diego
Engineering and Capital Projects Department
600 B Street, Suite 800
San Diego, California 92101
Contact: Brad Johnson

Prepared by:

DUDEK
605 Third Street
Encinitas, California 92024
Contacts:
Michael Sweesy, Landscape Architect No. 3319/Habitat Restoration Specialist
Christopher Oesch, Habitat Restoration Biologist

MAY 2010

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APPENDICES

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FIGURES

TABLES

GRAPH

1.0 PROJECT INFORMATION

1.1 Permit Holders

City of San Diego
Engineering and Capital Projects Department
600 B Street, Suite 800
San Diego, California 92101
Contact: Brad Johnson

1.2 Permit Numbers

U.S. Army Corps of Engineers (ACOE)

- State Route 56 (SR-56): ACOE 404 Nationwide Permit No. 972001400-TCD.

California Department of Fish and Game (CDFG)

- 1600 Streambed Alteration Agreement No. 5-049-99.

San Diego Regional Water Quality Control Board

- Clean Water Act Section 401 Water Quality Certification File No. 99C-014.

City of San Diego

- Site Development Permit No. 8471.

U.S. Fish and Wildlife Service

- FWS-SDG-3922.1

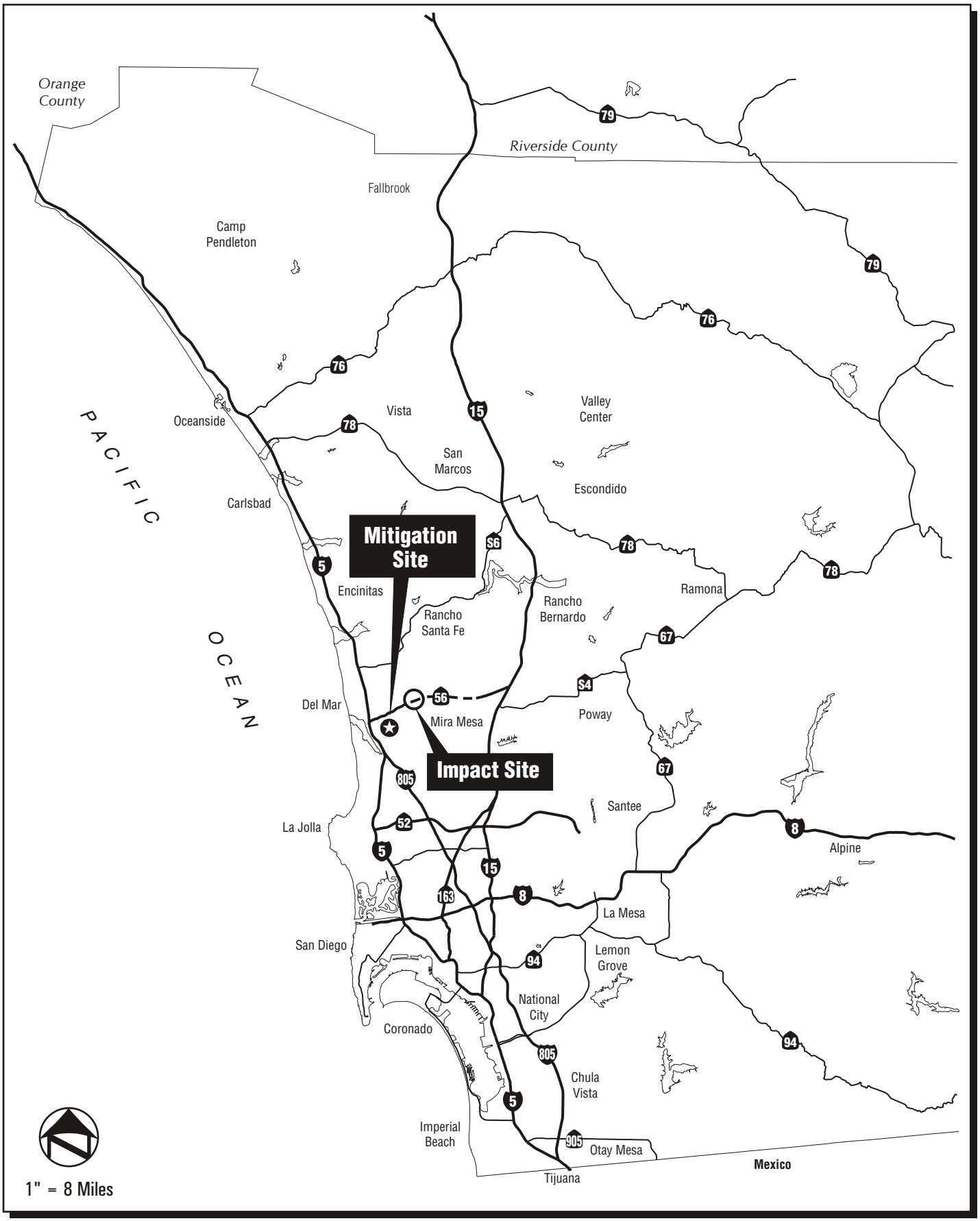
Additional Projects Receiving ACOE Mitigation Credits at the El Cuervo Mitigation Site

- Nobel Athletic Area and Library Project:
  - ACOE 404 Nationwide Permit No. 200401390-SMJ.
- Carmel Valley Trunk Sewer:
  - ACOE 404 Nationwide Permit No. 200301276.
- Mira Sorrento Place to Scranton Road, Vista Sorrento Parkway:
  - ACOE 404 Nationwide Permit No. 200201103-TCD.

- Camino Del Sur Project, from Carmel Mountain Road to 1600 feet North of Park Village Road:
  - Not yet received ACOE permit number by the time of report distribution.
- Stevenson Emergency Project:
  - ACOE 404 Nationwide Permit No. 200101442-TCD.
- Torreyana Emergency Project:
  - ACOE 404 Nationwide Permit No. 200201599-TCD.
- Peñasquitos Bluffs Emergency Project:
  - ACOE 404 Nationwide Permit No. 200500006-TCD.
- Acuna Emergency Project:
  - ACOE 404 Nationwide Permit No. 200201601-TCD.
- San Clemente Emergency Repairs Project:
  - ACOE 404 Nationwide Permit No. 200500003-TCD.
- Van Nuys Sewer Emergencies:
  - ACOE 404 Nationwide Permit No. 200501698-TCD.

1.3 Project Location

The wetland mitigation site is located at the western end of the Los Peñasquitos Canyon Preserve, directly north of Sorrento Valley Boulevard. The project is centered at approximately 32° 56’ 33.49”N, 117° 12’ 39.56”W. Figures 1 and 2 show the regional and vicinity location of the mitigation site. Figure 3 shows the project site with data collection transect locations and photo points.



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Fifth Annual Wetlands Mitigation Monitoring Report
El Cuervo Norte Wetland Mitigation Project– Los Penasquitos Canyon Preserve
Regional Map

FIGURE 1

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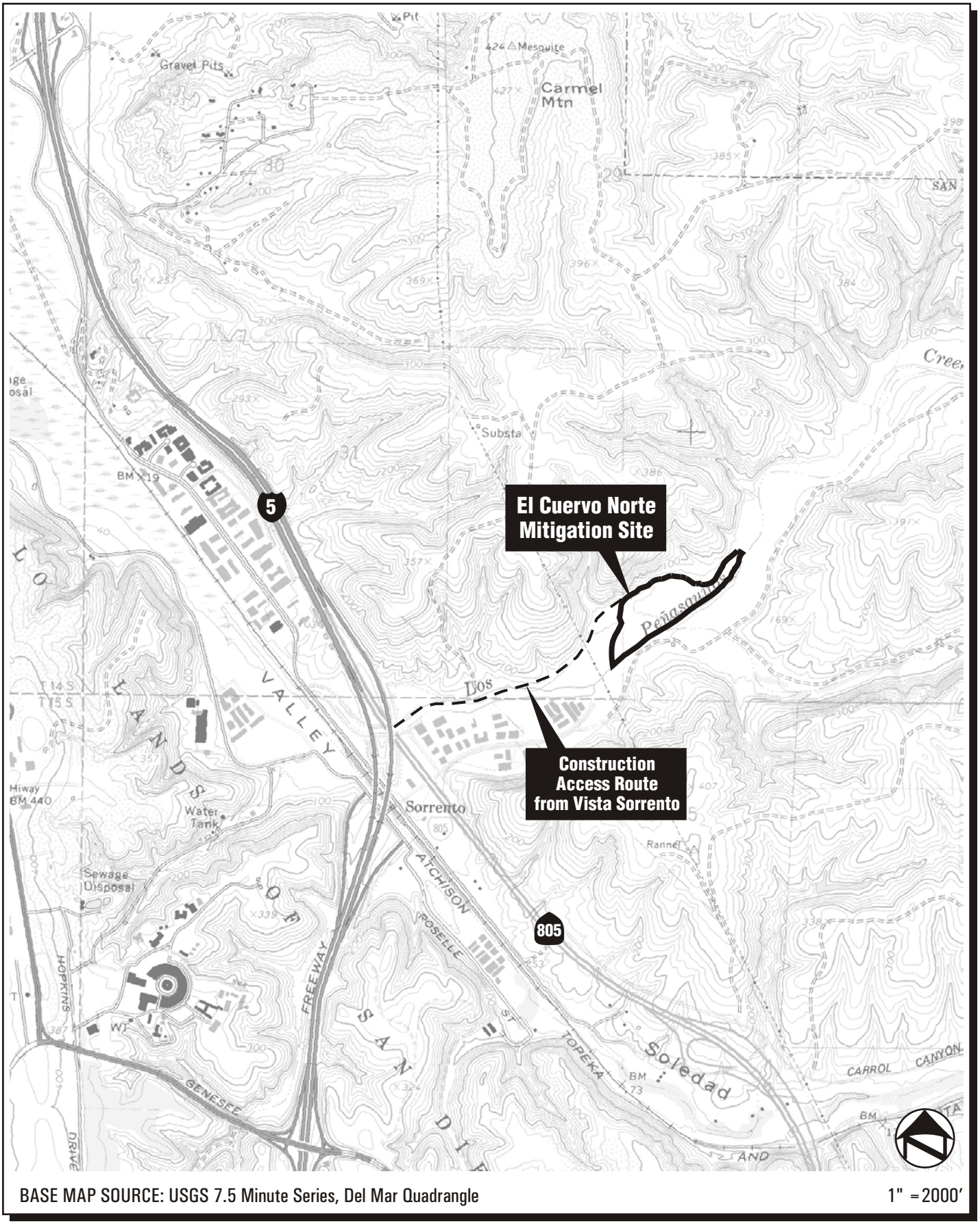

BASE MAP SOURCE: USGS 7.5 Minute Series, Del Mar Quadrangle

1" =2000'

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Fifth Annual Wetlands Mitigation Monitoring Report
El Cuervo Norte Wetland Mitigation Project– Los Penasquitos Canyon Preserve

Vicinity Map

FIGURE 2

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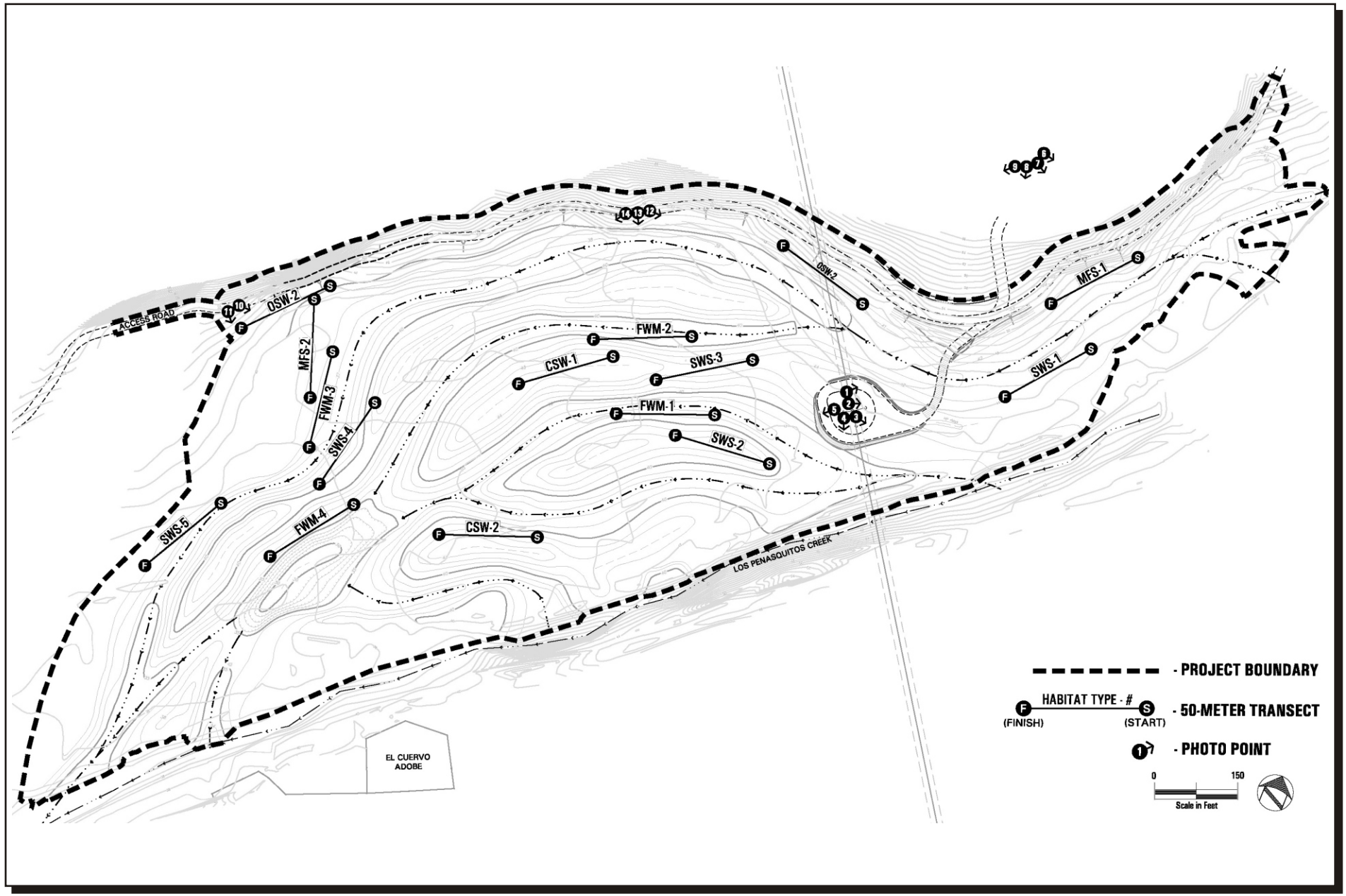

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Fifth Annual Wetlands Mitigation Monitoring Report
El Cuervo Norte Wetland Mitigation Project– Los Penasquitos Canyon Preserve

FIGURE 3

Transect & Photo Point Locations

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1.4 Impacts and Mitigation

This project provides mitigation for impacts to jurisdictional vegetation communities which occurred during the construction of SR-56 in north San Diego County. The road provides an east/west linkage between Interstate 5 (I-5) and Interstate 15 (I-15). Impacts and mitigation are summarized in Table 1. Please see the *El Cuervo Norte Conceptual Wetland Mitigation and Monitoring Plan Los Peñasquitos Canyon Preserve, San Diego, California* (Dudek & Associates, Inc. 2003), for additional information regarding specific impact locations and mitigation site details. Additional projects which are being mitigated for at the El Cuervo Norte Wetland Mitigation site are Nobel Athletic Area and Library Project, Mira Sorrento Place to Scranto Road, Vista Sorrento Parkway Project, Carmel Valley Trunk Sewer Project, Camino Del Sur Project, from Carmel Mountain Road to 1,600 feet North of Park Village Road, Stevenson Emergency Project, Torreyana Emergency Project, Peñasquitos Bluffs Emergency Project, Acuna Emergency Project, San Clemente Emergency Repairs Project, and the Van Nuys Sewer Emergencies.

Table 1
SR-56/El Cuervo Norte Project Jurisdictional Impacts and Required Mitigation by Watershed

Jurisdiction	Watershed Impacts (in acres)								
	Phase 1			Phase 2			Totals		
	Deer Canyon[1]	Los Peñasquitos Creek[2]	Phase 1 Total	Deer Canyon[3]	McGonigle Canyon[4]	Phase 2 Total	Impact Totals	Ratios	Mitigation Totals
ACOE Jurisdiction									
Wetlands	0.770	2.090	2.860	0	1.520	1.520	4.380	3:1	13.140
Waters of the U.S. and Farmed Waters	0.346	0	0.346	0.006	0.782	0.788	1.134	1:1	1.134
Total	1.116	2.090	3.206	0.006	2.302	2.308	5.514	NA	14.274
CDFG Jurisdiction									
Total CDFG	1.861	2.380	4.241	0	2.599	2.599	6.840	NA	NA
CDFG minus ACOE	0.745	0.290	1.035	0	0.297	0.291	1.326	2:1	2.652
Total	1.861	2.380	4.241	0	2.599	2.599	6.840	NA	16.926
Coastal Commission Jurisdiction									
Coastal Commission	0	0	0	0	0.427	0.427	0.427	NA	NA

NOTE: Vernal pool impacts are proposed to be mitigated at the Greystone mitigation bank and are not shown here for clarity. See project conceptual plan for more detail and description.
[1] Stream sites K9 through K11
[2] Stream sites K12 and K13
[3] Stream site K8
[4] Stream sites G1 through G12, and K1 through K7

1.5 Mitigation Schedule

Year	J	F	M	A	M	J	J	A	S	O	N	D
2005					S	M/I	M/I	M/I	M/I	M/I	M/I	M/I
2006	M/I	M/I	M/I	M/I	DC	R	M/I	M/I	M/I	M/I	M/I	M/I
2007	M/I	M/I	M/I	M/I	DC	R	M/I	M/I	M/I	M/I	M/I	M/I
2008	M/I	M/I	M/I	M/I	DC	R	M	M	M	M	M	M
2009	M	M	M	M/DC	M	R	M	M	M	M	M	M
2010	M	M	M	DC	R/T							

S = Completion of the mitigation installation and start of the 5-year maintenance and monitoring period
DC = Annual data collection
R = Report due
T = Scheduled termination of the 5-year maintenance and monitoring period
M/I = Maintenance, irrigation, and monitoring
M = Maintenance and monitoring
☐ = Work completed to date

1.6 Biological Consultant

Dudek
605 Third Street
Encinitas, California 92024
Contacts: Mike Sweesy 760.479.4253 or msweesy@dudek.com, and/or
Christopher Oesch 760.479.4268 or coesch@dudek.com

1.7 Landscape Maintenance Contractor

3-D Enterprises
2180 Garnet Avenue, Suite 2C
San Diego, California 92109
Contact: Frank Falcon, 858.272.3191 or office@3d-nt.com

1.8 Report Preparers

This report was prepared by Christopher Oesch and Michael Sweesy, the project habitat restoration specialists. Publications assistance was provided by Julie Corrales and graphics were prepared by Lesley Terry.

2.0 RESULTS OF ANNUAL MONITORING

Monitoring observations during Year Five show that regular maintenance was occurring, and that vegetation community establishment is progressing. Quantitative transect data was collected on April 26, 2010, and is discussed in Section 3.3. Native plant species continued to establish

throughout the year, and weed cover remained low. To address deer browse, a deer fence surrounding the majority of the site was installed shortly before the start of Year Four. This has greatly reduced deer browse, and has allowed for increased willow growth.

2.1 Weather-Related Issues

Year Five experienced above average rainfall during the winter and spring of 2010. Multiple flow events inundated the site. No supplemental irrigation was used during Year Five. No significant weather related impacts to the site occurred during Year Five.

2.2 Site Hydrology

Precipitation events during Year Five provided ample stormflow for all channels throughout the site to flow bank to bank, with the tops of higher elevations berms between them remaining above water (see figures in Appendix A for photos). The channels on the outer sides of the site (southern and northern) experience year-round surface water expression. Channels through the central portion of the site remain moist through the summer months, but may not express surface water in dryer years. Soil moisture present in the bottom of the graded channels is sufficient to support freshwater marsh and southern willow scrub vegetation year round.

Observations of the site throughout the monitoring period indicate that appropriate wetland hydrology has been established to support a mosaic of target vegetation communities year round without supplemental irrigation.

2.3 Site Maintenance

Throughout the long-term monitoring period, site maintenance has focused on control of non-native plants through chemical and physical control techniques. Dudek worked with the field crew to advise them on plant identification, and specific treatment requirements of individual weed species. Over the monitoring period, the maintenance crew became become more focused in their weed control efforts and increased their plant identification knowledge. In addition to annual weeds, other exotic plant species which received attention were salt cedar (*Tamarix* sp.), fennel (*Foeniculum vulgare*), and Bermuda grass (*Cynodon dactylon*). The crew has implemented a series of grow-and-kill treatments for several areas that were dominated by Bermuda grass. Many of these areas have shown significant progress, the majority of which are recruiting with natives. A weed free buffer zone surrounding the site was maintained to prevent edge effect establishment of weed species as per the Contact Documents Sections 308-6.1 and 308-6.4. Each consecutive year of the monitoring period weed cover was reduced. During Year Five, crews had reduced the weed presence to a suitable level, and only periodic, spot treatments were necessary to maintain weed cover standards.

2.4 Deer Herbivory

Deer herbivory was significantly reduced during Year Five due to the deer exclusion fence which was installed in spring 2008, shortly before the start of Year Four. Periodically, damage to the deer fence was observed, resulting in a deer entering the site. These openings were repaired when encountered. Even with occasional entrance of deer onto the site, the willows were able to make significant progress in height and establishment.

2.5 Description of Qualitative and Quantitative Data Collection

Monitoring in Year Five consisted of both qualitative and quantitative methods. Qualitative monitoring consists of characterizing vegetation community development, assessing plant condition, and reviewing the success of maintenance and remedial measures. Quantitative monitoring consisted of vegetative cover data taken from fifteen 50-meter transects placed randomly by vegetation community throughout the site (Figure 3). A 50-meter tape was stretched between two permanent t-posts which were then recorded with a Global Positioning System (GPS) unit. These locations are used for transect data collection during Years One through Five of the long-term monitoring period. At each 0.5 meter along the 50-meter length, a point is projected vertically (100 points total). Any plant (or bare ground) that falls within this point is recorded, regardless of strata. Since it is possible for plants within different strata to overlap at a given point, it is possible to record more than one plant per point. This can result in greater than 100 plants recorded as existing within the 100 sample points. This is recorded as "absolute cover." To determine percent cover relative to the other existing plants on the transect, the absolute cover totals are scaled using 100% as the maximum total. This is recorded as "relative cover."

Performance criteria and monitoring results are addressed in Section 3.0. Appendix A shows photo views of each of the 15 data collection transects on the date of data collection (April 26, 2010).

3.0 COMPARISON OF RESULTS WITH SUCCESS STANDARDS

3.1 Qualitative Results

Overall, the site appears to be progressing well. Focused weed control has reduced the amount of annual weed and invasive exotic plants on site, and been maintained within acceptable levels. Seed and container plants are establishing on the majority of the site, and natural recruitment of native plants is occurring, particularly cottonwoods (*Populus fremontii*). Due to higher velocity flows, and dense clay soils, vegetation cover at the eastern end of the site is sparser than in other areas. Tree species which appear to be in particularly good health this spring are sycamores

(*Platanus racemosa*) and oaks (*Quercus agrifolia*). The coastal sages scrub buffer has established well, and is performing satisfactorily at displacing non-native plant species. A significant number of willow wattles installed throughout the site have persisted, and with the introduction of the deer fence, are developing vertical structure. Various wildlife species have been observed using the site, including clapper rail (focused survey observation, reported to Dudek), indicating that suitable conditions and habitats are being created.

A water feature near the downstream terminus of the project, and is used by multiple species of water foul. This feature is a depositional area for sediment traveling through the site during both regular dry season and storm flows. As wetland vegetation has established in this area, as well as throughout the site, stormflows have been moderated, and deposition in many vegetated areas has increased.

During the monitoring period, the site appears to have achieved hydrologic equilibrium, and has remained stable during flow events during recent rainy seasons. Year One of the monitoring period experienced above average flow, which subjected the site to accelerated scour and deposition. Since this time, it appears that the gradients of the channels on site have remained stable.

Human traffic throughout the site has been low. The adjacent access road/trail is regularly used by hikers, runners, and mountain bikers, successfully focusing them away from the wetlands.

3.2 Performance Criteria

The performance standards for each of the 5 years per the conceptual plan and project permits are shown in Table 2.

Table 2
Performance Standards

Year	Freshwater Marsh		Southern Willow Scrub			Cotton/Sycamore, Sycamore/Oak Woodlands			Mulefat Scrub		
	Percent Survival	Percent Cover	Percent Survival	Percent Cover	Height[1] (feet)	Percent Survival	Percent Cover	Height[2] (feet)	Percent Survival	Percent Cover	Height[3] (feet)
1	90	20	100	20	—	80	20	—	100	20	—
2	100	40	90	50	—	90	30	—	90	30	—
3	100	60	90	70	8	100	50	5	90	40	3
4	100	80	90	80	12	100	70	6	90	50	4
5	100	80	90	80	16	100	80	7	90	60	6

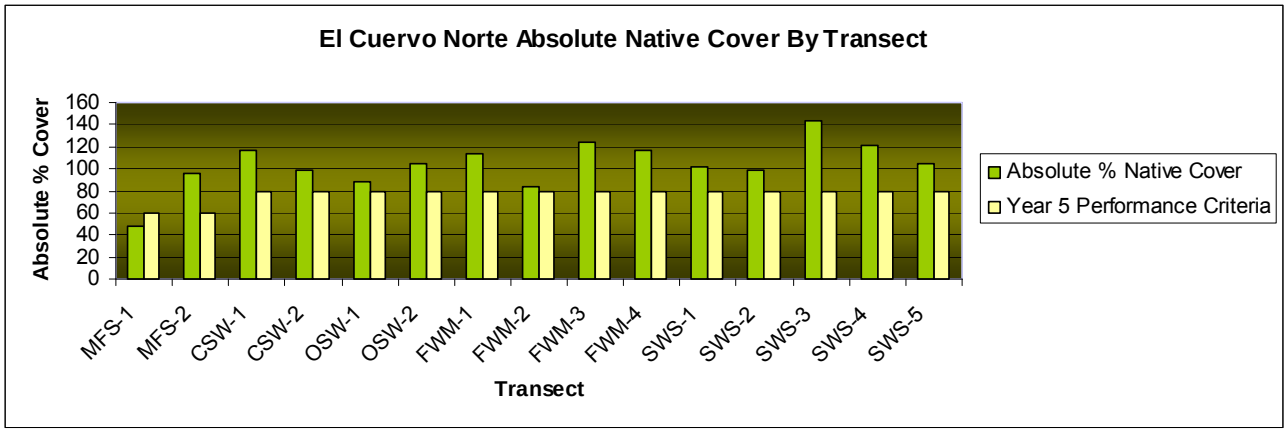
Percent Survival = Total percentage survival of all container plants
Percent Cover = Total percent cover of all native plant species, including trees, shrubs and herbs
[1] Average height of arroyo willows located on monitoring transect
[2] Average height of cottonwood and sycamores on monitoring transect. No oaks.
[3] Average height for mulefat located on transect.

In addition to criteria show in Table 2, the Contract Documents, 308-6.3, Item 1 states that not more than 5% vegetative cover by non-native plants defined as "List B" species by California Exotic Pest Plant Council (EPPC) may be present on the site at any time. EPPC has changed to California Invasive Plant Council. In addition, the rating system originally referenced in the project documents has been replaced by a newer rating system. However we still have the original list, although it is no longer being updated.

3.3 Monitoring Results

The highest absolute percent cover was transect SWS-3 with 144% absolute cover. The site has an overall average of 103.9% absolute native cover, well surpassing the Year Five requirements. Cover by EPPC List B weed species is less than 1%, falling below the maximum cover requirement of 5%. Non-native cover from species not found on the EPPC List B is at 2.9% absolute cover. While there are no specific overall maximum non-native plant cover criteria for this project, 2.9% absolute cover is considered acceptable by current mitigation standards. A summary of absolute native cover by transect is shown in Graph 1. For tree cover, cottonwood sycamore woodland has an average tree height of 12.5 feet, oak sycamore woodland has an average height of 9.3 feet, southern willow scrub has an average height of 7.3 feet, and mulefat scrub has an average height of 8.2 feet. As shown in Table 2, all vegetation communities meet their Year Five tree height requirements, except for southern willow scrub. This is attributed to past deer browse the site experienced during Years One through Three, which appeared to target willow species.

Graph 1
Absolute Native Cover by Transect



A summary of transect data results is shown in Table 3. Data from individual transects is shown in Appendix B.

Table 3
Transect Data Summary

Transect	Year Four Performance Criteria – Percent Native Cover	Percent Absolute Native Cover	Percent Relative Native Cover	Percent Absolute Non-Native Cover*	Percent Relative Non-Native Cover
MFS-1	60	48.0	46.6	0	0
MFS-2	60	95.0	88.8	4.0	3.7
CSW-1	80	117.0	96.7	3.0	2.5
CSW-2	80	98.0	82.4	2.0	1.7
OSW-1	80	88.0	80.0	0	0
OSW-2	80	104.0	96.3	3.0	2.8
SWS-1	80	102.0	82.9	7.0	5.7
SWS-2	80	99.0	83.9	2.0	1.7
SWS-3	80	144.0	96.6	5.0	3.4
SWS-4	80	121.0	88.3	8.0	5.8
SWS-5	80	105.0	94.6	2.0	1.8
FWM-1	80	114.0	98.3	0	0
FWM-2	80	83.0	78.3	3.0	2.8
FWM-3	80	124.0	96.9	1.0	0.8
FWM-4	80	116.0	94.3	3.0	2.4
	Average Totals	103.9	87.0	2.9	2.3

*Overall weed cover by species *not* listed in EPPC List B.

4.0 PROJECT COMPLETION STATUS

The El Cuervo Norte Wetland Mitigation Project has completed its 5-year maintenance and monitoring period, and meets final success criteria outlined in agency permits and the conceptual mitigation plan. While tree height development in some areas has been delayed due to deer browse in years One through Three, willows are established on site, and will continue to develop towards ultimate height and maturity. Following project completion acceptance by permitting agencies, the above-ground, temporary irrigation system, and temporary deer fence may be removed, and management of the site will transition to the City of San Diego Parks and Recreation Department, in perpetuity.

5.0 REFERENCES

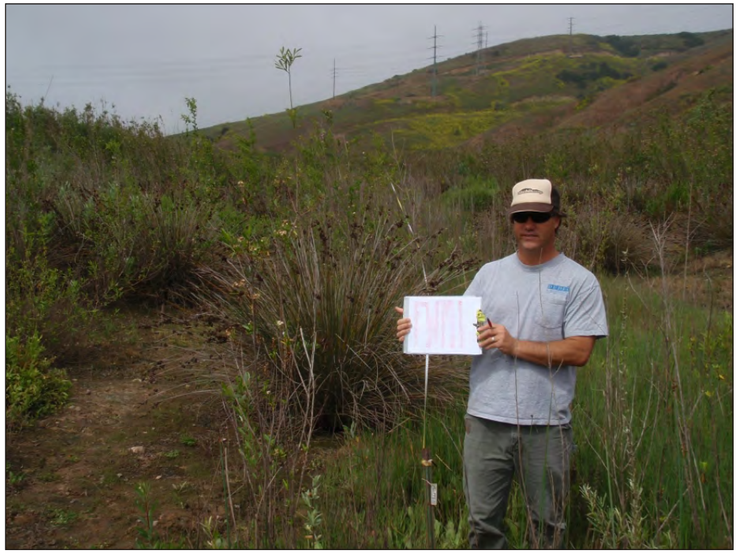
Dudek. 2003. *El Cuervo Norte Conceptual Wetland Mitigation and Monitoring Plan Los Peñasquitos Canyon Preserve, San Diego, California.*

APPENDIX A

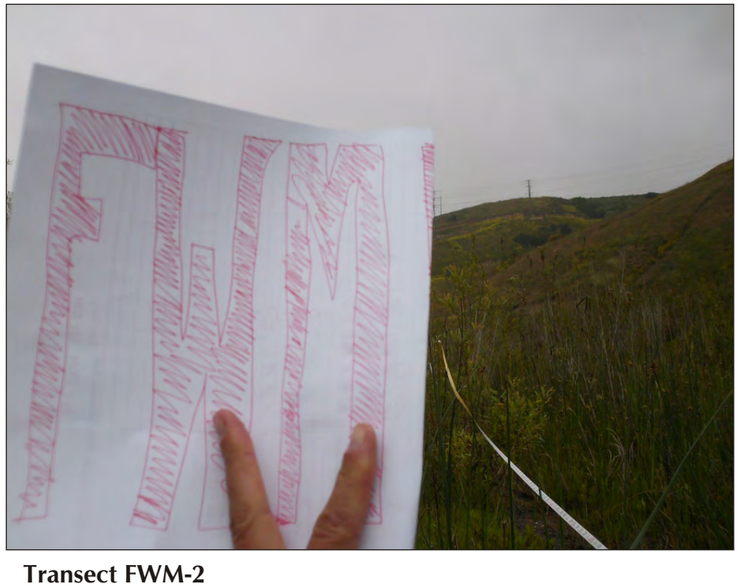
Photos of Transects and Photo Points

Transect CSW-1

Transect CSW-2



Transect FWM-1



Transect FWM-2

Transect FWM-3

Transect FWM-4

Transect Photos Date: April 26, 2010

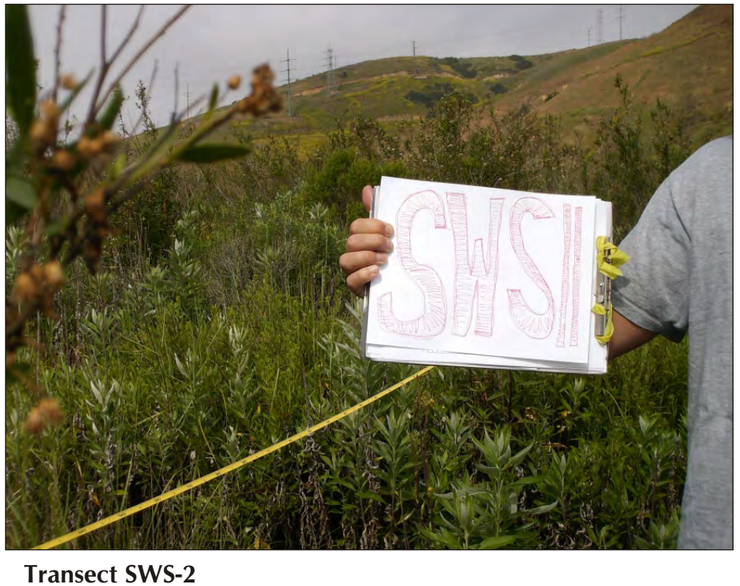
Transect MFS-1

Transect MFS-2

Transect OSW-1

Transect OSW-2

Transect SWS-1



Transect SWS-2

Transect Photos Date: April 26, 2010

Transect SWS-3

Transect SWS-4

Transect SWS-5

Transect Photos Date: April 26, 2010

Eastern end of site during stormflow event (January 22, 2010)

Central portion of site during stormflow event (January 22, 2010)

Western end of site during stormflow event (January 22, 2010)

Close up of central portion of site during stormflow event with all channels flowing (January 22, 2010)

Deer fence and flowing stream channel following a stormflow event (February 5, 2010)

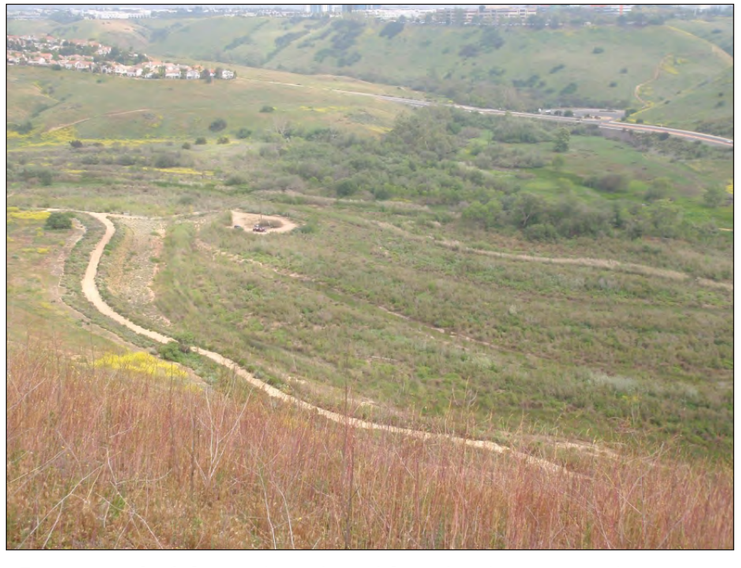
Wracking on deer fence from stormflow event (February 5, 2010)

View of southern willow scrub and freshwater marsh mosaic which has developed onsite (April 26, 2010)

Additional view of southern willow scrub and freshwater marsh mosaic which has developed onsite (April 26, 2010)

Freshwater marsh area surrounded by southern willow scrub. Light-footed clapper rail (***Rallus longirostris levipes***) has been observed utilizing this habitat on site (April 26, 2010)

Developing willow canopy (April 26, 2010)



Eastern end of the project site with springtime vegetation growth (April 26, 2010)

VCentral and western part of the project site with springtime vegetation growth (April 26, 2010)

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APPENDIX B

Transect Data Tables

APPENDIX B
Transect Data Tables

The "Number of Hits" column indicates the number of times a given plant (or bare ground) was sampled along the transect; the "Percent Absolute" column indicates absolute percent cover; and the "Percent Relative" column indicates relative percent cover. Total hits, total bare, native, and non-native hits are shown at the bottoms of the tables.

Scientific Name	Common Name	# of Hits	% Absolute	% Relative
MFS-1				
Ambrosia psilostachya	Western ragweed	1	1	1.0
Amorpha fruticosa	False indigo	4	4	3.9
Baccharis salicifolia	Mulefat	3	3	2.9
Isocoma menziesii	Goldenbush	14	14	13.6
Iva hayesiana	San Diego marsh elder	8	8	7.8
Leymus condensatus	Giant wild rye	2	2	1.9
Muhlenbergia rigens	Deergrass	14	14	13.6
Salix exigua	Sandbar willow	2	2	1.9
—	Bare ground	55	55	53.4
	Total Hits	103	103	100.0
	Total Native	48	48	46.6
	Total Non Native	0	0	0.0
MFS-2				
Ambrosia psilostachya	Western ragweed	1	1	0.9
*Anagalis arvensis**	Scarlet pimpernel	3	3	2.8
Anemopsis californica	Yerba mansa	2	2	1.9
Artemisia douglasiana	Mugwort	2	2	1.9
Baccharis salicifolia	Mulefat	26	26	24.3
Distichlis spicata	Salt grass	4	4	3.7
Iva hayesiana	San Diego marsh elder	26	26	24.3
Juncus acutus	Spiny rush	6	6	5.6
Leymus condensatus	Giant wild rye	1	1	0.9
Leymus triticoides	Creeping wild rye	1	1	0.9
Malvella leprosa	Alkali mallow	3	3	2.8
Muhlenbergia rigens	Deergrass	1	1	0.9
*Picris echioides**	Bristly ox tongue	1	1	0.9
Rosa californica	California wild rose	1	1	0.9
Salix exigua	Sandbar willow	14	14	13.1
Salix lasiolepis	Arroyo willow	7	7	6.5
—	Bare ground	8	8	7.5
	Total Hits	107	107	100.0
	Total Native	95	95	88.8
	Total Non Native	4	4	3.7

APPENDIX B (Continued)

Scientific Name	Common Name	# of Hits	% Absolute	% Relative
CSW-1				
Ambrosia psilostachya	Western ragweed	2	2	1.7
Artemisia douglasiana	Mugwort	15	15	12.4
Artemisia palmeri	San Diego sagewort	6	6	5.0
Baccharis salicifolia	Mulefat	49	49	40.5
*Conium maculata**	Poison hemlock	1	1	0.8
Iva hayesiana	San Diego marsh elder	15	15	12.4
Leymus condensatus	Giant wild rye	15	15	12.4
*Melilotus officinalis**	Sweetclover	2	2	1.7
Muhlenbergia rigens	Deergrass	12	12	9.9
Oenothera elata ssp. *hookeri*	Hooker's evening primrose	3	3	2.5
—	Bare ground	1	1	0.8
	Total Hits	121	121	100.0
	Total Native	117	117	96.7
	Total Non Native	3	3	2.5
CSW-2				
Ambrosia psilostachya	Western ragweed	3	3	2.5
Artemisia douglasiana	Mugwort	29	29	24.4
Artemisia palmeri	San Diego sagewort	4	4	3.4
Baccharis salicifolia	Mulefat	30	30	25.2
Baccharis pilularis	Coyote brush	6	6	5.0
Iva hayesiana	San Diego marsh elder	8	8	6.7
Juncus acutus	Spiny rush	1	1	0.8
Leymus triticoides	Creeping wild rye	1	1	0.8
*Melilotus officinalis**	Sweetclover	2	2	1.7
Muhlenbergia rigens	Deergrass	14	14	11.8
Rosa californica	California wild rose	1	1	0.8
Rubus ursinus	California blackberry	1	1	0.8
—	Bare ground	19	19	16.0
	Total Hits	119	119	100.0
	Total Native	98	98	82.4
	Total Non Native	2	2	1.7
OSW-1				
Ambrosia psilostachya	Western ragweed	2	2	1.8
Anemopsis californica	Yerba mansa	2	2	1.8
Artemisia douglasiana	Mugwort	2	2	1.8
Baccharis salicifolia	Mulefat	7	7	6.4
Bromus carinatus	Brome grass	1	1	0.9
Isocoma menziesii	Goldenbush	4	4	3.6
Leymus condensatus	Giant wild rye	3	3	2.7
Muhlenbergia rigens	Deergrass	62	62	56.4

Scientific Name	Common Name	# of Hits	% Absolute	% Relative
Quercus agrifolia	Coast live oak	1	1	0.9
Rosa californica	California wild rose	2	2	1.8
Salix lasiolepis	Arroyo willow	2	2	1.8
—	Bare ground	22	22	20.0
	Total Hits	110	110	100.0
	Total Native	88	88	80.0
	Total Non Native	0	0	0.0
	OSW-2			
Anemopsis californica	Yerba mansa	2	2	1.9
Ambrosia psilostachya	Western ragweed	1	1	0.9
Amorpha fruticosa	False indigo	3	3	2.8
Baccharis salicifolia	Mulefat	41	41	38.0
*Brassica nigra**	Black mustard	1	1	0.9
*Centaurea melitensis**	Star thistle	1	1	0.9
Malvella leprosa	Alkali mallow	5	5	4.6
*Melilotus officinalis**	Sweetclover	1	1	0.9
Isocoma menziesii	Goldenbush	9	9	8.3
Juncus acutus	Spiny rush	1	1	0.9
Muhlenbergia rigens	Deergrass	36	36	33.3
Quercus agrifolia	Coast live oak	1	1	0.9
Salix lasiolepis	Arroyo willow	5	5	4.6
—	Bare ground	1	1	0.9
	Total Hits	108	108	100.0
	Total Native	104	104	96.3
	Total Non Native	3	3	2.8
	SWS-1			
Artemisia douglasiana	Mugwort	2	2	1.6
Baccharis salicifolia	Mulefat	18	18	14.6
Iva hayesiana	San Diego marsh elder	20	20	16.3
Juncus acutus	Spiny rush	1	1	0.8
*Melilotus officinalis**	Sweetclover	7	7	5.7
Muhlenbergia rigens	Deergrass	42	42	34.1
Oenothera elata ssp. *hookeri*	Hooker's evening primrose	1	1	0.8
Rubus ursinus	California blackberry	2	2	1.6
Salix exigua	Sandbar willow	10	10	8.1
Salix lasiolepis	Arroyo willow	2	2	1.6
Scirpus californicus	California tule	4	4	3.3
—	Bare ground	14	14	11.4
	Total Hits	123	123	100.0
	Total Native	102	102	82.9
	Total Non Native	7	7	5.7

APPENDIX B (Continued)

Scientific Name	Common Name	# of Hits	% Absolute	% Relative
SWS-2				
*Anagalis arvensis**	Scarlet pimpernel	1	1	0.8
Artemisia douglasiana	Mugwort	37	37	31.4
Artemisia palmeri	San Diego sagewort	1	1	0.8
Baccharis pilularis	Coyote brush	1	1	0.8
Baccharis salicifolia	Mulefat	6	6	5.1
Carex spissa	San Diego sedge	4	4	3.4
Iva hayesiana	San Diego marsh elder	14	14	11.9
Juncus acutus	Spiny rush	1	1	0.8
Leymus triticoides	Creeping wild rye	6	6	5.1
*Melilotus officinalis**	Sweetclover	1	1	0.8
Muhlenbergia rigens	Deergrass	20	20	16.9
Populus fremontii	Fremont cottonwood	2	2	1.7
Salix exigua	Sandbar willow	3	3	2.5
Salix gooddingii	Black willow	3	3	2.5
Salix lasiolepis	Arroyo willow	1	1	0.8
—	Bare ground	17	17	14.4
	Total Hits	118	118	100.0
	Total Native	99	99	83.9
	Total Non Native	2	2	1.7
SWS-3				
*Anagalis arvensis**	Scarlet pimpernel	1	1	0.7
Artemisia douglasiana	Mugwort	47	47	31.5
Artemisia palmeri	San Diego sagewort	20	20	13.4
Baccharis pilularis	Coyote brush	11	11	7.4
Baccharis salicifolia	Mulefat	17	17	11.4
Geranium sp.*	Non-native geranium	3	3	2.0
Muhlenbergia rigens	Deergrass	37	37	24.8
*Picris echioides**	Bristly ox tongue	1	1	0.7
Rubus ursinus	California blackberry	2	2	1.3
Salix exigua	Sandbar willow	8	8	5.4
Salix lasiolepis	Arroyo willow	2	2	1.3
—	Bare ground	0	0	0.0
	Total Hits	149	149	100.0
	Total Native	144	144	96.6
	Total Non Native	5	5	3.4
SWS-4				
Ambrosia psilostachya	Western ragweed	7	7	5.1
*Anagalis arvensis**	Scarlet pimpernel	1	1	0.7
Artemisia douglasiana	Mugwort	7	7	5.1
Artemisia palmeri	San Diego sagewort	2	2	1.5
Baccharis salicifolia	Mulefat	23	23	16.8

Scientific Name	Common Name	# of Hits	% Absolute	% Relative
*Brassica nigra**	Black mustard	1	1	0.7
Carex spissa	San Diego sedge	1	1	0.7
*Cortaderia selloana**	Pampas grass	1	1	0.7
Distichlis spicata	Salt grass	14	14	10.2
*Foeniculum vulgare**	Fennel	1	1	0.7
Iva hayesiana	San Diego marsh elder	30	30	21.9
Juncus acutus	Spiny rush	11	11	8.0
Juncus xiphioides	Iris leaf rush	10	10	7.3
Leymus condensatus	Giant wild rye	1	1	0.7
*Melilotus officinalis**	Sweetclover	1	1	0.7
Muhlenbergia rigens	Deergrass	3	3	2.2
*Non-native grass**	Non-native grass	2	2	1.5
*Rumex crispus**	Curly dock	1	1	0.7
Salix gooddingii	Black willow	7	7	5.1
Salix lasiolepis	Arroyo willow	5	5	3.6
—	Bare ground	8	8	5.8
	Total Hits	137	137	100.0
	Total Native	121	121	88.3
	Total Non Native	8	8	5.8
	SWS-5			
Amorpha fruticosa	False indigo	1	1	0.9
Anemopsis californica	Yerba mansa	1	1	0.9
Artemisia douglasiana	Mugwort	2	2	1.8
Baccharis salicifolia	Mulefat	26	26	23.4
*Cotula coronopifolia**	Brass buttons	2	2	1.8
Distichlis spicata	Salt grass	1	1	0.9
Iva hayesiana	San Diego marsh elder	48	48	43.2
Juncus acutus	Spiny rush	9	9	8.1
Juncus maritimus	Maritime juncus	1	1	0.9
Juncus mexicanus	Mexican rush	4	4	3.6
Leymus triticoides	Creeping wild rye	2	2	1.8
Malvella leprosa	Alkali mallow	1	1	0.9
Muhlenbergia rigens	Deergrass	2	2	1.8
Rosa californica	California wild rose	2	2	1.8
Salix exigua	Sandbar willow	1	1	0.9
Salix gooddingii	Black willow	2	2	1.8
Scirpus americanus	American scirpus	2	2	1.8
—	Bare Ground	4	4	3.6
	Total Hits	111	111	100.0
	Total Native	105	105	94.6
	Total Non Native	2	2	1.8

APPENDIX B (Continued)

Scientific Name	Common Name	# of Hits	% Absolute	% Relative
FWM-1				
Anemopsis californica	Yerba mansa	2	2	1.7
Baccharis salicifolia	Mulefat	15	15	12.9
Eleocharis macrostachya	Creeping spikerush	1	1	0.9
Iva hayesiana	San Diego marsh elder	2	2	1.7
Juncus acutus	Spiny rush	10	10	8.6
Juncus bufonius	Toad rush	27	27	23.3
Juncus mexicanus	Mexican rush	4	4	3.4
Juncus xiphioides	Iris leaf rush	21	21	18.1
Leymus triticoides	Creeping wild rye	1	1	0.9
Salix lasiolepis	Arroyo willow	21	21	18.1
Scirpus californicus	California tule	5	5	4.3
Salix exigua	Sandbar willow	5	5	4.3
—	Bare ground	2	2	1.7
	Total Hits	116	116	100.0
	Total Native	114	114	98.3
	Total Non Native	0	0	0.0
FWM-2				
Anemopsis californica	Yerba mansa	15	15	14.2
Baccharis salicifolia	Mulefat	2	2	1.9
Distichlis spicata	Salt grass	25	25	23.6
Eleocharis macrostachya	Creeping spikerush	1	1	0.9
Iva hayesiana	San Diego marsh elder	1	1	0.9
Juncus acutus	Spiny rush	7	7	6.6
Juncus mexicanus	Mexican rush	1	1	0.9
Juncus xiphioides	Iris leaf rush	1	1	0.9
*Non-native grass**	Non-native grass	3	3	2.8
Salix lasiolepis	Arroyo willow	6	6	5.7
Scirpus acutus	Hardstem rush	11	11	10.4
Scirpus californicus	California tule	11	11	10.4
Typha latifolia	Broad leaved cattail	2	2	1.9
—	Bare ground	20	20	18.9
	Total Hits	106	106	100.0
	Total Native	83	83	78.3
	Total Non Native	3	3	2.8
FWM-3				
Anemopsis californica	Yerba mansa	5	5	3.9
Baccharis salicifolia	Mulefat	16	16	12.5
Iva hayesiana	San Diego marsh elder	14	14	10.9
Juncus acutus	Spiny rush	26	26	20.3
Juncus maritimus	Maritime juncus	4	4	3.1
Pluchea odorata	Marsh fleabane	2	2	1.6

APPENDIX B (Continued)

Scientific Name	Common Name	# of Hits	% Absolute	% Relative
*Rumex crispus**	Curly dock	1	1	0.8
Salix exigua	Sandbar willow	8	8	6.3
Salix gooddingii	Black willow	15	15	11.7
Salix lasiolepis	Arroyo willow	1	1	0.8
Scirpus acutus	Hardstem rush	22	22	17.2
Scirpus americanus	American scirpus	3	3	2.3
Scirpus californicus	California tule	7	7	5.5
Typha latifolia	Broad leaved cattail	1	1	0.8
—	Bare ground	3	3	2.3
	Total Hits	128	128	100.0
	Total Native	124	124	96.9
	Total Non Native	1	1	0.8
	FWM-4			
Ambrosia psilostachya	Western ragweed	6	6	4.9
*Anagalis arvensis**	Scarlet pimpernel	1	1	0.8
*Apium graveolens**	Celery	1	1	0.8
Artemisia douglasiana	Mugwort	5	5	4.1
Baccharis salicifolia	Mulefat	29	29	23.6
Distichlis spicata	Salt grass	7	7	5.7
Iva hayesiana	San Diego marsh elder	36	36	29.3
Juncus acutus	Spiny rush	18	18	14.6
Juncus mexicanus	Mexican rush	3	3	2.4
Juncus xiphioides	Iris leaf rush	5	5	4.1
*Melilotus officinalis**	Sweetclover	1	1	0.8
Muhlenbergia rigens	Deergrass	1	1	0.8
Pluchea odorata	Marsh fleabane	2	2	1.6
Salix gooddingii	Black willow	4	4	3.3
—	Bare ground	4	4	3.3
	Total Hits	123	123	100.0
	Total Native	116	116	94.3
	Total Non Native	3	3	2.4

* Indicates non-native species

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Appendix I2

E-mail from City of San Diego Confirming Credit Availability at El Cuervo Norte

From:	Santoro, Kerry
To:	Alden Environmental Inc
Subject:	El Cuervo Mitigation Credit Confirmation and Use of Sage Hill Mitigation Site for Impacts Assoc. with Camino Del Sur and Carmel Mtn.
Date:	Tuesday, May 24, 2016 3:25:00 PM
Attachments:	sharpcopier@sandiego.gov_20160524_144923.pdf RE El Cuervo Norte Mitigation Bank Calcs.xlsx (21.1 KB).msg

Hello Greg, this email confirms that the 0.09 acre (0.08 creation, 0.01 enhancement) in El Cuervo set aside for Camino del Sur South (see attached email from Public Works) and includes a copy of the letter sent via email from DSD to SANDAG requesting that they send a letter to the agencies regarding the use of Sage Hill for mitigation for impacts associated with Camino Del Sur and Carmel Mountain Road. If you have any questions regarding this email, don't hesitate to contact me.

Kerry Santoro
Deputy Director, Land Development Review Division
City of San Diego
Development Services Department

T (619) 446-5121
ksantoro@sandiego.gov

From: White, Rose
Sent: Tuesday, May 24, 2016 3:16 PM
To: Santoro, Kerry
Subject: FW: Use of Sage Hill Mitigation Site for Impacts Assoc. with Camino Del Sur and Carmel Mtn.

From: White, Rose
Sent: Tuesday, May 24, 2016 3:14 PM
To: 'Keith.Greer@sandag.org'
Subject: Use of Sage Hill Mitigation Site for Impacts Assoc. with Camino Del Sur and Carmel Mtn.

From: Baligad, Juan
To: Santoro, Kerry
Cc: Eng, Anita
Subject: RE: El Cuervo Norte Mitigation Bank Calcs.xlsx
Date: Thursday, May 05, 2016 4:40:44 PM

Kerry,

It's true. There is 0.08 allocated for "Camino del Sur Creation" and 0.01 for "Camino del Sur Enhancement." I don't think anyone is keeping track of any allocation activity. There is something wrong with the spreadsheet that I created and gave to Kristy, but it doesn't affect these figures.

Sincerely,

Juan Baligad
Senior Planner
City of San Diego
Public Works Department

T (619) 533-5473
C (619) 433-9616
sandiego.gov

From: Santoro, Kerry
Sent: Thursday, May 05, 2016 3:22 PM
To: Baligad, Juan <JBaligad@sandiego.gov>
Cc: Eng, Anita <AEng@sandiego.gov>
Subject: FW: El Cuervo Norte Mitigation Bank Calcs.xlsx

Hi Juan, can you confirm Greg's information, below?

Kerry Santoro
Deputy Director, Land Development Review Division
City of San Diego
Development Services Department

T (619) 446-5121
ksantoro@sandiego.gov

From: Eng, Anita
Sent: Thursday, May 05, 2016 12:26 PM
To: Santoro, Kerry; Shearer-Nguyen, Elizabeth
Subject: FW: El Cuervo Norte Mitigation Bank Calcs.xlsx

From: Greg Mason [mailto:gmason@aldenenv.com]
Sent: Thursday, May 05, 2016 11:51 AM
To: Forburger, Kristen
Cc: Eng, Anita
Subject: RE: El Cuervo Norte Mitigation Bank Calcs.xlsx

Hi Kristy,

The segment identified is the same footprint for what we're calling Camino Del Sur-South and is the same alignment that was previously included in the old EIR. It's now a 2-lane road, instead of 4-lane so it's a bit reduced in acreage. We can confirm this in the M56 BTR.

It looks like there is 0.09 acre (0.08 creation, 0.01 enhancement) in El Cuervo set aside for our segment (CDS-S). Our impacts are to 0.05 acre of non-wetland WUS. This is a mitigation ratio of greater than 1:1, which is suitable for non-wetland WUS impacts where there is no temporal loss (mitigation completed years ahead of impact).

We're going to take another look at the old EIR for CDS-S to make sure our current impacts are the same, or less, than assumed back then.

Aside from the above, is there anything else that you'll need to accept El Cuervo as the mitigation for the CDS-S portion?

Thanks,

Greg

Greg Mason | **Principal/Senior Biologist**
Alden Environmental, Inc.
3245 University Ave. #1188
San Diego, CA 92104
email: gmason@aldenenv.com
ph: (619) 284-3815
cell: (619) 517-5421

From: Forburger, Kristen [mailto:KForburger@sandiego.gov]
Sent: Monday, May 02, 2016 9:42 AM
To: Alden Environmental Inc
Cc: Eng, Anita
Subject: FW: El Cuervo Norte Mitigation Bank Calcs.xlsx

Greg,

Below is the segment that is in question. This needs to be verified and included in Merge 56 BTR discussion. Otherwise, only 0.03 acre remains at El Cuervo Norte and that is not enough to cover Merge 56 impacts.

Thanks,

Kristy Forburger
Senior Planner
Planning Department/MSCP
T (619) 236-6583
www.sandiego.gov

From: Baligad, Juan
Sent: Tuesday, January 12, 2016 1:58 PM
To: Forburger, Kristen <KForburger@sandiego.gov>
Cc: Johnson, Brad <BJohnson@sandiego.gov>
Subject: RE: El Cuervo Norte Mitigation Bank Calcs.xlsx

The 0.08 acre is set aside for Camino Del Sur, from Carmel Mountain Road to 1,600 feet North of Park Village Road (page 9 of attached). I don't know if already been used, and I don't have the environmental document and I don't know if the acreage has already been utilized. Brad Johnson might. Brad, can you help?

From: Baligad, Juan
Sent: Tuesday, January 12, 2016 1:19 PM
To: Forburger, Kristen <KForburger@sandiego.gov>
Subject: El Cuervo Norte Mitigation Bank Calcs.xlsx

Hi Kristy,

There is 0.03 wetland acreage available for mitigation.

Sincerely,
Juan Baligad
(619) 533-5473

Appendix I3

Department of the Army
Permit Authorization for El Cuervo Norte

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
6010 Hidden Valley Road, Suite 105
Carlsbad, California 92011

July 7, 2010

REPLY TO
ATTENTION OF:
Office of the Chief
Regulatory Division

Ms. Jeannette De Angelis
City of San Diego, Engineering & Capital Projects Department
600 B Street, Suite 800
San Diego, California 92101

SUBJECT: DEPARTMENT OF THE ARMY PERMIT AUTHORIZATION

Dear Ms. De Angelis:

I am replying to your request for Corps of Engineers authorization to cease mitigation maintenance and monitoring at the Cuervo Norte mitigation site. The Corps-approved mitigation site is located at the western end of the Los Peñasquitos Canyon Preserve, in Carmel Valley Creek and McGonigle Canyon, directly north of Sorrento Valley Boulevard, in the City and County of San Diego, California. The El Cuervo Norte Mitigation Site was initially approved as mitigation for the City of San Diego E&CP/ Middle Section SR-56 Department of the Army (DA) permit (File No. SPL-1997-20014-TCD) issued on December 28, 1999, and modified on May 10, 2004. In addition, mitigation for the following Corps-approved projects was performed at El Cuervo Norte:

Nobel Athletic Area and Library Project (SPL-2004-1390-SMJ)
Carmel Valley Trunk Sewer (SPL-2003-1276-TCD)
Mira Sorrento Place Road Widening (SPL-2002-1103-TCD)
Camino del Sur South (SPL-2001-1444-TCD; not yet Corps-approved)
Stevenson Emergency Project (SPL-2001-1442-TCD)
Torreyana Emergency Project (SPL-2002-1599-TCD)
Peñasquitos Bluffs Emergency Project (SPL-2005-0006-TCD)
Acuna Emergency Project (SPL-2002-1601-TCD)
San Clemente Emergency Repairs Project (SPL-2005-0003-TCD)
Van Nuys Sewer Emergency Projects (SPL-2005-01698-TCD
"Additional CDFG Enhancement Requirements" (no Corps authorization required).

Special Conditions of each of your DA authorizations required you to compensate for unavoidable impacts to waters of the U.S by establishing and enhancing wetlands and non-wetland waters of the U.S. Together, these requirements were the establishment/restoration of 9.23 acres and enhancement of 14.09 of waters of the U.S., for a total of 23.32 acres of mitigation requirements at the site.

Mr. Terry Dean of my staff reviewed the *Fifth Annual Wetlands Mitigation Monitoring Report for the El Cuervo Norte Wetland Mitigation Project, Los Peñasquitos Canyon Preserve, San Diego, California*, dated May 2010, and made a site inspection on May 19, 2010. As a result of the site inspection, Mr. Dean requested a detailed graphic representation of the mitigation site and a list of projects that have been mitigated at the site. Areas that have not met success criteria prescribed in the final mitigation plan were to be excluded from the total creditable acreage. As he requested, Mr. Dean received the graphic and listed information via email on June 18, 2010. After tallying up the total amount of successful mitigation areas (23.70 acres) and subtracting the acreage of the areas not meeting success criteria prescribed in the mitigation plan(s) (0.39 acre), we have determined that an additional 0.38 acre remains available to accommodate mitigation for future City project(s) in the Sorrento Valley watershed, for which the Corps had agreed during the initial mitigation site selection.

Based on the information provided, Mr. Dean concurred that the acreage of successful mitigation have met or exceeded those required for all of the projects listed. I have determined that you have met all performance standards prescribed in the mitigation plan. Accordingly, you have successfully fulfilled the Special Conditions of the permits requiring compensatory mitigation. No further monitoring is required, unless the 0.39 acre of currently under-performing excess mitigation will potentially be used for other projects. Those areas must remain under a continued maintenance and monitoring program until such time as the Corps releases them from further maintenance and monitoring.

Although no further maintenance and monitoring are required for the areas meeting full success criteria, it is our understanding that the entire mitigation site is to remain protected in perpetuity as dedicated parkland in the Los Peñasquitos Preserve. As so permanently protected, the site shall be managed to periodically remove exotic species, trash, homeless encampments, and other materials that will adversely impact the mitigation site. Hiking, cycling, equestrian trails and use, and motor vehicle access shall be prohibited from the site except as required for management efforts.

Thank you for participating in our regulatory program. If you have any questions, please call me at 760.602.4830 or e-mail me at Therese ORourke@usace.army.mil.

Please be advised that you can now comment on your experience with Regulatory Division by accessing the Corps web-based customer survey form at: http://per2.nwp.usace.army.mil/survey.html.

Sincerely,

Therese O'Rourke

Therese O'Rourke
Chief, South Coast Branch

Dudek & Associates, Inc.
Attn: Messrs. Chris Oesch and Mike Sweesy
605 Third Street
Encinitas, CA 92024

USFWS, Carlsbad – Pat Gower
RWQCB, San Diego
CDFG, San Diego – Darren Bradford

Appendix J

Merge 56 Development Project
Wetland Mitigation Documentation

Appendix J1

Wetland Mitigation Plan

Merge 56 Development Project
Wetland Mitigation Plan

May 25, 2016

Prepared for:

Sea Breeze Properties, LLC
3525 Del Mar Heights Road, #246
San Diego, CA 92130

Prepared by:

Alden Environmental, Inc.
3245 University Avenue, #1188
San Diego, CA 92104

ALDEN
ENVIRONMENTAL, INC

Merge 56 Development Project
Wetland Mitigation Plan

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1.0 INTRODUCTION

This wetland habitat mitigation plan provides mitigation for non-vernal pool jurisdictional impacts associated with the Public Roadway Component of the Merge 56 Development Project (Project). The measures identified herein are intended to meet the requirements of the project's Biological Technical Report (Alden 2016), as well as pending permits/authorizations from the U.S. Army Corps of Engineers (Corps), California Department of Fish and Wildlife (CDFW), and Regional Water Quality Control Board (RWQCB). Other project related mitigation requirements are not addressed in this document.

2.0 DEVELOPMENT PROJECT DESCRIPTION AND IMPACTS

2.1 DEVELOPMENT PROJECT LOCATION

The Merge 56 Development project is situated in the communities of Torrey Highlands and Rancho Peñasquitos immediately adjacent to the State Route 56 (SR-56) right-of-way in the City (Figures 1 & 2). Regional access to the Mixed Use site is from SR-56, Interstate 5, and Interstate 15; local access to the Mixed Use site is from the southern termini of Camino Del Sur and Carmel Mountain Road.

2.2 DEVELOPMENT PROJECT SUMMARY

The Merge 56 Development Project includes two main components: 1) a Mixed Use component (i.e., commercial, office, hotel, and residential development) and; 2) a Public Roadway component including improvements to Camino Del Sur (North and South) and Carmel Mountain Road City Circulation Element roads). This mitigation plan provides mitigation for non-vernal pool jurisdictional impacts associated with the Public Roadway Component (specifically Camino Del Sur-North). Impacts from the Camino Del Sur-South segment and the private Mixed Use Component are addressed in other permits and are not included in this document. Mitigation for impacts to vernal pool and road pool habitat is provided in a separate mitigation plan.

2.2.1 Public Roadway Component

The Public Roadway component is a public project that includes the extension of Camino Del Sur-North and Carmel Mountain Road (Figure 3). Camino Del Sur and Carmel Mountain Road are capital improvement projects identified in the Torrey Highlands and Rancho Peñasquitos Public Facilities Financing Plans. Camino Del Sur would be constructed from its current terminus at the intersection with Torrey Santa Fe Road, south to its planned intersection with Carmel Mountain Road, as a four-lane roadway. South of its planned intersection with Carmel Mountain Road, Camino Del Sur would transition to a two-lane roadway to its existing terminus north of Dormouse Road. Camino Del Sur has been designed to avoid direct impacts to the USFWS National Wildlife Refuge immediately to the west by pulling the roadway slope back to the east and constructing a retaining wall. Grading for construction of the retaining wall and the roadway would all be outside the National Wildlife Refuge.

The existing segment of Carmel Mountain Road would be realigned and extended south of SR-56 to its planned intersection with Camino Del Sur as a two-lane roadway. A 16-inch public water main and an eight-inch diameter recycled water line would be installed within the Carmel Mountain Road right-of-way. Additionally, sidewalks and unpaved trails will be incorporated into the City roadway elements.

2.3 JURISDICTIONAL IMPACTS

Jurisdictional wetlands and non-wetland waters are those areas that are subject to federal regulation by the Corps pursuant to the Clean Water Act (i.e., WUS) and State regulation by CDFW pursuant to California Fish and Game Code (i.e., WS). The City of San Diego also regulates impacts to City defined wetlands. The impacts to be mitigated for in the plan are those that would result from the Camino Del Sur-North portion of the project. Impacts to vernal and road pool habitats are not addressed in this document.

The Camino Del Sur-North segment of the Public Roadway Component would impact a total of 0.5 acre of wetland habitat that is considered jurisdictional by the Corps, CDFW, RWQCB, and the City (Table 1). In addition, Camino Del Sur-North would impact 0.04 acre of non-wetland WUS/WS that are jurisdictional to the agencies, but not to the City. Combined, the Camino Del-Sur component would impact 0.54 acre of jurisdictional features that would require mitigation.

Table 1
JURISDICTIONAL IMPACTS (acres)

Jurisdictional Area	Camino Del Sur-North
Wetlands	
Southern willow scrub	0.32
Mule fat scrub	0.03
Freshwater marsh	0.15
Subtotal Wetlands	**0.50**
Non-wetland WUS/WS	
Non-wetland WUS/streambed	0.04
Subtotal Non-wetland	**0.04**
TOTAL	**0.54**

3.0 MITIGATION REQUIREMENTS

The objective of this effort is to provide for full mitigation for permanent impacts to jurisdictional features (excluding vernal and road pools) associated with the Camino Del Sur-North segment of the Public Roadway Component (Table 1). This plan is intended to meet the mitigation requirements of the City, as well as those to be required in the Corps, RWQCB, and CDFW permits/agreements.

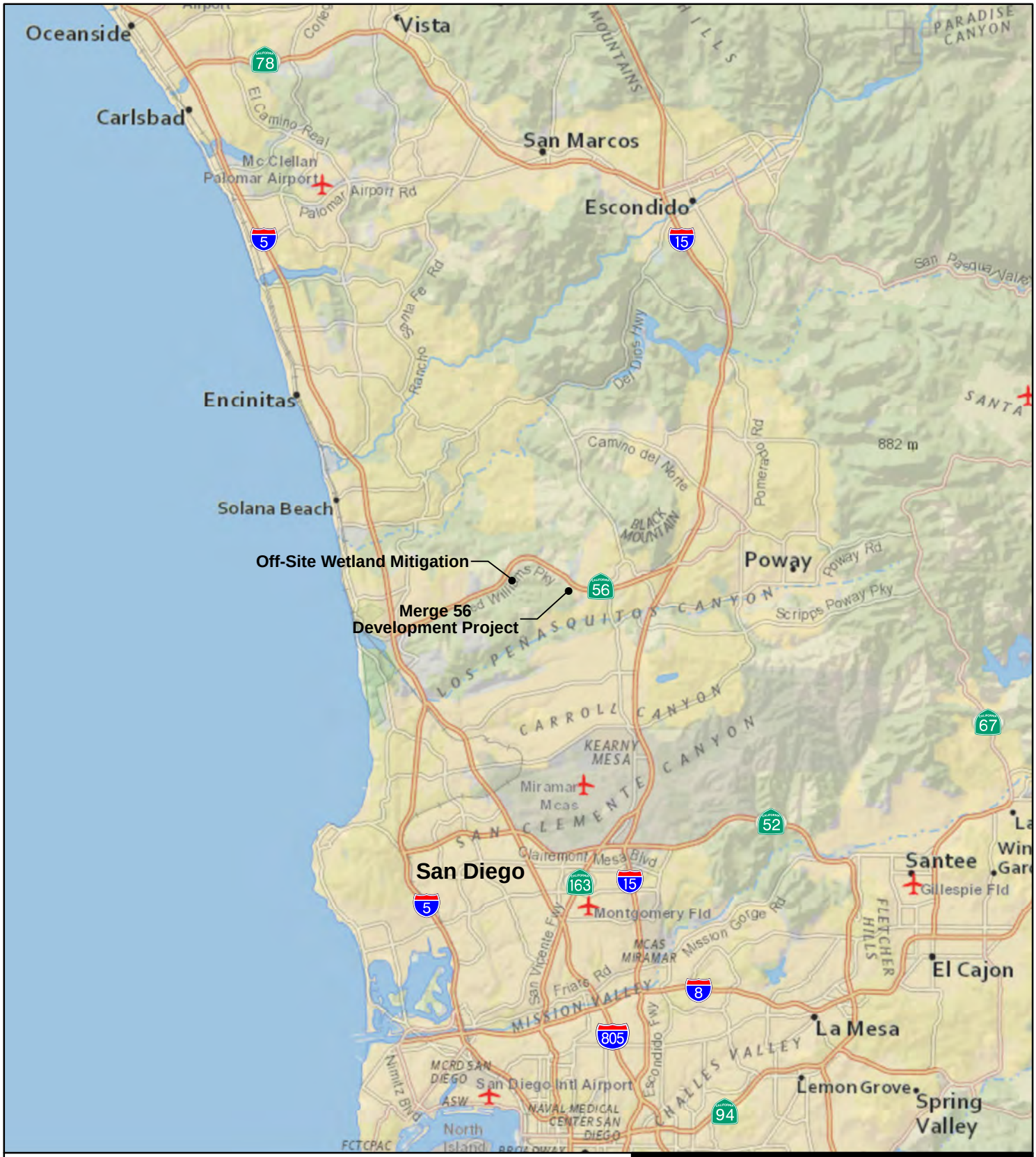
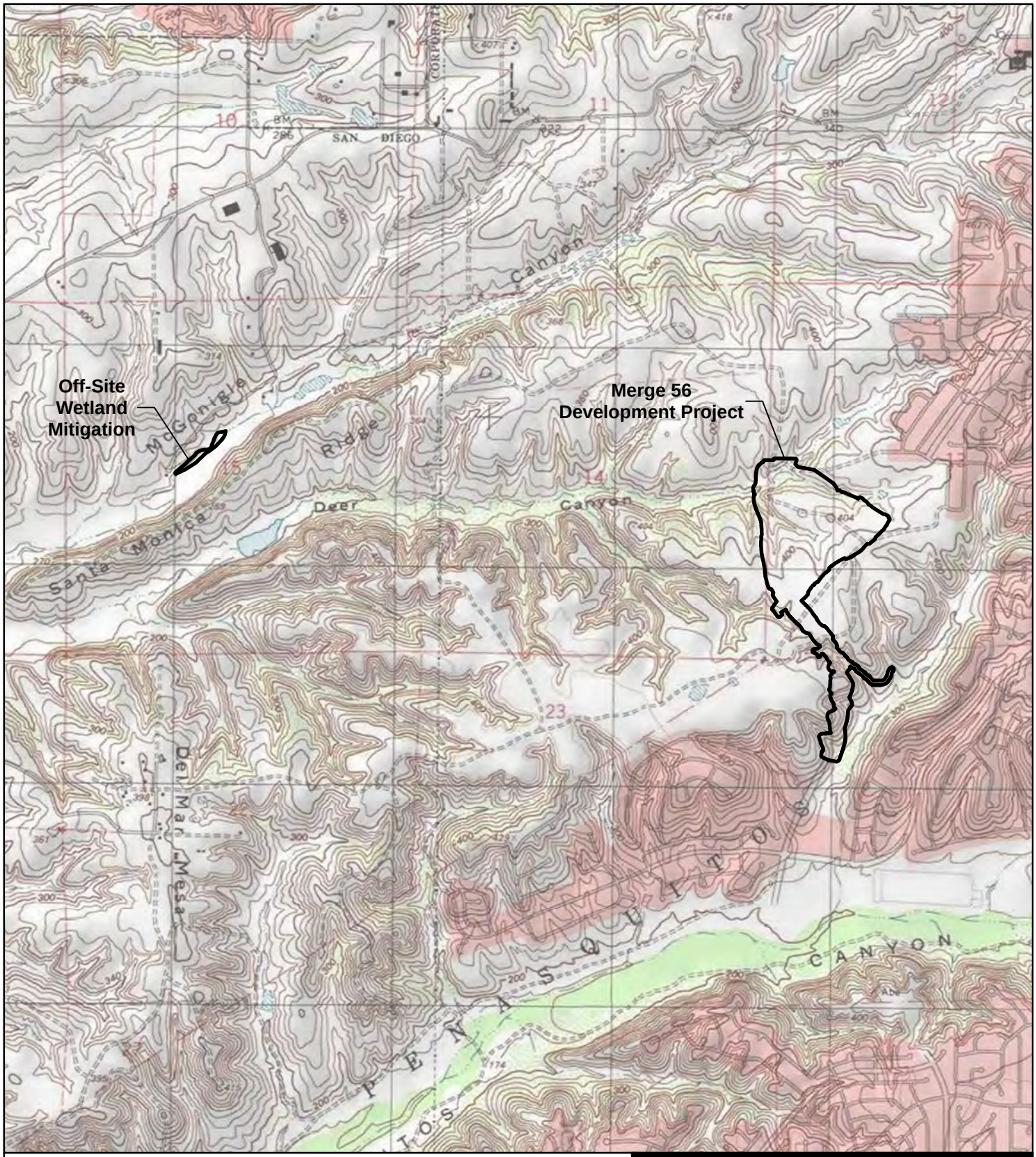


Figure 1

Regional Location

MERGE 56 DEVELOPMENT PROJECT
WETLAND MITIGATION PLAN

ALDEN ENVIRONMENTAL, INC



Source: USGS Quads (Del Mar); Copyright:© 2013 National Geographic Society, i-cubed

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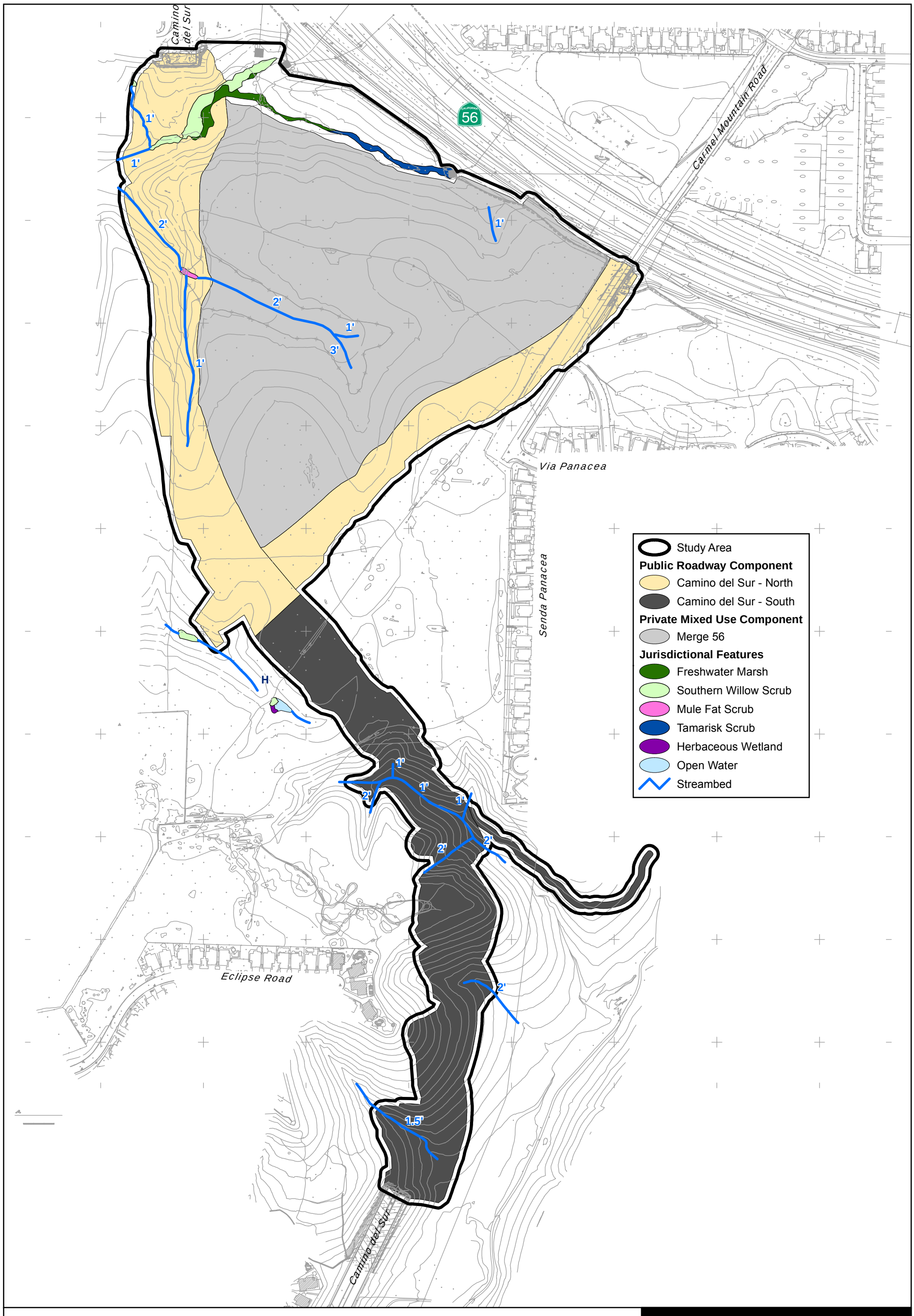
Feet

ALDEN
ENVIRONMENTAL, INC

Figure 2

Project Location

MERGE 56 DEVELOPMENT PROJECT
WETLAND MITIGATION PLAN



ALDEN ENVIRONMENTAL, INC

Figure 3

Jurisdictional Impacts

MERGE 56 DEVELOPMENT PROJECT
WETLAND MITIGATION PLAN

Mitigation is proposed at a 3:1 ratio (Table 2) for wetland habitat impacts and 2:1 for non-wetland streambed. The mitigation would be in the form of habitat restoration. In total, the project would provide 1.58 acres of mitigation for jurisdictional impacts. The wetland mitigation area is shown on Figure 4.

Table 2
MITIGATION (acres)

Jurisdictional Area	Impact	Ratio	Requirement
Wetlands			
Southern willow scrub	0.32	3:1	0.96
Mule fat scrub	0.03	3:1	0.09
Freshwater marsh	0.15	3:1	0.45
Subtotal Wetlands	**0.50**		**1.50**
Non-wetland WUS/WS			
Non-wetland WUS/streambed	0.04	2:1	0.08
Subtotal Non-wetland	**0.04**		**0.08**
TOTAL	**0.54**		**1.58**

4.0 DESCRIPTION OF THE PROPOSED MITIGATION SITE

4.1 LOCATION AND SIZE OF MITIGATION AREA

The mitigation site is located along the creek in McGonigle Canyon approximately 1.5 miles northwest of the Project (Figure 2). The site supports existing wetland/riparian habitat along the creek and is located within the MHPA. The mitigation effort would widen the creek to the south in an area that has been filled and used for agricultural purposes.

4.2 OWNERSHIP STATUS

The mitigation parcel is currently under contract to Sea Breeze Properties, LLC. Contact information for the entity is provided below:

Sea Breeze Properties, LLC
C/O Mr. Gary Levitt
3525 Del Mar Heights Road, #246
San Diego, CA 92130

Currently, the proposed mitigation area has not been dedicated as a permanent preserve area or placed within a conservation easement.

4.3 MITIGATION AREA EXISTING FUNCTIONS AND SERVICES

The site supports existing wetland/riparian habitat along the creek and is located within the MHPA. The mitigation effort would widen the creek to the south in an area that has been filled and used for agricultural purposes. The wetland restoration area consists of a long, narrow, flat piece of land within the floodplain of McGonigle Creek (Scheidt 2016). This area supports intensive agriculture, as it has been used for many years to store and grow nursery plants such as queen palm (*Syagrus romanzoffiana*), Mexican fan palm (*Washingtonia robusta*), and others. As of December 2008, most of the nursery activity in this area had ended, with greenhouses and hundreds of container plants being removed. The proposed mitigation area currently supports mostly bare dirt and weedy species.

4.4 MITIGATION SITE SUITABILITY

The proposed mitigation site is within an area that has been previously identified as a wetland habitat mitigation site. A habitat restoration plan was previously prepared for this area (Scheidt 2016) as required mitigation for the Rancho Del Sol Stipulated Judgement SDP for GIC No. 801949. This plan includes a habitat restoration area for mitigation (Phase I) and a potential future wetland habitat mitigation bank area (Phase II). The Project's proposed mitigation is located outside of the Phase I mitigation area and entirely within the Phase II potential mitigation bank area (Figure 4). The City also has completed a Substantial Conformance Review (SCR) to confirm that the current proposed Phase I mitigation meets the requirements of the Stipulated Judgement Agreement SDP. The Project's mitigation does not create a conflict with the mitigation for the Stipulated Judgement Agreement SDP. The identified 1.58-acre mitigation area would be constructed as mitigation specifically for impacts associated with the Camino Del Sur-North roadway and would not be a part of any current or proposed future mitigation banking agreement.

5.0 MITIGATION DESIGN

To meet Corps, USFWS, CDFW, RWQCB, and City (hereafter referred to as "resource agencies") mitigation requirements, as appropriate, this plan recommends measures to expand existing jurisdictional features adjacent to McGonigle Creek. In addition, Diegan coastal sage scrub habitat also will be re-established in the area adjacent to the wetland mitigation area. The required mitigation would include a minimum of 1.58 acres of wetland habitat. It is anticipated that the functions and services of the enhanced and re-established habitats within the target area would be increased with the proposed mitigation measures.

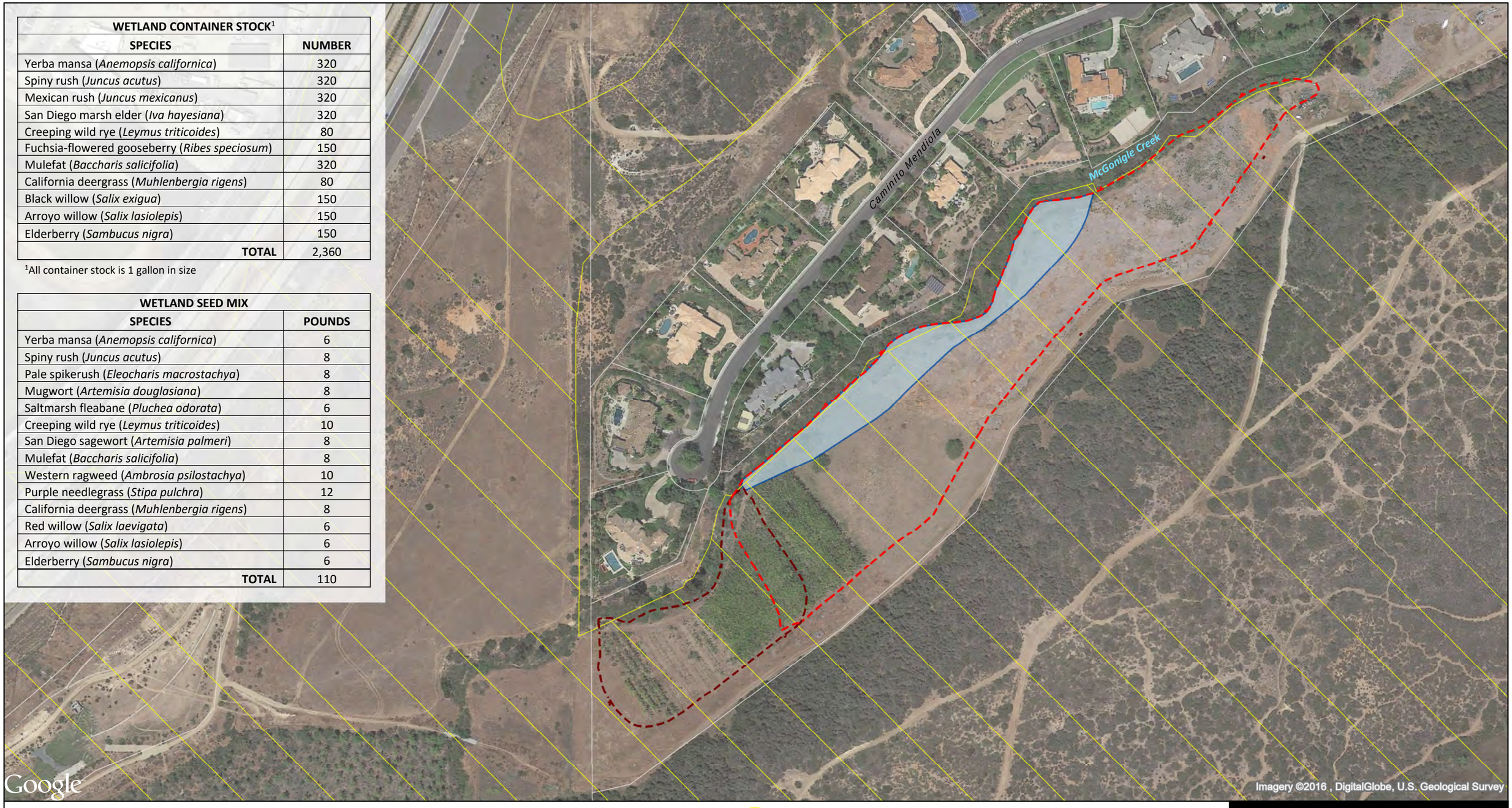
5.1 WETLAND RESTORATION

Wetland habitat will be restored by expanding the width of the existing Mcgonigle Creek. Expansion of the Creek will involve removal of all of the fill material, trash, and debris adjacent to the creek. The site will be graded to create an expanded channel area that is at an elevation within 2 – 4 feet of the existing creek bottom. All of the wetland habitat restoration will occur within this expanded, graded area. The habitat goal is to create a mosaic of site appropriate wetland/riparian associated habitats through the installation of a broad species mix. The habitats to become established are anticipated to range from freshwater marsh adjacent to the central

WETLAND CONTAINER STOCK[1]	
SPECIES	**NUMBER**
Yerba mansa (*Anemopsis californica*)	320
Spiny rush (*Juncus acutus*)	320
Mexican rush (*Juncus mexicanus*)	320
San Diego marsh elder (*Iva hayesiana*)	320
Creeping wild rye (*Leymus triticoides*)	80
Fuchsia-flowered gooseberry (*Ribes speciosum*)	150
Mulefat (*Baccharis salicifolia*)	320
California deergrass (*Muhlenbergia rigens*)	80
Black willow (*Salix exigua*)	150
Arroyo willow (*Salix lasiolepis*)	150
Elderberry (*Sambucus nigra*)	150
TOTAL	2,360

[1]All container stock is 1 gallon in size

WETLAND SEED MIX	
SPECIES	**POUNDS**
Yerba mansa (*Anemopsis californica*)	6
Spiny rush (*Juncus acutus*)	8
Pale spikerush (*Eleocharis macrostachya*)	8
Mugwort (*Artemisia douglasiana*)	8
Saltmarsh fleabane (*Pluchea odorata*)	6
Creeping wild rye (*Leymus triticoides*)	10
San Diego sagewort (*Artemisia palmeri*)	8
Mulefat (*Baccharis salicifolia*)	8
Western ragweed (*Ambrosia psilostachya*)	10
Purple needlegrass (*Stipa pulchra*)	12
California deergrass (*Muhlenbergia rigens*)	8
Red willow (*Salix laevigata*)	6
Arroyo willow (*Salix lasiolepis*)	6
Elderberry (*Sambucus nigra*)	6
TOTAL	110



Merge 56-Public Roadway Component Wetland Mitigation Area
Wetland Habitat Creation Area (1.58 acres)

Rancho Del Sol Restoration Area
Phase I Restoration Area[1]
Phase II – Potential Future Mitigation Bank Area[2]

Multi-Habitat Planning Area (MHPA)

[1] Mitigation for the Rancho Del Sol Stipulated Judgement SDP for GIC No. 801949
[2] Merge 56 mitigation would occur entirely within the Phase II area

N W E S
0 100 200 Feet

ALDEN ENVIRONMENTAL, INC

Figure 4

Wetland Mitigation Area

MERGE 56 DEVELOPMENT PROJECT
WETLAND MITIGATION PLAN

portions of the channel that experience steady water flows to riparian scrub along the periphery of the wetland mitigation area.

5.2 TARGET FUNCTIONS AND SERVICES

The goals of this mitigation effort are to restore wetland habitat that would, at a minimum replace, the functions and services lost through impacts to wetland habitat and jurisdictional features associated with the Camino Del Sur-North segment of the Public Roadway Component. With the completed mitigation, it is expected that functions and services (water filtration, sensitive wildlife and plant habitat, etc.) would be improved and increased by the end of the 5-year mitigation effort. This realization of target functions and values would be documented by conducting quantitative and qualitative analyses throughout the 5-year monitoring period.

6.0 IMPLEMENTATION PLAN

The habitat restoration will consist of several components, including:

- Initial site preparation/grading
- Restoration of additional jurisdictional areas/habitats

6.1 RATIONALE FOR EXPECTING IMPLEMENTATION SUCCESS

The site selected for the mitigation effort is located along McGonigle Creek and was previously identified as a wetland habitat restoration area (Scheidt 2016). This plan would enhance and expand the limits of jurisdictional area in the Creek and would improve habitat quality and functions. Additionally, the adjacent wetland watershed area is suitable for upland habitat restoration.

6.2 RESPONSIBLE PARTIES

6.2.1 Project Proponent

Sea Breeze Properties, LLC (project proponent) will be responsible for financing the installation, maintenance, and monitoring of the mitigation measures. As the mitigation effort is being carried out for a public City roadway project, the project proponent may pursue reimbursement from the City. Reimbursement of costs will be determined through consultation between the project proponent and the City.

6.2.2 Restoration Specialist

Overall supervision of the installation, maintenance, and monitoring of this program will be the responsibility of a restoration specialist with a minimum of 5 years of habitat restoration experience. The restoration specialist will educate all participants with regard to program goals and directly oversee all aspects of the project. In addition, the specialist will conduct all monitoring data collection, annual assessments, and prepare all required reports. If necessary, the restoration specialist will provide the project proponent and contractor with a brief report, including a written list of items in need of attention following each monitoring visit. The

contractor will be responsible for carrying out all required measures in a timely manner. The restoration specialist will notify the contractor and responsible party if any requested remediation is not addressed. A checklist with the main tasks and responsibilities sis included in Table 3.

6.2.3 Installation/Maintenance Contractor

The installation and maintenance contractor(s) will have habitat restoration experience and will, under the direction of the restoration specialist, be responsible for completion of grading, pre-planting weed control, planting, seeding, and maintenance. The restoration specialist will educate the contractor(s) on the installation and maintenance of native plant species.

After the installation is complete, maintenance personnel will initiate the 5-year maintenance program under the direction of the restoration specialist. Maintenance crews will service the entire enhancement area regularly following installation. Service will include but not be limited to weed control, trash removal, watering, fence repair, dead plant replacement, and re-seeding. All activities conducted will be seasonally appropriate and approved by the restoration specialist. The maintenance crew will meet the restoration specialist at the site when requested and will perform all checklist items in a timely manner as directed by the restoration specialist. The restoration specialist will ensure that maintenance personnel are capable of discerning between native plant species and non-native weed species.

6.3 CONTRACTOR EDUCATION

Prior to the commencement of site activities, the contractor(s) will review all aspects of this plan including permit requirements, site protection, maintenance inspections, landscape procedures, and monitoring. The restoration specialist will make the Contractor and all other contractors, subcontractors and the project supervisors aware of the agency permits and authorizations associated with the project. Copies of project permits will be kept onsite at all times during periods of active work and must be presented to any agency personnel upon demand.

6.4 IMPLEMENTATION SCHEDULE

Implementation of the restoration/enhancement program would commence in the summer/fall season. This schedule assumes that weather and soil conditions are dry enough to conduct the mitigation without causing irreparable damage to the site. Installation of the habitat mitigation (seeding, planting, irrigation, etc.) will begin once the site preparation and grading activities are complete. Habitat restoration activities are anticipated to take between 6 and 8 weeks to complete.

Table 3 MITIGATION PLAN CHECKLIST						
Construction Phase	**Task**	**Applicable Parties**				
		Project Proponent	**Grading Contractor**	**Installation Contractor**	**Maintenance Contractor**	**Restoration Specialist**
Pre-construction	Order seed and container stock			X		
	Attend pre-construction meeting	X	X	X		X
	Document pre-impact conditions					X
	Identify site limits and staging area					X
Installation	Delineate mitigation boundaries			X		X
	Remove existing buildings		X			X
	Grade mitigation area		X			X
	Install container stock and seed			X		X
	Install irrigation system			X		X
	Prepare/submit as-built report					X
Five-year Maintenance & Monitoring Period	Conduct maintenance monitoring and annual monitoring					X
	Maintain site for remainder of 5 years - until signed off by resource agencies				X	X

6.5 SITE PREPARATION

As described above, the initial site preparation will involve removal of debris and grading of the area adjacent to McGonigle Creek to achieve the target elevations for the wetland mitigation. The intent of this plan is to restore native wetland habitat. Weeds, refuse, debris, and deleterious soil will be removed and disposed of in a licensed landfill.

6.6 FENCING

Prior to and during implementation of the restoration effort, a temporary orange construction fence will restrict access to the mitigation area. No permanent barriers are proposed as the site is within the MHPA and wildlife connection and mobility is desired. A total of 10 steel signs will be installed in areas where people could enter the site. The signs will provide notice, in both English and Spanish, that the area is an ecological preserve and that trespassing is prohibited.

Additionally, specific development project (non-mitigation) construction monitoring measures called for by the City and agencies will be conducted by the entity responsible for project related permit compliance and is not included as a part of this mitigation plan.

6.7 WETLAND HABITAT

The target habitat within the wetland mitigation area has been designed to allow for a mosaic of wetland associated species to become established as determined by specific conditions. To this end, an overall wetland seed mix has been prepared that includes native wetland species that occur within wetland riparian scrub/forest habitats (mulefat scrub, southern willow scrub, freshwater marsh, etc.).

6.7.1 Wetland Seed Mix

Wetland seeding will take place within the wetland mitigation area (Figure 4) along McGonigle Creek. The wetland seed mix is presented in Table 4. The seed will be sourced from the as close to the site as possible. The source and proof (tags) for all seed will be provided.

Table 4 WETLAND SEED MIX	
SPECIES	**POUNDS**
Yerba mansa (*Anemopsis californica*)	6
Spiny rush (*Juncus acutus*)	8
Pale spikerush (*Eleocharis macrostachya*)	8
Mugwort (*Artemisia douglasiana*)	8
Saltmarsh fleabane (*Pluchea odorata*)	6
Creeping wild rye (*Leymus triticoides*)	10
San Diego sagewort (*Artemisia palmeri*)	8
Mulefat (*Baccharis salicifolia*)	8
Western ragweed (*Ambrosia psilostachya*)	10
Purple needlegrass (*Stipa pulchra*)	12
California deergrass (*Muhlenbergia rigens*)	8
Red willow (*Salix laevigata*)	6
Arroyo willow (*Salix lasiolepis*)	6
Elderberry (*Sambucus nigra*)	6
TOTAL	110

A hydroseed slurry will be evenly applied in two stages such that an even, homogeneous distribution is made in each area. The first stage will include the seed, a small amount of fiber mulch, and dye. This application will help ensure that maximum seed/soil contact is made. A second layer will be applied immediately following the first. The second layer will include additional fiber mulch, dye, and a tackifier. The tackifier will serve to help bind seed and soil until germination. Hydroseed specifications are presented in Table 5.

Table 5 HYDROSEED APPLICATION SPECIFICATIONS		
Material	**First Application**	**Second Application**
Seed	As called for per site	N/A
Long fiber wood mulch	500 lbs/acre	1,000 lbs/acre
Dye	As necessary	As necessary
Tackifier	N/A	90 lbs/acre
Water	Sufficient to maintain slurry	Sufficient to maintain slurry

Hand seeding may be conducted in focused areas to help ensure targeted application of seed. Areas not treated with the hydroseed slurry will be hand seeded following hydroseeding to make sure all areas are seeded. These areas will be determined at the time of seeding and will include areas where hydroseeding may not be possible, where existing native plants may be negatively affected by the hydroseed slurry, or where it is thought that certain species may be appropriate in small areas. Seed of different species will only be mixed when they are to be applied to the same location. Individual species may be seeded separately as directed by the project restoration specialist. Hand broadcasters will be used to help ensure a consistent application of seed. An

inert carrier (sand, saw dust) may also be mixed with the seed to help maintain consistency. Seeding will not be conducted during windy conditions. Seed will be raked into soil after application to help increase seed/soil contact.

6.7.2 Wetland Container Stock

In addition to seed, native container stock will be planted in the wetland mitigation area (Table 6). The container stock will be sourced from the as close to the site as possible. If container stock is unavailable from the project vicinity, the restoration specialist may substitute species as necessary. The source and proof for all plant material will be provided. All container stock will be inspected and approved by the restoration specialist prior to being installed. Specifically, the restoration specialist will ensure that:

- The correct number, size, and species ordered are delivered;
- Plants are healthy and showing no sign of disease;
- Roots fill the containers, but are not root bound;
- There is no breakage of plants;
- Plants show no evidence of pests;
- Plants are in a state suitable for outplanting.

The restoration specialist will reject any plants not meeting these requirements.

Table 6
WETLAND CONTAINER STOCK[1]

SPECIES	NUMBER
Yerba mansa (*Anemopsis californica*)	320
Spiny rush (*Juncus acutus*)	320
Mexican rush (*Juncus mexicanus*)	320
San Diego marsh elder (*Iva hayesiana*)	320
Creeping wild rye (*Leymus triticoides*)	80
Fuchsia-flowered gooseberry (*Ribes speciosum*)	150
Mulefat (*Baccharis salicifolia*)	320
California deergrass (*Muhlenbergia rigens*)	80
Black willow (*Salix exigua*)	150
Arroyo willow (*Salix lasiolepis*)	150
Elderberry (*Sambucus nigra*)	150
TOTAL	2,360

[1]All container stock is 1 gallon in size

The installation contractor will be responsible for planting all container stock within four days following delivery. Container stock staged on site will be placed in a protected area and watered regularly prior to planting. Container stock will be planted in such a way as to mimic a natural species distribution. The project restoration specialist will specify the locations for all planting. Plants will be placed in natural groupings with appropriate spacing for the given species/target habitat type. Holes for each plant will be dug twice as deep and twice as wide as the container size. The hole will then be refilled to the halfway point, slightly compacted, and filled with water. Once all the water has soaked into the soil, the container stock will be planted such that the container plant soil level is slightly above ground level. Loose soil will be used to fill in the areas around the root ball and help ensure that there are no air spaces. Remaining soil will be used to create a watering basin around the plant.

6.9 IRRIGATION

A temporary, above ground irrigation system will be installed within both the wetland mitigation area. The system will provide head to head coverage to ensure adequate irrigation of both the installed seed mix and container stock species. The system will include timers and ground moisture sensors to help prevent over watering. The timers will be set to emulate a normal rainfall year in the event that actual rainfall does not reach normal levels.

6.10 WILDLIFE HABITAT ENHANCEMENT

In addition to seeding and planting, the restoration effort will include additional measures intended to increase the potential for wildlife usage of the site, particularly in the early years prior to full establishment.

6.10.1 Small Animal Cover

As an aid to wildlife establishment within the restoration area, shelter for small animal species will be created. The first type of shelter involves placement of 5 half-inch thick plywood boards, measuring 2 x 4 feet. These boards will provide shade, cover, and nesting locations for species including mice, lizards, snakes, and numerous invertebrate species (i.e., insects, spiders, etc.). The boards also provide an opportunity to monitor the wildlife usage of the site. During regularly scheduled monitoring visits, the restoration specialist will be able to lift each board and note the species present. There are no specific monitoring requirements or performance standards for the boards. The boards are intended to be left in place and allowed to break down naturally.

Additionally, shrub and brush material available on site will be collected by hand and stacked into low brush piles to provide additional cover for small animals. Each pile will be approximately 4 to 6 feet in diameter and 2 to 3 feet in height, provided sufficient material is available. This can be especially beneficial during the initial stages of the effort when there will be no cover available for small animals to utilize. The brush piles will be distributed throughout the restoration area. The final number and size of piles will depend upon the amount of material available on site. There are no specific monitoring requirements or performance standards for the brush piles.

6.10.2 Pollinator Support

Pollinator species may include bats, birds, and a host of insects that are integral in a diverse, self-sustaining habitat. The upland habitat seed mixes include a variety of species with overlapping flowering periods to help support a range of pollinators that will stimulate continued seed production and provide pollen and nectar sources for foraging wildlife. To help facilitate presence of insect pollinator species a total of 5 bee blocks (Sarver 2007, Xerces 2012) will be prepared and scattered throughout the upland mitigation area. The bee blocks will provide nesting locations for native wood and cavity-nesting bees during the initial plant establishment period when there will be little substrate for bees to utilize. Bee species from the Apidae, Colletidae, Halictidae, and Megachilidae families are expected to use the blocks. The bee blocks will be made by drilling holes (3/32 inch to 3/8 inch in diameter) into the side of untreated 4 inch x 8 inch by 12 inch blocks of wood. The holes will be drilled approximately 3/4 inch on center. The depth of the holes will vary depending on the diameter of the hole. For holes less than 1/4 inch in diameter, hole depth will be approximately 3 to 4 inches. Depths will be 5 to 6 inches for holes greater than 1/4 inch in diameter. The bee blocks will be oriented to face the morning sun (east to southeast).

6.11 AS-BUILT CONDITIONS

The restoration specialist shall prepare and submit a map using showing the as-built conditions of the mitigation area within 8 weeks of completion of site preparation and planting. Areas of grading, seeding, and planting shall be shown on the map.

6.12 COST ESTIMATE

The cost to carry out the implementation and maintenance and monitoring tasks described in this plan will be determined at the time of implementation. A Property Analysis Record (PAR) also will be prepared to determine the non-wasting endowment amount required to fund the long-term (post 5-year maintenance and monitoring period) management. Long term management for the site is described in a separate Habitat Management Plan (HMP) prepared for the project. As noted in Section 6.2.1, reimbursement from the City for the effort (mitigation for a public roadway) may be pursued by the project proponent. Any reimbursement of costs will be determined through consultation between the project proponent and the City.

7.0 MAINTENANCE PLAN

7.1 HABITAT MAINTENANCE ACTIVITIES

A 5-year maintenance program is proposed to help ensure the successful establishment and persistence of the wetland mitigation effort. The maintenance program will involve removal of trash, weed control, fence and signage repair/replacement, and any remedial measures deemed necessary for restoration program success (e.g., re-seeding and recontouring).

7.1.1 Trash Removal

The maintenance contractor will remove trash encountered within the restoration/enhancement areas during every maintenance event and dispose of it in a legally acceptable fashion.

7.1.2 Weed Control

Particular maintenance emphasis will be placed on pro-active weed control within the mitigation area. All weed species observed during restoration activities will be considered invasive and targeted for removal. Workers conducting weed removal activities will be educated to distinguish between native and non-native species, with special attention paid to rare and endangered plant species.

Weeds will be removed by hand or with small machinery (e.g., line trimmers) whenever possible, but focused herbicide application may be used if needed and requested by the restoration specialist. Herbicides will only be applied by workers licensed to use those chemicals. Additionally, herbicide will not be used during wet or windy conditions.

Weeds will be removed from the restoration limits and disposed of in a legal manner. All weeds will be removed prior to reaching 12 inches in height or before reaching seed. Leaf and branch drop of native species should be left in place and not removed from the site.

7.2 HABITAT MAINTENANCE SCHEDULE

Regular maintenance, trash removal, and weed control of the mitigation area will be conducted during the first 5 years following implementation of the mitigation program or until the mitigation program is deemed successful. Maintenance personnel will visit the site at least monthly for the 5-year maintenance and monitoring period. Additional visits will be conducted as directed by the restoration specialist during the rainy season (generally December through May) each year to keep weeds under control.

8.0 PERFORMANCE STANDARDS

The following sections provide performance standards to determine the successful completion of the 5-year mitigation and monitoring program. Attainment of these standards indicates the mitigation areas are progressing toward the habitat functions and services specified for this plan. Methods used to measure these performance standards are described in the following text. If the restored areas fail to meet the Year 5 standards after the full monitoring term, a specific set of remedial measures will be developed, implemented, and the monitoring and maintenance period would be extended until all Year 5 standards are met or as otherwise provided in this document. If the site does not meet Year 5 standards, the monitoring and maintenance period would be extended a full year until all are met. Only when the entire mitigation site has attained the Year 5 standards will the entire site be signed off.

8.1 CONTAINER STOCK

During each annual monitoring event there will be no less than 80 percent of the initial planting surviving container plants for all five years unless their function has been replaced by natural recruitment.

8.2 NATIVE SPECIES RICHNESS

Species richness cover success criteria have been established to determine the success of the mitigation effort. Species richness will be measured by visual assessment in Years 1 and 2, and by quantitative transect data in Years 3, 4, and 5. No specific richness criteria are established for Years 1 or 2, but annual success criteria for species richness in Years 3, 4, and 5 are provided in Table 7. Corrective measures will be implemented in areas not meeting the species richness goals in any given year.

Table 7
Species Richness Success Criteria[1]

Habitat	Year 3	Year 4	Year 5
Coastal Sage Scrub	10	12	12
Wetland	10	14	14

[1]Pre-determined, non-relative values

8.3 NATIVE SPECIES COVER

Native species cover success criteria have also been established to determine success of the mitigation effort. Species cover will be measured by visual assessment in Years 1 and 2, and by quantitative transect data in Years 3, 4, and 5. No specific cover criteria are established for Years 1 or 2, but annual success criteria for species richness in Years 3, 4, and 5 are provided in Table 8. Corrective measures will be implemented in areas not meeting the species richness goals in any given year.

Table 8
Native Species Cover Success Criteria[1]

Habitat	Year 3	Year 4	Year 5
Coastal Sage Scrub	40	60	70
Wetland	50	70	80

[1]Pre-determined, non-relative values

8.4 WEED COVER

General and target weed cover success criteria have been established for the mitigation effort. Given the size of the area and the extent of the weed seed bank, 100% weed eradication for all weed species is not a realistic goal (Some species are highly invasive and others are easier to eradicate). Therefore, species in Table 9 are zero tolerance species and will be controlled at 100% on a yearly basis. Other non-native species are more ubiquitous and can never be completely eliminated and will therefore be managed to a level of 10% or less. If the weed cover success criteria are not met in any given year then remedial measures will be conducted.

Table 9
Zero Tolerance Weed Species

Latin name	Common name	Cal-IPC Rating[1]
Atriplex semibaccata	Australian saltbush	M
Carpobrotus spp.	Ice plant, hottentot fig	H/M
Euphorbia lathyris	Gopher plant	N/A
Foeniculum vulgare	Fennel	H
Hordeum spp	barley	M
Nicotiana glauca	Tree tobacco	M
Ricinus communis	Castor bean	L
Salsola tragus	Russian thistle	L
Silybum marianum	Milk thistle	L
Sorghum halepense	Johnson grass	N/A
Xanthium strumarium	Cocklebur	N/A

[1]H= High invasiveness, M= Moderate invasiveness, L= Low invasiveness N/A= Not listed.

9.0 MONITORING PLAN

9.1 INSTALLATION MONITORING

The restoration specialist will be on site daily during the installation period to direct activities including site preparation, weed control, seeding, planting, and watering. Upon completion, the restoration specialist will prepare an as built map and letter and confirm that the 5-year maintenance and monitoring period may begin.

9.2 MAINTENANCE MONITORING

The restoration specialist will conduct regular maintenance monitoring visits during the 5-year maintenance period. Visits will be conducted monthly in Year 1, every other month in Years 2-3, and quarterly in Years 4-5. Additional visits may be required as conditions warrant. During each visit the restoration specialist will assess the condition of the site and identify remedial measures as necessary. A brief monitoring memo will be prepared and submitted to the maintenance contractor following each maintenance monitoring visit.

9.3 ANNUAL MONITORING

Annual monitoring visits will be conducted by the restoration specialist in the late spring each year for the upland area and in the fall for the wetland area during the 5-year maintenance period. During each annual monitoring the success of the restoration effort will be evaluated and species richness and cover data will be collected. In Years 1 and 2 species richness and cover for each site within the restoration area will be determined by visual assessment. In Years 3-5 quantitative transect data will be collected within the restoration area and control sites.

Quantitative transect data will be collected using the point intercept line transect sampling methods described in the California Native Plant Society's Field Sampling Protocol (Sawyer and Keeler-Wolf 1995). Two 50-m long sampling transects will be established in Year 3 within each site (A-J). Additionally, off-site control transects will be established in adjacent coastal sage scrub (2 transects) and riparian scrub (2 transects) habitat. The ends of each transect will be marked with a re-bar stake and recorded with a Global Positioning System (GPS) unit.

Species cover will be determined by dividing each transect into 50 half meter intervals. A point will be projected into the vegetation each interval and any species intercepted by the point will be recorded. Species also will be divided into herb (0- 60 cm), shrub (60cm-3m), and tree (greater than 3 m) layers. Percent cover will be measured by dividing the number of hits by the number of possible hits. Total, native, and non-native cover values will be determined separately.

Native species richness (the number of species) will be calculated by counting all of the species encountered within a 5m wide belt transect along each transect (2.5m on each side). All plants observed will be categorized by origin (native/non-native) and height layer.

Photographs will be taken each year from the same photograph points used prior to initiation of site preparation. The photographs will help track project progress over time and will be included in the annual report each year.

9.4 ANNUAL REPORTS

As part of the monitoring program, annual reports prepared by the restoration specialist will be prepared and submitted evaluating the success of the effort to date, along with any recommendations for future work that may be deemed necessary. Each annual monitoring report will include data collected throughout the year in addition to the annual monitoring visit. To detect the overall trend of the site, the annual monitoring report will contain comparisons of the monitoring data for the years that data are collected.

9.5 REMEDIAL MEASURES/ADAPTIVE MANAGEMENT

If the effort is not progressing as desired, corrective measures may be implemented. Corrective measures may include, but are not limited to: additional planting or seeding, altered maintenance effort, and increased watering regime

9.6 MONITORING SCHEDULE

As described above, monthly inspections of the restoration and maintenance effort would be performed during Year 1, every other month during Years 2 and 3, and quarterly for the remainder of the 5-year maintenance and monitoring period. The first annual botanical monitoring event will occur in the first spring following installation. Reports will be prepared and submitted within 3 months of the fall annual monitoring visit.

10.0 COMPLETION OF PROGRAM

10.1 NOTIFICATION OF COMPLETION

The permittee shall notify the agencies upon the mitigation site obtaining the year 5 performance standards through the submittal of the final (Year 5) monitoring report.

10.2 AGENCY CONFIRMATION

After receipt of the final monitoring report, the City and applicable agencies may inspect the compensatory mitigation site to determine if the enhancement and re-establishment has been conducted in accordance with this plan.

10.3 LONG-TERM MANAGEMENT

Prior to initiation of project impacts, a complete draft Conservation Easement for the mitigation area shall be provided to the City for review and approval. This easement will be in favor of an entity approved by the City. This easement will state that no other easements or activities (e.g., fuel modification zones, public trails, drainage facilities, walls, maintenance access roads) that would result in soil disturbance and/or vegetation removal will be allowed within the biological conservation easement area. No later than 30 calendar days after receiving City approval of the final draft conservation easement, the conservation easement shall be executed and a final copy furnished. The site will be turned over in fee-title to a non-profit organization committed to the preservation of sensitive lands. Long-term management will be the responsibility of the organization accepting the fee-title. As of the writing of this report, no entity has been chosen to accept long-term responsibility of the mitigation area.

11.0 CONTINGENCY MEASURES

11.1 INITIATING PROCEDURES

An integral part of a successful mitigation program is the ability to detect problems with the mitigation early in the process, determine the cause of the problem, and attempt to modify the mitigation program to accommodate emerging issues or situations. Minor problems, such as trash, vandalism, isolated instances of plant mortality, or small-scale weed or pest infestations will be rectified as they are discovered during routine site monitoring and would not warrant the implementation of contingency measures.

If a performance standard is not met for all or any portion of the mitigation site in any year, or if the final performance standards are not met, the restoration specialist will prepare an analysis of the cause(s) of failure, and if determined necessary by the participating agencies, propose remedial action for approval. These measures may include supplemental site grading, manipulation, planting, changes to the plant palette, adjustment of the management of the site or re-evaluate species composition or other design changes.

Should the mitigation area fail as a result of a natural disaster such as an earthquake or flood, the project proponent will still be held responsible for any additional measures that are required to re-establish the mitigation site.

11.2 FUNDING MECHANISM

The project proponent shall be responsible for all costs associated with any remedial measures during the 5-year maintenance and monitoring period. As noted in Section 6.2.1, reimbursement from the City for the effort (mitigation for a public roadway) may be pursued by the Project Proponent. Any reimbursement of costs will be determined through consultation between the project proponent and the City.

11.3 RESPONSIBLE PARTIES

The project proponent shall be the responsible party for any remedial measures.

12.0 REFERENCES CITED

Alden. 2016. Biological Technical Report for Merge 56 Development Project.

Scheidt, Vince. 2016. A Wetlands Creation Plan, The McGonigle Creek Wetlands Mitigation Bank. December.

Xerces 2012. Invertebrate Conservation Fact Sheet, Nests for Native Bees. Xerces Society. http://www.xerces.org/wp-content/uploads/2008/10/nests_for_native_bees1.pdf, Portland, Oregon.

Appendix J2

Wetland Mitigation Habitat Management Plan

Merge 56 Development Project
Wetland Mitigation
Habitat Management Plan

May 25, 2016

Prepared for:

Sea Breeze Properties, LLC
3525 Del Mar Heights Road, #246
San Diego, CA 92130

Prepared by:

Alden Environmental, Inc.
3245 University Avenue, #1188
San Diego, CA 92104

ALDEN
ENVIRONMENTAL, INC

Merge 56 Development Project
Wetland Mitigation
Habitat Management Plan

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1.0 INTRODUCTION

This Habitat Management Plan (HMP) has been prepared for the off-site wetland (non-vernal pool) mitigation area for the Merge 56 Development Project, in accordance with requirements identified in the Project's Biological Technical Report and Wetland Mitigation Plan (Alden Environmental, Inc. [Alden] 2016a & 2016b). Specifically, the preserve area provides wetland mitigation for the Public Roadway component of the project. This HMP directs long term management for the wetland habitat mitigation area and addresses applicable management guidelines for the City of San Diego's (City) Multi-Habitat Planning Area (MHPA).

The main purpose of this HMP is to identify methods and means necessary to maintain and enhance habitat (and related wildlife) values of the mitigation area in perpetuity. The HMP provides framework for long-term management, following successful implementation of the mitigation effort. It defines methods and schedules to sustain habitat function and value following restoration, determines the parties responsible for management, and identifies associated costs and source of funding. The ultimate goal of this HMP is to preserve long-term viability and function and value of native habitats on site along with the listed and sensitive species they support. Achieving this goal also would benefit and improve the quality of life for local residents through preservation and enhancement of a more diverse and balanced environment.

For information on biological conditions existing prior to development, please refer to the Biological Technical Report for Merge 56 Development Project (Alden 2016a).

2.0 PRESERVE AREA DESCRIPTION

The mitigation site is located along the creek in McGonigle Canyon approximately 1.5 miles northwest of the Merge 56 Project (Figures 1 and 2). The site supports existing wetland/riparian habitat along the creek and is located within the MHPA. The mitigation effort would widen the creek to the south in an area that has been filled and used for agricultural purposes.

2.1 SENSITIVE RESOURCES WITHIN THE PRESERVE AREA

Upon successful completion of the wetland habitat mitigation effort, the site will support approximately 1.58 acre of created wetland habitat (Figure 3). The target habitat within the wetland mitigation area has been designed to allow for a mosaic of wetland associated species that occur within wetland riparian scrub/forest habitats (mulefat scrub, southern willow scrub, freshwater marsh, etc.) to become established as determined by specific conditions.

3.0 RESPONSIBLE PARTIES

3.1 PROJECT PROPONENT

Sea Breeze Properties, LLC (project proponent) is responsible for funding the implementation of this HMP, including management/maintenance of the preserve area in perpetuity via a one-time endowment. The endowment would be non-wasting (i.e., annual interest would be sufficient to cover yearly management needs) and would fund management activities in perpetuity. In

addition, the proposed endowment amount would require approval by the City and/or entity accepting title/management responsibilities for the HMP site. As the mitigation effort is being carried out for a public City roadway project, the project proponent may pursue reimbursement from the City. Reimbursement of costs will be determined through consultation between the project proponent and the City.

No start-up tasks will be required, given that information used to finalize the mitigation effort (Year 5 Annual Report) can be used as start-up information. Long-term HMP tasks involve activities associated with the management and maintenance of the preserve area in perpetuity, including habitat monitoring/mapping, exotic species control, public awareness programs, and general monitoring and reporting. Additional descriptions of these long-term efforts are provided below.

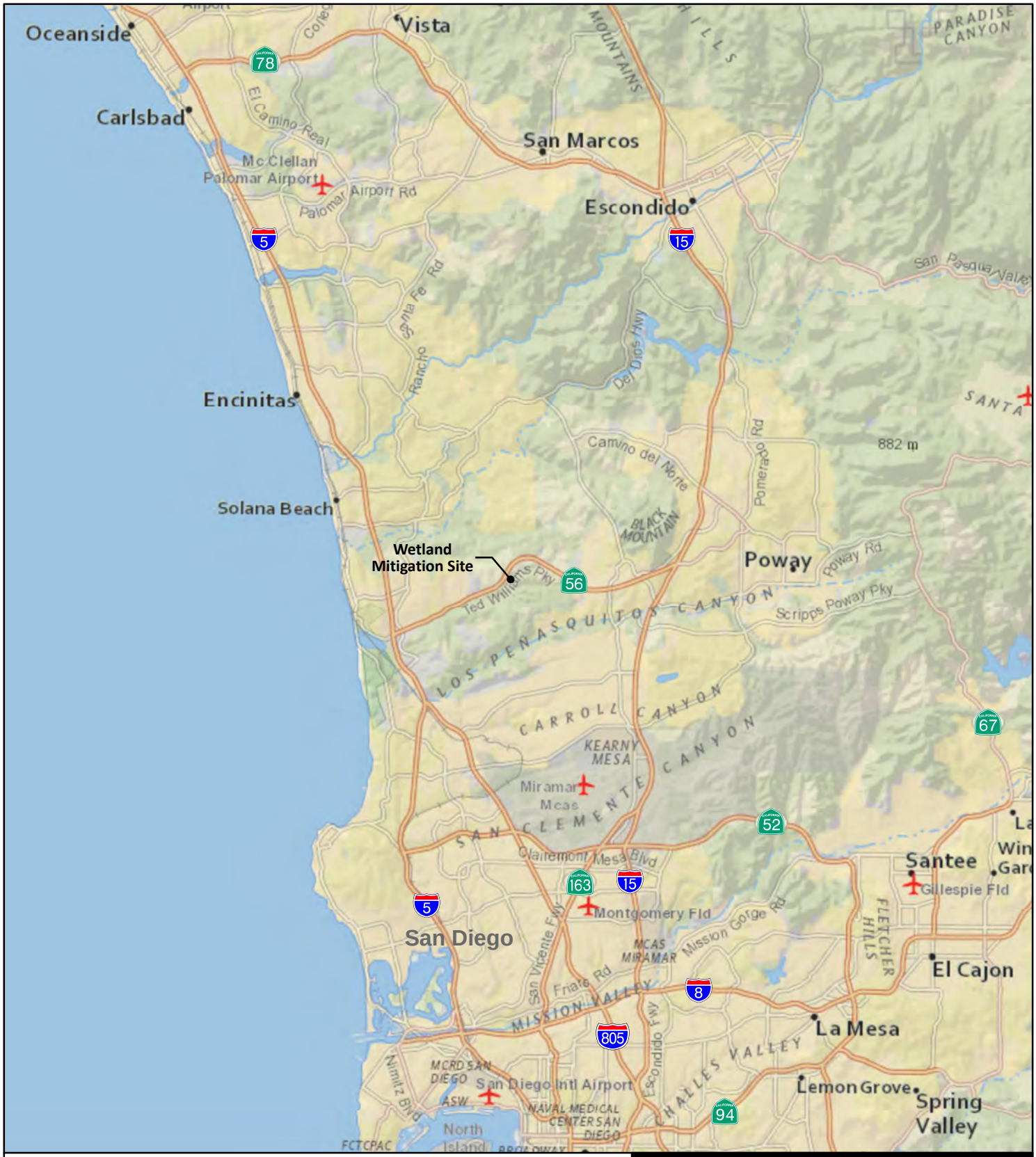
3.2 HABITAT MANAGER

An individual or organization acceptable to the project proponent/HOA and City shall be contracted to serve as Habitat Manager for the general management effort. If the entity hired is an organization, the person(s) actively managing the open space must satisfy criteria for a Habitat Manager (as described below), and a Project Manager must be designated. The Habitat Manager shall possess the following qualifications:

- A B.S. or B.A. degree in wildlife management, natural resources, ecology, zoology, botany, biology, or similar degree.
- A minimum of 2 years of experience in field biology in southern California (preferably San Diego County).
- Demonstrated experience in similar projects, or in projects requiring similar skills.
- Experience in working with community groups.

The Habitat Manager (1) will be responsible for the implementation of this HMP; and (2) will carry out the HMP's requirements and objectives. The Habitat Manager's primary responsibility will be to maintain the integrity of all preserved and restored habitats. In order to fulfill that responsibility, the Habitat Manager shall:

- Be an advocate of the preserved open space and its protection.
- Be familiar with this HMP and supporting documentation.
- Be responsible for all points noted in this HMP as being within his/her responsibility or judgment, as discussed in applicable sections of this document.
- Maintain all documents transferred by the project proponent (as previously noted), and be knowledgeable about the resources addressed in these reports.
- Educate the surrounding community about the presence and need for the open space and be responsive to any community concerns or problems regarding the open space.



N
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0 2 4 Miles

ALDEN
ENVIRONMENTAL, INC

Figure 1

Regional Location

MERGE 56 DEVELOPMENT PROJECT
WETLAND HABITAT MANAGEMENT PLAN

N
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0 500 1,000
Feet

ALDEN ENVIRONMENTAL, INC

Figure 2

Project Location

MERGE 56 DEVELOPMENT PROJECT
WETLAND HABITAT MANAGEMENT PLAN

Long-Term Management Area

Multi-Habitat Planning Area (MHPA)

N

W E

S

0 100 200

Feet

ALDEN ENVIRONMENTAL, INC

Figure 3

Preserve Area

MERGE 56 DEVELOPMENT PROJECT
WETLAND HABITAT MANAGEMENT PLAN

- Provide direction to the community on the importance and maintenance of open space.

- Document all field visits, and notify the City in a timely manner of all concerns, problems, and suggested solutions. Forward all applicable monitoring and management data to the City for incorporation into the MSCP database.

- Coordinate with the manager(s) of adjacent preserves (i.e., MHPA) on management practices and tasks related to preservation and maintenance of the subregional open space system and apply pertinent adaptive management recommendations received from the regional monitoring source. Specifically, this will include activities such as the removal of exotic and pest species, and ensuring compatibility with the overall open space management plan proposed as part of the MSCP Subarea Plan.

4.0 FUNDING MECHANISM

General Funding

The project proponent will be responsible for all HMP funding requirements. Specifically, this would include a one-time endowment to fund long-term HMP implementation. As noted in Section 3.1, reimbursement from the City for the effort (mitigation for a public roadway) may be pursued by the Project Proponent. Any reimbursement of costs will be determined through consultation between the Project Proponent and the City.

The estimated cost for implementation of the HMP will be determined through the preparation of a Property Analysis Record (PAR) for the site. Long-term HMP tasks involve activities associated with the management and maintenance of the preserve in perpetuity, as funding permits, including habitat monitoring/mapping, exotic species control, public involvement programs, and general monitoring and reporting. The PAR will include funding necessary to ensure long term management in perpetuity, including contingency funds to address restoration efforts that may be required after a catastrophic event. The endowment amount would be required to meet the estimated costs identified in the PAR. In addition, the proposed endowment amount would require approval by the chosen Preserve Manager.

5.0 MANAGEMENT SPECIFICATIONS

General Management

The overall preserve area is intended to serve as a habitat preserve, and as such, is not compatible with many uses. Activities specifically prohibited include grazing, hunting, off-road vehicle use, dumping, construction activities and staging, vegetation clearing, and removal of natural resources. Exceptions to these prohibitions include selective hand-clearing of vegetation to the extent required by written order of the fire authorities for the express purpose of reducing an identified fire hazard or weed problem. A number of individual open space management tasks are described below and in Table 2, with these efforts to be conducted at appropriate time intervals, depending on their specific characteristics.

Table 2 LONG-TERM MANAGEMENT TASKS	
Task Description	**Approximate Implementation Date/Frequency**
Summer/fall habitat mapping	Map update every 5 years in summer/fall
General monitoring	Quarterly
Exotic plant control	Minimum of once a year beginning with the first year of active management
Exotic animal control	As needed
Fire response planning	As needed
Annual reports	Annually/January 15
Barrier and sign inspection/repair	In conjunction with regular monitoring visits
Educational brochure	Once – within 3 months of active management
Trash removal	In conjunction with regular monitoring visits

5.1 HABITAT MONITORING

Improving and maintaining the health and diversity of habitat contained within the preserve area are the basis for successful management. To assist the Habitat Manager in prioritizing management tasks and to provide information to the general public, City, and researchers regarding the overall state of the open space area, the Habitat Manager will monitor and document habitat types and conditions on a regular basis. These activities will include the ongoing surveys and tasks described below.

5.1.1 Long-term Habitat Monitoring and Documentation

Vegetation communities and boundaries may change over time due to natural processes such as fire, flood, and succession. In addition, the preserve area could be susceptible to indirect impacts from adjacent development, particularly along the development/preserve margins. Any changes within the preserve area may affect the functions and values provided by the existing vegetation communities, with monitoring and documentation of such changes in both existing and restored habitats therefore important to successful long-term management. Specifically, information obtained from regularly monitoring and documenting changes in open space habitats will assist the Habitat Manager in determining and prioritizing future management tasks.

Methods

Habitat Mapping

The Habitat Manager will conduct summer/fall habitat mapping to note changes in the wetland vegetation communities. Updated vegetation maps should be prepared every 5 years.

General Monitoring

The preserve area will be visually inspected for changes during quarterly maintenance and monitoring visits, and all observations will be documented. Substantial changes will be monitored more closely to determine the necessity of additional measures. Recommendations from such activities will be submitted to the City for review and information prior to implementation. Vegetation and sensitive species mapping should be conducted during regular site monitoring, and updated maps should be submitted to the City every 5 years.

In addition, the Habitat Manager will assess the condition of the preserve area visually and note any problems in need of attention. The preserve area fences and signs will be inspected and any necessary repairs noted. All applicable monitoring data will be forwarded to the City for incorporation into the MSCP database.

If substantial changes are noted, the area in question will be monitored more closely to determine if additional measures are appropriate. Any recommendations resulting from such activities will be submitted to the City for review and approval prior to implementation.

Schedule

Habitat Mapping

The Habitat Manager will update habitat mapping every 5 years following completion of the Mitigation Plan using a current aerial photograph.

General Monitoring

The condition and extent of habitats within the preserve will be monitored and documented during regular site visits.

5.2 SENSITIVE SPECIES MONITORING

Preservation of sensitive plant and animal populations within the preserve area is one step in achieving the overall long-term conservation of these species. Monitoring of sensitive species located within open space has 2 purposes: (1) to identify short-term threats to species persistence; and (2) to identify longer-term trends that may suggest that a population is in decline. Adaptive management measures may be required to intervene when either natural or man-made disturbances or effects appear to be adversely influencing a sensitive species.

5.2.1 Methods

It is the responsibility of the Habitat Manager to evaluate the status of the preserved species within preserve area and to institute protective measures if any individual species becomes threatened. Monitoring of sensitive species populations will vary based on the target species and be conducted in conjunction with regularly scheduled visits. Not all monitoring parameters can be identified within the context of this plan because some parameters will be dependent on a detailed assessment of field conditions. In each assessment, however, the Habitat Manager will observe and document sensitive species locations and conditions.

Monitoring for Other Sensitive Species

All sensitive species observed during site visits will be noted and recorded on updated maps.

5.2.2 Schedule

Monitoring Sensitive Species

Monitoring for other sensitive plant and animal species populations will be conducted opportunistically during all site visits.

5.3 CONTROL OF EXOTIC SPECIES

Exotic plant and animal species through urban edge effects could result in degradation of both native habitats and associated wildlife populations. The Habitat Manager will implement the following measures to control introduction of exotic plants and animals in the preserve area.

5.3.1 Exotic Plant Control

There are numerous exotic plant species known to occur within the vicinity of the mitigation area. Annual weed removal will be focused on removal of highly invasive species that would pose a threat to the wetland habitat. Removal of these species will be conducted using mechanical line trimmers and focused herbicide application.

Schedule

Removal of exotic plant species will be conducted annually in January/February. The Habitat Manager may modify this schedule as necessary to accommodate annual fluctuations in weed growth.

5.3.2 Exotic Animal Control

Exotic animal species may be present now or in the future within and adjacent to the mitigation area. Escaped pets from neighboring residential areas also may pose a problem within the preserve. Some exotic animal species may prove to be detrimental to the preserved habitats and species within the mitigation area.

Methods/Schedule

Exotic animal species will be noted during all site visits. If a population of an exotic animal species poses a threat to the preserve area, a control/eradication program will be coordinated with the City, if appropriate. Control and eradication efforts will be implemented at the most appropriate time(s) of year and will reflect current field conditions and observations regarding the target species. No exotic animal species control is expected to be necessary and will be implemented only under extreme conditions.

5.4 FIRE MANAGEMENT

Fire is an important element in the ecology of southern California and presents a potential hazard to buildings located adjacent to open space area. Fuel management zones for the nearby development areas would occur entirely outside of the mitigation area. As such, no regular fuel modification is anticipated.

5.4.1 Fire Response Planning

Access would be provided in the event of fire. When requested, the Habitat Manager will coordinate with the local fire marshal to discuss appropriate access locations and measures to minimize impacts to sensitive biological resources in the event of a fire.

5.5 ANNUAL REPORT

An annual report summarizing the status of the mitigation area, results of the annual surveys, and all major actions taken since the last assessment will be provided to the City each year. This annual report will include: (1) information on the extent and overall health of the various habitats present within the preserve area; (2) any changes to the health or distribution of sensitive plant and animal species observed (provided on a map); (3) any observed changes resulting from natural or man-made causes; (4) summary of any management issues/tasks addressed during the last year; and (5) tasks or recommendations for changes in management identified for the next year. In addition, the annual report will include: (1) results of floral and faunal surveys; (2) photographs of the site from fixed photo points; (3) summary of the endowment; (4) funds generated, expenses incurred in performing site management, and year-end balance; (5) locations of sensitive species plotted on a site map; and (6) site maps providing information on the cumulative area of exotic species, trespass, dumping, and other concerns. This report also will compare the most recent data with that collected in previous years, and will outline appropriate remedial measures if habitat or sensitive species issues are noted.

5.6 OPEN SPACE BARRIERS

The mitigation area will be fenced during the initial 5-year maintenance and monitoring period. Following completion of the five-year program, the Habitat Manager will assume barrier inspection and replacement responsibilities. Inspection of the barriers will occur during monthly patrols, with a thorough barrier inspection conducted annually (in October). Ongoing barrier inspection and maintenance costs would be included in the HMP annual budget estimate. In the event that the barrier/fence is damaged or removed, the Habitat Manager would immediately replace it. If appropriate, the Habitat Manager also would inform the Code Enforcement and/or Police Department of the City of the damage.

Methods/Schedule

Inspection of the fence will occur during regularly scheduled visits. In the event that the fence is damaged or removed, the Habitat Manager will notify the City for repair/replacement. If appropriate, the Habitat Manager also would inform the Code Enforcement and/or Police Department of the City of the damage.

5.7 PUBLIC AWARENESS

Acceptance of the preserve area as a valuable amenity by the community is an important consideration for the long-term viability of associated open space resources. To that end, steps will be taken to encourage participation by local residents and community members in the stewardship of the preserve area. It is also a goal of this plan that community members take pride in the maintenance and protection of the preserves. The community can help police the preserve area and assist the Habitat Manager, who cannot be present 24 hours a day, in preventing vandalism and unauthorized activities from occurring.

5.7.1 Measures

The following measures will be taken to maximize public awareness and acceptance of the open space:

- Steel signs attached to the fence at approximately 50 foot intervals will provide notice, in both English and Spanish, that the area is an ecological preserve and that trespassing is prohibited. Maintenance/replacement of these signs will be the responsibility of the Habitat Manager.

- The Habitat Manager will inform adjacent residents (or other applicable individuals) that any damage to or alteration of the fence or the site would violate the Municipal Code, and be subject to possible action, fine, and/or criminal charges.

- The Habitat Manager will prepare and distribute an educational brochure to inform nearby residents and businesses of the sensitivity of the habitat, and how to minimize impacts to habitat. The brochure will include information regarding responsible pet care, proper landscape maintenance techniques, brush management, water quality, human intrusion, and lighting and noise requirements. It also will inform residents of the importance of not collecting plants or animals within the habitat. In order to help enforce the requirements, contact information for the City Neighborhood Code Compliance will be included in the brochure.

5.7.2 Schedule

Within 3 months of the start of habitat management activities, the Habitat Manager will ensure all signs have been installed and distribute educational brochures to the current residents adjacent to the preserve area.

5.8 ADDITIONAL MANAGEMENT CONCERNS

5.8.1 Trash Removal

The Habitat Manager will be responsible for the removal of trash from the preserve area. Trash removal would typically occur on an as-needed basis and would be conducted as an element of regularly scheduled site visits. In cases of excessive trash disposal within the preserve area, the Habitat Manager may enlist the help of community volunteer groups, as discussed above.

5.8.2 Illegal Occupancy

Illegal occupancy is a common problem in open space area within San Diego County. The Habitat Manager will regularly survey the site for encampments and report them to the City and applicable law enforcement agencies.

5.8.3 Poaching/Collecting

Removal of any plants, animals, rocks, minerals, or other natural resources will be prohibited within the preserve area. Anyone found removing natural resources would be informed, in a non-confrontational manner, that these activities are illegal. The Habitat Manager should maintain a log of all incidences of collecting within the preserve. Should a situation turn confrontational or if requests to discontinue illegal activities are ignored, the Habitat Manager shall report the offender(s) to the City and applicable law enforcement agencies.

The Habitat Manager may, at his/her discretion, allow seed collection and plant cuttings to be used for revegetation efforts within or outside of the preserve area. Any such activities will take place under the direct supervision of the Habitat Manager, and the amount of collected plant materials will be limited to ensure protection of on-site resources.

5.8.4 Lighting

Lighting from the developed adjacent projects proposed future projects will not be directed toward the preserve area. The design of all project adjacent lighting features will conform to the guidelines in the City MSCP Subarea Plan Adjacency Guidelines (City 1997a). The Habitat Manager will notify any neighbors who are in violation of these lighting restrictions. If the issue is not resolved, the Habitat Manager shall report the offender(s) to the City and applicable law enforcement agencies.

5.8.5 Fencing

In addition to the fencing described above, additional fencing may be used as a short- or long-term tool to protect habitat if encroachment becomes a problem and other means to deter unauthorized access (e.g., signing and notices to local residents) are not effective. Fencing may also be used for the following specific purposes:

- Protection of any revegetated habitat area (e.g., as required to replace habitat after catastrophic natural events such as fires).
- Prevention of unauthorized vehicle access.
- Prevention of unauthorized trail formation within the mitigation area.

Any proposed use of fencing within the preserve area (except the barriers described above) will be identified by the Habitat Manager based on observed site conditions and related issues (e.g., unauthorized access). The Habitat Manager would then submit proposed fencing needs and locations to the City for approval prior to installation.

7.0 REFERENCES

City of San Diego (City). 1997a. Multiple Species Conservation Program. City of San Diego MSCP Subarea Plan. March.

1997b. City of San Diego MSCP Implementing Agreement Documents.

Alden Environmental, Inc. (Alden). 2016a. Biological Technical Report for the Merge 56 Development Project.

2016b. Wetland Mitigation Plan for the Merge 56 Development Project.

Appendix K

Mitigation Documentation for McGonigle Creek (Rancho Del Sol)

Appendix K1

A Wetlands Creation Plan, The McGonigle Creek Wetlands Mitigation Bank

A Wetlands Creation Plan

The McGonigle Creek Wetlands Mitigation Bank

Prepared for

Robert D. Barczewski, Trustee
Barczewski Family Trust
c/o Paul Metcalf, DevCon
5681 Bellevue Avenue
La Jolla, CA 92037

Prepared by

Vincent N. Scheidt
Biological Consultant
3158 Occidental Street
San Diego CA 92122
(858) 457-3873

Final January 2016
~~January 2010~~

Vincent N. Scheidt, M.A.
Certified Biological Consultant

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1. INTRODUCTION

a. Background and Project Purpose

The McGonigle Creek Wetlands Mitigation Bank (hereafter “Wetlands Mitigation Bank”) project consists of the creation of a formal wetlands mitigation bank on portions of the Rancho del Sol property (portions of APNs 305-040-21 and 305-060-20) in the City of San Diego, California. These areas are located within the floodplain of McGonigle Creek (“Wetlands Re-establishment Area” on Figure 1) and within the floodway of McGonigle Creek and a tributary to McGonigle Creek (“Wetlands Rehabilitation/Enhancement Areas” on Figure 1). For purposes of this plan, the term "wetlands creation" is synonymous with wetlands re-establishment, wetlands rehabilitation, and wetlands enhancement as defined the U.S. Army Corps of Engineers. The project includes limited grading to lower the elevations of the wetlands re-establishment area to the proper level to support wetlands habitat (within approximately one foot of the current elevations of McGonigle Creek), followed by the planting of this area with native species, biological monitoring, and maintenance. Grading will not be necessary in the wetlands rehabilitation/enhancement areas, as these areas already support wetlands. Activities in these areas will mainly consist of habitat rehabilitation and enhancement, including the removal of exotic species, the limited planting of native species, biological monitoring, and maintenance.

This plan must be approved by the City of San Diego (City), the U.S. Army Corps of Engineers (ACOE), Regional Water Quality Control Board (RWQCB), U.S Fish and Wildlife Service (USFWS), and California Department of Fish and Wildlife (CDFW) prior to the initiation of wetlands re-establishment, rehabilitation, and/or enhancement activities. A program for selling wetlands re-establishment and wetlands rehabilitation/ enhancement credits to other projects impacting wetlands would be developed in consultation with the City and the ACOE, RWCQB, USFWS, and CDFW (Resource Agencies) as part of an Interagency Review Team (IRT). The Wetlands Mitigation Bank project requires the placement of a Conservation Easement over the entirety of the Wetlands Mitigation Bank site. This easement would be managed pursuant to an IRT-approved Habitat Management Plan (HMP) by an approved long-term management entity (i.e., Habitat Manager).

Implementation of the Wetlands Mitigation Bank project, as proposed, will result in the re-establishment of approximately 9.79 acres of new wetlands habitat adjacent to the floodway of McGonigle Creek, through the conversion of old agricultural land. This will occur in two phases. Implementation will also result in the rehabilitation/enhancement of approximately 3.01 acres of existing wetlands habitat within the current floodway McGonigle Creek and a minor tributary to McGonigle Creek. Up to approximately 1.90 acres of the wetlands re-established and 2.51 acres of the wetlands restored/enhanced under this plan will be used to mitigate for impacts to wetlands and “waters” that occurred or are anticipated to occur elsewhere on the Rancho del Sol property in association with Stipulated Settlement GIC 801949 (Attachment B). This leaves a

minimum of approximately 7.89 acres of re-established wetlands habitat to be made available for sale as “wetlands re-establishment credits” and a minimum of approximately 0.50 acre of rehabilitated/enhanced wetlands habitat available for sale as “wetlands rehabilitation" or "wetlands enhancement credits” (Table 2). The final credits available will be determined once all regulatory agency permits are secured, Stipulated Settlement GIC 801949 has been implemented, and the final impacts of that implementation action are assessed. These remaining credits will be sold to buyers needing offsite wetlands mitigation credits to offset impacts associated with their respective projects.

b. Project Location

The Wetlands Mitigation Bank site is located south and east of Caminito Mendiola in the Carmel Valley area of the City of San Diego (Figure 1). The majority of the Wetlands Mitigation Bank is within the City’s Multi-Habitat Planning Area (Figure 2) and qualifies as Environmentally Sensitive Lands (ESL), as defined by the City. ESL lands consist of steep slopes and areas supporting environmentally sensitive resources.

c. Goals and Objectives

The goal of this Wetlands Creation Plan is the creation of viable native wetlands vegetation in a section of the McGonigle Creek floodplain that currently supports fallow agriculture (wetlands re-establishment area) and the rehabilitation/enhancement of portions of McGonigle Creek and a tributary to McGonigle Creek that are currently infused with non-native species (wetlands rehabilitation/enhancement areas). The purpose of this Plan is to permit the eventual sale of the re-established and restored/enhanced wetlands as wetlands mitigation “credits” to development projects in the vicinity with unavoidable wetlands impacts. By the end of a five-year maintenance and monitoring period, the Wetlands Mitigation Bank shall support mature, undisturbed, and self-sustaining riparian vegetation and shall provide high-value native habitat for the area’s resident wildlife.

2. EXISTING CONDITIONS

The analysis presented in this plan is based on a forensic biological field survey of portions of the Rancho del Sol property (the Rancho del Sol Stipulated Judgment Study Area) that include the Wetlands Mitigation Bank. The results of this survey are summarized in Attachment B, *Results of a Forensic Biological Survey - Rancho del Sol Stipulated Judgment Study Area, GIC 801949, Carmel Valley, City of San Diego* (Scheidt, 2011). This survey identified three habitat-types that are currently present on the Wetlands Mitigation Bank site: Intensive Agriculture, Southern Riparian Scrub, and Disturbed Wetland. Sensitive species found onsite or in the immediate vicinity of the site include Nuttall’s Scrub Oak *(Quercus dumosa)*, San Diego Sagewort (*Artemisia palmeri*), and Orange-throated Whiptail (*Cnemidophorus hyperythrus beldingi*).

a. Environmental Setting – Wetlands Re-establishment Area

The wetlands re-establishment area consists of a long, narrow, flat piece of land within the floodplain of McGonigle Creek (Figure 3 and 4). This area supports Intensive Agriculture, as it has been used for many years to store and grow nursery plants, such as Queen Palm *(Syagrus romanzoffiana),* Mexican Fan Palm *(Washingtonia robusta),* and others. As of December 2008, most of the nursery activity in this area had ended, with greenhouses and hundreds of container plants being removed. The wetlands re-establishment area currently supports mostly bare dirt and weedy species. A small, relict stand of Eucalyptus (*Eucalyptus* sp.) trees is present at the eastern end of the wetlands re-establishment area, as are a number of palms immediately adjacent to the McGonigle Creek floodway. Southern Maritime Chaparral is present to the south of the wetlands re-establishment area.

San Diego Sagewort *(Artemisia palmeri)*, a sensitive plant species, is present along the margins of the McGonigle Creek floodway and broader floodplain. This species will be utilized in the re-establishment of wetlands habitat in this program.

The wetlands re-establishment area currently totals approximately 9.79 acres of Intensive Agriculture. Following the implementation and success of this Wetlands Creation Plan, this area will convert to 9.79 acres of Riparian Forest vegetation in two phases.

b. Environmental Setting – Wetlands Rehabilitation/Enhancement Areas

The wetlands rehabilitation/enhancement areas include the portion of McGonigle Creek that is adjacent to the wetlands re-establishment area and a portion of a tributary to McGonigle Creek that is located a short distance to the north (Figure 3). The floodway of McGonigle Creek currently supports disturbed Southern Riparian Scrub (SRS). This habitat-type is indicated by willows (*Salix* spp.), small California Sycamore (*Platanus racemosa*), Mule Fat (*Baccharis glutinosa*), Cattails (*Typha latifolia*), and other riparian species. Non-native species found in the SRS include Salt Cedar (*Tamarix* sp.), Canary Island Palm (*Phoenix canariensis*), Giant Wild Reed (*Arundo donax*), Pampas Grass (*Cortaderia* sp.), Eucalyptus, and others. Disturbed Wetlands is found in the floodway of the tributary to McGonigle Creek. This habitat-type is dominated by exotic species, such as Salt Cedar, Canary Island Palm, Eucalyptus, and others. Native species present in the Disturbed Wetlands include Arroyo Willow (*S. lasiolepis*), Mule Fat, and Bulrush (*Scirpus* sp).

The wetlands rehabilitation/enhancement areas currently support 2.73 acres of SRS and 0.28 acre of Disturbed Wetland. Following the implementation and success of this Wetlands Creation Plan, these areas will support 3.01 acres (2.73 acres + 0.28 acre) of higher-quality SRS vegetation.

c. Reference Site

The existing riparian vegetation in McGonigle Creek will be quantitatively and qualitatively monitored in order to compare its viability, diversity, and species composition with the planted stock. By the end of five years, it is anticipated that the planted areas will blend with the adjoining habitat and provide continuous high-value habitat.

3. RESPONSIBILITIES

a. Financial Responsibility

The property owner (Barczewski Family Trust) is currently responsible for funding all wetlands re-establishment, rehabilitation and enhancement activities, including site preparation, planting, exotics removal, maintenance, and biological monitoring. This responsibility shall transfer to any subsequent owner(s) of the Wetlands Mitigation Bank property. A revegetation agreement shall be signed by the City of San Diego following approval of this Plan and accompanied by the required security as established by the City.

b. Wetlands Creation Team

The following parties shall be responsible for implementation of this Wetlands Creation Plan:

- The property owner (Barczewski Family Trust) shall ensure that all necessary funds are in place to ensure that site work is completed in an effective and timely manner.

- The City of San Diego Development Services Department (DSD) is responsible for ensuring that implementation of this plan takes place in a timely and effective manner.

- The Project Biologist shall be responsible for preparing and obtaining City of San Diego approval of this plan, for supervising all site preparation and planting activities, and for coordinating with the Installation Contractor.

- The Landscape Architect shall be responsible for designing a Landscape Revegetation Planting Plan in coordination with the Project Biologist and to the specifications of the City's Landscape Standards and Biology Guidelines, in compliance with the requirements of the ESL ordinance.

- The Installation Contractor shall be responsible for the timely and effective installation of all materials identified in this Plan and for coordinating directly with the Project Biologist.

- The Revegetation Monitor shall be responsible for conducting regular site inspections, assessing site

conditions, and preparing regular biological monitoring reports. The Project Biologist may serve as the Revegetation Monitor.

- The Maintenance Contractor shall be responsible for the maintenance of the Wetlands Mitigation Bank for the duration of the biological monitoring period, as discussed subsequently in this report. If properly qualified, the Installation Contractor may serve as the Maintenance Contractor.

- Seed/plant collection/procurement contracting – All of the plants recommended for use in this revegetation plan are normally readily available from local sources, such as Las Pilitas Nursery, Tree of Life Nursery, and others. Container plant sources should be contacted as far in advance as possible in order to secure the appropriate selection of plants. Site-collected seeds and container plants are desirable to the extent feasible.

All members of the Wetlands Creation Team shall be experienced in working with successful wetlands re-establishment, rehabilitation, and enhancement projects in San Diego County.

This plan has been designed by Vincent N. Scheidt, Certified Biological Consultant and Certified Revegetation Planner. See Attachment A for a description of the Project Biologist's qualifications.

4. PLAN IMPLEMENTATION GUIDELINES

a. Preparation of the Wetlands Re-establishment Area

As discussed above, the wetlands re-establishment area will be graded to the appropriate levels (within approximately one foot of the current elevations of the surface of McGonigle Creek) to support new wetlands habitat and a braided drainage. Equipment to be used to prepare the 9.79-acre wetlands re-establishment area would likely include excavator, backhoe, etc. This effort will occur in two phases, with the first phase (Phase I) consisting of the southwestern-most segment of McGonigle Creek on the subject property. This consists of 1.86 acres of wetlands re-establishment. The second phase (Phase II), which consists of 6.38 acres of wetlands re-establishment, will be implemented once sufficient funds are available to cover the costs of construction.

Prior to construction, all surface debris within the wetlands re-establishment area will be removed by hand. The wetlands re-establishment area shall be hand-cleared of all surface vegetation, with the exception of any salvageable native species, which will be flagged off by the Project Biologist. All site preparation activities shall be completed under the direct, full-time supervision of the Project Biologist.

b. Wetlands Rehabilitation/Enhancement Activities

Wetlands rehabilitation/enhancement activities shall consist mainly of the removal of all non-native species from the wetlands rehabilitation/enhancement areas, along with any recommended planting of container stock in bare areas to provide additional native vegetative coverage. Prior to the initiation of exotics removal, the Project Biologist shall flag off all non-native species intended for removal. Great care must be taken to avoid or minimize damage to native vegetation during the removal of exotics. All wetlands rehabilitation/enhancement activities shall be completed under the direct, full-time supervision of the Project Biologist.

Smaller exotics may be hand-pulled from the wetlands rehabilitation/enhancement areas. Larger exotics will be cut off at ground level and their stumps will be painted with an herbicide such as Round-up® or Pathfinder®. The application of herbicide may need to be repeated throughout the maintenance and monitoring period in order to ensure that exotic specimens do not regenerate within the wetlands rehabilitation/enhancement areas.

Following the initial round of exotics removal, bare patches within the wetlands rehabilitation/enhancement areas shall be planted with the native wetlands species listed in Table 1. Table 1 contains an estimate of the numbers of container stock that will be needed for the wetlands rehabilitation/enhancement areas. However, the final amounts and locations of the container stock shall be determined by the Project Biologist immediately following the initial removal of non-native species from the wetlands rehabilitation/enhancement areas.

c. Plant Sources and Procurement

All of the plants recommended for use in this Wetlands Creation Plan are available from local nursery sources. Because the applicants (the Barczewski family) are in the nursery business, they will provide site-grown specimens grown elsewhere on the Rancho del Sol property for all planting. Seeds and/or cuttings shall be collected from areas within or adjacent to the Wetlands Mitigation Bank site itself or from locations within the same watershed as the site. In any case, no seeds or container plants will be utilized from any source where the stock collection took place outside of the City of San Diego.

A specific plant palette has been designed for this project; it has been compiled from indigenous native species that are currently present in the SRS in McGonigle Creek. Table 1 defines quantities, types, and sizes of all required container stock plants. All plant materials used shall be of the highest quality available and shall be subject to inspection and approval by the Project Biologist for health, vigor, and correct species identity prior to planting.

d. Timing of Planting

Container stock planting and hydroseeding shall be generally restricted to the fall-winter-spring growing season, herein defined as the period between 1 November and 1 April. Planting may occur at other times of the year, although it should be recognized that this would require significantly increased amounts of irrigation, as well as the potential need for replacement of container plants that fail to thrive. It is estimated that planting will require an approximately one-week period, which will commence immediately following the final preparation of the wetlands re-establishment area and wetlands rehabilitation/enhancement areas for each project phase.

In order to avoid conflicts with the City's MHPA Adjacency Guidelines, the federal Migratory Bird Treaty Act, and Sections 3503, 3503.5 and 3513 of the California Fish and Game Code, the Wetlands Mitigation Bank project must not remove or disturb any potential nesting habitat during the bird breeding season, defined as between 1 January and 15 September of each year. This restriction will be waived by the City with concurrence from the Wildlife Agencies (USFWS, CDFW) upon completion of a pre-construction nesting bird survey of all areas within 300 feet of the proposed activity. If no nesting survey is completed, "presence" will be assumed, and avoidance will be required.

e. Proposed Planting Methods

All planting shall occur under the direct supervision of the Project Biologist. Container stock plants will be hand-planted immediately following site preparation. The precise location of all container plants will be hand-spotted within the wetlands re-establishment area and wetlands rehabilitation/enhancement areas by the Project Biologist to maximize survivorship potential. A posthole digger shall be used to create holes no more than 50% larger than the diameter of the root ball of each plant. Each hole will be filled with water three times and allowed to completely drain immediately prior to planting. Small amounts of mulch material (leaf litter, etc) from the adjoining wetlands habitat in McGonigle Creek may be salvaged to be used as an inoculum if available. This mulch will be worked into the soil to a depth of approximately 18 inches and used to blend with the backfill material at each planting hole. This will provide suitable microrrhizae to facilitate rapid growth and plant development. Surface fertilization shall not be permitted in order to reduce chances for competition by aggressive weedy species. Fertilizer tablets may be added to the bottom of the planting holes at the discretion of the Project Biologist in consultation with the Installation Contractor at the time of planting.

All California Sycamores will be planted on 30-foot centers (one specimen per 900 square feet). Arroyo Willows and Mule Fat will be planted on ten-foot centers. San Diego Sagewort will be intermixed as an understory among the sycamores, willows, and Mule Fat, and will be planted randomly within approximately six feet of the trunks of the primary specimens.

The species selected for the plant palette are indigenous native species found in the SRS associated with

McGonigle Creek and reflect the natural diversity onsite and immediately adjoining the site. Some native species that are found in the SRS and Disturbed Wetlands onsite, such as Cattails and Bulrush, are not included in the container stock plant palette, as these species are expected to naturally recruit onto the wetlands re-establishment area and wetlands rehabilitation/enhancement areas from the adjoining wetlands. This will increase the species diversity of the Wetlands Mitigation Bank.

f. Irrigation

Temporary irrigation is recommended in order to ensure that the wetlands re-establishment area achieves adequate vegetative coverage. This should consist of a brown-line, surface-only system that can be easily removed after the stock is established. The irrigation system should be designed to last several years under harsh weather conditions. Permanent irrigation is not recommended. Irrigation is not recommended for the wetlands rehabilitation/enhancement areas, as these areas already receive sufficient flow to support wetlands.

Irrigation shall occur on a year-round basis, except during the winter months, when normal precipitation should preclude the need for protracted irrigation. If properly planted, native wetland plants will generally flourish without the need for any type of permanent irrigation. Irrigation is most critical during the first year following planting. Watering shall be gradually phased-out after the second or third year following planting, depending on the success of wetlands creation.

5. MAINTENANCE

a. Site Protection

The Wetlands Mitigation Bank site contains existing sensitive habitat associated with McGonigle Creek and, to a lesser extent, the tributary of McGonigle Creek. Therefore, extensive protection measures will be required to protect these areas during site preparation and project implementation.

Prior to the commencement of this Plan, a preconstruction meeting is required to be held which includes a qualified biologist (i.e., the Project Biologist). The Project Biologist must be onsite as specified during the preconstruction meeting (discussed below) and the implementation of the Wetlands Creation Plan. In addition, the Project Biologist is responsible for carrying out/supervising any pre-grading sensitive fauna surveys, placement of habitat protection fencing, and enforcement of any required mitigation during wetlands creation activities, etc.

Prior to the initiation of site preparation, the Project Biologist will meet with the responsible parties to present the findings of this report in basic terms and explain the intent of the Wetlands Mitigation Bank project. A

primary issue discussed at this meeting shall be efforts by all involved to avoid impacts to areas of undisturbed native vegetation, both within and adjacent to the Wetlands Mitigation Bank site. The intent of the meeting will be to inform the attendees of the sensitivity of the habitat in these areas and thus presumably minimize losses.

As discussed elsewhere in this document, some grading will be required to bring the wetlands re-establishment area to the appropriate elevations for wetlands re-establishment. Prior to the commencement of any earth-moving activities, the perimeter of the wetlands re-establishment area shall be staked and flagged to distinguish it from the adjacent sensitive habitat in McGonigle Creek. The Project Biologist shall also identify any other sensitive habitats on in the vicinity of the wetlands re-establishment area and mark these habitats accordingly. The stakes and flagging will be used as guidelines for the placement of temporary fencing at the edge of the sensitive habitats to remain undisturbed. This temporary fencing is required. The Project Biologist shall verify in the field that this temporary fencing has been placed appropriately. In addition, all sensitive habitat areas adjacent to earth-moving activities shall be protected in accordance with required BMPs in order to reduce potential secondary impacts. The Project Biologist shall:

(1) Stake or flag the specific location of the temporary habitat protection fence and examine and verify the correct placement of said fencing after it has been installed, but prior to the initiation of earth-moving activities.

(2) Flag-off for removal and ensure that all exotics are successfully removed and exported from the Wetlands Mitigation Bank site to a legal disposal location.

(3) Inspect stormwater management measures to ensure that all erosion control devices (straw waddles, sand bags, etc.) have been properly installed, preventing potential added erosion concerns.

(4) Be onsite during earth-moving activities adjoining McGonigle Creek and its associated wetlands habitat.

(5) Document in writing that the habitat protection fence and erosion control devices have remained in place during the earth-moving and planting period. Evidence of this shall be provided in a letter to the City and the Resource Agencies.

b. Weed Control

Weeding of non-natives found in the wetlands re-establishment area and wetlands rehabilitation/ enhancement areas shall occur on a regular basis throughout the maintenance and monitoring period. The Revegetation Monitor, in coordination with the Maintenance Contractor, shall define the need for weeding and

a weeding schedule. At a minimum, four weeding visits shall be conducted during each year of the five years, with two to three of these visits occurring in the spring and at least one of these visits occurring in the summer. The actual weeding schedule shall be flexible and based on precipitation, weed recruitment, and other factors.

The weeding effort shall focus on the manual removal of perennial exotics that become established in the Wetlands Mitigation Bank, including (but not limited to) Salt Cedar, Mexican Fan Palm, Canary Island Palm, Eucalyptus, Giant Wild Reed, Pampas Grass, Hottentot Fig (*Carpobrotus edulis*), Castor Bean *(Ricinus communis)*, Brazilian Peppertree *(Schinus terebinthifolius)*, *Acacia*, and others. Removal of exotics shall be under the direction of the Revegetation Monitor.

The use of control agents such as herbicides or pesticides will be minimized. Any required use will be under the direction of the Revegetation Monitor in coordination with the City of San Diego.

c. Horticultural Treatments

Pruning or trimming of any native species (planted, salvaged, or recruited) that become established within the Wetlands Mitigation Bank site shall not be permitted under any circumstances, unless determined to be necessary by the Revegetation Monitor.

d. Erosion Control

All sensitive habitats adjacent to the Wetlands Mitigation Bank site shall be protected in accordance with required BMPs to reduce the potential for erosion into these areas. Erosion control devices (straw waddles, hay bales, etc.) must be installed prior to planting. See Section a, above.

e. Replacement Plantings

Any dead or diseased plants shall be removed and new replacement specimens shall be planted to meet the goals of the Wetlands Creation Plan. The need for replacement, size of replacement plants, timing of replanting, etc. will be determined by the Revegetation Monitor. Any required removal of diseased plants shall be conducted under the direct supervision of the Revegetation Monitor.

f. Trash Removal and Vandalism Repair

Removal of trash and litter from the Wetlands Mitigation Bank will occur on a regular basis, concurrent with the regular weeding visits. This will include the clearing of all surface debris present within the wetlands re-establishment area and wetlands rehabilitation/enhancement areas prior to planting. Any planting debris shall be removed from the site immediately, and no trash may be stored onsite overnight.

The Revegetation Monitor shall be responsible for the general condition of the Wetlands Mitigation Bank by directing the removal/clean-up of any illegally dumped materials, litter, and/or graffiti. Any vandalism resulting in damage to fences or plants within the Wetlands Mitigation Bank must be remediated immediately. These tasks shall occur as often as necessary and approved by the Revegetation Monitor.

g. Irrigation Maintenance

The Maintenance Contractor shall perform routine maintenance of the irrigation system. This shall include replacement of nozzles, broken lines, vandalized timers, etc. Irrigation maintenance shall be flexible to account for weather.

6. MONITORING AND SUCCESS ASSESSMENT

a. Monitoring and Reporting Schedules

Biological monitoring will begin shortly before the first day of planting with an inspection of the wetlands re-establishment area, the wetlands rehabilitation/enhancement areas, and the container stock. It will terminate at the end of a five year period, assuming that the performance standards discuss below have been met at this time. This five year period will begin at the successful completion of all initial planting activities, as determined by the DSD. If success criteria have not been achieved by the end of the five year maintenance and monitoring period, it may be necessary to extend this period. Monitoring inspections will be conducted four times during the first year following plan implementation, twice during the second and third years, and once during the fourth and fifth years.

Letter-format reports summarizing the qualitative and quantitative results of biological monitoring shall be submitted to the DSD at the end of each year of monitoring.

b. Performance Standards

By the end of the first two years of monitoring, seventy-five percent (75%) of the planted container stock shall be alive and thriving. By the end of the third, fourth, and fifth years of monitoring, survivorship of the container stock shall be at sixty percent (60%). These percentages represent a realistic goal, as the more robust stock develops and matures, precluding the less well-established specimens. The percentage of native vegetative cover in the wetlands re-establishment area and wetlands rehabilitation/enhancement areas shall equal no less than eighty percent (80%) by the end of the fifth year of monitoring. This assumes that the container stock plants will become well established and that the cover of weeds will be maintained at less than ten percent (10%) at all times. In order to ensure that exotics removal has been effective within the wetlands rehabilitation/enhancement areas, evidence must be provided that no specimens of Salt Cedar, Mexican Fan Palm, Canary Island Palm, Eucalyptus, Hottentot Fig, Giant Wild Reed, Castor Bean, Pampas Grass,

Brazilian Peppertree, or Acacia have been observed within these areas for the final three years of the five-year monitoring period. Verification to that end shall be provided in the annual monitoring reports.

c. Monitoring Procedures

Biological monitoring will include plant height and distribution measurements, survivorship measurements, and a qualitative analysis of the native plant cover, weed/exotics cover, species diversity and recruitment, plant density, and developing species composition. Color photographs that clearly depict the height and cover of the native vegetation in the wetlands re-establishment area and wetlands rehabilitation/ enhancement areas will be taken during each site monitoring visit.

d. Reporting Program

The annual monitoring reports shall summarize the qualitative and quantitative results of the previous year of monitoring, including the current survivability of the container stock and overall conditions of the wetlands re-establishment area and wetlands rehabilitation/enhancement areas. The monitoring reports shall discuss any problems noted within the wetlands re-establishment area and/or wetlands rehabilitation/enhancement areas during the previous year of monitoring and actions taken to remediate these problems. The reports shall address the need for and amounts of replacement planting, weed control, erosion control, and irrigation maintenance within the wetlands re-establishment area and wetlands rehabilitation/enhancement areas.

Color photographs showing the overall wetlands re-establishment area and wetlands rehabilitation/enhancement areas, as well as representative specimens of each species planted, will be assembled to document the success of the Wetlands Creation Plan. These photographs will clearly depict the height and cover of the native vegetation in the respective areas, as well as any problems recommended for remediation. Permanent photo-documentation points will be established by the end of the first year of biological monitoring, and photos will be taken from these points at each subsequent site monitoring visit.

e. Remediation and Contingency Measures

Should the above survivorship percentages not be generally met at the end of each monitoring year, additional stock of like kind and size will be planted to compensate for all specimens lost, up to the required percentage of the original planting (see Section 5.e). Contingency measures for the failure to eradicate exotic species from the wetlands rehabilitation/enhancement areas shall consist of additional maintenance and monitoring until such time as these species are verified to have been removed for three consecutive years. In addition, a program for adaptive management and remedial actions shall be put into place to address identifiable problems in the Wetlands Mitigation Bank or the failure of the Wetlands Mitigation Bank to meet success goals.

If the City and the Regulatory Agencies determine that the performance standards described in this Wetlands

Creation Plan have been met at the end of the five year maintenance and monitoring period, then the revegetation monitoring component of this Wetlands Mitigation Bank program shall end and perpetual site management shall begin. Perpetual site management, including a Property Analysis Record, shall be described in the project's HMP. If, however, the City or the Regulatory Agencies determine that the Wetlands Mitigation Bank does not meet the performance standards at the end of the five year maintenance and monitoring period, then additional measures, based on site conditions at that time, shall be undertaken to meet the goals and objectives of this plan.

7. PERFORMANCE BOND

In order to ensure that sufficient funds are available to implement and monitor the Wetlands Mitigation Bank program, a performance bond, letter of credit, or other appropriate measure of assurance shall be provided by the applicant to the City of San Diego. The amount of the bond shall be established by the City based on similar-sized projects in the general vicinity.

8. NOTICE OF COMPLETION

The City of San Diego shall issue a Notice of Completion at the end of five years of maintenance and monitoring, assuming that the stated performance criteria have been met. The Notice of Completion shall release the City or the property owner(s) from any performance bonds being held by the City.

9.0 CERTIFICATION

I hereby certify that the information contained in this document is complete and accurate to the best of my knowledge as of November 2015

Vincent N. Scheidt
Certified Biological Consultant

Table 1. Container Stock

Common Name	**Scientific Name**	**Number of Plants Phase I/Phase II**	**Size**
California Sycamore	*Platanus racemosa*	700 300/400	5+ gallon
Mule Fat	*Baccharis glutinosa*	2,500 1,075/1,425	Rooted cuttings / 1 gallon
Arroyo Willow	*Salix lasiolepis*	2,500 1,075/1,425	Rooted cuttings / 1 gallon
San Diego Sagewort	*Artemisia palmeri*	1,400 602/798	4 inch / 1 gallon

Table 2. Proposed Wetlands Mitigation Credits

Resource Type Existing ⇨ Proposed	**Acres Existing Prior to Bank Establishment**	**Credit Type**	**Available Credits [1]**	
			Wetland Waters of the State Only	Wetland Waters of the U.S. and Wetland Waters of the State
Southern Riparian Scrub (SRS) SRS ⇨ SRS	2.73 acres	Enhancement	0 credits	2.73 credits
Disturbed Wetland (DW) DW ⇨ SRS	0.28 acres	Rehabilitation	0.28 credits	0 credits
Intensive Agriculture (IA) Southern Riparian Forest (SRF) IA ⇨ SRF	9.79 acres	Re-establishment	0 credits	9.79 credits

[1] *Mitigation requirements associated with implementation of STIP will consume up to 1.90 acres of the available re-establishment credits plus 2.51 acres of the enhancement /rehabilitation credits, leaving a minimum of 7.89 acres of re-established wetlands habitat to be made available for sale as "wetlands re-establishment credits" and a minimum of 0.50 acre of rehabilitated/enhanced wetlands habitat available for sale as "wetlands rehabilitation" or "wetlands enhancement credits"*

Figure 1. Regional Location – Portion of the U.S.G.S. "Del Mar, California" 7.5' Quadrangle

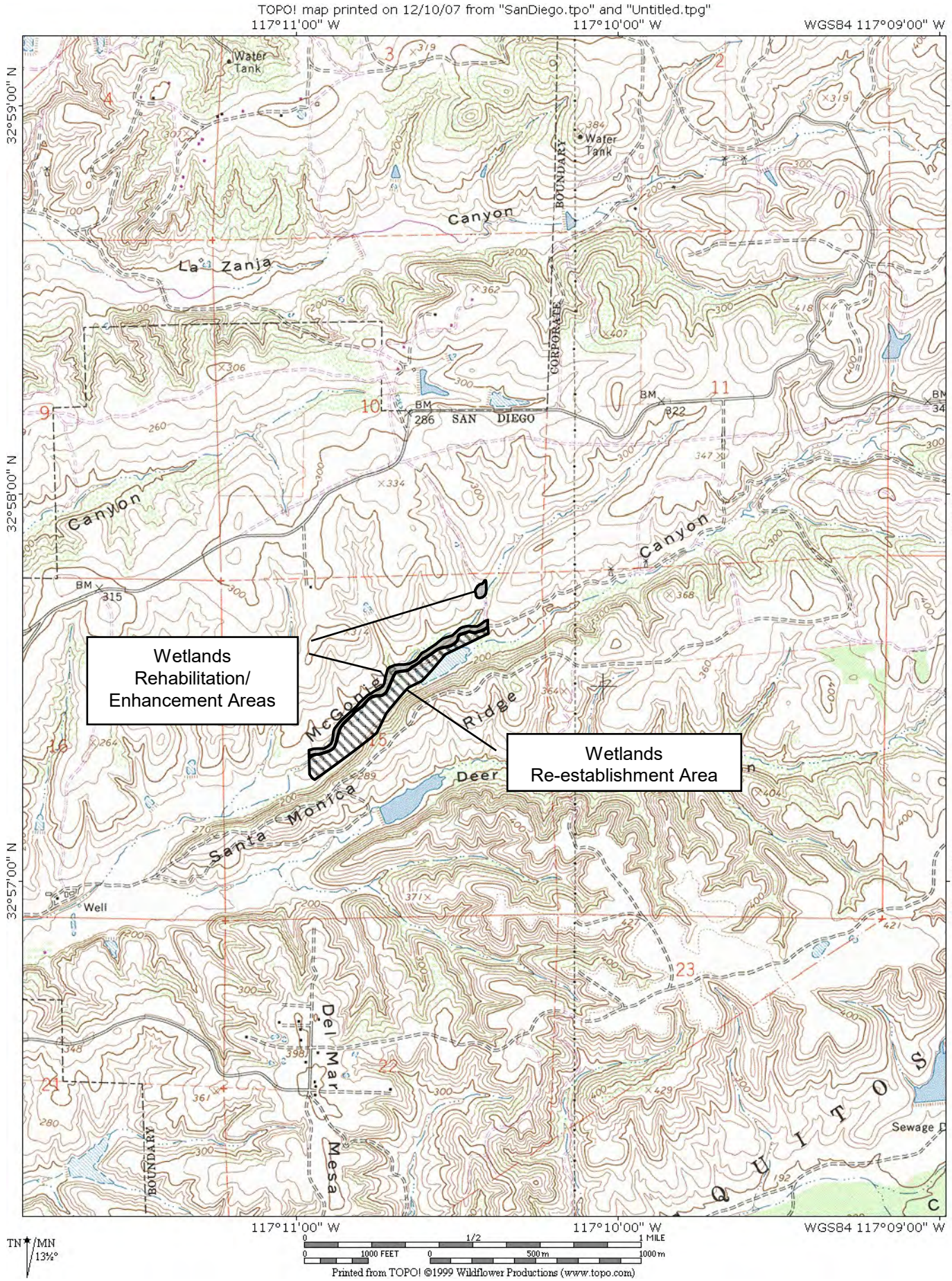
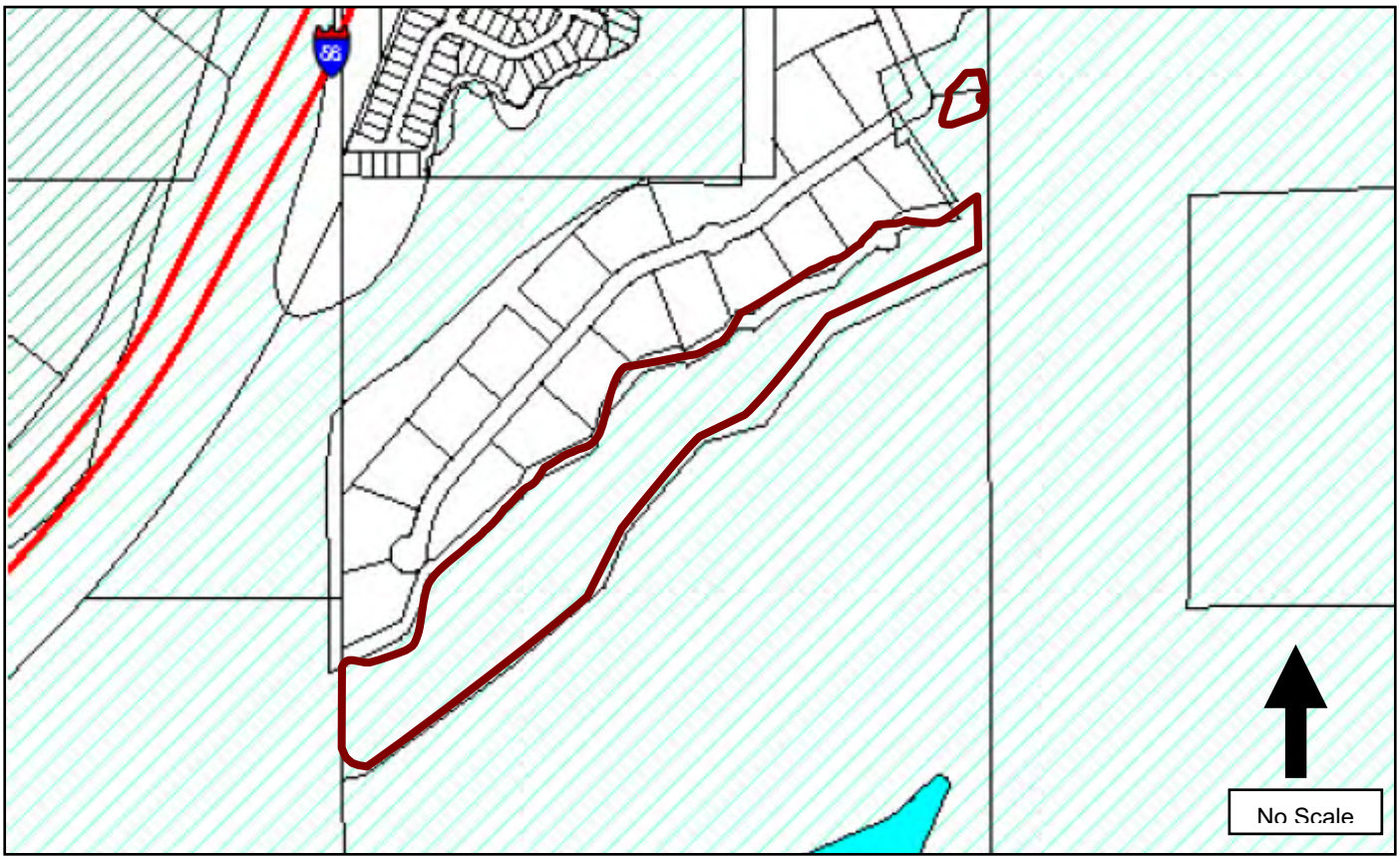


Figure 2. Approximate Limits of the Wetlands Mitigation Bank (in brown) in Relation to the City's MHPA Boundary[2]



[2] *Source – http://www.sangis.org/*

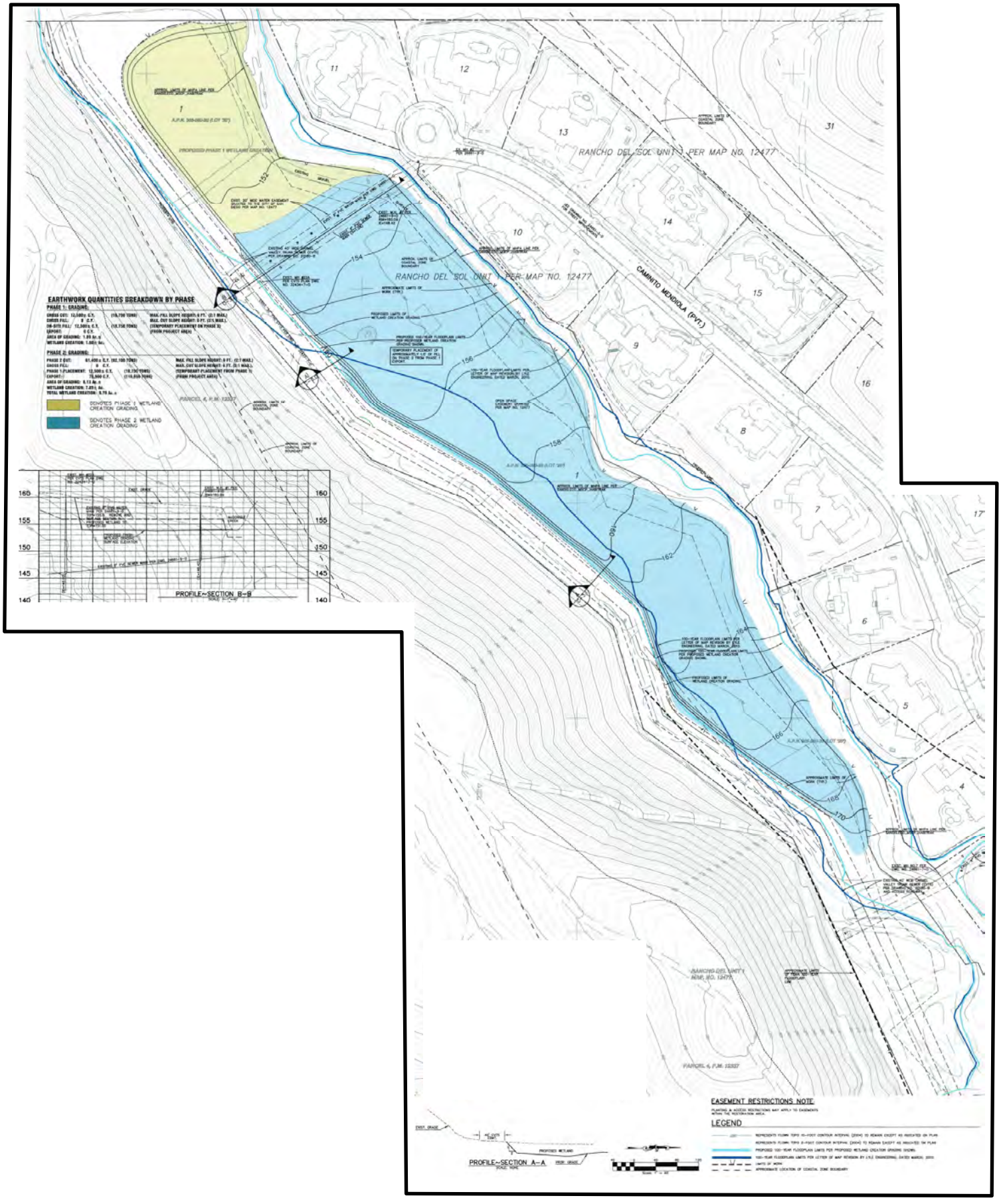
Figure 3. Aerial Photo Showing Approximate Limits of Wetlands Mitigation Bank

= Wetlands Re-establishment Area, Phase I and Phase II

= Wetlands Rehabilitation/Enhancement Areas

= Phase I - Portion of Wetlands Mitigation Bank to be used as mitigation for impacts of Stipulated Settlement GIC 801949 (approx), based on requirements for wetlands rehabilitation/enhancement (2.51 acres) and wetlands re-establshment (1.90 acres)

Figure 4. Preliminary Grading Plan Showing Limits of Wetlands Creation Grading



PLAN PREPARER QUALIFICATIONS

SAMPLE REVEGETATION PROJECTS - DESIGN, IMPLEMENTATION, AND MONITORING

Project - **Carmel Valley Riparian Enhancement Plan**
Year - 1989
Contact / Jurisdiction - Bruce McIntyre, LMA / City of San Diego
Responsibilities - Riparian Wetland Revegetation Plan preparation.

Project - **Point Loma Forced Main Sludge Line Habitat Restoration Plan**
Year - 1990
Contact / Jurisdiction - Jack Nakawatase / City of San Diego
Responsibilities - Final Coastal Sage Scrub and Maritime Succulent Scrub Revegetation Plan preparation, implementation, and 5-year monitoring

Project - **San Luis Rey Valley United Methodist Church Revegetation Plan**
Year - 1992
Contact / Jurisdiction - Morgan Brainerd / City of Oceanside
Responsibilities - Willow Woodland Restoration Plan preparation, implementation, and 3-year monitoring

Project - **Dictionary Village San Diego Barrel Cactus Transplantation Plan**
Year - 1993
Contact / Jurisdiction - Tom Olson / County of San Diego
Responsibilities - Cactus Transplantation Plan preparation, implementation, and 5-year monitoring.

Project - **Tecalote Oaks Woodland Restoration Plan**
Year - 1997
Contact / Jurisdiction - Bill Kidoo / County of San Diego
Responsibilities - Oak Woodland Restoration Plan preparation and implementation.

Project - **Mahogany Ranch Revegetation Plan**
Year - 1998
Contact / Jurisdiction - Ward Benshoof / County of San Diego
Responsibilities - Oak Woodland Restoration Plan preparation.

Project – **Paradise Valley Road Coastal Sage Scrub Revegetation Plan**
Year - 2002
Contact / Jurisdiction - Pacific Scene Homes / City of National City
Responsibilities - Oak Woodland Restoration Plan preparation and implementation.

Project – **Revegetation Plan for 2999 Racetrack View Drive, City of San Diego**
Year - 2004
Contact / Jurisdiction - Mr. Sam Ershadi/ City of San Diego
Responsibilities – Coastal Sage Scrub and Southern Maritime Chaparral Restoration Plan preparation and implementation.

Project – **Salvage and Translocation Plan for the Estates at Costa del Mar, City of San Diego**
Year - 2007
Contact / Jurisdiction – Perl Family Trust / City of San Diego
Responsibilities – Coast White Lilac salvage and revegetation plan preparation.

Attachment A

Complete Landscape Drawings

(to be provided)

Attachment B

Results of a Forensic Biological Survey - Rancho del Sol Stipulated Judgment Study Area, GIC 801949, Carmel Valley, City of San Diego

Attachment C

Jurisdictional Wetland Delineation Report for the Rancho del Sol Stipulated Judgment Study Area, GIC No. 801949, San Diego, California

Appendix K2

SCR for Rancho Del Sol
Stipulated Judgement SDP
for GIC No. 801949

DATE OF NOTICE: June 16, 2016

NOTICE OF DECISION

DEVELOPMENT SERVICES DEPARTMENT

PROJECT NO:	**480113**
PROJECT NAME:	**RANCHO DEL SOL SUBSTANTIAL CONFORMANCE REVIEW**
PROJECT TYPE:	**SUBSTANTIAL CONFORMANCE REVIEW, NO ENVIRONMENTAL DOCUMENT, PROCESS TWO DECISION**
APPLICANT:	**PAUL METCALF**
COMMUNITY PLAN AREA:	**PACIFIC HIGHLANDS RANCH**
COUNCIL DISTRICT:	**1**
CITY PROJECT MANAGER:	**Sandra Teasley, Development Project Manager**
PHONE NUMBER/E-MAIL:	**(619) 446-5271 / steasley@sandiego.gov**

On June 16, 2016, Development Services Department APPROVED an application for a Substantial Conformance Review (SCR) to the previously approved Project No. 157399 for proposed language changes to separate project specific mitigation obligations from project features. The SCR proposes to separate out the required mitigation from the voluntary mitigation, and defer the voluntary mitigation bank to a separate phase. **No development is approved with this Substantial Conformance Review.** The original project approved by the Planning Commission in November 2014 under Project No. 157399, approved a Site Development Permit to conduct restoration activities for a previously graded site and compliance with State Superior Court Stipulated Judgment - Case No. GIC 801949 and the 2007 Army Corps of Engineers (ACOE) Restoration Order (No. SPL-2002-0667). The site is located 3113 Rancho Sante Fe Farms Road at the southeast corner of Black Mountain Road and Rancho Santa Fe Farms Road in the AR-1-1 Zone, Coastal Overlay Zone (Deferred Certification Area) Airport Influence Area (MCAS-Miramar), and the Multiple Habitat Planning Area. This development is within the Coastal Overlay zone and the application was filed on May 2, 2016.

If you have any questions about this project, the decision, or wish to receive a copy of the resolution approving or denying the project, contact the City Project Manager above.

The decision by staff can be appealed to the Planning Commission no later than twelve (12) business days of the decision date. See Information Bulletin 505 "Appeal Procedure"**,** available at www.sandiego.gov/development-services or in person at the Development Services Department, located at 1222 First Avenue, 3rd Floor, San Diego, CA 92101. Please do not e-mail your appeal as it will not be accepted. The decision of the Planning Commission is final. This information will be made available in alternative formats upon request.

Internal Order No.: 24006564

cc: Frisco White, Chair, Pacific Highlands Ranch
Interested Parties via Electronic Mail

The City of SAN DIEGO
Development Services Department
Sandra Teasley / Project No.480113
1222 First Ave., MS 501 San Diego, California 92101-4101

RETURN SERVICE REQUESTED

Appendix L

Ledger for Deer Canyon Mitigation Bank

ENVIRONMENTAL CREDIT SALES AT
DEER CANYON CONSERVATION BANK

Total Bank Acreage - 60.0 acres

RESOURCES

CREDIT ALLOCATION BY TIER TYPE Presence of CA Adolphia and San Diego Barrel Cactus	TIER I So.Marit Chap.	TIER II Coastal Sage	TIER III Chamise Chap	California Adolphia 745 Plants	Barrel Cactus 132 plants	CREDIT TOTAL
TOTAL BY TIER TYPE	35.97	0.2	23.83	745	132	60

CLOSED SALES AND COMMITTED RESOURCES

	CLOSED SALE STATUS	BUYER / PROJECT NAME	TIER I	TIER II	TIER III	CA Adolphia 745 Plants	Barrel Cactus	CREDIT TOTAL	PROJECT JURISDICTION
1	Closed 9/20/05	Barry O'Brien (TPM 20477)			0.8	20		0.80	COUNTY OF SD
2	Closed 9/20/05	Sher Lot Split (TPM 2068)	0.73					0.73	COUNTY OF SD
3	Closed 9/20/05	Lawrence (L-14309)	0.10					0.1	COUNTY OF SD
4	Closed 9/20/05	Lux Art Institute	1.11					1.11	ENCINITAS
5	Closed 6/6/06	Tom Clotfelter (TM 5406RLP2)	3.30					3.3	COUNTY OF SD
6	Closed 7/14/06	Village Comm. Church P72-108WP	0.27					0.27	COUNTY OF SD
7	Closed 9/1/06	Carmel Valley Catholic Church	0.50		4.39			4.89	CITY OF SD
8	Closed 9/25/06	Leonard Bloom (Artesian Trails)			3	76		3	COUNTY OF SD
9	Closed 1/25/07	Belmont Trust (VAC 05-007)	3.22					3.22	COUNTY OF SD
10	Closed 4/4/07	Singh Project (L-14748)		0.2	2.8	520		3	COUNTY OF SD
11	Closed 4/9/08	Lin (VAC02-005)	3.30				1	3.3	COUNTY OF SD
12	Closed 10/7/09	Levie (TPM 21065; ER 07-08-005)			0.1	4		0.1	COUNTY OF SD
13	Closed 12/1/09	Carmel View (#72282)	3.54		1.65			5.19	CITY OF SD
14	Closed 12/30/09	Brett Ames (MND 99387)	0.39		0.39			0.78	CITY OF SD
15	Closed 6/1/07	Bridges at Pointsettia	2.50					2.5	CARLSBAD
16	Closed 8/30/10	Rhodes Crossing	13.81		6.88	125	131	20.69	CITY OF SD
17	Closed 6/14/12	La Jolla Centre III (# 176134)	2.41					2.41	CITY OF SD
18	Closed 9/8/15	Lot 7 Rhodes Crossing KB Homes	0.79		3.42			4.21	CITY OF SD
19	Closed 9/8/15	Carmel Mt. Road LDR #40-0386			0.4			0.4	CITY OF SD
		Total Closed Escrow	35.97	0.20	23.83	745	132	60.00	
		Remaining Available CREDITS	0.00	0.00	0.00	0	0	0.00	

Appendix M

Mitigation Documentation for Anderprizes Mitigation Site

Appendix M1

SANDAG Conservation Credit Agreement

CONSERVATION CREDIT AGREEMENT AMONG THE SAN DIEGO ASSOCIATION OF GOVERNMENTS ("SANDAG"), THE CALIFORNIA DEPARTMENT OF TRANSPORTATION ("CALTRANS"), THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE ("CDFW"), AND THE UNITED STATES FISH AND WILDLIFE SERVICE ("USFWS") (COLLECTIVELY "THE SIGNATORIES") (SANDAG AGREEMENT NO. 5009002)

WHEREAS, in April 2003 the SANDAG Board of Directors (SANDAG Board) adopted the 2030 Regional Transportation Plan entitled Mobility 2030, The Transportation Plan for the San Diego Region;

WHEREAS, Mobility 2030 includes a list of transportation network improvements and other transportation programs that are intended to improve the mobility of people and goods throughout the region;

WHEREAS, the list of transportation network improvements and other transportation programs that are intended to improve the mobility of people and goods throughout the region included in Mobility 2030 is updated every four years and is referenced herein as the current Regional Transportation Plan;

WHEREAS, the *TransNet* Extension Ordinance and Expenditure Plan (*Transnet* Extension Ordinance) Commission Ordinance 04-01 was adopted by the SANDAG Board on May 28, 2004, and subsequently approved by the voters on November 2, 2004, to provide for continuation of the half-cent transportation sales tax for 40 years to relieve traffic congestion, improve safety, and match state/federal funds;

WHEREAS, the *TransNet* Extension Ordinance included the establishment and implementation of an Environmental Mitigation Program (EMP), including 11 principles that further defined the major elements of the EMP;

WHEREAS, the *TransNet* EMP Principals No. 2, adopted by the voters with the *TransNet* Extension Ordinance, identified that funding be allocated for regional transportation projects included in the proposed *TransNet* Expenditure Plan, as well as for regional projects that are included in the adopted 2030 Regional Transportation Plan Mobility Network;

WHEREAS, on March 19, 2008, the signatories entered into a Memorandum of Agreement (MOA) on the implementation of the EMP as amended on August 12, 2013, including a conservation and mitigation strategy for regional transportation projects and local streets and roads;

WHEREAS, on June 15, 2012, the signatories entered into an agreement regarding the acquisition of Hidden Valley and the establishment of 935 acres of credits for transportation projects (HV Acquisition);

WHEREAS, SANDAG, pursuant to the MOA, has acquired property in advance of mitigation for regional transportation projects and local streets and roads per the provisions of the MOA and letters of concurrence and commitments from California Department of Fish and Wildlife (CDFW) and United States Fish and Wildlife Service (USFWS) ("the Wildlife Agencies");

WHEREAS, the signatories agree that a "regional transportation project" includes any project identified in the current Regional Transportation Plan, including highway, heavy rail, light rail, and/or bike and pedestrian projects under the management of SANDAG and/or Caltrans;

WHEREAS, the signatories agree that a "local public street and road" includes all publically contracted streets and roads within a jurisdiction of San Diego County and included in the most current Regional Transportation Improvement Program (RTIP);

WHEREAS, the signatories agree that regional transportation projects and local public streets and roads as defined herein are considered "transportation projects";

WHEREAS, SANDAG would like to memorialize the number of acres available for future transportation project impacts as envisioned under the MOA and establish a process to include additional properties as they are acquired;

WHEREAS, the signatories have determined that entering into this Conservation Acreage Agreement (Agreement) does not constitute a "project" as that term is used in the California Environmental Quality Act (CEQA), California Public Resource Code section 21000, et seq., that entering into this Agreement does not constitute a major federal action significantly affecting the human environment as those terms are used in the National Environmental Policy Act (NEPA), 42 U.S.C. section 4321, et seq., and that CEQA and NEPA compliance are conditions precedent to any signatory being committed to carry out any transportation project for which such compliance is required;

NOW THEREFORE, BE IT RESOLVED that the signatories agree as follows:

1. SANDAG will have the right to use land for the mitigation of transportation-related impacts for transportation projects as outlined in the version of Exhibit A attached hereto and subject to the revisions, conditions and caveats set-forth in this Agreement.

2. The area for which the credits can be used as mitigation (Service Area) and the type of credits available (e.g., vegetation community, tiered habitat, etc.) for each property in Exhibit A must be approved by the Wildlife Agencies and reflected on the Ledger in Exhibit A. Each credit is equal to one acre of habitat.

3. The signatories agree that the credits can only be used for transportation-related projects. Credits may not be sold to third-party users, or given to third parties for projects not implementing public capital improvement projects included in the Regional Transportation Plan RTIP.

4. Except for the HV Acquisition, SANDAG or its approved land manager(s) will be responsible to assure the land identified in Exhibit A is maintained and managed in perpetuity as native open space for wildlife.

    a. SANDAG will submit a Resource Management Plan (RMP) to the Wildlife Agencies for approval prior to releasing any credits from a given site. The RMP will include, but not be limited to, the following: 1) a Property Analysis Record that define the property management costs or other cost estimation results for the non-wasting endowment; 2)

proposed land manager's name, qualifications, business address, and contact information; 3) method of protecting the resources in perpetuity (e.g., conservation easement), monitoring schedule, measures to prevent human and exotic species encroachment, funding mechanism, and contingency measures should problems occur. The RMP will contain an adaptive management program.

b. SANDAG will establish a funding mechanism (e.g. non-wasting endowment) for the implementation of the RMP that is approved by the Wildlife Agencies.

c. SANDAG will enter into a management agreement with land managers, as appropriate, to ensure the property is adaptively managed consistent with the RMP.

5. SANDAG will be responsible for obtaining any necessary conservation easement or similar restrictive covenants, as applicable and approved by the Wildlife Agencies, when the title of the land is transferred to a non-governmental entity. The conservation easement or restrictive covenant will be recorded prior to use of any credits from a given site.

6. SANDAG will be responsible for all accounting on the use of the mitigation credits, including the source of the approval from the regulatory agencies. Annual reports will be provided to the Wildlife Agencies, in hard copy and in editable electronic format, on or before August 15 of each year beginning August 15, 2015.

   a. The time period covered, i.e., the dates "from" and "to"

   b. An updated Ledger Exhibit A showing all credits used to date and an accounting of the remaining credits

   c. An accounting of the actions taking over the year in the RMP

   d. Proposed work plan for the following year

7. The signatories agree that acreage will be available for the transportation projects, but each transportation project will be required to obtain approval for its use if required under the federal or state endangered species act and/or streambed authorizations under California Fish and Game Code 1600.

8. The signatories agree that SANDAG will provide a letter that indicates the proposed use and a copy of the updated ledger to the Wildlife Agencies for review when the credits are proposed for use. The Wildlife Agencies agree to send written correspondence outlining their concerns within thirty (30) days if they disagree with the use of the credits for the proposed transportation project. If no correspondence is received within 30 days, the use of the credits for the project is agreed to be acceptable by the signatories.

9. The signatories agree that this Agreement does not constitute any requirement to issue a permit, authorize approval and/or limit conservation conditions for specific transportation projects wishing to use the credits.

10. The signatories agree that the ledger and all backup material for use of the credits shall be made available to the Wildlife Agencies within five (5) days upon request.

11. The signatories agree that additional credits can be added to this Agreement upon mutual agreement by the signatories to change Exhibit A, which shall be established by SANDAG sending notice to the other signatories requesting the addition of credits. Upon receipt of signed response from the other agencies the credits will be added to this Agreement. If any of the signatories receiving the notice fail to object to the change by giving written notice to the requesting signatory within thirty (30) days of receipt their lack of object will be considered their concurrence.

12. The Wildlife Agencies agree not to unduly prohibit the use of the credits for a transportation project, unless there is documented and reasonable cause.

13. This Agreement will be binding among the signatures in perpetuity unless modified by subsequent written agreement signed by all signatories or if terminated for cause with at least thirty (30) days notice.

14. Any notice required or permitted under this Agreement may be personally served on another party, by the party giving notice, or may be served by certified mail, return receipt requested, to the following addresses:

For SANDAG:	For USFWS:	For CDFW:	For CALTRANS:
401 B Street, Suite 800	2177 Salk Avenue, Suite 250	3883 Ruffin Road	4050 Taylor Street
San Diego, CA 92101	Carlsbad, CA 92008	San Diego, CA 92123	San Diego, CA 92110
Attn: Executive Director	Attn: Field Supervisor	Attn: Regional Manager	Attn: District Director

15. No Member of Congress shall be entitled to any share or part of this Agreement, or to any benefit that may arise from it.

16. This Agreement shall be interpreted in accordance with the laws of the State of California and applicable federal laws.

17. All terms, conditions, and provisions hereof shall inure to and shall bind each of the parties hereto, and each of their respective successors, and assigns.

18. For purposes of this Agreement, the relationship of the parties is that of independent entities and not as agents of each other or as joint ventures or partners. The parties shall maintain sole and exclusive control over their personnel, agents, consultants, and operations.

19. Except as described specifically herein with regard to Exhibit A, no alteration or variation of the terms of this Agreement shall be valid unless made in writing and signed by the parties hereto, and no oral understanding or agreement not incorporated herein shall be binding on any of the parties hereto.

20. Nothing in the provisions of this Agreement is intended to create duties or obligations to or rights in third parties to this Agreement or to accord to any third-party a right to sue under this Agreement, to affect the legal liability of the parties to this Agreement to third parties.

21. If a portion of this Agreement is found unenforceable, the remaining provisions shall be severable and shall remain enforceable.

22. This Agreement may be executed in any number of identical counterparts, each of which shall be deemed to be an original, and all of which together shall be deemed to be one and the same instrument when each party has signed one such counterpart.

IN WITNESS WHEREOF, the signatories hereto have executed this Agreement is effective on the day and year first above written.

SAN DIEGO ASSOCIATION OF GOVERNMENTS

for **GARY L. GALLEGOS** **DATE**
Executive Director

CALIFORNIA DEPARTMENT OF TRANSPORTATION

LAURIE BERMAN **DATE**
District Director, District 11

APPROVED AS TO FORM:

SANDAG Office of General Counsel

UNITED STATES FISH AND WILDLIFE SERVICE

G. MENDEL STEWART **DATE**
Field Supervisor

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

11-10-14

EDMUND PERT **DATE**
Regional Manager, South Coast Region

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SAN DIEGO ASSOCIATION OF GOVERNMENTS

GARY L. GALLEGOS **DATE**
Executive Director

UNITED STATES FISH AND WILDLIFE SERVICE

11/11/14

G. MENDEL STEWART **DATE**
Field Supervisor

CALIFORNIA DEPARTMENT OF TRANSPORTATION

11/25/14

LAURIE BERMAN **DATE**
District Director, District 11

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

EDMUND PERT **DATE**
Regional Manager, South Coast Region

APPROVED AS TO FORM:

SANDAG Office of General Counsel

Exhibit A: Conservation Credits

#	Mitigation Site	Date Acquired	Acreage	Used	Credits Available	Type	Service Area	Future Use	SANDAG Contract #	Caveats and Conditions
1	Anderprizes	11/10/2008	54.03	2.53	51.5	Upland and potential vernal pools	South of the Sweetwater River*	Local Streets and Roads and Regional Transporation Projects	None	Credit for vernal pools would require a vernal pool restoration design approved by the wildlife agencies.
2	Sage Hill	2/13/2009	170.77	96.46	74.31	Uplands Tier II or III	Countywide	Local Streets and Roads and Regional Bike and Ped Projects	#5003026	Tier II and III habitats Only
3	Mendocino	7/19/2010	19.72	15.7	4.02	Uplands Tier II or III	Countywide	Local Streets and Roads and Regional Bike and Ped Projects	#5003088	Tier II and III habitats
4	Time Out Holdings/ Stacco	3/28/2012	61.6	26.32	35.28	Uplands & Wetlands	Countywide	Regional Transporation Projects	None	Credits per restoration plan
5	Hidden Valley	6/28/2012	953	748	205	Uplands Tier II or III	South of SR-52	Local Streets and Roads and Regional Bike and Ped Projects	#5001704	Tier II and III habitats. Available for local streets and roads projects that occur south of SR- 52
6	Palmer	8/22/2013	2.68	0	2.68	Uplands Tier II or III	Countywide	Local Streets and Roads and Regional Bike and Ped Projects	#5003122	Tier II and III habitats Only
7	SR-94 Parcels	various	61.37	0	61.37	Uplands Tier I and II and Wetlands	Within the MSCP*	Regional Transporation Projects	None	Tier I and II habitats available for road projects that occur within the MSCP
		Total:	**1323.17**	**889.01**	**434.16**					

* The Wildlife Agencies agree to review the use of these properties as mitigation for impacts outside of the Service Areas defined above on a case-by-case basis.

Balance **Anderprizes**

Agency	Project	Credit Tracking				Date Encumbered	Source	Note
		Wetlands						
		Creation	Restoration/Preservation	Balance				
	Beginning Balance	TBD	0 4	0 4				Vernal pool = 0.39 acres Road Ruts = 0.01 acres
		Uplands						
		Tier I (MSS)	Tier II (CSS) or III (NNG)	Disturbed (Tier IV)				
	Beginning Balance	5 76	27 38	20.49	53.63	11/10/2008	Credit ledger from Robert James dated 6/23/14, 26.12 CSS and 1 26 NNG	
			2.5		51.13	4/25/2013	Email from Robert James dated 6/30/2014, used 1 27 CSS and 1.23 NNG	Mitigation for San Ysidro Frieght yard
	Mid-Coast Corridor Transit Project			0.03	51.10	9/5/2014	0.03 ac disturbed converted to created vernal pools for U.S. Fish and Wildlife Service: Formal Section 7 consultation FWS-SDG-10B0572-14F0402	

SUMMARY

Total Site Size	Acres Used	Acres Available
54.03	2.53	51.5

Balance **SAGE HILL**

Agency	Project	Credit Tracking			Date Encumbered	Source	Notes
		Wetlands					
		Creation	Restoration/Preservation	Balance			
	Beginning Balance	0	0	0			
		Uplands					
		Tier I (Native Grasslands)	Tier II (CSS) or III (Chaparral)				
	Beginning Balance	0	170.77	170.77		SANDAG's pro-rata share acquisition	
SANDAG		0	87	83.77	8/25/2008	Per Joint USFWS and DFW letter dated August 25, 2008.	Encumberd for Regional Projects
CALTRANS		0	9.46	74.31	7/3/2013	Per joint letter from SANDAG and Caltrans to USFWS and DFW dated June 3, 2013	Additional Mitigaiton for SR-76

SUMMARY

Total Site Size	Acres Used	Acres Available
170.77	96.46	74.31

Accounting **Mendocino**

Agency	Project	Credit Tracking			Date Encumbered	Project? Source	Notes
		Wetlands					
		Creation	Restoration/Preservation	Balance			
	Beginning Balance	0	0.16	0 16			
		Uplands					
		Tier I (Native Grasslands)	Tier II (CSS) or III (Chaparral/NNG)				
	Beginning Balance	0.59	18.97	19.56	3/29/2010	Per joint USFWS and DFW letter dated March 29, 2010	
		0	1.2	5.78	3/31/2009	Interstate 805/Carroll Canyon Road Extension Biological Opinion March 31, 2009	
		0	12.58	6.98	4/19/2011	I-805 South Managed Lanes Biological Opinion April 19, 2011	
		0	1.92	3.86	3/28/2014	Inland Rail Trail MND (SCH:1999081121)	

SUMMARY

Total Site Size	Acres Used	Acres Available
19.72	15.7	4.02

Balance **STACCO-TIMEOUT HOLDINGS**

Agency	Project	Credit Tracking			Date Encumbered	Source	Notes
			Wetlands				
		Creation	Restoration/Preservation	Balance			
	Beginning Balance	0	3 8	3 8		Table 2: Final restoration plan (4/2014)	
SANDAG	Santa Maragrita Bridge	0	0.6	3 2	7/15/2009	U.S. Fish and Wildlife Service: Programmatic Section 7 Consultation FWS-SDG-4123 2 Mitigation for temporal loss Section 404 Permit	Preservation of Bacharris Scrub
SANDAG	Santa Maragrita Bridge	0	0.5	2 7	7/11/2013	2004-01049-MBS	Preservation of Bacharris Scrub
SANDAG	San Onfre to Pulgas Phase I	0	0	2 7	1/15/2014	NWP Note 0.05 ac creation is required by USACE for San Onofre to Pulgas Phase 1 but no creation was included in the final restoration plan for this site.	
			Uplands				
		Tier I (Native Grasslands)	Tier II (CSS)				
	Beginning Balance	8 8	49	57 8		Table 3: Final restoration plan (1/2013)	
SANDAG	San Onfre to Pulgas Phase I	0	20 48	37 32	1/15/2014	U.S Fish and Wildlife Service: Formal Section 7 Consultation FWS-SDG-08B0311-13I0183 (reinitation) March 8, 2013	
SANDAG	San Onfre to Pulgas Phase II	0 55	3 4	33 37	3/1/2013	U.S. Fish and Wildlife Service: Formal Section 7 Consultation FWS-SDG-08BO311-13I0121 March 1, 2013	
SANDAG	East Brook to Shell	0 15	0.6	32 62	9/12/2014	U.S Fish and Wildlife Service: Formal Section 7 Consultation FWS-SDG-08B0311-14F0231	
SANDAG	Green Beach North Bridge Repla	0	0.04	32 58	2/18/2014	U S Fish and Wildlife Service: Technical Assistance FWS-SDG-08B0311-14TA0177	

SUMMARY

Total Site Size	Acres Used	Acres Available
61.6	26.32	35 28

Balance **Hidden Valley**

Agency	Project	Credit Tracking			Date Encumbered	Source	Notes
		Wetlands					
		Creation	Restoration/Preservation	Balance			
	Beginning Balance	0	0	0			
		Uplands					
		Tier I (Native Grasslands)	Tier II (CSS) or III (Chaparral)				
	Beginning Balance	0	953	953	6/28/2012	Per MOA 5001704 between SANDAG, USWFS, DFW and Caltrans	
		0	219	734	6/28/2012	Acreage in lue of management funds per MOA.	
		0	529	205	6/28/2012	Per MOA 5001704between SANDAG, USWFS, DFW and Caltrans	Encumbered for Regional Projects South of SR-52

SUMMARY

Total Site Size	Acres Used	Acres Available
953	748	205

Balance **SR-94 Parcels**

Agency	Project	Credit Tracking			Date Encumbered	Source	Notes
		Wetlands					
		Creation	Restoration/Preservation	Balance			
	Beginning Balance	0	21.18	21.18		Includes 21.18 acres southern willow scrub and 8 LVB territories per email from Robert James Sept 24, 2014	
		Uplands					
		Tier I (Coast Live Oak Forest)	Tier II (CSS)				
	Beginning Balance	0.14	40.05	40.19		CSS includes 2 CAGN territories per email from Robert James Sept 24, 2014	

SUMMARY

Total Site Size	Acres Used	Acres Available
61.37	0	61.37

Balance **Palmer**

Agency	Project	Credit Tracking			Date Encumbered	Source	Notes
		Wetlands					
		Creation	Restoration/Preservation	Balance			
	Beginning Balance	0	0	0			
		Uplands					
		Tier I (Native Grasslands)	Tier II (CSS) or III (Chaparral)				
	Beginning Balance	0	2.68	2.68	3/29/2010	Per joint USFWS and DFW letter dated March 29, 2010	

SUMMARY

Total Site Size	Acres Used	Acres Available
2.68	0	2.68

Appendix M2

City of San Diego Request Letter to SANDAG

The City of
SAN DIEGO

Land Development Review Division
Development Services Department

January 24, 2017

Mr. Keith Greer
SANDAG Facilities and Environmental Planning
Keith.Greer@sandag.org

Reference/Subject: Use of Anderprizes Mitigation Site for Impacts Associated with Camino Del Sur and Carmel Mountain Road Improvement Components of the Merge 56 Development Project

The applicants for the Merge 56 Development Project are proposing to use credits at the Anderprizes mitigation site for public roadway improvements to Camino Del Sur and Carmel Mountain Road, which are previously approved City Circulation Element roads. The City roadway improvements are being processed in conjunction with the Merge 56 Development Project.

The land use changes and improvements proposed as part of the Merge 56 Development Project trigger amendments to a number of adopted/certified environmental documents and existing permits, including those for the public roadways (i.e., Site Development Permit No. 40-0386 for Camino Del Sur-North and Carmel Mountain Road and Site Development Permit No. 3278 for Camino Del Sur-South). An EIR is currently being prepared to address the impacts from the Project.

The public roadway improvements would result in the removal of 28.1 acres of City Tier II, IIIA, and IIIB upland habitats. The Development Services Department believes that the request for the use of credits at Anderprizes to meet the corresponding 17.4-acre mitigation requirements is an appropriate request. Per number 8 in the Conservation Credit Agreement between SANDAG, California Department of Transportation, California Department of Fish and Wildlife, and U.S. Fish and Wildlife Service (SANDAG Agreement No. 5009002), we are requesting that SANDAG provide a letter that indicates the proposed use of the Anderprizes mitigation site by the Project and that a copy of the updated ledger for Anderprizes be submitted to the Wildlife Agencies for review. This letter is needed prior to commencing the public review of the draft environmental document for the Project.

Please contact me at (619) 446-5121 or ksantoro@sandiego.gov if you have any questions regarding this letter.

Sincerely,

Kerry M. Santoro

Kerry M. Santoro, Deputy Director
Land Development Review Division

1222 01st Avenue MS. 501
San Diego, CA 92101

T (619) 446-5000
sandiego.gov

Appendix M3

Anderprizes Credit Ledger

Balance **Anderprizes**

Agency	Project	Credit Tracking				Date Encumbered	Source	Note
		Wetlands						
		Creation	Restoration/Preservation	Balance				
	Beginning Balance	0	0.4	0.4				Vernal pool = 0.39 acres
		0.03						Road Ruts = 0.01 acres
		0.3						For Mid Coast Project
								For Otay Truck Route
		Uplands						
		Tier I (MSS)	Tier II (CSS) or III (NNG)	Disturbed (Tier IV)				
	Beginning Balance	5.76	27.38	20.49	53.63	11/10/2008	Credit ledger from Robert James dated 6/23/14, 26.12 CSS and 1.26 NNG	
	SANDAG	0	2.5	0	51.13	4/25/2013	Email from Robert James dated 6/30/2014, used 1.27 CSS and 1.23 NNG	Mitigation for San Ysidro Frieght yard
	SANDAG	0	0	0.03	51.10	9/5/2014	0.03 ac disturbed converted to created vernal pools for U.S. Fish and Wildlife Service: Formal Section 7 consultation FWS-SDG-10B0572-14F0402	Mid-Coast Corridor Transit Project
	City of San Diego	0	17.4	0	33.70	1/24/2017	City of San Diego letter dated January 24, 2017.	Camino del Sur/Merge 56 [RTIP SD-247]
	City of San Diego	0	0	7.4	26.30	1/12/2017	B.O. FWS-SDG-12B0319-15F024, 3.51 of Otay tarplant habitat occupied by a minimum of 1392 individuals and 0.3 acres of vernal pools occupied by fairy shrimp on 7.4 acres.	Otay Truck Route Phase 4 [RTIP SD-102a]

SUMMARY

Total Site Size	Acres Used	Acres Available
54.03	27.33	26.7

Updated: 1.24.2017

APPENDIX D

Cultural Resources Technical Reports and Senate Bill 18 Consultation

CULTURAL RESOURCES SURVEY REPORT *for the* MERGE 56 DEVELOPMENT PROJECT, SAN DIEGO COUNTY, CALIFORNIA

Prepared for:

Gary Levitt
Sea Breeze Properties, LLC
3525 Del Mar Heights Road #246
San Diego, CA 92130

Prepared by:

Ian Scharlotta, Ph.D., RPA

ASM Affiliates, Inc.
2034 Corte Del Nogal
Carlsbad, California 92011

July 2014
(revised March 2017)
PN 22260

Keywords: Intensive Survey Update, USGS 7.5' Del Mar Quadrangle, SDI-13077H, SDI-13078

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LIST OF FIGURES

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MANAGEMENT SUMMARY

ASM Affiliates, Inc. (ASM) was contracted to conduct an archaeological survey and records search update for the Merge 56 Development Project, San Diego County, California. Two archaeological sites (SDI-13077H and SDI-13078), located within the project area of potential effects (APE), had previously been evaluated by ASM in 2010 and 2012, and were relocated with the goal of updating site condition assessments and boundary determinations if any changes in condition were observed. SDI-13077H was not found to be a significant cultural resource, or eligible for listing in the National Register of Historic Places (NRHP), the California Register of Historic Resources (CRHR) or the City of San Diego Historical Resources Register (CSDHR), while SDI-13078 was found to be both significant and eligible, though the data potential had been exhausted by the data recovery completed by ASM in 2012. No significant changes in the status or conditions of these sites were observed in the field. All work was conducted in compliance with the City of San Diego guidelines, the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act (NHPA) requirements.

1. INTRODUCTION

This report documents the results of a cultural resources s completed by ASM Affiliates Inc. (ASM) for the Merge 56 Development Project, San Diego County, California (Figures 1.1 and 1.2). Sea Breeze Properties is proposing a residential housing development and a road connecting extant portions of Camino Del Sur between CA-56 and Park Village Road for the project area. The project includes three main project areas: 1) Camino Del Sur-North; 2) Camino Del Sur-South; and 3) Merge 56. Several previous cultural resources studies (e.g., Willis et al. 2010; Daniels et al. 2012) have been completed for the project but an updated inventory and site condition assessment was required due to the amount of time elapsed since the previous investigations. To this end, ASM conducted a cultural resources inventory of the proposed project area to identify cultural resources that are eligible for listing on the City of San Diego Historical Resources Register (CSDHR), the California Register of Historical Resources (CRHR) or National Register of Historic Places (NRHP) under the California Environmental Quality Act (CEQA) or Section 106 of the National Historic Preservation Act (NHPA). This inventory included an intensive pedestrian survey of the project area, and a records search update at the South Coastal Information Center (SCIC) for a one-mile radius around the project area. The primary intent of this updated cultural resources study was to provide up to date and accurate mapping of all archaeological sites for review by the State Historic Preservation Officer (SHPO).

The current inventory relocated two previously recorded sites (SDI-13077H and SDI-13078) to assess any changes in status or condition. The two sites that were relocated (SDI-13077H and SDI-13078) were found to be in similar condition as described in the most recent studies (Daniels et al. 2012).

REPORT STRUCTURE

Following this introduction, a project context is provided in chapter 2, including a description of the natural environment and culture history. Chapter 3 presents the study methods, and survey results are summarized in Chapter 4. Chapter 5 is an overall project summary. Site location and sketch maps, can be found in Appendix A

Figure 1.1. Vicinity map of project area.

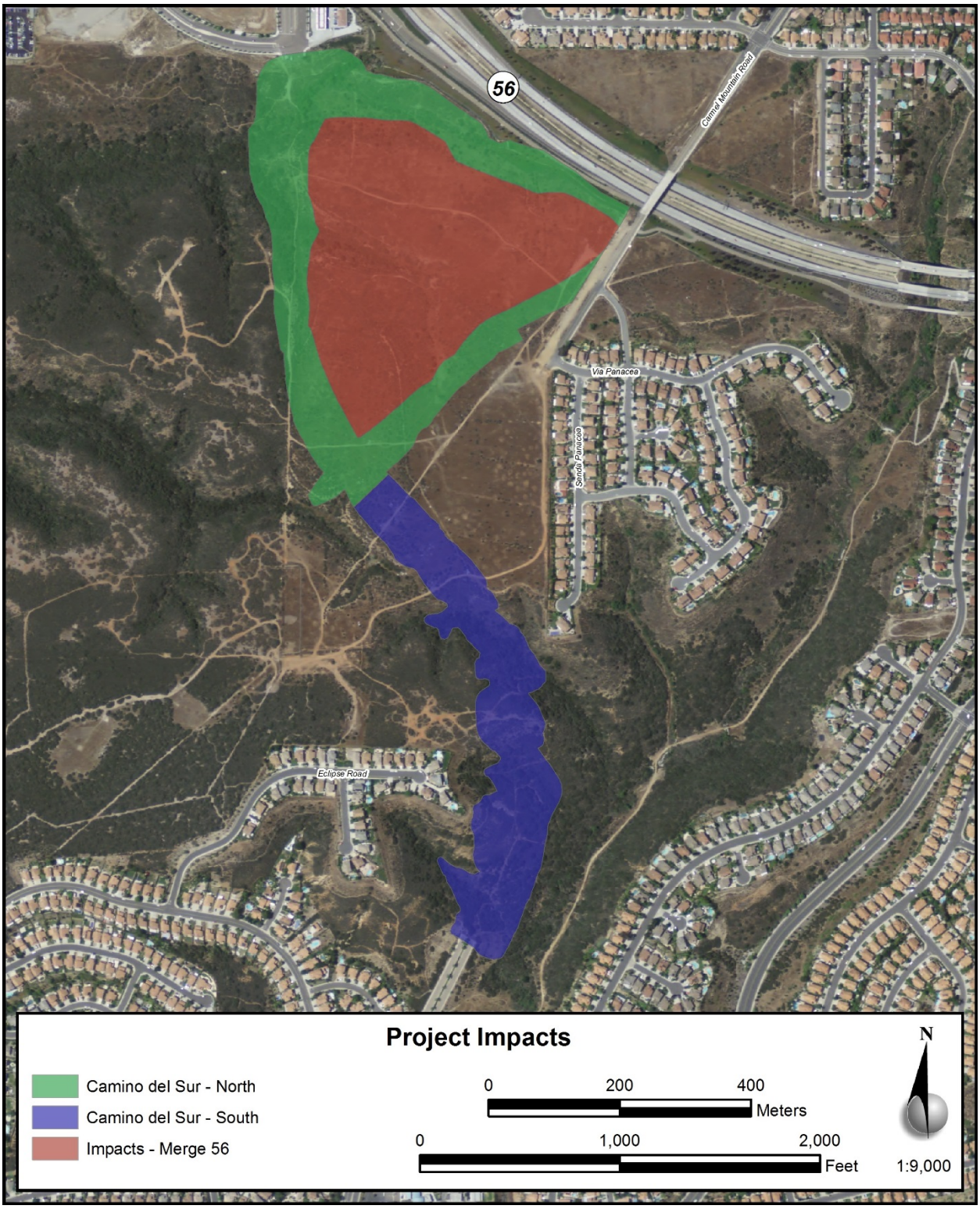

Figure 1.2. Location map of the project area on the Del Mar USGS 7.5' Quad.

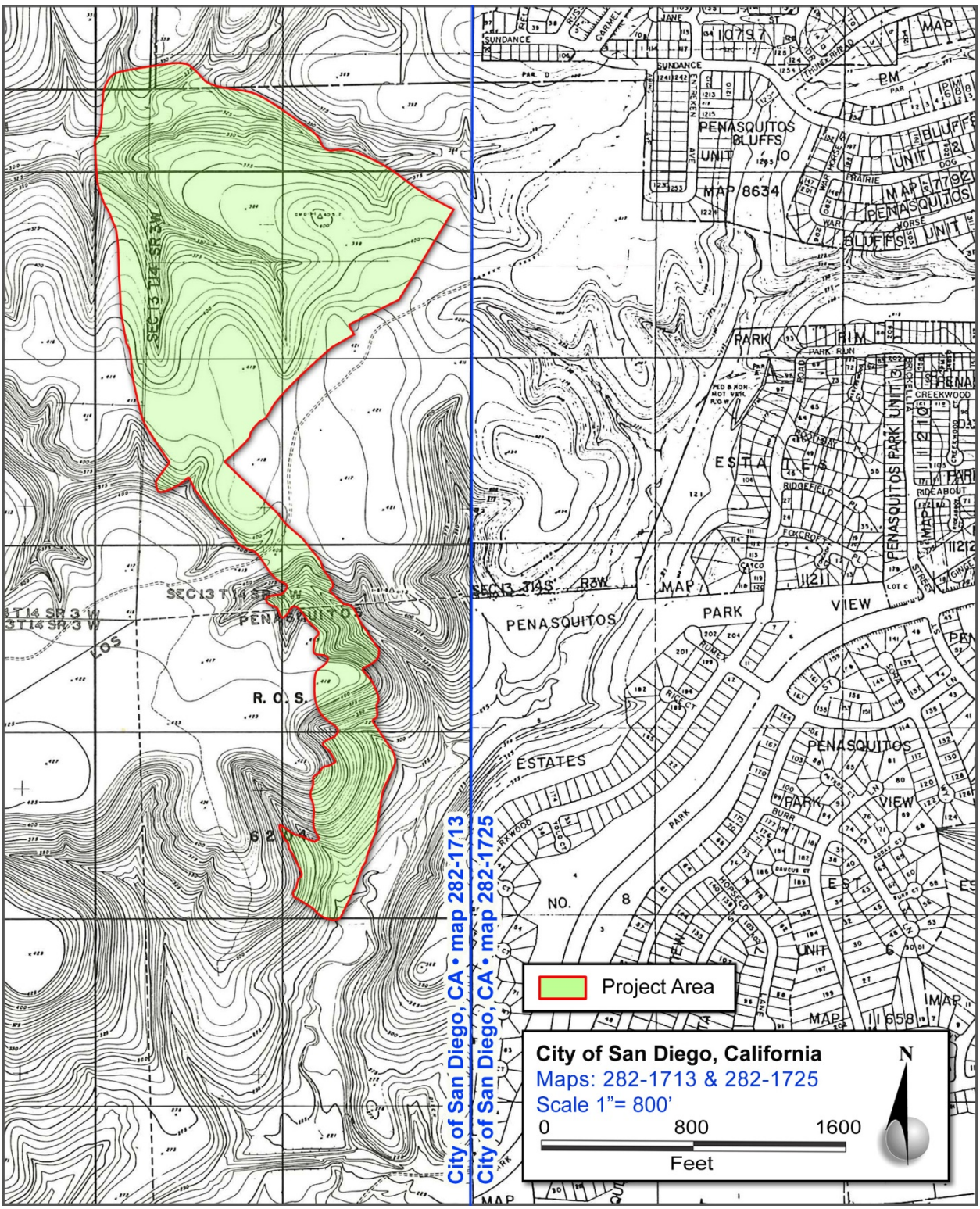

Figure 1.3. City of San Diego 1"=800' map of the project area

2. SETTING

This chapter reviews the environmental setting of the survey area, along with prehistoric, ethnohistoric, and historic contexts. Previous archaeological research conducted in the area is also included. The discussion that follows is a summary describing how pertinent investigations in the general region have contributed to the current constructions of past cultural history, and is not intended to be an exhaustive account of all research conducted in the area.

NATURAL SETTING

The project location lies with the coastal plains province of San Diego County. Geologically, the project area is underlain by pre-Cretaceous rock, which outcrop as granite and gneiss (similar to granite), other patches of exposed quartz diorite and granodiorite (Strand 1962). Much of the surrounding area contains Mesozoic granitic rocks. Metamorphic and granitic rocks provided material for milling tools used by the prehistoric inhabitants of the region, and quartz dikes within the granitic rocks provided a local material for manufacturing flaked stone tools. The region's prime source of material for flaked stone tools was the metavolcanic rock of the Santiago Peak formation, which is available in streambeds in low-lying areas approximately 20 km to the southwest. The valley floor is composed of Quaternary non-marine alluvium characterized by coarse loamy sand derived from granodiorite.

The climate is classified as Mediterranean Hot Summer, or Csa in the Köppen classification (Pryde 2004). Rainfall is about 33 cm per year, falling primarily between December and March. The average January daily minimum temperature is 4°C (39°F), and the average July daily maximum is 32°C (90°F). The climate would have imposed few constraints on prehistoric hunter-gatherers in the region.

The predominant natural vegetation community of the region is chaparral, although perhaps mixed with coastal sage scrub (Pryde 2004). Typical plant species include laurel sumac (*Rhus laurina*), black sage (*Salvia mellifera*), manzanita (*Arctostaphylos* spp.), redshank (*Adenostoma sparsifolium*), oak (*Quercus* spp.), chamise (*Adenostoma fasciculatum*), and California lilac (*Ceanothus* sp.), along with various grasses and legumes. Riparian species are associated with drainages. Mammals, birds, and reptiles within these communities provided potential food resources to prehistoric inhabitants. Much of the natural vegetation in low-lying areas has been displaced by modern land uses for grazing, and orchards. However, the steep mountain slopes harbor relatively intact, dense chaparral and Oak communities. These vegetation communities have been in place since the early Holocene, by at least 7500 B.P., when the climate became noticeably warmer and drier (Axelrod 1978).

CULTURAL SETTING

Evidence for continuous human occupation in the San Diego region spans the last 10,000 years. Various attempts to parse out variability in archaeological assemblages over this broad time frame

have led to the development of several cultural chronologies; some of these are based on geologic time, most are based on temporal trends in archaeological assemblages, and others are interpretive reconstructions. Each of these reconstructions describes essentially similar trends in assemblage composition in more or less detail. This research employs a common set of generalized terms used to describe chronological trends in assemblage composition: Paleoindian (pre-5500 B.C.), Archaic (8000 B.C.-A.D. 500), Late Prehistoric (A.D. 500-1750), and Ethnohistoric (post-A.D. 1750).

Paleoindian (pre-5500 B.C.)

Evidence for Paleoindian occupation in coastal southern California is tenuous, especially considering the fact that the oldest dated archaeological assemblages look nothing like the Paleoindian artifacts from the Great Basin. One of the earliest dated archaeological assemblages in coastal southern California (excluding the Channel Islands) derives from SDI-4669/W-12, in La Jolla. A human burial from SDI-4669 was radiocarbon dated to 9590-9920 years before present (B.P.) (95.4 percent probability) (Hector 2007). The burial is part of a larger site complex that contained more than 29 human burials associated with an assemblage that fits the Archaic profile (i.e., large amounts of ground stone, battered cobbles, and expedient flake tools). In contrast, typical Paleoindian assemblages include large stemmed projectile points, high proportions of formal lithic tools, bifacial lithic reduction strategies, and relatively small proportions of ground stone tools. Prime examples of this pattern are sites that were studied by Emma Lou Davis (1978) on Naval Air Weapons Station China Lake near Ridgecrest, California. These sites contained fluted and unfluted stemmed points and large numbers of formal flake tools (e.g., shaped scrapers, blades). Other typical Paleoindian sites include the Komodo site (MNO-679)—a multicomponent fluted point site, and MNO-680—a single component Great Basin Stemmed point site (see Basgall et al. 2002). At MNO-679 and -680, ground stone tools were rare while finely made projectile points were common.

Turning back to coastal southern California, the fact that some of the earliest dated assemblages are dominated by processing tools runs counter to traditional notions of mobile hunter-gatherers traversing the landscape for highly valued prey. Evidence for the latter—that is, typical Paleoindian assemblages—may have been located along the coastal margin at one time, prior to glacial desiccation and a rapid rise in sea level during the early Holocene (pre-7500 B.P.) that submerged as much as 1.8 km of the San Diego coastline. If this were true, however, it would also be expected that such sites would be located on older landforms near the current coastline. Some sites, such as SDI-210 along Agua Hedionda Lagoon, contained stemmed points similar in form to Silver Lake and Lake Mojave projectile points (pre-8000 B.P.) that are commonly found at sites in California's high desert (see Basgall and Hall 1990). SDI-210 yielded one corrected radiocarbon date of 8520-9520 B.P. (see Warren et al. 2004). However, sites of this nature are extremely rare and cannot be separated from large numbers of milling tools that intermingle with old projectile point forms.

Warren et al. (2004) claimed that a biface manufacturing tradition present at the Harris site complex (SDI-149) is representative of typical Paleoindian occupation in the San Diego region that possibly dates between 10,365 and 8200 B.C. (Warren et al. 2004: 26). Termed San Dieguito (see also Rogers 1945), assemblages at the Harris site are qualitatively distinct from most others in the San Diego region because the site has large numbers of finely made bifaces (including projectile points), formal flake tools, a biface reduction trajectory, and relatively small amounts of

processing tools (see also Warren 1964, 1968). Despite the unique assemblage composition, the definition of San Dieguito as a separate cultural tradition is hotly debated. Gallegos (1987) suggested that the San Dieguito pattern is simply an inland manifestation of a broader economic pattern. Gallegos' interpretation of San Dieguito has been widely accepted in recent years, in part because of the difficulty in distinguishing San Dieguito components from other assemblage constituents. In other words, it is easier to ignore San Dieguito as a distinct socioeconomic pattern than it is to draw it out of mixed assemblages.

The large number of finished bifaces (i.e., projectile points and non-projectile blades), along with large numbers of formal flake tools at the Harris site complex, is very different than nearly all other assemblages throughout the San Diego region, regardless of age. Warren et al. (2004) made this point, tabulating basic assemblage constituents for key early Holocene sites. Producing finely made bifaces and formal flake tools implies that relatively large amounts of time were spent for tool manufacture. Such a strategy contrasts with the expedient flake-based tools and cobble-core reduction strategy that typifies non-San Dieguito Archaic sites. It can be inferred from the uniquely high degree of San Dieguito assemblage formality that the Harris site complex represents a distinct economic strategy from non-San Dieguito assemblages.

If San Dieguito truly represents a distinct socioeconomic strategy from the non-San Dieguito Archaic processing regime, its rarity implies that it was not only short-lived, but that it was not as economically successful as the Archaic strategy. Such a conclusion would fit with other trends in southern California deserts, wherein hunting-related tools are replaced by processing tools during the early Holocene (see Basgall and Hall 1990).

Archaic (8000 B.C.-A.D. 500)

The more than 1,500-year overlap between the presumed age of Paleoindian occupations and the Archaic period highlights the difficulty in defining a cultural chronology in the San Diego region. If San Dieguito is the only recognized Paleoindian component in the San Diego region, then the dominance of hunting tools implies that it derives from Great Basin adaptive strategies and is not necessarily a local adaptation. Warren et al. (2004) admitted as much, citing strong desert connections with San Dieguito. Thus, the Archaic pattern is the earliest local socioeconomic adaptation in the San Diego region (see Hale 2001, 2009).

The Archaic pattern is relatively easy to identify (albeit hard to define) with assemblages that consist primarily of processing tools: millingstones, handstones, battered cobbles, heavy crude scrapers, incipient flake-based tools, and cobble-core reduction. These assemblages occur in all environments across the San Diego region, with little variability in tool composition. Low assemblage variability over time and space among Archaic sites has been equated with cultural conservatism (see Byrd and Reddy 2002; Warren 1968; Warren et al. 2004). Despite enormous amounts of archaeological work at Archaic sites, little change in assemblage composition occurs until the bow and arrow is adopted at around A.D. 500, as well as ceramics at approximately the same time (Griset 1996; Hale 2009). Even then, assemblage formality remains low. After the bow is adopted, small arrow points appear in large quantities and already low amounts of formal flake tools are replaced by increasing amounts of expedient flake tools. Similarly, shaped millingstones and handstones decrease in proportion relative to expedient, unshaped ground stone tools (Hale 2009). Thus, the terminus of the Archaic period is equally as hard to define as its beginning because

basic assemblage constituents and patterns of manufacturing investment remain stable, complemented only by the addition of the bow and ceramics.

Late Prehistoric (A.D. 500-1750)

The interval following the Archaic and prior to ethnohistoric times (A.D. 1750) is commonly referred to as the Late Prehistoric (M. Rogers 1945; Wallace 1955; Warren et al. 2004). However, several other subdivisions continue to be used to describe various shifts in assemblage composition, including the addition of ceramics and cremation practices. In northern San Diego County, the post-A.D. 1450 period is called the San Luis Rey Complex (True 1980), while the same period in southern San Diego County is called the Cuyamaca Complex and is thought to extend from A.D. 500 until ethnohistoric times (Meighan 1959). Rogers (1929) also subdivided the last 1,000 years into the Yuman II and III cultures, based on the distribution of ceramics. Despite these regional complexes, each is defined by the addition of arrow points and ceramics, and the widespread use of bedrock mortars. Vagaries in the appearance of the bow and arrow and ceramics make the temporal resolution of the San Luis Rey and Cuyamaca complexes difficult. For this reason, the term Late Prehistoric is well suited to describe the last 1,500 years of prehistory in the San Diego region.

Temporal trends in socioeconomic adaptations during the Late Prehistoric are poorly understood. This is partly due to the fact that the fundamental Late Prehistoric assemblage is very similar to the Archaic pattern, but includes arrow points, large quantities of fine debitage from producing arrow points, ceramics, and cremations. The appearance of mortars and pestles is difficult to place in time because most mortars are on bedrock surfaces; bowl mortars are actually rare in the San Diego region. Some argue that the ethnohistoric intensive acorn economy extends as far back as A.D. 500 (Bean and Shipek 1978). However, there is no substantial evidence that reliance on acorns, and the accompanying use of mortars and pestles, occurred prior to A.D. 1400. True (1980) argued that acorn processing and ceramic use in the northern San Diego region did not occur until the San Luis Rey pattern emerged after approximately A.D. 1450. For southern San Diego County, the picture is less clear. The Cuyamaca Complex is the southern counterpart to the San Luis Rey pattern, however, and is most recognizable after A.D. 1450 (Hector 1984). Similar to True (1980), Hale (2009) argued that an acorn economy did not appear in the southern San Diego region until just prior to ethnohistoric times, and that when it did occur, a major shift in social organization followed.

Ethnohistoric (post-A.D. 1750)

Early descriptions of the lifeways of San Diego County ethnohistoric groups were provided by explorers, missionaries, administrators, and other travelers, who gave particular attention to the coastal populations (Boscana 1846; Fages 1937; Geiger and Meighan 1976; Harrington 1934; Laylander 2000). Subsequent ethnographers in the early twentieth century were able to give much more objective, detailed, and penetrating accounts. Most of the ethnographers attempted to distinguish between observations of the customs of surviving Native Americans and orally transmitted or inferred information concerning the lifeways of native groups prior to European intrusion into the region. The second of these subjects provides a terminal baseline for discussing the cultures of the region's prehistory. Despite the relatively rich ethnographic record, attempts to distinguish between the archaeological residues that were produced by the linguistically unrelated

but culturally similar Luiseño and Ipai/Kumeyaay have been largely unsuccessful (Pigniolo 2004; True 1966).

The project area lies within the territory usually ascribed to speakers of the Kumeyaay language, but near their boundary were speakers of the very closely related Ipai language to the north. Kumeyaay and Ipai are Yuman languages, with ties to other groups in northern Baja California, on the lower Colorado River, and in western Arizona. The separation of the Ipai and Kumeyaay languages from their closest relative, Cocopa in the Colorado River delta, may date back about 1,000-1,200 years, and the separation from other Yuman groups may have occurred around 1,500-2,000 years ago (Laylander 1985).

Aboriginal subsistence in the region was based largely on acquiring natural plants and animals, rather than the cultivation of agricultural crops. Acorns were a staple for the western groups, as were agave and mesquite for eastern groups. Numerous other plants were valued for their dietary contributions from their seeds, fruit, roots, stalks, or greens, and a still larger number of species had known medicinal uses. Game animals included deer first and foremost, but mountain sheep and pronghorn antelope were also present, as well as bears, mountain lions, bobcats, coyotes, and other medium-sized mammals. Small mammals were probably as important in aboriginal diets as larger animals, with jackrabbits and cottontails being preeminent, but woodrats and other rodents were commonly exploited. Various birds, reptiles, and amphibians were consumed as well; food taboos were few in number and inconsistent, judging from the surviving ethnographic record. The only precontact domesticated animal was the dog. It is not clear whether marine fish and shellfish were a mainstay for some coastal groups or merely provided supplemental or emergency food sources for groups that were oriented primarily toward terrestrial resources. Interregional exchange systems are known to have linked the coast with areas to the east in particular, but exchange may have been concerned more with facilitating social and ceremonial matters than with meeting material needs.

The Kumeyaay had developed a varied material culture that functioned well but was not highly elaborated, at least by global standards. A variety of tools was made from stone, wood, bone, and shell, and these served to procure and process the resources of the region. Needs for shelter and clothing were minimal, but considerable attention was devoted to personal decoration in the form of ornaments, painting, and tattooing. The local pottery was well made, although infrequently decorated. Basketry was a craft that was particularly refined.

The Kumeyaay were subdivided into essentially sovereign local communities or tribelets. Community membership was generally inherited from the male line. In practice, however, some degree of intermixing of these patriclans was certainly present during the historic period, and this may have reflected a considerable degree of flexibility in community membership during prehistoric times as well. Later descriptions of the settlement systems have been inconsistent, and there may have been considerable variability in practice (cf., Laylander 1991, 1997; Owen 1965; Shipek 1982; Spier 1923). In some areas, substantially permanent, year-round villages seem to have existed, with more remote resources beyond the daily foraging range being acquired by special task groups. In other areas, communities appear to have followed an annual circuit among seasonal settlements, or to have oscillated between summer and winter villages, often with the group splitting up into its constituent families during certain seasons. Some differences in

settlement strategies may have reflected local differences in resource availability or cyclical effects of variability between times of plenty and times of stress. Rights of ownership over the land and its various resources were vested both in individual families and in the clans or communities as a whole. Leadership within communities had at least a tendency to be hereditary, but it was relatively weak; authority was more ceremonial and advisory than administrative or judicial. Headmen had assistants, and shamans exerted an important influence in community affairs, beyond their role in curing individual illness.

Historic (post-A.D. 1542)

European activity in the region began as early as A.D. 1542, when Juan Rodríguez Cabrillo landed in San Diego Bay. Sebastián Vizcaíno returned in 1602, and it is possible that there were subsequent contacts that went unrecorded. These brief encounters made the local native people aware of the existence of other cultures that were technologically more complex than their own. Epidemic diseases may also have been introduced into the region at an early date, either by direct contacts with the infrequent European visitors or through waves of diffusion emanating from native peoples farther to the east or south (Preston 2002). It is possible, but as yet unproven, that the precipitous demographic decline of native peoples had already begun prior to the arrival of Gaspar de Portolá and Junípero Serra in 1769.

Spanish colonial settlement was initiated in 1769, when multiple expeditions arrived in San Diego by land and sea, and then continued northward through the coastal plain toward Monterey. A military presidio and a mission to deal with the local Kumeyaay and Ipai were soon firmly established at San Diego, despite violent resistance to them from a coalition of native communities in 1776. Private ranchos subsequently established by Spanish and Mexican soldiers, as well as other non-natives, appropriated much of the remaining coastal or near-coastal locations (Pourade 1960-1967).

Mexico's separation from the Spanish empire in 1821 and the secularization of the California missions in the 1830s caused further disruptions to native populations in western San Diego County. Some former mission neophytes were absorbed into the work forces on the ranchos, while others drifted toward the urban centers at San Diego and Los Angeles or moved to the eastern portions of the county where they were able to join still largely autonomous native communities. In 1843, the small (28-acre) Cañada de Los Coches rancho in Lakeside was granted to Apolinaria Lorenza, and in 1845, the 48,000-acre El Cajon rancho (which includes the current study area) was granted to María Antonia Estudillo.

United States conquest and annexation, together with the gold rush in northern California, brought many additional outsiders into the region. Development during the following decades was fitful, undergoing cycles of boom and bust. Small-scale settlement of El Cajon and Lakeside began in the late 1800s, including the construction of the San Diego-Cuyamaca Eastern Railroad and the flume from Cuyamaca Reservoir in the 1880s and 1890s. However, it was not until the second half of the twentieth century that the urbanization of the region exploded.

RECORDS SEARCH RESULTS

An updated records search request was conducted at the South Coastal Information Center (SCIC) for the project area and a 1-mile radius surrounding it on May 9, 2014. The search involved a review of recorded cultural resources, previous cultural resources survey report boundaries, historic addresses, and a historic maps database. The records search did not identify any newly recorded sites within the project area, or a 1-mile radius of the project area since 2010 (Willis et al. 2010) when ASM completed an earlier inventory. The previous report noted six previously recorded sites (SDI-6043, SDI-6044, SDI-6046, SDI-13077H, SDI-13078, SDI-13080) within the APE, and fifty-five previously recorded sites within a 1-mile radius of the project area.

3. METHODS

The Secretary of the Interior has issued standards and guidelines for the identification and evaluation of historic properties (*The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* [48 FR 44720–44726]), which are used to ensure that the procedures are adequate and appropriate. The identification and evaluation of historic properties are dependent upon the relationship of individual properties to other similar properties (NPS and ACHP 1998). Information about properties regarding their prehistory, history, architecture, and other aspects of culture must be collected and organized to define these relationships (NPS 2009), which is the intent of the current Class III cultural resources inventory.

FIELD METHODS

For the current investigation the survey field crew consisted of a field director who met the applicable Secretary of the Interior Qualification standards. There was also one local Native American Monitor on the field crew from Redtail Monitoring. Standard transect spacing was 15-m, although spacing was reduced to 3 to 5 m within identified archaeological sites in order to adequately define the site character. The systematic 15-m transects were interrupted to do judgmental inspections of locations such as potential milling features on exposed bedrock outcrops within the APE. Transects generally followed an East to West orientation.

Daily survey forms on the progress, condition, and findings of the survey were completed. These forms included a description of vegetation cover (including contextual photos), as well as estimates of ground surface visibility, rated as poor (0-25 percent), fair (26-50 percent), good (51-75 percent), or excellent (76-100 percent).

Evidence for buried cultural deposits was opportunistically sought through inspection of natural or artificial erosion exposures and the spoils from rodent burrows. In the daily survey notes, the field director and/or crew chief assessed the potential for buried sites on the basis of geomorphology. For instance, large alluvial valleys tend to have higher potential for buried sites, and areas with shallow bedrock have lower potential for buried sites.

ASM employs site definitions that meet the Secretary of Interior's standards for recording archaeological sites. These standards are based off of the basic definition of a site as either three or more artifacts, or two or more artifacts of two different kinds in a 25 m^2 area. These definitions were not needed as no new cultural deposits were identified.

Standard global positioning systems (GPS) aided navigation in the field. Together with hard-copy field maps, GPS receivers were used to keep the field crew aware at all times of the limits of the APE, and areas of different land ownership, and were also used to record the datums of archaeological sites to decimeter-level accuracy. This information was downloaded with the Microsoft ActiveSync program and converted to GIS shape files using Pathfinder software. A GIS specialist created digital maps to accompany the site forms and report.

4. REPORT OF FINDINGS

The records search update, and previous documentation for cultural resource studies in the project area, provided details on archaeological sites within a one-mile radius of the project area. Every effort was made to relocate previously recorded sites in the project area during the survey. Four of the six previously recorded archaeological sites were not relocated (SDI-6043, SDI-6044, SDI-6046, and SDI-13080). No trace of cultural material could be found at the reported locations any of the four sites not relocated, despite intensive searching in the general vicinity. In no case were any of the four sites thought to be buried or obscured by vegetation, however, the vegetation was dense at the time of survey (Figures 4.1-4.6). In fact, reported cultural deposits at the non-relocated sites were ephemeral and several different factors can account for their disappearance, including erosion, illicit collecting, and disturbance from development. It is believed that these four sites (SDI-6043, SDI-6044, SDI-6046, and SDI-13080) are no longer in existence due to development. Two sites (SDI-13077H and SDI-13078) were relocated and found to be in a similar condition as described in previous documentation (Daniels et al. 2012; Willis et al. 2010)

SDI-13077H

This site was originally recorded in 1993 by Gallegos and Associates as an historic site made up of three coble stone features and three artifacts. This site covers an approximate 20 x 20 m area. The three features were described as being the remains of what appeared to be a cistern, a barbeque pit, and a foundation. The artifacts at the site consisted of two hole in cap cans and one square cut nail. This site was evaluated by Schaefer (1998) who recommended the site as potentially eligible for CRHR listing but that it required a detailed evaluation. A detailed evaluation was conducted by ASM (Daniels et al. 2012) to determine eligibility for both CRHR and the NRHP. The evaluation determined that the resource was interesting but did not meet the necessary and sufficient conditions for being historically significant. During the current survey, the site was relocated and found to be in the same condition as when last updated.

SDI-13078

This site, in the northwestern portion of the project area, was originally recorded by Walker (1978), updated by Gallegos and Associates (1993), and tested by Pigniolo (1996). Kyle (2002) also relocated the site. Several different types of artifacts were recovered by Pigniolo's (1996) evaluation, including millingstones, a scraper plane, a point midsection, hammerstones, cores, various groundstone implements, lithic tools and thousands of pieces of debitage. One radiocarbon assessment yielded a radiocarbon date of 1880+/-90 radiocarbon years before present (rybp). These results, combined with hydration rind readings of two pieces of Coso obsidian and identification of a dart point, suggest that the site was occupied during the Archaic period. The testing resulted in the determination that an approximate 210-x-150-ft (70 x 50 m) portion of the site was significant, while the remainder was not. A data recovery was conducted by ASM (Daniels et al. 2012) to exhaust the research potential of the site before planning development impacted the resource. The results of this data recovery corroborated the earlier evaluation findings that SDI-13078 is a Middle-to-Late Archaic period habitation site that focused on the seasonal exploitation of local resources and functioned as a food processing center for these local resources. The additional information gathered during the 2012 (Daniels et al. 2012) investigation varied little

Figure 4.1. Overview of the Camino Del Sur-North project area, facing northeast

Figure 4.2. Overview of the Camino Del Sur-North project area, facing west

Figure 4.3. Overview of the Camino Del Sur-South project area, facing southeast

Figure 4.4. Overview of the Camino Del Sur-South project area, facing north

Figure 4.5. Overview of the Merge 56 project area, facing north

Figure 4.6. Overview of the Merge 56 project area, facing southeast

from that presented by Pigniolo et al. (1996), other than narrowing down the area of intensive occupation and activities and providing better chronological control. Additional evidence for a terrestrial-based subsistence strategy was recovered in the midden area, which supports the hypothesis that the site was seasonally occupied. Had the site been occupied year-round, it is expected that subsistence remains, along with the artifact assemblage, would have been more diverse and evenly distributed. However, the presence of the midden soils suggests the area was repeatedly occupied over a long period of time, generating soils rich in organic residues left over from daily economic activities and general habitation. Overall, the artifact assemblage indicates that the occupants employed a strategy of expedient tool manufacture from locally available raw materials for the exploitation of locally available foods. It was determined that it was unlikely that any additional work at the site would yield data that would provide any substantially different information regarding the site's function or contribution to the prehistory of the region. The data recovery efforts thus had fulfilled the scientific research potential of the cultural deposit, and no further data recovery work is required to achieve research goals. During the current survey, the site was relocated, but no additional artifacts visible on the surface. Dense grass at the time of the current survey made it difficult to examine the site thoroughly. It is likely that most surface artifacts were already collected during the data recovery.

5. MANAGEMENT CONSIDERATIONS

During the pedestrian survey of the project area two cultural resources were encountered, and four of the six previously recorded sites could no longer be relocated. The reason for this varies, but in several cases it appears that development projects have destroyed the sites. There are currently two cultural resources present within the project area: SDI-13077H and SDI-13078. SDI-13077H is a historical archaeological site that was found to be not historically significant by Daniels et al. (2012), while SDI-13078 is a prehistoric habitation site that was recommended CRHR eligible by Pigniolo (1996), with the research potential exhausted by a data recovery conducted by ASM (Daniels et al. 2012). The current status of these sites remains unchanged from their last site updates. Furthermore, the original recommendations (see Daniels et al. 2012) for archaeological and Native American monitoring during all ground-disturbing activities related to project construction remains in effect.

The current inventory was conducted to satisfy the requirements of the City of San Diego guidelines, Section 106 of the NHPA, and CEQA. The primary goal of this study was to relocate previously recorded sites and determine if any previously unrecorded resources remained within the project area. No additional resources were located in the project area.

6. REFERENCES

Axelrod, Daniel I.
1978 Outline of History of California Vegetation. In *Terrestrial Vegetation of California*, edited by Michael G. Barbour and Jack Major, pp. 139-194. Wiley and Sons, New York.

Basgall, M.E. and M. Hall
1990 *Adaptive Variation in the North-Central Mojave Desert*. Paper Presented at the 55th Annual Meeting of the Society for American Archaeology, Las Vegas.

Basgall, M. E., L. Johnson, and M. Hale
2002 *An Evaluation of Four Archaeological Sites in the Lead Mountain Training Area, Marine Corps Air Ground Combat Center, Twentynine Palms, California*. Submitted to U.S. Army Corps of Engineers, Fort Worth, Texas.

Bean, Lowell J., and Florence C. Shipek
1978 Luiseño. In *California*, edited by Robert F. Heizer, pp. 550-563. Handbook of North American Indians, Vol. 8, W. C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Boscana, Gerónimo
1846 Chinigchinich; A Historical Account of the Origin, Customs, and Traditions of the Indians at the Missionary Establishment of St. Juan Capistrano, Alta California. In *Life in California*, by Alfred Robinson, pp. 227-341. Wiley & Putnam, New York.

Byrd, Brian F., and Seetha N. Reddy
2002 Late Holocene Adaptations along the Northern San Diego Coastline: New Perspectives on Old Paradigms. In *Cultural Complexity on the California Coast: Late Holocene Archaeological and Environmental Records*, edited by Jon M. Erlandson and Terry L. Jones, pp. 41-62. University of California Los Angeles Press.

Daniels, James T., Tony Quach, Micha J. Hale, Sarah Stringer-Bowsher, and Scott Wolf
2012 *Evaluation of SDI-13077H and Data Recovery at SDI-13078 for the Rhodes Crossing Project, San Diego County, California*. ASM Affiliates, Inc. On file at the South Coast Information Center.

Davis, Emma Lou
1978 *The Ancient Californians: Rancholabrean Hunters of the Mojave Lakes Country*. Natural History Museum of Los Angeles County Science Series No. 29.

Fages, Pedro
1937 *A Historical, Political, and Natural Description of California* (1775). Translated by Herbert Ingram Priestly. University of California Press, Berkeley.

Gallegos, Dennis R.
1987 *San Dieguito-La Jolla: Chronology and Controversy*. San Diego County Archaeological Society Research Paper No. 1.

Geiger, Maynard, and Clement W. Meighan
1976 *As the Padres Saw Them: California Indian Life and Customs as Reported by the Franciscan Missionaries, 1813-1815*. Santa Barbara Mission Archive Library, Santa Barbara, California.

Griset, Suzanne
1996 *Southern California Brown Ware*. Unpublished Ph.D. dissertation, University of California, Riverside.

Gross, G. Timothy
1993 Settlement Pattern and Predictive Modeling of Site Locations. In Historic Properties Background Study for the City of San Diego Clean Water Program, pp. VIII-1-VIII-12. Brian F. Mooney Associates. Prepared for Clean Water Program for Greater San Diego.

Hale, Micah
2001 Technological Organization of the Millingstone Pattern in Southern California. Master's thesis, California State University, Sacramento.
2009 San Diego and Santa Barbara: Socioeconomic Divergence in Southern California. Ph.D. dissertation, University of California, Davis.

Harrington, John P.
1934 A New Original Version of Boscana's Historical Account of the San Juan Capistrano Indians of Southern California. *Smithsonian Miscellaneous Collections* 92(4). Washington, D.C.

Hector, Susan M.
1984 *Late Prehistoric Hunter-Gatherer Activities in Southern San Diego County*. Ph.D. dissertation, Department of Anthropology, University of California, Los Angeles.
2007 *Archaeological Investigations at University House Meeting Center and Chancellor Residence, CA-SDI-4669 (SDM-W-12), University of California at San Diego, La Jolla, California*. ASM Affiliates.

Laylander, Don
1985 Some Linguistic Approaches to Southern California's Prehistory. *San Diego State University Cultural Resource Management Center Casual Papers* 2(1):14-58.
1991 Organización comunitaria de los yuhandstones occidentales: Una revisión etnográfica y prospecto arqueológico. *Estudios Fronterizos* 24/25:31-60.
1997 Inferring Settlement Systems for the Prehistoric Hunter-Gatherers of San Diego County, California. *Journal of California and Great Basin Anthropology* 19:179-196.
2000 *Early Ethnography of the Californias, 1533-1825*. Coyote Press Archives of California Prehistory No. 47, Salinas.

Meighan, Clement W.
1959 California Cultures and the Concept of an Archaic Stage. *American Antiquity* 24:289-305.

NPS (National Park Service)
2009 Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines [As Amended and Annotated]. Electronic document, http://www.nps.gov/history/local-law/arch_stnds_0.htm, accessed on March 19, 2009.

NPS and ACHP (National Park Service and the Advisory Council on Historic Preservation)
1998 The Secretary of the Interior's Standards and Guidelines for Federal Agency Historic Preservation Programs Pursuant to the National Historic Preservation Act. Published jointly by the National Park Service of the U.S. Department of the Interior and the Advisory Council on Historic Preservation.

Owen, Roger C.
1965 The Patrilineal Band: A Linguistically and Culturally Hybrid Social Unit. *American Anthropologist* 67:675-690.

Pigniolo, Andrew R.
2004 Points, Patterns, and People: Distribution of the Desert Side-Notched Point in San Diego. *Proceedings of the Society for California Archaeology* 14:27-39.

Pigniolo, Andrew R., James Cleland, and Rebecca Apple
1996 Between Coast and Foothill: Archaeological Evaluation for the Proposed Alternative Northern and Central State Route 56 Alignments, City of San Diego, California. KEA Environmental, Submitted to City of San Diego.

Pourade, Richard F.
1960-1967 *The History of San Diego*. 6 vols. Union-Tribune Publishing Company, San Diego.

Preston, William L.
2002 Portents of Plague from California's Protohistoric Period. *Ethnohistory* 49:69-121.

Pryde, Philip R.
2004 The Nature of the County: San Diego's Climate, Soils, Vegetation, and Wildlife. In *San Diego: An Introduction of the Region*, by Philip R. Pryde, pp. 31-51. 4th ed. Sunbelt Publications, San Diego.

Rogers, Malcolm J.
1929 The Stone Art of the San Dieguito Plateau. *American Anthropologist* 31:454-467.
1945 An Outline of Yuman Prehistory. *Southwestern Journal of Anthropology* 1:167-198.

Schaefer, Jerry
1998 Archaeological consulting Services: CA-SDI-13077H Inspection and Evaluation. ASM Affiliates. Submitted to Ray Schooley. Unpublished Report on file at south Coastal Information Center, San Diego State University.

Shipek, Florence Connolly
1982 Kumeyaay Socio-Political Structure. *Journal of California and Great Basin Anthropology* 4:296-303.

Spier, Leslie
1923 Southern Diegueño Customs. *University of California Publications in American Archaeology and Ethnology* 20:295-358. Berkeley.

Strand, Rudolph G.
1962 San Diego-El Centro Sheet. Geologic Map of California. California Division of Mines and Geology, Sacramento.

True, D. L.
1966 Archaeological Differentiation of Shoshonean and Yuman Speaking Groups in Southern California. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Los Angeles.
1980 The Pauma Complex in Northern San Diego County: 1978. *Journal of New World Archaeology* 3(4):1-39.

Wallace, William J.
1955 A Suggested Chronology for Southern California Coastal Archaeology. Southwestern Journal of Anthropology 11:214-230.

Warren, Claude N.
1964 Cultural Change and Continuity on the San Diego Coast. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Los Angeles.
1968 Cultural Tradition and Ecological Adaptation on the Southern California Coast. In *Archaic Prehistory in the Western United States*, edited by Cynthia Irwin-Williams, pp. 1-14. Eastern New Mexico University Contributions in Anthropology No. 1. Portales.

Warren, Claude N., Gretchen Siegler, and Frank Dittmer
2004 Paleoindian and Early Archaic Periods. Chapter 2 in *Prehistoric and Historic Archaeology of Metropolitan San Diego: A Historic Properties Background Study*. ASM Affiliates, Encinitas, California. Prepared for the Metropolitan Wastewater Department, City of San Diego.

Willis, Chad A., Micah Hale, and Brad Comeau
2010 *Cultural Resources Inventory Report for the Rhodes Crossing Project, San Diego County, California*. ASM Affiliates. Submitted to Keith B. Rhodes. Unpublished report on file at the South Coast Information Center, San Diego, California.

ASM affiliates
Archaeology • History • Ethnography • Architectural History

February 6, 2015

Gary Levitt
Sea Breeze Properties
3525 Del Mar Heights Road # 246
San Diego, CA 92130

Re: East Trail Project Area Addition Amendment to the Cultural Resources Survey Report for the Merge 56 Development Project, San Diego County, California

Dear Mr. Levitt,

This letter report documents the results of a record search review and archaeological survey of the East Trail Project (Project), San Diego County California by ASM Affiliates, Inc. (ASM). The East Trail Project is an addition to the Merge 56 Development Project, San Diego County, California (see Sharlotta 2014). The current study was completed in compliance with the California Environmental Quality Act (CEQA), the City of San Diego guidelines, and Section 106 of the National Historic Preservation Act (NHPA) requirements. No cultural resources were identified within the Project area during the record search review and the archaeological survey.

Project Description and Location

The Project consists of the addition of a trail to the Merge 56 Development Project. The trail connects to the Merge 56 Development Project along the east side of the proposed Camino Del Sur roadway and extends approximately ¼-mile (402 meters) to the east to connect to the existing City of San Diego Trail System. The Project area is shown in Figures 1, 2, and 3.

Specifically the Project area is located within Township 14 South, Range 3 West, Section 13 and the unsectioned Los Peñasquitos Land Grant, shown on the USGS 7.5' Del Mar, California Topographic Quad Map.

Study Methods

A Cultural Resources Study for the Merge 56 Development Project was prepared by ASM Affiliates in July of 2014 (Scharlotta 2014). The study included a one-mile radius records search of the California Historical Resources Information System (CHRIS) at the South Coastal Information Center (SCIC) and a pedestrian archaeological survey of the Merge 56 Development Project area. The Merge 56 Development Project record search area encompassed all of the current Project area and was used for this Project (Scharlotta 2014).

For the current investigation the survey field crew consisted of ASM Senior Archaeologist Shelby Castells, who meets the Secretary of the Interior Qualification standards and Native

American Monitor Kelly LaChappa from the La Posta Band of Mission Indians. Standard transect spacing was 15-m, although spacing was reduced to 3 to 5 m within areas of poor ground surface visibility due to dense vegetation. Transects generally followed an east to west orientation.

A field survey form on the condition and findings of the survey were completed immediately after the fieldwork. This form included a description of vegetation cover (including contextual photos), as well as estimates of ground surface visibility, rated as poor (0-25 percent), fair (26-50 percent), good (51-75 percent), or excellent (76-100 percent). Evidence for buried cultural deposits was opportunistically sought through inspection of natural or artificial erosion exposures and the spoils from rodent burrows.

ASM employs site definitions that meet the Secretary of Interior's standards for recording archaeological sites. These standards are based off of the basic definition of a site as either three or more artifacts, or two or more artifacts of two different kinds, in a 25 m^2 area.

Standard global positioning systems (GPS) aided navigation in the field. Together with hard-copy field maps, GPS receivers were used to keep the field crew aware at all times of the limits of the Project area and would be used to record the datum of archaeological sites to decimeter-level accuracy if needed.

Study Results

The SCIC record search showed that no cultural resources had been previously recorded within the Project area. The full record search review is available within the Merge 56 Development Project Report (Scharlotta 2014).

The pedestrian archaeological survey of the Project area was performed on February 4, 2015. The Project area was surveyed in east to west transects. The Project area was characterized by dense chaparral vegetation and steep slopes (Figures 4 and 5). Ground surface visibility was poor across all of the Project area. The soil within the Project area consisted of reddish brown silt with water worn cobble inclusions. Several drainages and steep slopes crossed the Project area. The survey did not identify any cultural resources within the Project area.

Conclusions

No cultural resources were identified during the record search or during the pedestrian survey of the Project area.

Should you have any questions regarding this study, please do not hesitate to contact me.

Respectfully submitted,

Shelby G. Castells

Shelby Gunderman Castells, M.A., RPA
Senior Archaeologist

Attachments

Figure 1. Project vicinity map.
Figure 2. Project location, shown on the Del Mar USGS 7.5' Quadrangle and aerial photograph.
Figure 3. Project location shown on the City of San Diego 800' map.
Figure 4. Overview of the Project area, facing west.
Figure 5. Overview of the Project area, facing east.

Reference

Scharlotta, Ian
2014 *Cultural Resources Survey Report for the Merge 56 Development Project, San Diego County, California.* ASM Affiliates, Inc, San Diego. Submitted to Sea Breeze Properties, LLC.

Figure 1. Project vicinity map.

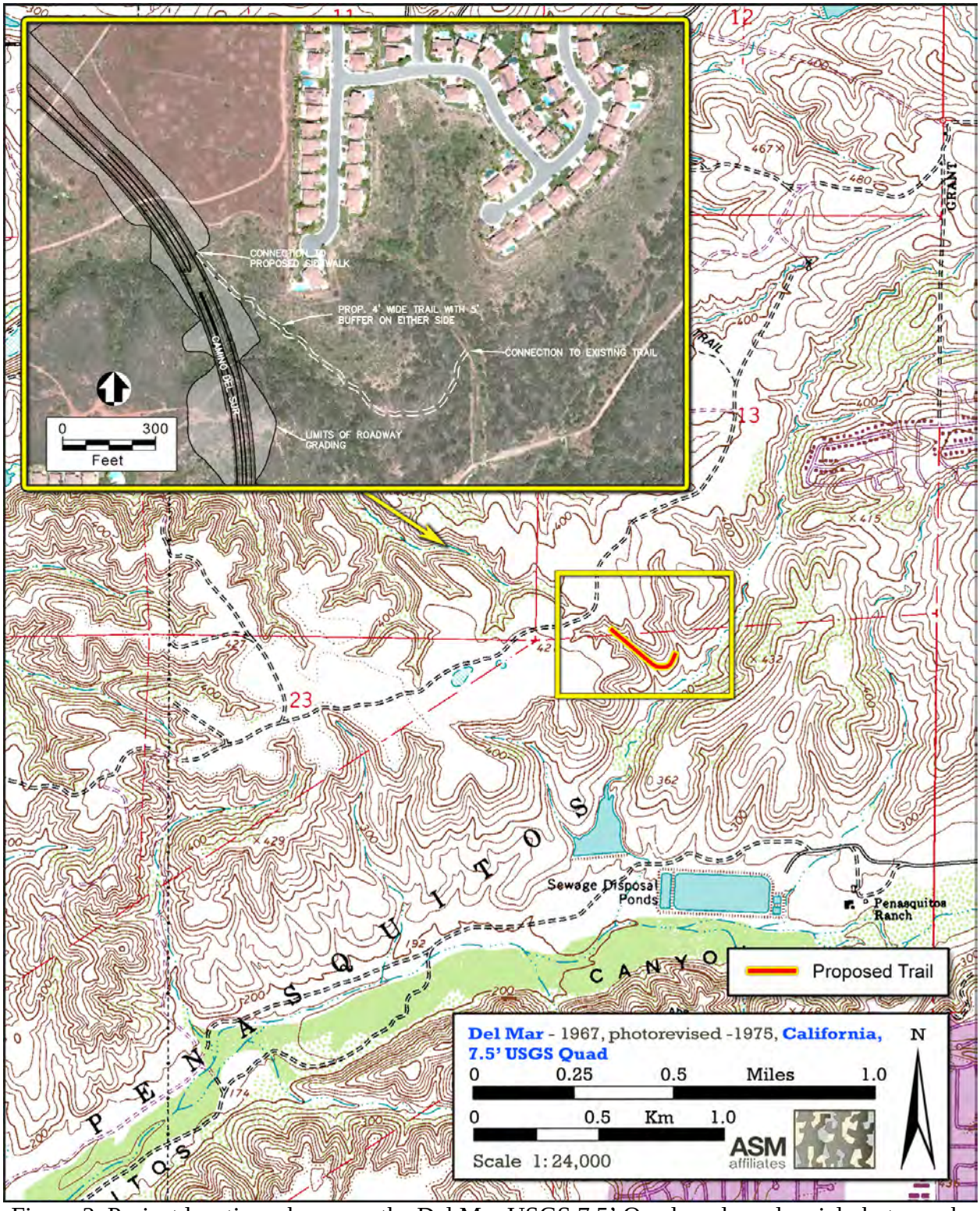

Figure 2. Project location, shown on the Del Mar USGS 7.5' Quadrangle and aerial photograph.

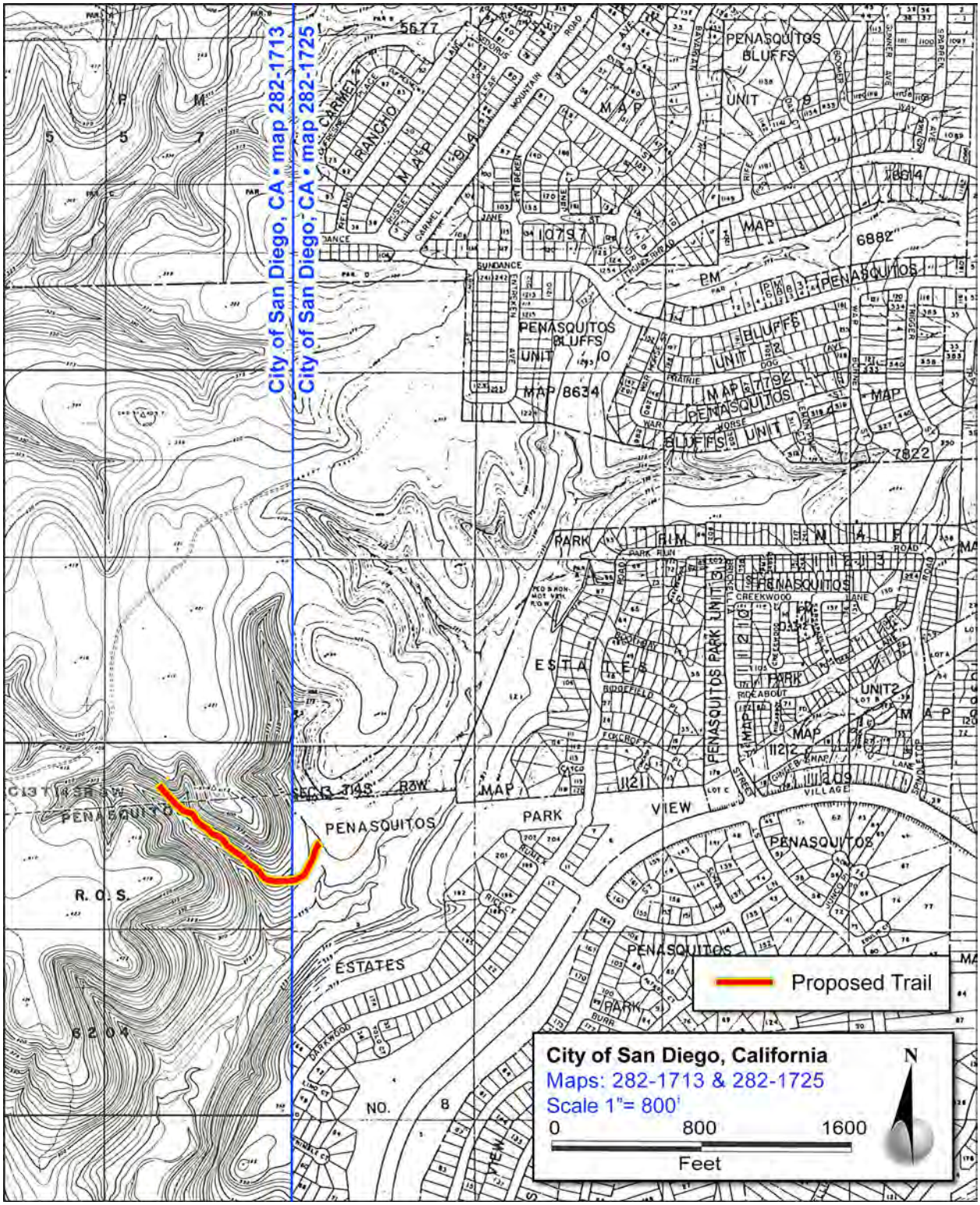

Figure 3. Project location shown on the City of San Diego 800' map.

Figure 4. Overview of the Project area, facing west.

Figure 5. Overview of the Project area, facing east.

CITY OF SAN DIEGO

Date of Notice: 02-26-14

NOTICE OF POTENTIAL ACTION SUBJECT TO THE REQUIREMENTS OF SB 18
LOCAL AND TRIBAL INTERGOVERNMENTAL CONSULTATION

This is a Notice of the opportunity to consult with the City of San Diego for the purpose of preserving, or mitigating impacts to cultural places located on land within the City's jurisdiction that is affected by the proposed Torrey Highlands Subarea Plan community plan amendment in the attached Report to the Planning Commission, Report No. 13-106. You have 90 days from the date you receive this notification to request consultation by calling Michael Prinz, Senior Planner in the Planning Division of Development Services Department at 619-533-5931. You may also request consultation via email to --- MPrinz@sandiego.gov; fax at (619) 236-6478, or regular mail sent to Michael Prinz at 1222 First Avenue, MS413, San Diego, CA, 92101.

The City of San Diego would very much like to hear from you regarding this notice. The hearing described below was the first step in the community plan amendment process. The Planning Commission voted to initiate the proposed plan amendment, and the project entitlements are being processed through the development review process, including preparation of an environmental document that will be made available for public review. Approval of the initiation does not constitute an endorsement of the project proposal. A staff recommendation will be developed once the project has been fully analyzed, including the results of any requested Native American consultation.

Regardless of whether you request consultation at this stage of the process or not, you will be sent future project information (via email, fax, or USPS) such as a 45 day notice, a community plan amendment initiation package, a notice of availability of the associated environmentaldocument, and a notice of any future public hearings for your review. Because it is very early in the planning review process, an environmental initial study has not been prepared by the City of San Diego. It is unknown if there are previously identified cultural resource sites located within the project area or immediate vicinity.

DATE OF HEARING:	**September 19, 2013**
TIME OF HEARING:	**9:00 A.M.**
LOCATION OF HEARING:	**Council Chambers, 12th Floor, City Administration Building; 202 C Street, San Diego, CA 92101**
UNDER CONSIDERATION:	Initiation of an Amendment to the Torrey Highlands Subarea Plan to redesignate approximately 42 acres from Commercial Regional and Medium High Density Residential to Local Mixed Use located south of State Route 56, east of the planned extension of Camino del Sur, and west of Carmel Mountain Road.
CITY STAFF:	**Michael Prinz**
PHONE NUMBER:	**(619) 533-5931**

If you have any questions after reviewing this information, contact the City Staff member listed above.

VIEJAS
TRIBAL GOVERNMENT

P.O Box 908
Alpine, CA 91903
#1 Viejas Grade Road
Alpine, CA 91901

Phone: 6194453810
Fax: 6194455337
viejas.com

February 26, 2014

Tony Kempton
1222 First Ave., MS 413
San Diego, CA 92101

RE: Torrey Hills Subarea - Seabreeze

Dear Mr. Kempton,

The Viejas Band of Kumeyaay Indians ("Viejas") has reviewed the proposed project and at this time we have determined that the project site is has cultural significance or ties to Viejas and should not be disturbed. If and when project is approved, Viejas Band request that a Native American Cultural Monitor be on site for initial ground disturbing activities to inform us of any new developments such as inadvertent discovery of cultural artifacts, cremation sites, or human remains. Please call Julie Hagen for scheduling at 619-659-2339 or email jhagen@viejas-nsn.gov. Thank you

Sincerely,
VIEJAS BAND OF KUMEYAAY INDIANS

APPENDIX E

Noise Study

NOISE STUDY

Merge 56
Residential and Commercial Development
City of San Diego

City Project No. 360009

Prepared for:

Latitude 33 Planning & Engineering
c/o Sea Breeze Properties
5355 Mira Sorrento Place, Suite 650
San Diego, CA 92121

Prepared by:

Ldn Consulting, Inc.
42428 Chisolm Trail
Murrieta, CA 92562
760-473-1253

May 20, 2015

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GLOSSARY OF TERMS

Sound Pressure Level (SPL): a ratio of one sound pressure to a reference pressure (L_{ref}) of 20 µPa. Because of the dynamic range of the human ear, the ratio is calculated logarithmically by 20 log (L/L_{ref}).

A-weighted Sound Pressure Level (dBA): Some frequencies of noise are more noticeable than others. To compensate for this fact, different sound frequencies are weighted more.

Minimum Sound Level (L_{min}): Minimum SPL or the lowest SPL measured over the time interval using the A-weighted network and slow time weighting.

Maximum Sound Level (L_{max}): Maximum SPL or the highest SPL measured over the time interval the A-weighted network and slow time weighting.

Equivalent sound level (L_{eq}): the true equivalent sound level measured over the run time. Leq is the A-weighted steady sound level that contains the same total acoustical energy as the actual fluctuating sound level.

Day Night Sound Level (LDN): Representing the Day/Night sound level, this measurement is a 24 –hour average sound level where 10 dB is added to all the readings that occur between 10 pm and 7 am. This is primarily used in community noise regulations where there is a 10 dB "Penalty" for night time noise. Typically LDN's are measured using A weighting.

Community Noise Exposure Level (CNEL): The accumulated exposure to sound measured in a 24-hour sampling interval and artificially boosted during certain hours. For CNEL, samples taken between 7 pm and 10 pm are boosted by 5 dB; samples taken between 10 pm and 7 am are boosted by 10 dB.

Octave Band: An octave band is defined as a frequency band whose upper band-edge frequency is twice the lower band frequency.

Third-Octave Band: A third-octave band is defined as a frequency band whose upper band-edge frequency is 1.26 times the lower band frequency.

Response Time (F,S,I): The response time is a standardized exponential time weighting of the input signal according to fast (F), slow (S) or impulse (I) time response relationships. Time response can be described with a time constant. The time constants for fast, slow and impulse responses are 1.0 seconds, 0.125 seconds and 0.35 milliseconds, respectively.

EXECUTIVE SUMMARY

This noise study has been completed to determine the noise impacts associated with the development of the proposed residential project. The project known as "Merge 56" consists of approximately 42 acres and includes 242 residential units, 525,000 square feet of commercial office and the extension of Camino Del Sur and Carmel Mountain Road. The project site is located east of Camino Del Sur, west of Carmel Mountain Road, and south of State Route 56 in the City of San Diego CA.

Operational Noise Levels

Based upon the property line noise levels determined for the Project none of the proposed noise sources exceeds the property line standards. Therefore, the proposed development related operational noise levels comply with the City's daytime and evening noise standards. No impacts are anticipated and no mitigation is required.

On-Site Transportation Noise Findings

All the residential units will comply with the City's 65 dBA standard with the proposed 3 foot wall along Camino Del Sur and a combination of 4 to 8 foot walls at the northeastern corner of the site adjacent to SR-56 and Carmel Mountain Road. The commercial uses were found to be below the City compatibility threshold of 75 dBA CNEL at the proposed outdoor use areas. The barriers will be constructed of a non-gapping material consisting of masonry, glass, or a combination of these materials.

An interior noise assessment is required for the residential units along the roadways once the architectural floor plans are available. This final report would identify the interior noise requirements to meet the City's established interior noise limit of 45 dBA CNEL. It should be noted; a closed window condition will be required necessitating a means of mechanical ventilation (e.g. air conditioning) along with upgraded windows for all sensitive rooms (e.g. bedrooms and living spaces).

To meet the 50 dBA CNEL interior noise standard at the commercial uses, an interior noise level reduction of minimum 22 dBA CNEL is needed for the proposed project. Therefore with the incorporation of a minimum STC 26 rated dual pane windows and mechanical ventilation will achieve the necessary interior noise reductions to meet the City's 50 dBA CNEL standard. Office spaces shall be provided with a continuously running fan to comply with indoor air quality per ASHRAE 62.2-2007.

Off-Site Transportation Noise Findings

The project does not create a direct noise increase of more than 3 dBA CNEL along Camino Del Sur south of the site. Therefore, the project's direct contributions to off-site roadway noise increases will not cause any significant impacts to any existing or future noise sensitive land uses. No mitigation is required.

Construction Noise Findings

During the site preparation and grading the equipment will be spread out over the project site from distances near the occupied property to distances of more than 250-feet. Based upon the calculations of the noise levels when construction equipment is located near the property line the average noise levels are anticipated not to exceed the 75 dBA 12-hour standard and no impacts will occur and no mitigation measures are required.

The roadway construction activities for the extension of Camino Del Sur are anticipated not to exceed the 75 dBA 12-hour standard and no impacts will occur and no mitigation measures are required

The commercial building construction was found to comply with the 75 dBA 12-hour standard at a distance of 100 feet. Therefore, no mitigation or impacts are anticipated to any existing or proposed residential uses.

1.0 PROJECT INTRODUCTION

1.1 Purpose of this Study

The purpose of this Noise study is to determine potential onsite traffic noise impacts (if any) created from adjacent State Route 56 (SR-56), Camino Del Sur, and Carmel Mountain Road. Should impacts be determined, the intent of this study would be to recommend suitable mitigation measures to bring those impacts to a level that would be considered less than significant.

1.2 Project Location

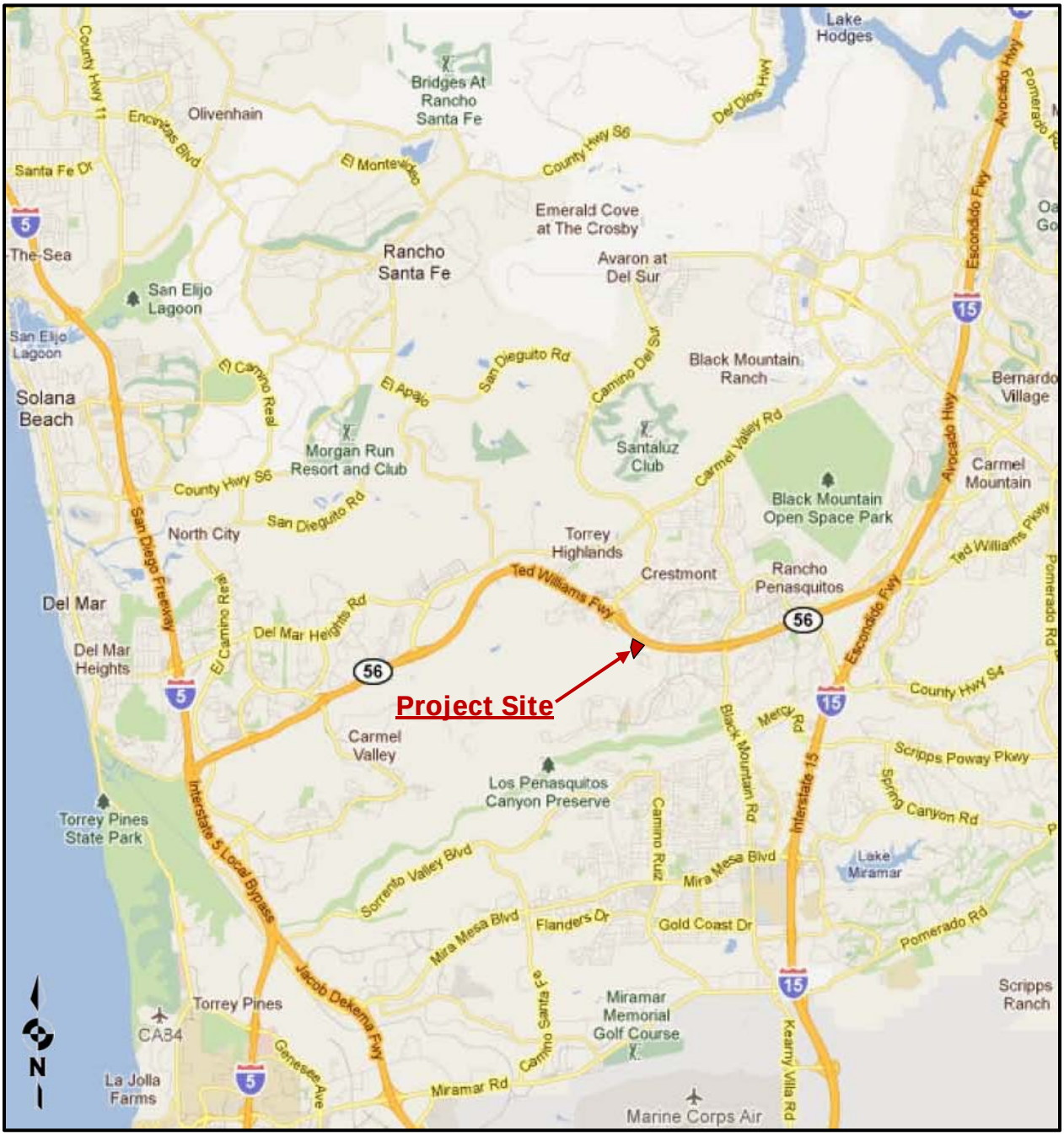
The project site is located east of Camino Del Sur, west of Carmel Mountain Road, and south of State Route 56 in the City of San Diego CA. A general project vicinity map is shown in Figure 1–1 on the following page.

1.3 Project Setting

The Merge 56 applicant proposes to modify and reconfigure land uses approved for Units 4, 5 and 10 as part of the Rhodes Crossings project. Instead of constructing 273,855 square feet of self-storage, 250,000 square feet of commercial and 242 multi-family residences, the Merge 56 Development Project proposes approximately 525,000 square feet of commercial, office, theater and hotel uses and up to 242 residential dwelling units. The residential units would include a mix housing types including multi-family (approximately 47 affordable units), townhomes (approximately 111 units), and single family (approximately 84 units). Commercial uses would occupy approximately 14 acres of the site, while multi-family residential uses would occupy approximately 6 acres and single-family residential development would occupy approximately 10.4 acres. Roads and slopes would occupy the balance of the development site.

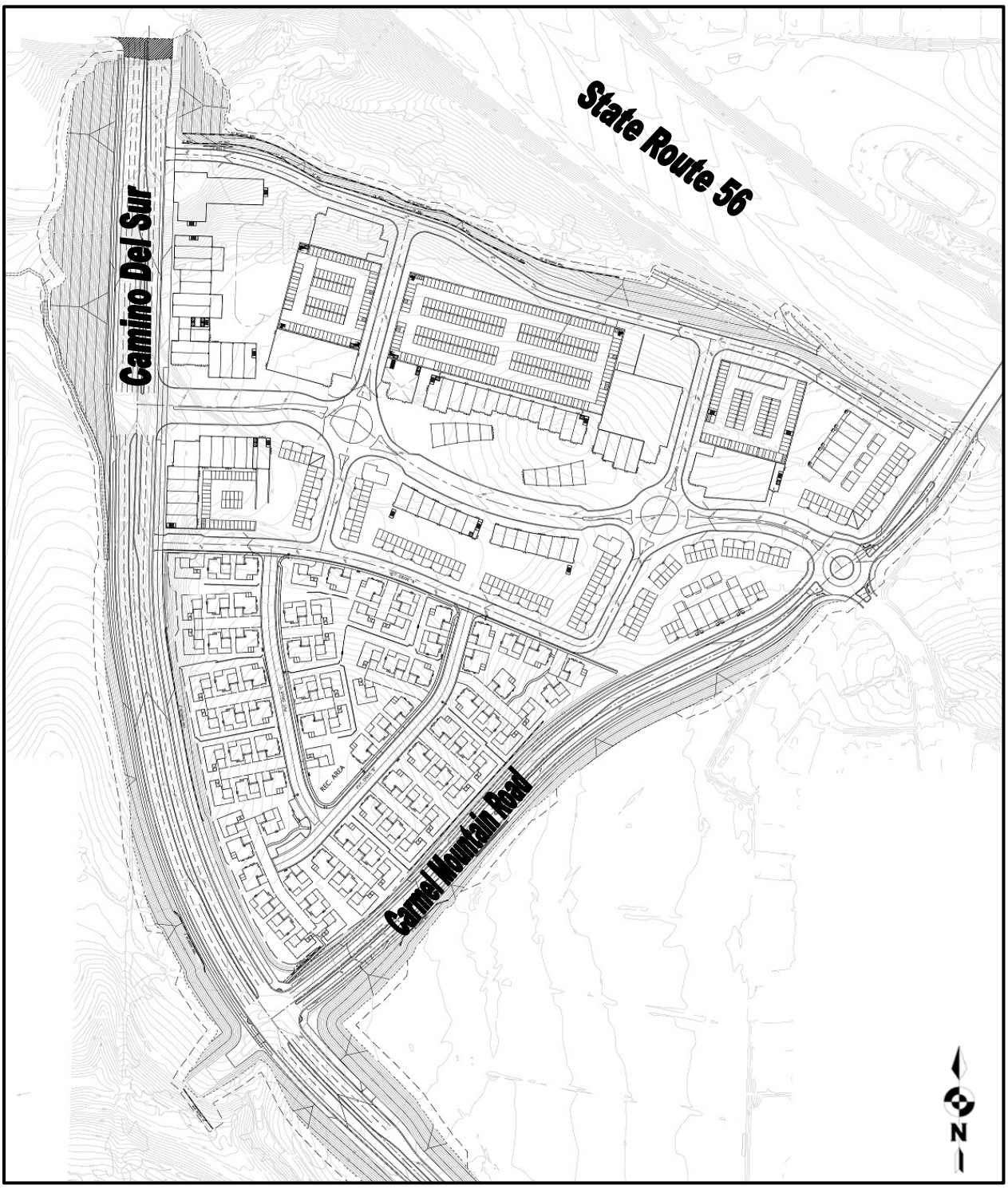
In addition to developing commercial, theater, office, hotel and residential uses, the applicant would construct underground utilities (i.e., sewer, water, electrical and storm drains/detention basins), private streets and half-width improvements for Camino Del Sur and Carmel Mountain Road along the frontage of the Merge 56 property. Parking to serve the on-site uses would be provided in several above-ground structures and various surface lots integrated among the various land uses. Existing residential uses surround the majority of the site with some commercial uses to the northwest. A project site plan is shown in Figure 1–2 on Page 3 of this report.

Figure 1-1: Project Vicinity Map



Source: Google Maps, 2015

Figure 1-2: Project Site Plan



Source: Latitude 33, 2015

2.0 ACOUSTICAL FUNDAMENTALS

Noise is defined as unwanted or annoying sound which interferes with or disrupts normal activities. Exposure to high noise levels has been demonstrated to cause hearing loss. The individual human response to environmental noise is based on the sensitivity of that individual, the type of noise that occurs and when the noise occurs.

Sound is measured on a logarithmic scale consisting of sound pressure levels known as a decibel (dB). The sounds heard by humans typically do not consist of a single frequency but of a broadband of frequencies having different sound pressure levels. The method for evaluating all the frequencies of the sound is to apply an A-weighting to reflect how the human ear responds to the different sound levels at different frequencies. The A-weighted sound level adequately describes the instantaneous noise whereas the equivalent sound level depicted as Leq represents a steady sound level containing the same total acoustical energy as the actual fluctuating sound level over a given time interval.

The Community Noise Equivalent Level (CNEL) is the 24 hour A-weighted average for sound, with corrections for evening and nighttime hours. The corrections require an addition of 5 decibels to sound levels in the evening hours between 7 p.m. and 10 p.m. and an addition of 10 decibels to sound levels at nighttime hours between 10 p.m. and 7 a.m. These additions are made to account for the increased sensitivity during the evening and nighttime hours when sound appears louder.

A vehicles noise level is from a combination of the noise produced by the engine, exhaust and tires. The cumulative traffic noise levels along a roadway segment are based on three primary factors: the amount of traffic, the travel speed of the traffic, and the vehicle mix ratio or number of medium and heavy trucks. The intensity of traffic noise is increased by higher traffic volumes, greater speeds and increased number of trucks.

Because mobile/traffic noise levels are calculated on a logarithmic scale, a doubling of the traffic noise or acoustical energy results in a noise level increase of 3 dBA. Therefore the doubling of the traffic volume, without changing the vehicle speeds or mix ratio, results in a noise increase of 3 dBA. Mobile noise levels radiant in an almost oblique fashion from the source and drop off at a rate of 3 dBA for each doubling of distance under hard site conditions and at a rate of 4.5 dBA for soft site conditions. Hard site conditions consist of concrete, asphalt and hard pack dirt while soft site

conditions exist in areas having slight grade changes, landscaped areas and vegetation. On the other hand, fixed/point sources radiate outward uniformly as it travels away from the source. Their sound levels attenuate or drop off at a rate of 6 dBA for each doubling of distance.

The most effective noise reduction methods consist of controlling the noise at the source, blocking the noise transmission with barriers or relocating the receiver. Any or all of these methods may be required to reduce noise levels to an acceptable level.

3.0 SIGNIFICANCE THRESHOLDS AND STANDARDS

3.1 Construction Noise

Division 4 of Article 9.5 of the City of San Diego Municipal Code addresses the limits of disturbing or offensive construction noise. The Municipal Code states that with the exception of an emergency, it should be unlawful to conduct any construction activity so as to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 decibels during the 12–hour period from 7:00 a.m. to 7:00 p.m.

3.2 Operational Noise

Land Development Code

The generation of noise from certain types of land uses could cause potential land use incompatibility. A project which would generate noise levels at the property line which exceed Section 59.5.0401 of the City's Municipal Code is considered potentially significant, as identified in Table 3-1 below.

Table 3-1: Sound Level Limits in Decibels (dBA)

Land Use	Time of Day	One-Hour Average Sound Level (decibels)
1. Single Family Residential	7 a.m. to 7 p.m. 7 p.m. to 10 p.m. 10 p.m. to 7 a.m.	50 45 40
2. Multi-Family Residential (Up to a maximum density of 1/2000)	7 a.m. to 7 p.m. 7 p.m. to 10 p.m. 10 p.m. to 7 a.m.	55 50 45
3. All other Residential	7 a.m. to 7 p.m. 7 p.m. to 10 p.m. 10 p.m. to 7 a.m.	60 55 50
4. Commercial	7 a.m. to 7 p.m. 7 p.m. to 10 p.m. 10 p.m. to 7 a.m.	65 60 60
5. Industrial or Agricultural	any time	75

Source: City of San Diego Noise Ordinance Section 59.5.0401

Section 59.5.0401 of the Noise Ordinance sets a more restrictive operational exterior noise limit for commercial/office uses of 65 dBA Leq for daytime hours of 7 a.m. to 7 p.m. and 60 dBA Leq during the noise sensitive nighttime hours of 7 p.m. to 7 a.m. Project components will only operate during the daytime hours but a few may operate during nighttime or early morning hours and therefore the most conservative approach is to apply the 60 dBA Leq nighttime standard at the property lines.

City General Plan

The City uses the Land Use - Noise Compatibility Guidelines as shown on Table NE-3 in the Noise Element of the General Plan (provided as Table 3-2 below) for evaluating land use noise compatibility when reviewing proposed land use development projects. A "compatible" land use indicates that standard construction methods will attenuate exterior noise to an acceptable indoor noise level and people can carry out outdoor activities with minimal noise interference. Evaluation of land use that falls into the "conditionally compatible" noise environment should have an acoustical study prepared. The acoustical study should include, with consideration of the type of noise source, the sensitivity of the noise receptor, and the degree to which the noise source may interfere with speech, sleep, or other activities characteristic of the land use. For land uses indicated as "conditionally compatible", structures must be capable of attenuating exterior noise to the indoor noise level as shown in Table 3-2. For land uses indicated as "incompatible", new construction should generally not be undertaken.

Additionally, if the project is proposed within the Airport Environs Overlay Zone (AEOZ) as defined in Chapter 13, Article 2, Division 3 of the San Diego Municipal Code, the potential exterior noise impacts from aircraft noise would not constitute a significant environmental impact. However, the City recommends that structures within an AEOZ must also follow the requirements as shown in Table 3-2.

3.3 City CEQA Significance Determination Thresholds

In accordance with CEQA, a project should not have a noticeable adverse impact on the surrounding environment. Noise level changes greater than 3 dBA, or a doubling of the acoustic energy, are often identified as audible and considered potentially significant, while changes less than 1 dBA are not discernible. In the range of 1 to 3 dBA, humans who are very sensitive to noise may perceive a slight change. For the purposes for this analysis, a direct and cumulative roadway noise impact would be considered significant if the project increases noise levels at a noise sensitive land use 3 dBA CNEL and if the noise level increases above an unacceptable noise level per the City's General Plan.

Table 3-2: Land Use - Noise Compatibility Guidelines

Land Use Category	Exterior Noise Exposure (dBA CNEL)				
	60	65	70	75	
Open Space and Parks and Recreational					
Community & Neighborhood Parks; Passive Recreation					
Regional Parks; Outdoor Spectator Sports, Golf Courses; Athletic Fields; Outdoor Spectator Sports, Water Recreational Facilities; Horse Stables; Park Maint. Facilities					
Agricultural					
Animal Raising, Maintain & Keeping; Commercial Stables					
Residential					
Single Units; Mobile Homes; Senior Housing		45			
Multiple Units; Mixed-Use Commercial/Residential; Live Work; Group Living Accommodations **For uses affected by aircraft noise, refer to Policies NE-D.2. & NE-D.3.*		45	45*		
Institutional					
Hospitals; Nursing Facilities; Intermediate Care Facilities; Kindergarten through Grade 12 Educational Facilities; Libraries; Museums; Places of Worship; Child Care Facilities		45			
Vocational or Professional Educational Facilities; Higher Education Institution Facilities (Community or Junior Colleges, Colleges, or Universities)		45	45		
Cemeteries					
Sales					
Building Supplies/Equipment; Food, Beverages & Groceries; Pets & Pet Supplies; Sundries, Pharmaceutical, & Convenience Sales; Wearing Apparel & Accessories			50	50	
Commercial Services					
Building Services; Business Support; Eating & Drinking; Financial Institutions; Assembly & Entertainment; Radio & Television Studios; Golf Course Support			50	50	
Visitor Accommodations		45	45	45	
Offices					
Business & Professional; Government; Medical, Dental & Health Practitioner; Regional & Corporate Headquarters			50	50	
Vehicle and Vehicular Equipment Sales and Services Use					
Commercial or Personal Vehicle Repair & Maintenance; Commercial or Personal Vehicle Sales & Rentals; Vehicle Equipment & Supplies Sales & Rentals; Vehicle Parking					
Wholesale, Distribution, Storage Use Category					
Equipment & Materials Storage Yards; Moving & Storage Facilities; Warehouse; Wholesale Distribution					
Industrial					
Heavy Manufacturing; Light Manufacturing; Marine Industry; Trucking & Transportation Terminals; Mining & Extractive Industries					
Research & Development				50	

	Compatible	Indoor Uses	Standard construction methods should attenuate exterior noise to an acceptable indoor noise level. Refer to Section I.
		Outdoor Uses	Activities associated with the land use may be carried out.
	Conditionally Compatible	Indoor Uses	Building structure must attenuate exterior noise to the indoor noise level indicated by the number for occupied areas. Refer to Section I.
		Outdoor Uses	Feasible noise mitigation techniques should be analyzed and incorporated to make the outdoor activities acceptable. Refer to Section I.
	Incompatible	Indoor Uses	New construction should not be undertaken.
		Outdoor Uses	Severe noise interference makes outdoor activities unacceptable.

Source: City of San Diego Noise Element (2008)

4.0 EXISTING NOISE ENVIRONMENT

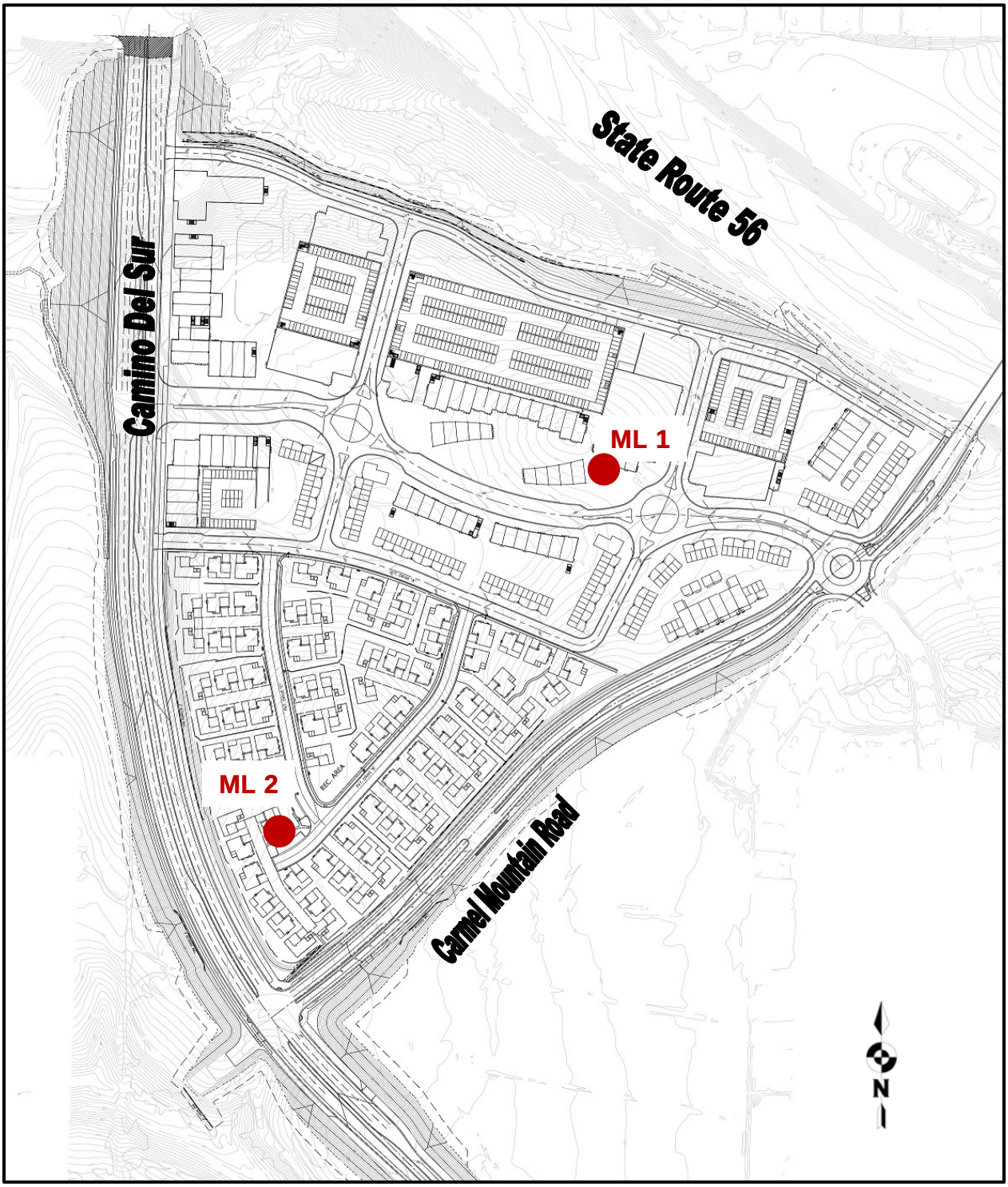
Noise measurements were taken using a Larson-Davis Model LxT Type 1 precision sound level meter, programmed, in "slow" mode, to record noise levels in "A" weighted form. The sound level meter and microphone were mounted on a tripod, five feet above the ground and equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 200.

Monitoring location 1 (M1) was located roughly 400-feet from the northern property line and approximately 500-feet from Carmel Mountain Road. Monitoring location 2 (M2) was located towards the southern property line of the project near approximately 1,200 feet from M1. The results of the noise level measurements are presented in Table 4-1. The noise measurements were monitored for a time period of 15 minutes. The existing noise levels in the project area consisted primarily of background traffic along State Route 56. The ambient Leq noise levels measured in the area of the project during the morning hour were found to be between 36 dBA Leq and 51 dBA Leq. The statistical indicators Lmax, Lmin, L10, L50 and L90, are given for the monitoring location. As can be seen from the L90 data, 90% of the time the noise level is between 34-48 dBA. The noise monitoring locations are provided graphically in Figure 4-1 on the following page.

Table 4-1: Measured Ambient Noise Levels

Measurement Identification	Description	Time	Noise Levels (dBA)					
			Leq	Lmax	Lmin	L10	L50	L90
M1	Northern PL	7:15-7:30 a.m.	50.4	54.9	43.4	52.2	50.0	48.0
M2	Southern PL	7:30-7:45 a.m.	36.6	47.9	32.9	37.8	36.6	34.6
Source: Ldn Consulting, Inc. July 15, 2014								

Figure 4-1: Ambient Noise Monitoring Locations



5.0 FUTURE ON-SITE OPERATIONAL NOISE LEVELS

This section examines the potential stationary noise source levels and delivery operations associated with the development and operation of the proposed project. Noise from a fixed or point source drops off at a rate of 6 dBA for each doubling of distance. Which means a noise level of 70 dBA at 5-feet would be 64 dBA at 10-feet and 58 dBA at 20-feet. A review of the proposed project indicates that noise sources such as delivery trucks and the mechanical ventilation system (HVAC) are the primary sources of stationary noise.

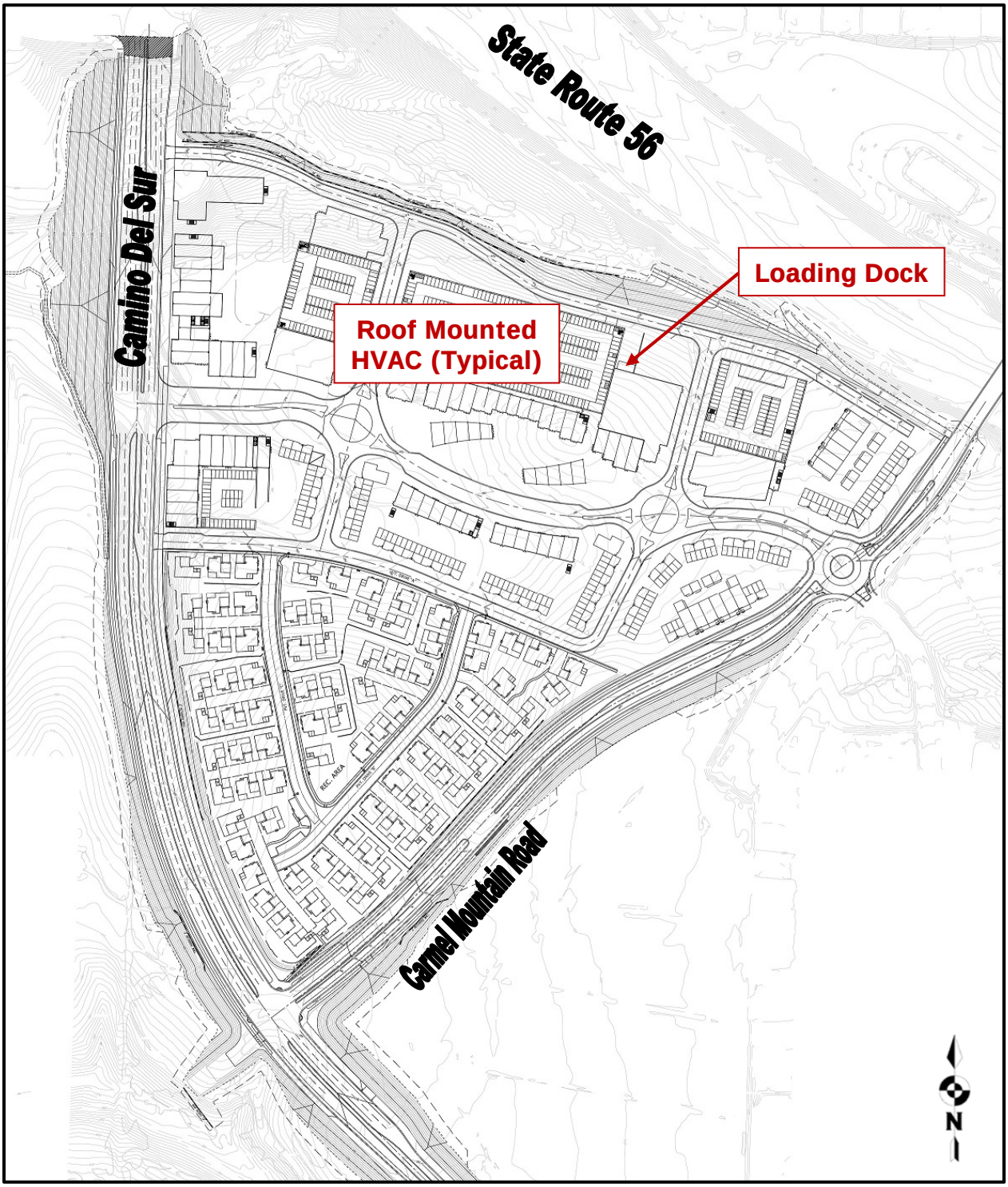
The locations of the loading docks noise sources are shown in Figure 5-1. Each building will have a series of HVAC unit for temperature control and are discussed in more detail below. The most sensitive property line to the operational noise sources, by distance and orientation, is the property line at the proposed town homes. The section will analyze the property line to determine the worst case noise levels. All other property lines are located further from the noise sources and have a commercial zoning allowing a less restrictive noise standard or a higher noise level.

5.1 Reference Noise Levels

This section provides a detailed description of the reference noise level measurement results. It is important to note that the following projected noise levels assume the worst-case noise environment with the delivery trucks, drive-thru activities and roof-top mounted mechanical ventilation (HVAC) all occurring at the same time. In reality, these noise levels will vary throughout the day. The mechanical ventilation may operate during nighttime hours and the delivery trucks may arrive during early evening or morning hours.

The Project must meet the most restrictive arithmetic mean daytime and evening standards of 55.0 dBA and 50.0 dBA at the residential property lines as shown in Table 3-2 above. Each anticipated noise source is provided in more detail below to determine if direct noise impacts will occur. To determine the noise level reductions from the building parapets that shield the HVAC units Fresnel Barrier Reduction Calculations were utilized for each separate noise source. A cumulative noise level analysis with associated distances, noise reductions and calculations of the proposed sources is provided at the end of this section along with a table showing the individual noise sources and their associated property line noise levels.

Figure 5-1: Noise Source Locations



Delivery Trucks

In order to evaluate the truck delivery noise impacts, the analysis utilized reference noise level measurements taken at an Albertson's Shopping Center in San Diego, California in 2011. The measurements include truck drive-by noise, truck loading/unloading and truck engine noise. The unmitigated exterior noise levels for truck drive-by noise and truck engine noise were measured at 66.5 dBA Leq at a distance of 25-feet from the loading dock.

There is one loading dock proposed at the grocery facility approximately 350 feet from the closest residential property line. A truck will take approximately 5 minutes to drive in the site and position itself into a bay, 30-45 minutes to be unloaded or loaded, and another 5 minutes to exit the bay secure doors, complete necessary paperwork and drive out of the site. This equates to 40-55 minutes it would take for one truck to complete a delivery or pickup, therefore only one truck at the most could deliver to this facility in one hour. During the loading/unloading of the truck the engine can only idle for five (5) minutes in compliance with State air quality requirements. To be conservative, it was assumed the truck engine could be operating for 15 minutes of the total time required during the delivery process (5 minutes at arrival, 5 minutes of idle and 5 minutes at departure).

Noise levels drop 3 decibels each time the duration of the source is reduced in half. Therefore, hourly truck noise level over a 15 minute period would be reduced 6 decibels to 60.5 dBA at a distance of 25-feet based on the limited time of operation. The nearest loading dock at the grocery facility is slightly over 350 feet from the nearest residential property line and the noise level reduction due to distance would be -22.9 dBA. This would result in an unshielded noise level of 37.6 dBA Leq which is below the 50.0 dBA Leq property line standard. No noise impacts are anticipated.

Table 5-1: Delivery Truck Noise Levels (Residential Property Line)

Distance To Observer (Feet)	Reference Noise Level (dBA)	Noise Source Reference Distance (Feet)	Noise Reduction Due To Distance (dBA)	Noise Level At Property Line (dBA)	Quantity per hour	Property Line Cumulative Noise Level (dBA)
350	66.5	25	-22.9	37.6	1	37.6*
*Complies with the nighttime Noise Standard of 50 dBA.						

Air Conditioning Units

Rooftop mechanical ventilation units (HVAC) will be installed on the proposed buildings. In order to evaluate the HVAC noise impacts, the analysis utilized reference noise level measurements taken at a Von's Shopping Center in Murrieta, CA in 2010. The unshielded noise levels for the HVAC units were measured at 65.9 dBA Leq at a distance of 6-feet. The grocery is proposed with a larger 18 ton unit and one smaller unit having a reference noise level of 76 dBA at 3-feet (Source: Lennox Commercial HVAC Units – October, 2005).

To predict the worst-case future noise environment, a continuous reference noise level of 65.9 dBA at 6-feet was used to represent the roof-top mechanical ventilation system for office and retail space and a reference noise level of 76.0 dBA at 3-feet (or 70 dBA at 6-feet) for the grocery, cinema, and fitness center. Even though the mechanical ventilation system will cycle on and off throughout the day, this approach presents the worst-case noise condition. In addition, these units are designed to provide cooling during the peak summer daytime periods, and it is unlikely that all the units will be operating continuously. The noise levels associated with the roof-top mechanical ventilation system will be limited with the proposed parapet walls on each building that will vary in height but will be roughly 1-foot higher than the HVAC units to shield them both visually and acoustically. Hence, the parapet wall will block the line-of-sight from the adjacent residential units.

To determine the noise level reductions from the parapet walls that are planned to be 1-foot higher than the HVAC units on each the Fresnel Barrier Reduction Calculations based on distance, source height, receiver elevation and the top of barrier were modeled. The noise level reductions due to distance and the parapet walls for the nearest residential uses located to the south is provided in Table 5-2 below for each building. The number of HVAC units that are proposed for each building is also provided in Table 5-2 along with the cumulative noise levels. The Fresnel barrier reduction calculations for the parapets are provided in ***Attachment A*** of this report.

The proposed HVAC operational noise levels are in compliance with the City's daytime 55 dBA property line standard and would also meet the most restrictive nighttime standard of 50 dBA. No impacts are anticipated and no further mitigation is required. Additionally, most of the HVAC units will be located farther from the residential property line as part of the proposed project.

Table 5-2: Project HVAC Noise Levels (Nearest Residential Property Line)

Building	Distance To Observer Location (Feet)	Hourly Reference Noise Level (dBA)	Noise Source Reference Distance (Feet)	Noise Reduction Due To Distance (dBA)	Reduction Due To Parapets (dBA)	Noise Level At Property Line (dBA)	Quantity	Property Line Cumulative Noise Level (dBA)*
Loading Dock	442	66.5	25.0	-24.9	0.0	35.6	1	**35.6**
6-story Office	371	65.9	6.0	-35.8	-10.9	19.2	10	**29.2**
4-story Office	194	65.9	6.0	-30.2	-11.6	24.1	4	**30.1**
1-story Retail	168	65.9	6.0	-28.9	-7.4	29.6	7	**38.0**
1-story Retail	543	65.9	6.0	-39.1	-7.4	19.4	7	**27.8**
1-story Retail	301	65.9	6.0	-34.0	-6.0	25.9	4	**31.9**
Cinema	432	70.0	6.0	-37.1	-8.2	24.7	2	**27.7**
Market Hall	220	65.9	6.0	-31.3	-8.0	26.6	5	**33.6**
Market Hall	144	65.9	6.0	-27.6	-8.8	29.5	5	**36.5**
Retail/ Office	249	65.9	6.0	-32.4	-9.7	23.8	11	**34.3**
Fitness	510	70.0	6.0	-38.6	-11.3	20.1	2	**23.1**
1-story Retail	496	65.9	6.0	-38.3	-8.1	19.5	4	**25.5**
3-story Office	777	65.9	6.0	-42.2	-11.5	12.2	6	**19.9**
3-story Office	652	65.9	6.0	-40.7	-9.5	15.7	6	**23.5**
*Complies with the nighttime Noise Standard of 50 dBA.								

5.2 Cumulative Project Noise Levels

It is possible to calculate the cumulative noise levels from the proposed project along the residential property line from each of the proposed noise sources. Although not all the noise sources are close enough to each other in distance or sound level to create a cumulative effect this method is considered ultra conservative in determining impact potential. The cumulative noise levels are calculated separately at the residential at three locations at the Western, Central, and Eastern portions of the site below in Tables 5-3, 5-4 and 5-5, respectively. These projections include the delivery truck noise, drive-thru noise and noise from the HVAC systems of each building and their respective distances.

Table 5-3 below presents the cumulative noise levels at the western residential property line from the proposed commercial development during the daytime and nighttime hours. The resultant cumulative noise level at the southwestern property lines is projected to be at or below 41.5 dBA Leq. Therefore, cumulatively the proposed commercial development related operational noise levels comply with the daytime and nighttime noise standards at the residences to the southwest. No Impacts are anticipated and no mitigation is required.

Table 5-3: Cumulative Noise Levels (Western Residential Property Line)

Source	Distance To Observer Location (Feet)	Hourly Reference Noise Level (dBA)	Noise Source Reference Distance (Feet)	Noise Reduction Due To Distance (dBA)	Reduction Due To Barriers (dBA)	Noise Level At Property Line (dBA)	Quantity	Property Line Cumulative Noise Level (dBA)*
Loading Dock	787	60.5	25.0	-30.0	0.0	30.5	1	30.5
6-story Office	371	65.9	6.0	-35.8	-10.9	19.2	10	29.2
4-story Office	194	65.9	6.0	-30.2	-11.6	24.1	4	30.1
1-story Retail	168	65.9	6.0	-28.9	-7.4	29.6	7	38.0
1-story Retail	345	65.9	6.0	-35.2	-6.0	24.7	4	30.7
Cinema	401	70.0	6.0	-36.5	-8.2	25.3	2	28.3
Market Hall	393	65.9	6.0	-36.3	-8.0	21.6	5	28.6
Market Hall	619	65.9	6.0	-40.3	-8.8	16.8	5	23.8
Retail/ Office	560	65.9	6.0	-39.4	-9.7	16.8	11	27.2
1-story Retail	731	65.9	6.0	-41.7	-9.0	15.2	2	18.2
Grocery	798	70.0	6.0	-42.5	-8.6	18.9	2	21.9
Fitness	984	70.0	6.0	-44.3	-11.3	14.4	2	17.4
1-story Retail	994	65.9	6.0	-44.4	-8.1	13.4	4	19.4
3-story Office	353	65.9	6.0	-35.4	-11.5	19.0	6	26.8
3-story Office	356'	65.9	6.0	-35.5	-9.5	20.9	6	28.7
Combined Cumulative Noise Level at Property Line:								**41.5**
*Complies with the nighttime Noise Standard of 50 dBA.								

Table 5-4 below presents the cumulative noise levels at the center residential property line from the proposed commercial development during the daytime and nighttime hours. The resultant cumulative noise level at the southwestern property lines is projected to be at or below 42.5 dBA Leq. Therefore, cumulatively the proposed commercial development related operational noise levels comply with the daytime and nighttime noise standards at the residences directly to the south. No Impacts are anticipated and no mitigation is required.

Table 5-4: Cumulative Noise Levels (Central Residential Property Line)

Source	Distance To Observer Location (Feet)	Hourly Reference Noise Level (dBA)	Noise Source Reference Distance (Feet)	Noise Reduction Due To Distance (dBA)	Reduction Due To Barriers (dBA)	Noise Level At Property Line (dBA)	Quantity	Property Line Cumulative Noise Level (dBA)*
Loading Dock	442	60.5	25.0	-24.9	-0.0	35.6	1	35.6
6-story Office	851	65.9	6.0	-43.0	-10.9	12.0	10	22.0
4-story Office	689	65.9	6.0	-41.2	-11.6	13.1	4	19.1
1-story Retail	543	65.9	6.0	-39.1	-7.4	19.4	7	27.8
1-story Retail	301	65.9	6.0	-34.0	-6.0	25.9	4	31.9
Cinema	432	70.0	6.0	-37.1	-8.2	24.7	2	27.7
Market Hall	220	65.9	6.0	-31.3	-8.0	26.6	5	33.6
Market Hall	144	65.9	6.0	-27.6	-8.8	29.5	5	36.5
Retail/ Office	249	65.9	6.0	-32.4	-9.7	23.8	11	34.3
1-story Retail	272	65.9	6.0	-33.1	-9.0	23.8	2	26.8
Grocery	396	70.0	6.0	-36.4	-8.6	25.0	2	28.0
Fitness	510	70.0	6.0	-38.6	-11.3	20.1	2	23.1
1-story Retail	496	65.9	6.0	-38.3	-8.1	19.5	4	25.5
3-story Office	777	65.9	6.0	-42.2	-11.5	12.2	6	19.9
3-story Office	652	65.9	6.0	-40.7	-9.5	15.7	6	23.5
Combined Cumulative Noise Level at Property Line:								**42.5**

*Complies with the nighttime Noise Standard of 50 dBA.

Table 5-5 below presents the cumulative noise levels at the eastern residential property line from the proposed commercial development during the daytime and nighttime hours. The resultant cumulative noise level at the southwestern property lines is projected to be at or below 42.5 dBA Leq. Therefore, cumulatively the proposed commercial development related operational noise levels comply with the daytime and nighttime noise standards at the residences to the southeast. No Impacts are anticipated and no mitigation is required.

Table 5-5: Cumulative Noise Levels (East Residential Property Line)

Source	Distance To Observer Location (Feet)	Hourly Reference Noise Level (dBA)	Noise Source Reference Distance (Feet)	Noise Reduction Due To Distance (dBA)	Reduction Due To Barriers (dBA)	Noise Level At Property Line (dBA)	Quantity	Property Line Cumulative Noise Level (dBA)*
Loading Dock	441	60.5	25.0	-24.9	0.0	35.6	1	35.6
6-story Office	1303	65.9	6.0	-46.7	-10.9	8.3	10	18.3
4-story Office	1164	65.9	6.0	-45.8	-11.6	8.5	4	14.6
1-story Retail	1006	65.9	6.0	-44.5	-7.4	14.0	7	22.5
1-story Retail	734	65.9	6.0	-41.8	-6.0	18.1	4	24.2
Cinema	795	70.0	6.0	-42.4	-8.2	19.4	2	22.4
Market Hall	664	65.9	6.0	-40.9	-8.0	17.0	5	24.0
Market Hall	430	65.9	6.0	-37.1	-8.8	20.0	5	27.0
Retail/ Office	532	65.9	6.0	-39.0	-9.7	17.2	11	27.7
1-story Retail	339	65.9	6.0	-35.0	-9.0	21.9	2	24.9
Grocery	363	70.0	6.0	-35.6	-8.6	25.8	2	28.8
Fitness	192	70.0	6.0	-30.1	-11.3	28.6	2	31.6
1-story Retail	122	65.9	6.0	-26.2	-8.1	31.6	4	37.7
3-story Office	153	65.9	6.0	-28.1	-11.5	26.3	6	34.1
3-story Office	279	65.9	6.0	-33.3	-9.5	23.1	6	30.8
Combined Cumulative Noise Level at Property Line:								**42.5**

*Complies with the nighttime Noise Standard of 50 dBA.

5.3 Conclusions

Based upon the property line noise levels determined above none of the proposed noise sources directly or cumulatively exceeds the property line standards at the shared commercial and residential property lines. Therefore, the proposed commercial development related operational noise levels comply with the daytime and nighttime noise standards at the residences. No Impacts are anticipated and no mitigation is required.

6.0 TRANSPORTATION NOISE LEVELS

6.1 Onsite Transportation Related Noise Levels

To determine the future noise environment and impact potentials the Caltrans Sound32 noise model was utilized. The critical model input parameters, to determine the projected traffic noise levels, include vehicle travel speeds, the percentages of automobiles, medium trucks and heavy trucks in the roadway volume, the site conditions (hard or soft) and the peak hour traffic volume. The peak hour traffic volumes range between 6-12% of the average daily traffic (ADT) and 10% is acceptable for noise modeling.

The required coordinate information necessary for the Sound32 traffic noise prediction model input was taken from the preliminary site plans provided by Latitude 33 received May 2015. The site plans were used to identify the pad elevations, roadway elevations, and the relationship between the noise source(s) and the outdoor receptor areas to evaluate the future potential noise impacts on the proposed development. Outdoor observers were located in the private areas and placed five feet above the finished pad elevation. In addition, the top of slopes and proposed walls were modeled to adjust for grade separation and any natural shielding from the roadways.

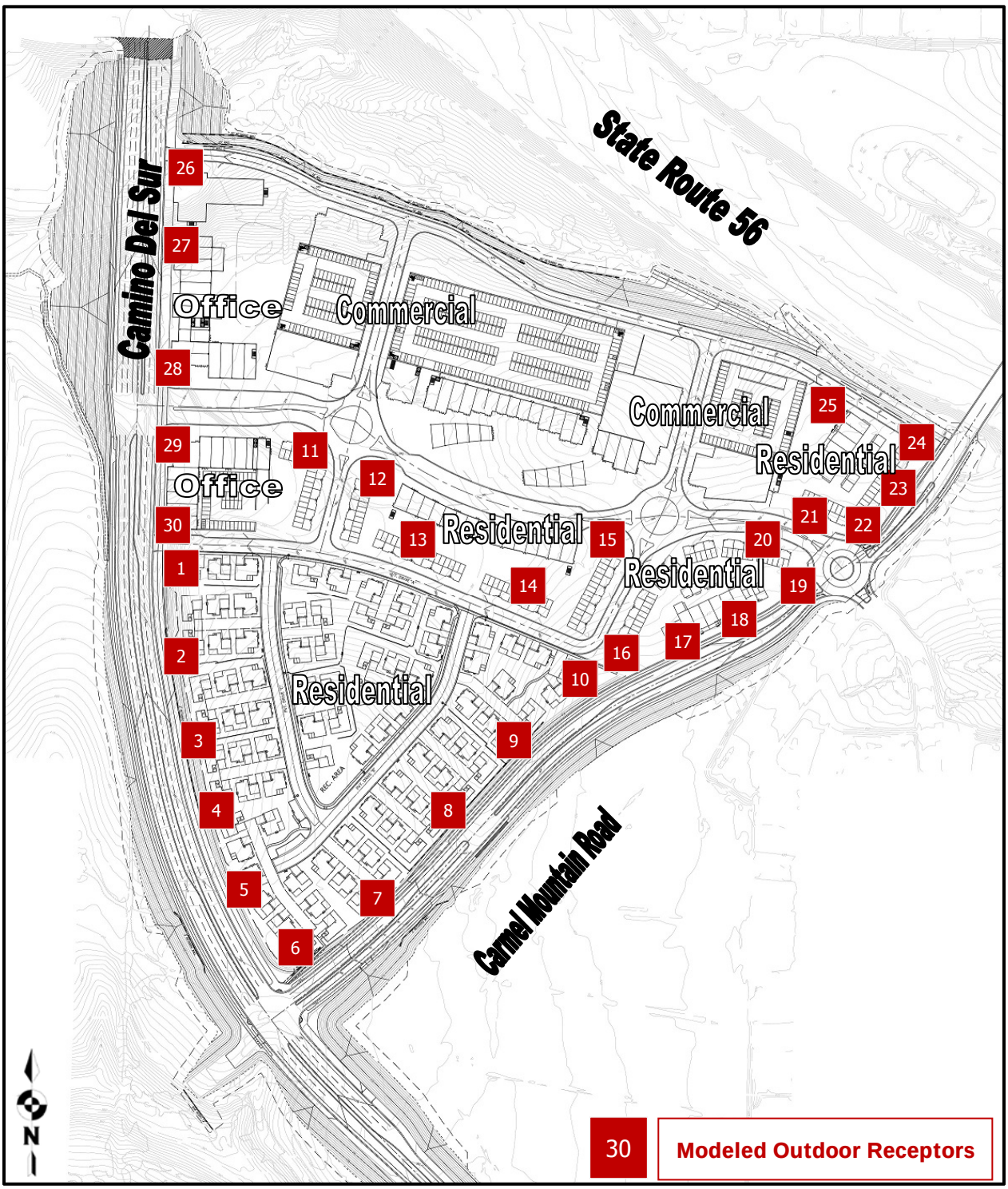
Table 6-1 presents the roadway parameters used in the analysis including the average daily traffic volumes, vehicle speeds and the hourly traffic flow distribution (vehicle mix) for Year 2035 provided by Linscott, Law & Greenspan, 2015. The vehicle mix provides the hourly distribution percentages of automobile, medium trucks and heavy trucks for input into the Sound32 Model. The future traffic noise model also utilizes the common vehicle mix found on City's roadways. The modeled observer locations for the sampled units of the proposed project are presented in Figure 6-1.

Table 6-1: Future Traffic Parameters

Roadway	Average Daily Traffic (ADT) [1]	Peak Hour Volume	Modeled Speeds (MPH)	Vehicle Mix % [3]		
				Auto	Medium Trucks	Heavy Trucks
State Route 56 (SR 56)	-	9,314 [1]	65	96	2	2
Carmel Mountain Road	7,815	782 [2]	45	96	2	2
Camino Del Sur	26,983	2,698 [2]	45	96	2	2

[1] Source: Linscott, Law & Greenspan, Engineers, 2014
[2] 10% of the ADT
[3] Typical Vehicle Mixed observed in City of San Diego

Figure 6-1: Modeled Receptor Locations



The Buildout analysis was modeled utilizing the roadway parameters described above for the future conditions. The modeling results are quantitatively shown in Table 6-2 below. The modeling results are quantitatively shown in Table 6-2 below. The S32 models input parameters and output files for the future conditions with and without mitigation are also provided in ***Attachment B***.

Table 6-2: Future Residential Exterior Noise Levels

Receptor Number	Receptor Location	Noise Levels with Proposed Walls (dBA CNEL)*	Upper Floor Noise Level (dBA CNEL)*
1	Lot 60	65	68
2	Lot 55	64	67
3	Lot 49	63	68
4	Lot 42	64	68
5	Lot 36	64	68
6	Lot 33	65	68
7	Lot 27	64	67
8	Lot 20	65	65
9	Lot 9	65	66
10	Lot 1	65	65
11	Townhomes	61	61
12	Townhomes	60	60
13	Townhomes	58	59
14	Townhomes	59	60
15	Townhomes	58	59
16	Townhomes	62	62
17	Townhomes	63	67
18	Townhomes	64	67
19	Townhomes	64	67
20	Townhomes	61	62
21	Townhomes	65	66
22	Townhomes	65	68
23	Townhomes	65	68
24	Townhomes	65	70
25	Townhomes	65	69
26**	Office	72	72
27**	Office	72	71
28**	Office	72	72
29**	Office	54	54
30**	Office	66	66

* Interior Noise Assessment required if residential façade noise level is above 60 dBA CNEL.
** Commercial interior Noise Levels are anticipated to meet the 50 dBA CNEL standard.

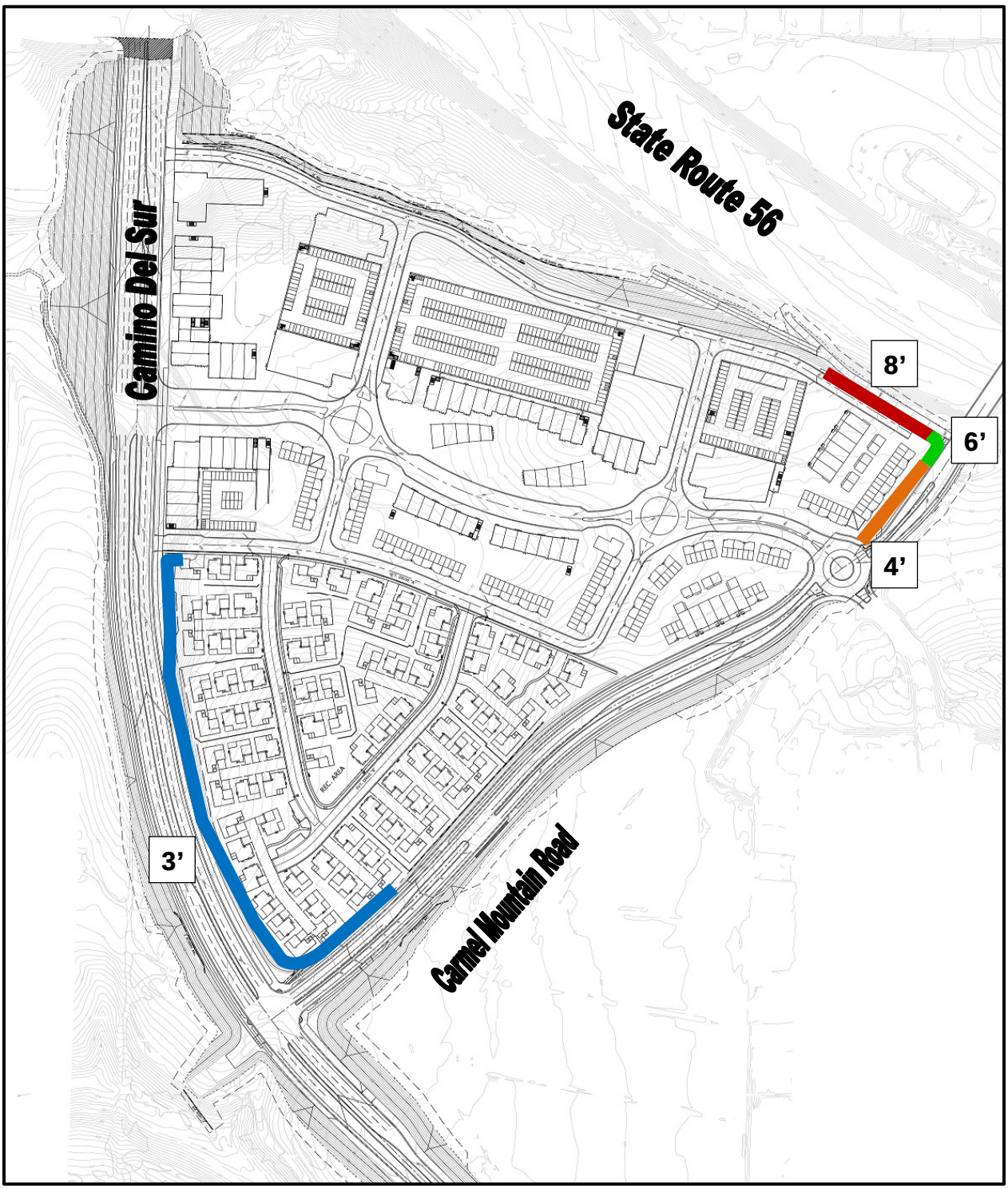
As can been seen in Table 6-2, all the residential units will comply with the City's 65 dBA standard with the proposed 3 foot wall along Camino Del Sur and a combination of the proposed 4 to 8 foot walls at the northeastern corner of the site adjacent to SR-56 and Carmel Mountain Road. The location and height of the proposed walls are shown in Figure 6-2 on the following page. The barriers will be constructed of a non-gapping material consisting of masonry, ½ inch thick glass, earthen berm or any combination of these materials. The commercial uses were found to be below the City compatibility threshold of 75 dBA CNEL at the proposed outdoor use areas.

The City of San Diego as part of its noise guidelines also states, consistent with Title 24 of the California Code of Regulations (CCR), a project is required to perform an interior assessment on the portions of a project site where building façade noise levels are above the normally compatible noise level in order to ensure that acceptable interior noise levels can be achieved. The City of San Diego's Noise Compatibility Guidelines require interior noise levels in residential structures to be reduced to 45 dBA CNEL and office buildings be reduced to 50 dBA CNEL as shown in Table 3-2 above.

Basic calculations show that a windows open condition will only reduce the interior noise levels 12-15 dBA CNEL and not provide adequate interior noise mitigation. A windows closed condition will typically reduce the interior noise levels 20-25 dBA CNEL if the windows are dual pane and have a minimum sound transmission class (STC) rating of 26.

An interior noise assessment is required for the residential units along the roadways prior to the issuance of the first building permit once the architectural floor plans are available. This final report would identify the interior noise requirements to meet the City's established interior noise limit of 45 dBA CNEL. It should be noted; a closed window condition will be required necessitating a means of mechanical ventilation (e.g. air conditioning) along with upgraded windows for all sensitive rooms (e.g. bedrooms and living spaces). To meet the 50 dBA CNEL interior noise standard at the commercial uses, an interior noise level reduction of minimum 22 dBA CNEL is needed for the proposed project. Therefore with the incorporation of a minimum STC 26 rated dual pane windows and mechanical ventilation will achieve the necessary interior noise reductions to meet the City's 50 dBA CNEL standard. Office spaces shall be provided with a continuously running fan to comply with indoor air quality per ASHRAE 62.2-2007.

Figure 6-2: Proposed Noise Wall Locations and Heights



6.2 Offsite Project Related Transportation Noise Levels

The off-site project-related roadway segment noise levels projected in this report were calculated using the methods in the Highway Noise Model published by the Federal Highway Administration (FHWA Highway Traffic Noise Prediction Model, FHWA-RD-77-108, December, 1978). The FHWA Model uses the traffic volume, vehicle mix, speed, and roadway geometry to compute the equivalent noise level. A spreadsheet calculation was used which computes equivalent noise levels for each of the time periods used in the calculation of CNEL. Weighting these equivalent noise levels and summing them gives the CNEL for the traffic projections. The noise contours are then established by iterating the equivalent noise level over many distances until the distance to the desired noise contour(s) are found.

Community noise level changes greater than 3 dBA are often identified as audible and considered potential significant, while changes less than 1 dBA will not be discernible to local residents. In the range of 1 to 3 dBA, residents who are very sensitive to noise may perceive a slight change. There is no scientific evidence available to support the use of 3 dBA as the significance threshold; community noise exposures are typically over a long time period rather than the immediate comparison made in a laboratory situation. Therefore, the level at which changes in community noise levels become discernible is likely greater than 1 dBA and 3 dBA appears to be appropriate for most people. For the purposes for this analysis, a direct roadway noise impacts would be considered significant if the project increases noise levels for a noise sensitive land use by 3 dBA CNEL and if the project increases noise levels above an unacceptable noise level per the City's General Plan in the area adjacent to the roadway segment.

Traffic Noise Impacts

To determine if off-site noise level increases associated with the development of the extensions of Camino Del Sur to the south of the project site will create noise impacts, the noise levels for the future conditions were compared with the noise level increase from when the project once fully built. Utilizing the project's traffic assessment (Source: Linscott, Law & Greenspan, 2015), noise contours were developed for the following traffic scenarios:

Roadway Extension: Traffic projections at the time the roadway would open without project traffic.

Roadway Extension Plus Project: Projected conditions plus the added noise from the proposed project related traffic.

Roadway Extension vs. Roadway Extension Plus Project: Comparison between the conditions without the project and with the project.

The noise levels and reference distances to the 65 dBA CNEL contour for the southern extension of Camino Del Sur are given in Table 6-3 for the No Project Scenario and in Table 6-4 for the Plus Project Scenario. Table 6-5 presents the comparison of the noise levels along Camino Del Sur south of the site for the No Project and with Project scenarios. The overall roadway segment noise levels will have a less than 0.8 dBA CNEL increase with the development of the project.

As can be seen in Table 6-5, the project does not create a direct noise increase of more than 3 dBA CNEL. Therefore, the project's direct contributions to off-site roadway noise increases will not cause any significant impacts to any existing or future noise sensitive land uses along Camino Del Sur.

Table 6-3: Noise Levels without Project

Roadway Segment	ADT[1]	Vehicle Speeds (MPH)[1]	Noise Level @ 50-Feet (dBA CNEL)	65 dBA CNEL Contour Distance (Feet)
Camino Del Sur				
Carmel Mountain Rd to Park Village Rd	6,870	35	65.3	53
[1] Source: Project Traffic study prepared by Linscott, Law & Greenspan, 2015				

Table 6-4: Near Term + Project Noise Levels

Roadway Segment	ADT[1]	Vehicle Speeds (MPH)[1]	Noise Level @ 50-Feet (dBA CNEL)	65 dBA CNEL Contour Distance (Feet)
Camino Del Sur				
Carmel Mountain Rd to Park Village Rd	8,428	35	66.1	65
[1] Source: Project Traffic study prepared by Linscott, Law & Greenspan, 2015				

Table 6-5: Without Project vs. With Project Noise Levels

Roadway Segment	Existing Noise Level @ 50-Feet (dBA CNEL)	Existing Plus Project Noise Level @ 50-Feet (dBA CNEL)	Project Related Direct Noise Level Increase (dBA CNEL)
Camino Del Sur			
Carmel Mountain Rd to Park Village Rd	65.3	66.1	0.8

6.3 Transportation Noise Conclusions

Onsite Transportation Related Noise Levels

The project is proposing a combination of 3 foot walls along Camino Del Sur and a combination of the proposed 4 to 8 foot walls at the northeastern corner of the site adjacent to SR-56 and Carmel Mountain Road. With the proposed barriers, the future noise levels at the outdoor areas of the residential uses were found to be below the City of San Diego 65 dBA CNEL exterior noise level standard. An interior noise assessment is required for the residential units along the roadways prior to the issuance of the first building permit once the architectural floor plans are available. This final report would identify the interior noise requirements to meet the City's established interior noise limit of 45 dBA CNEL.

The commercial uses were found to be below the City compatibility threshold of 75 dBA CNEL at the proposed outdoor use areas. To meet the 50 dBA CNEL interior noise standard at the commercial uses, an interior noise level reduction of minimum 22 dBA CNEL is needed for the proposed project. Therefore with the incorporation of a minimum STC 26 rated dual pane windows and mechanical ventilation will achieve the necessary interior noise reductions to meet the City's 50 dBA CNEL standard. Office spaces shall be provided with a continuously running fan to comply with indoor air quality per ASHRAE 62.2-2007.

Offsite Project Related Transportation Noise Levels

The project does not create a direct noise increase of more than 3 dBA CNEL along Camino Del Sur south of the site. Therefore, the project's direct contributions to off-site roadway noise increases will not cause any significant impacts to any existing or future noise sensitive land uses. No mitigation is required.

7.0 CONSTRUCTION NOISE LEVELS

Construction noise represents a short-term impact on the ambient noise levels. Noise generated by construction equipment includes haul trucks, water trucks, graders, dozers, loaders and scrapers can reach relatively high levels. Grading activities typically represent one of the highest potential sources for noise impacts. The most effective method of controlling construction noise is through local control of construction hours and by limiting the hours of construction to normal weekday working hours.

Division 4 of Article 9.5 of the City of San Diego Municipal Code (SDMC) addresses the limits of disturbing or offensive construction noise. The SDMC states that, with the exception of an emergency, it is unlawful to conduct any construction activity as to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 decibels during the 12-hour period from 7:00 a.m. to 7:00 p.m.

The U.S. Environmental Protection Agency (U.S. EPA) has compiled data regarding the noise generating characteristics of specific types of construction equipment. Noise levels generated by heavy construction equipment can range from 60 dBA to in excess of 100 dBA when measured at 50 feet. However, these noise levels diminish rapidly with distance from the construction site at a rate of approximately 6 dBA per doubling of distance. For example, a noise level of 75 dBA measured at 50 feet from the noise source to the receptor would be reduced to 69 dBA at 100 feet from the source to the receptor, and reduced to 63 dBA at 200 feet from the source.

Using a point-source noise prediction model, calculations of the expected construction noise levels were completed. The essential model input data for these performance equations include the source levels of the equipment, source to receiver horizontal and vertical separations, the amount of time the equipment is operating in a given day, also referred to as the duty-cycle and any transmission loss from topography or barriers.

7.1 On-Site Construction Noise Levels

Based on the EPA noise emissions, empirical data and the amount of equipment needed, worst-case noise levels from the construction equipment operations would occur during the base operations (grading and commercial construction). The grading of the project will occur in a single phase, with the entire site be prepared for building construction. The construction of the commercial buildings and parking structure could occur during or after

the residential units are occupied. Therefore, the grading activities and commercial building construction are analyzed separately below.

The noise levels utilized in this analysis for the grading are shown in Table 7-1. As can be seen in Table 7-1, with the equipment working closely together the cumulative noise levels would be 72.0 dBA at the nearest property line located 250 feet from the construction activities over a 12 hour period. Therefore the construction activities would be expected to comply with the City's 75 dBA Leq 12-hour standard at the property lines and no impacts are anticipated. The grading activities will be short term only lasting approximately six months.

Table 7-1: Grading and Site Preparation Noise Levels

Construction Equipment	Quantity	Source Level @ 50-Feet (dBA)*	Duty Cycle (Hours/Day)	12 Hour Noise Level @ Property Line (dBA)
Tractor/Backhoe	2	72	8	73.3
Dozer D9 Cat	4	74	8	78.3
Loader/Grader	4	73	8	77.3
Water Trucks	2	70	8	71.3
Dump Trucks	6	75	8	81.0
Paver/Blade	2	75	8	76.3
Roller/Compactor	2	74	8	75.3
Scraper	2	75	8	76.3
			Cumulative Levels @ 50 Feet (dBA)	86.0
			Average Distance To Property Line	250
			Noise Reduction Due To Distance	-14.0
			NEAREST PROPERTY LINE NOISE LEVEL	**72.0**

*Source: U.S. Environmental Protection Agency (U.S. EPA), 1971 and Empirical Data

The commercial buildings and parking structure construction may occur after residential units have been constructed and occupied. The anticipated commercial building construction noise as provided in Table 7-2. As can be seen in Table 7-2, with the equipment all working together the cumulative noise levels would be 73.9 dBA at the nearest proposed residential property line 100 feet from the building construction over a 12 hour period. Therefore the construction activities would be expected to comply with the City's 75 dBA Leq 12-hour standard at the property lines and no impacts are anticipated.

Table 7-2: Commercial Building Construction Noise Levels

Construction Equipment	Quantity	Source Level @ 50-Feet (dBA)*	Duty Cycle (Hours/Day)	12 Hour Noise Level @ Property Line (dBA)
Cranes	1	78	8	78.0
Flatbed Delivery Trucks	1	70	8	70.0
Forklifts	2	72	8	75.0
Welder	2	71	8	74.0
Misc. Remaining Equipment	1	72	8	72.0
			Cumulative Levels @ 50 Feet (dBA)	79.9
			Average Distance To Property Line	100
			Noise Reduction Due To Distance	-6.0
			NEAREST PROPERTY LINE NOISE LEVEL	**73.9**

*Source: U.S. Environmental Protection Agency (U.S. EPA), 1971 and Empirical Data

7.2 Off-Site Roadway Construction Noise Levels

The roadway construction activities for the extension of Camino Del Sur are anticipated to require one motor grater, two scrapers, one skip loader, a vibratory roller, an excavator and a 2,000 gallon water truck. During asphalt paving and construction of the street improvements, construction equipment will consist of one paving machine, one skip loader, and two rollers. Based on the EPA noise emissions, empirical data and the amount of equipment needed, worst case noise impacts from this construction equipment for roadway operations would occur during the base operations (grading).

Reference noise levels for each piece of equipment during the base operations are provided in Table 7-3 below. As can be seen in Table 7-3, with the equipment all working together the cumulative noise levels would be 80.3 dBA at 50 feet from the center of the roadway construction over a 12 hour period. The average distances from the centerline of the proposed roadway extension to the existing residences is 250 feet and the noise levels would drop 14 decibels.

Table 7-3: Roadway Construction Noise Levels

Construction Equipment	Quantity	Source Level @ 50-Feet (dBA)*	Duty Cycle (Hours/Day)	12 Hour Noise Level @ Property Line (dBA)
Water Truck	1	70	8	68.2
Scraper	2	75	8	76.2
Motor Grader	1	73	8	71.2
Dozer D9 Cat	2	74	8	75.2
Vibratory Roller	1	74	8	72.2
Excavator	1	74	8	72.2
			Cumulative Levels @ 50 Feet (dBA)	80.9
			Average Distance To Property Line	250
			Noise Reduction Due To Distance	-14.0
			NEAREST PROPERTY LINE NOISE LEVEL	**70.8**

*Source: U.S. Environmental Protection Agency (U.S. EPA), 1971 and Empirical Data

Based upon physical constraints and normal roadway grading operations and slope preparation, the combination of a dozer and grader will be working with the use of a water truck at the limits of work nearest the existing residences along the roadways in a single area at any given time. This activity will be intermittent as the grading progresses along the roadway alignment. The cumulative noise levels from these three pieces of equipment are provided in Table 7-4 below. The cumulative noise level is 74.8 dBA Leq at a distance of 50-feet. Therefore the construction activities would be expected to comply with the City's 75 dBA Leq 12-hour standard at the property lines and no impacts are anticipated. The roadway construction activities will be short term only lasting approximately three months.

Table 7-4: Roadway Construction Noise Levels

Construction Equipment	Quantity	Source Level @ 50-Feet (dBA)*	Duty Cycle (Hours/Day)	12 Hour Noise Level @ Property Line (dBA)
Water Truck	1	70	8	68.2
Motor Grader	1	73	8	71.2
Dozer D9 Cat	2	74	8	70.2
			NEAREST PROPERTY LINE NOISE LEVEL	**70.8**

*Source: U.S. Environmental Protection Agency (U.S. EPA), 1971 and Empirical Data

7.3 Conclusions

During the site preparation and grading the equipment will be spread out over the project site from distances near the occupied property to distances of more than 250-feet. Based upon the calculations of the noise levels when construction equipment is located near the property line the average noise levels are anticipated not to exceed the 75 dBA 12-hour standard and no impacts will occur and no mitigation measures are required.

The roadway construction activities for the extension of Camino Del Sur are anticipated not to exceed the 75 dBA 12-hour standard and no impacts will occur and no mitigation measures are required

The commercial building construction was found to comply with the 75 dBA 12-hour standard at a distance of 100 feet. Therefore, no mitigation or impacts are anticipated to any existing or proposed residential uses.

8.0 SUMMARY OF PROJECT CONCLUSIONS

- Operational Noise Findings

Based upon the property line noise levels, none of the proposed noise sources directly or cumulatively exceeds the property line standards at the shared commercial and residential property lines. Therefore, the proposed commercial development related operational noise levels comply with the daytime and nighttime noise standards at the residences. No impacts are anticipated and no mitigation is required.

- On-Site Transportation Noise Findings

All the residential units will comply with the City's 65 dBA standard with the proposed 3 foot Camino Del Sur and a combination of the proposed 4 to 8 foot walls at the northeastern corner of the site adjacent to SR-56 and Carmel Mountain Road. The commercial uses were found to be below the City compatibility threshold of 75 dBA CNEL at the proposed outdoor use areas. The barriers will be constructed of a non-gapping material consisting of masonry, glass, or a combination of these materials.

An interior noise assessment is required for the residential units along the roadways once the architectural floor plans are available. This final report would identify the interior noise requirements to meet the City's established interior noise limit of 45 dBA CNEL. It should be noted; a closed window condition will be required necessitating a means of mechanical ventilation (e.g. air conditioning) along with upgraded windows for all sensitive rooms (e.g. bedrooms and living spaces).

To meet the 50 dBA CNEL interior noise standard at the commercial uses, an interior noise level reduction of minimum 22 dBA CNEL is needed for the proposed project. Therefore with the incorporation of a minimum STC 26 rated dual pane windows and mechanical ventilation will achieve the necessary interior noise reductions to meet the City's 50 dBA CNEL standard. Office spaces shall be provided with a continuously running fan to comply with indoor air quality per ASHRAE 62.2-2007.

- Off-Site Transportation Noise Findings

The project does not create a direct noise increase of more than 3 dBA CNEL along Camino Del Sur south of the site. Therefore, the project's direct contributions to off-

site roadway noise increases will not cause any significant impacts to any existing or future noise sensitive land uses. No mitigation is required.

- Construction Noise Findings

During the site preparation and grading the equipment will be spread out over the project site from distances near the occupied property to distances of more than 250-feet. Based upon the calculations of the noise levels when construction equipment is located near the property line the average noise levels are anticipated not to exceed the 75 dBA 12-hour standard and no impacts will occur and no mitigation measures are required.

The roadway construction activities for the extension of Camino Del Sur are anticipated not to exceed the 75 dBA 12-hour standard and no impacts will occur and no mitigation measures are required

The commercial building construction was found to comply with the 75 dBA 12-hour standard at a distance of 100 feet. Therefore, no mitigation or impacts are anticipated to any existing or proposed residential uses.

ATTACHMENT A

Fresnel Barrier Calculations

Elevated Point Source 6-story Office
Source to Receiver Horizontal Distance (ft) = 371.00
Source to Barrier Horizontal Distance (ft) = 10.00
Barrier to Receiver Horizontal Distance (ft) = 361.00
Source Height (ft) = 468.00
Receiver Height (ft) = 387.00
Barrier Height (ft) = 469.00
Distance Source to Receptor (ft) d = 379.74
Distance Source to Barrier top (ft) d1 = 10.05
Distance Barrier top to Receiver (ft) d2 = 370.20

Frequency (Hz) = 8000 Attenuation (db) = 20.0 Fresnel N = 7.189
Frequency (Hz) = 4000 Attenuation (db) = 18.5 Fresnel N = 3.595
Frequency (Hz) = 2000 Attenuation (db) = 15.5 Fresnel N = 1.797
Frequency (Hz) = 1000 Attenuation (db) = 13.0 Fresnel N = 0.899
Frequency (Hz) = 500 Attenuation (db) = 10.9 Fresnel N = 0.449
Frequency (Hz) = 250 Attenuation (db) = 9.2 Fresnel N = 0.225
Frequency (Hz) = 125 Attenuation (db) = 7.8 Fresnel N = 0.112
Frequency (Hz) = 63 Attenuation (db) = 6.7 Fresnel N = 0.056

Elevated Point Source 4-story Office
Source to Receiver Horizontal Distance (ft) = 194.00
Source to Barrier Horizontal Distance (ft) = 10.00
Barrier to Receiver Horizontal Distance (ft) = 184.00
Source Height (ft) = 438.00
Receiver Height (ft) = 387.00
Barrier Height (ft) = 439.00
Distance Source to Receptor (ft) d = 200.59
Distance Source to Barrier top (ft) d1 = 10.05
Distance Barrier top to Receiver (ft) d2 = 191.21

Frequency (Hz) = 8000 Attenuation (db) = 20.0 Fresnel N = 9.440
Frequency (Hz) = 4000 Attenuation (db) = 19.7 Fresnel N = 4.720
Frequency (Hz) = 2000 Attenuation (db) = 16.6 Fresnel N = 2.360
Frequency (Hz) = 1000 Attenuation (db) = 13.9 Fresnel N = 1.180
Frequency (Hz) = 500 Attenuation (db) = 11.6 Fresnel N = 0.590
Frequency (Hz) = 250 Attenuation (db) = 9.9 Fresnel N = 0.295
Frequency (Hz) = 125 Attenuation (db) = 8.3 Fresnel N = 0.148
Frequency (Hz) = 63 Attenuation (db) = 7.2 Fresnel N = 0.074

Elevated Point Source 1-story Retail
Source to Receiver Horizontal Distance (ft) = 168.00
Source to Barrier Horizontal Distance (ft) = 10.00
Barrier to Receiver Horizontal Distance (ft) = 158.00
Source Height (ft) = 393.00
Receiver Height (ft) = 387.00
Barrier Height (ft) = 394.00
Distance Source to Receptor (ft) d = 168.11
Distance Source to Barrier top (ft) d1 = 10.05
Distance Barrier top to Receiver (ft) d2 = 158.15

Frequency (Hz) = 8000 Attenuation (db) = 14.5 Fresnel N = 1.388
Frequency (Hz) = 4000 Attenuation (db) = 12.1 Fresnel N = 0.694
Frequency (Hz) = 2000 Attenuation (db) = 10.3 Fresnel N = 0.347
Frequency (Hz) = 1000 Attenuation (db) = 8.7 Fresnel N = 0.173
Frequency (Hz) = 500 Attenuation (db) = 7.4 Fresnel N = 0.087
Frequency (Hz) = 250 Attenuation (db) = 6.3 Fresnel N = 0.043
Frequency (Hz) = 125 Attenuation (db) = 5.4 Fresnel N = 0.022
Frequency (Hz) = 63 Attenuation (db) = 4.9 Fresnel N = 0.011

Elevated Point Source 1-story Retail
Source to Receiver Horizontal Distance (ft) = 301.00
Source to Barrier Horizontal Distance (ft) = 10.00
Barrier to Receiver Horizontal Distance (ft) = 291.00
Source Height (ft) = 393.00
Receiver Height (ft) = 397.00
Barrier Height (ft) = 394.00
Distance Source to Receptor (ft) d = 301.03
Distance Source to Barrier top (ft) d1 = 10.05
Distance Barrier top to Receiver (ft) d2 = 291.02

Frequency (Hz) = 8000 Attenuation (db) = 11.5 Fresnel N = 0.550
Frequency (Hz) = 4000 Attenuation (db) = 9.7 Fresnel N = 0.275
Frequency (Hz) = 2000 Attenuation (db) = 8.2 Fresnel N = 0.138
Frequency (Hz) = 1000 Attenuation (db) = 7.1 Fresnel N = 0.069
Frequency (Hz) = 500 Attenuation (db) = 6.0 Fresnel N = 0.034

Frequency (Hz) = 250 Attenuation (db) = 5.2 Fresnel N = 0.017
Frequency (Hz) = 125 Attenuation (db) = 4.9 Fresnel N = 0.009
Frequency (Hz) = 63 Attenuation (db) = 4.9 Fresnel N = 0.004

Elevated Point Source Cinema
Source to Receiver Horizontal Distance (ft) = 432.00
Source to Barrier Horizontal Distance (ft) = 10.00
Barrier to Receiver Horizontal Distance (ft) = 422.00
Source Height (ft) = 428.00
Receiver Height (ft) = 397.00
Barrier Height (ft) = 429.00
Distance Source to Receptor (ft) d = 433.11
Distance Source to Barrier top (ft) d1 = 10.05
Distance Barrier top to Receiver (ft) d2 = 423.21

Frequency (Hz) = 8000 Attenuation (db) = 16.2 Fresnel N = 2.137
Frequency (Hz) = 4000 Attenuation (db) = 13.6 Fresnel N = 1.069
Frequency (Hz) = 2000 Attenuation (db) = 11.4 Fresnel N = 0.534
Frequency (Hz) = 1000 Attenuation (db) = 9.6 Fresnel N = 0.267
Frequency (Hz) = 500 Attenuation (db) = 8.2 Fresnel N = 0.134
Frequency (Hz) = 250 Attenuation (db) = 7.0 Fresnel N = 0.067
Frequency (Hz) = 125 Attenuation (db) = 5.9 Fresnel N = 0.033
Frequency (Hz) = 63 Attenuation (db) = 5.2 Fresnel N = 0.017

Elevated Point Source Market Hall
Source to Receiver Horizontal Distance (ft) = 220.00
Source to Barrier Horizontal Distance (ft) = 10.00
Barrier to Receiver Horizontal Distance (ft) = 210.00
Source Height (ft) = 411.00
Receiver Height (ft) = 397.00
Barrier Height (ft) = 412.00
Distance Source to Receptor (ft) d = 220.45
Distance Source to Barrier top (ft) d1 = 10.05
Distance Barrier top to Receiver (ft) d2 = 210.54

Frequency (Hz) = 8000 Attenuation (db) = 15.9 Fresnel N = 1.986
Frequency (Hz) = 4000 Attenuation (db) = 13.4 Fresnel N = 0.993
Frequency (Hz) = 2000 Attenuation (db) = 11.2 Fresnel N = 0.497
Frequency (Hz) = 1000 Attenuation (db) = 9.4 Fresnel N = 0.248
Frequency (Hz) = 500 Attenuation (db) = 8.0 Fresnel N = 0.124
Frequency (Hz) = 250 Attenuation (db) = 6.9 Fresnel N = 0.062
Frequency (Hz) = 125 Attenuation (db) = 5.8 Fresnel N = 0.031
Frequency (Hz) = 63 Attenuation (db) = 5.1 Fresnel N = 0.016

Elevated Point Source Market Hall
Source to Receiver Horizontal Distance (ft) = 144.00
Source to Barrier Horizontal Distance (ft) = 10.00
Barrier to Receiver Horizontal Distance (ft) = 134.00
Source Height (ft) = 411.00
Receiver Height (ft) = 397.00
Barrier Height (ft) = 412.00
Distance Source to Receptor (ft) d = 144.68
Distance Source to Barrier top (ft) d1 = 10.05
Distance Barrier top to Receiver (ft) d2 = 134.84

Frequency (Hz) = 8000 Attenuation (db) = 17.6 Fresnel N = 2.951
Frequency (Hz) = 4000 Attenuation (db) = 14.7 Fresnel N = 1.476
Frequency (Hz) = 2000 Attenuation (db) = 12.4 Fresnel N = 0.738
Frequency (Hz) = 1000 Attenuation (db) = 10.4 Fresnel N = 0.369
Frequency (Hz) = 500 Attenuation (db) = 8.8 Fresnel N = 0.184
Frequency (Hz) = 250 Attenuation (db) = 7.5 Fresnel N = 0.092
Frequency (Hz) = 125 Attenuation (db) = 6.4 Fresnel N = 0.046
Frequency (Hz) = 63 Attenuation (db) = 5.4 Fresnel N = 0.023

Elevated Point Source Retail/Office
Source to Receiver Horizontal Distance (ft) = 249.00
Source to Barrier Horizontal Distance (ft) = 10.00
Barrier to Receiver Horizontal Distance (ft) = 239.00
Source Height (ft) = 433.00
Receiver Height (ft) = 397.00
Barrier Height (ft) = 434.00
Distance Source to Receptor (ft) d = 251.59
Distance Source to Barrier top (ft) d1 = 10.05
Distance Barrier top to Receiver (ft) d2 = 241.85

Frequency (Hz) = 8000 Attenuation (db) = 19.3 Fresnel N = 4.373

Frequency (Hz) = 4000 Attenuation (db) = 16.3 Fresnel N = 2.186
Frequency (Hz) = 2000 Attenuation (db) = 13.7 Fresnel N = 1.093
Frequency (Hz) = 1000 Attenuation (db) = 11.5 Fresnel N = 0.547
Frequency (Hz) = 500 Attenuation (db) = 9.7 Fresnel N = 0.273
Frequency (Hz) = 250 Attenuation (db) = 8.2 Fresnel N = 0.137
Frequency (Hz) = 125 Attenuation (db) = 7.1 Fresnel N = 0.068
Frequency (Hz) = 63 Attenuation (db) = 6.0 Fresnel N = 0.034

Elevated Point Source 1-story Retail
Source to Receiver Horizontal Distance (ft) = 272.00
Source to Barrier Horizontal Distance (ft) = 10.00
Barrier to Receiver Horizontal Distance (ft) = 262.00
Source Height (ft) = 428.00
Receiver Height (ft) = 397.00
Barrier Height (ft) = 429.00
Distance Source to Receptor (ft) d = 273.76
Distance Source to Barrier top (ft) d1 = 10.05
Distance Barrier top to Receiver (ft) d2 = 263.95

Frequency (Hz) = 8000 Attenuation (db) = 18.1 Fresnel N = 3.350
Frequency (Hz) = 4000 Attenuation (db) = 15.2 Fresnel N = 1.675
Frequency (Hz) = 2000 Attenuation (db) = 12.8 Fresnel N = 0.838
Frequency (Hz) = 1000 Attenuation (db) = 10.7 Fresnel N = 0.419
Frequency (Hz) = 500 Attenuation (db) = 9.0 Fresnel N = 0.209
Frequency (Hz) = 250 Attenuation (db) = 7.7 Fresnel N = 0.105
Frequency (Hz) = 125 Attenuation (db) = 6.6 Fresnel N = 0.052
Frequency (Hz) = 63 Attenuation (db) = 5.6 Fresnel N = 0.026

Elevated Point Source Grocery
Source to Receiver Horizontal Distance (ft) = 396.00
Source to Barrier Horizontal Distance (ft) = 10.00
Barrier to Receiver Horizontal Distance (ft) = 386.00
Source Height (ft) = 433.00
Receiver Height (ft) = 397.00
Barrier Height (ft) = 434.00
Distance Source to Receptor (ft) d = 397.63
Distance Source to Barrier top (ft) d1 = 10.05
Distance Barrier top to Receiver (ft) d2 = 387.77

Frequency (Hz) = 8000 Attenuation (db) = 17.1 Fresnel N = 2.642
Frequency (Hz) = 4000 Attenuation (db) = 14.3 Fresnel N = 1.321
Frequency (Hz) = 2000 Attenuation (db) = 12.0 Fresnel N = 0.661
Frequency (Hz) = 1000 Attenuation (db) = 10.1 Fresnel N = 0.330
Frequency (Hz) = 500 Attenuation (db) = 8.6 Fresnel N = 0.165
Frequency (Hz) = 250 Attenuation (db) = 7.3 Fresnel N = 0.083
Frequency (Hz) = 125 Attenuation (db) = 6.2 Fresnel N = 0.041
Frequency (Hz) = 63 Attenuation (db) = 5.3 Fresnel N = 0.021

Elevated Point Source Fitness
Source to Receiver Horizontal Distance (ft) = 192.00
Source to Barrier Horizontal Distance (ft) = 10.00
Barrier to Receiver Horizontal Distance (ft) = 182.00
Source Height (ft) = 448.00
Receiver Height (ft) = 403.00
Barrier Height (ft) = 449.00
Distance Source to Receptor (ft) d = 197.20
Distance Source to Barrier top (ft) d1 = 10.05
Distance Barrier top to Receiver (ft) d2 = 187.72

Frequency (Hz) = 8000 Attenuation (db) = 20.0 Fresnel N = 8.094
Frequency (Hz) = 4000 Attenuation (db) = 19.0 Fresnel N = 4.047
Frequency (Hz) = 2000 Attenuation (db) = 16.0 Fresnel N = 2.024
Frequency (Hz) = 1000 Attenuation (db) = 13.4 Fresnel N = 1.012
Frequency (Hz) = 500 Attenuation (db) = 11.3 Fresnel N = 0.506
Frequency (Hz) = 250 Attenuation (db) = 9.5 Fresnel N = 0.253
Frequency (Hz) = 125 Attenuation (db) = 8.0 Fresnel N = 0.126
Frequency (Hz) = 63 Attenuation (db) = 6.9 Fresnel N = 0.063

Elevated Point Source 1-story Retail
Source to Receiver Horizontal Distance (ft) = 122.00
Source to Barrier Horizontal Distance (ft) = 10.00
Barrier to Receiver Horizontal Distance (ft) = 112.00
Source Height (ft) = 411.00
Receiver Height (ft) = 403.00
Barrier Height (ft) = 412.00
Distance Source to Receptor (ft) d = 122.26

Distance Source to Barrier top (ft) d1 = 10.05
Distance Barrier top to Receiver (ft) d2 = 112.36

Frequency (Hz) = 8000 Attenuation (db) = 16.2 Fresnel N = 2.114
Frequency (Hz) = 4000 Attenuation (db) = 13.6 Fresnel N = 1.057
Frequency (Hz) = 2000 Attenuation (db) = 11.4 Fresnel N = 0.528
Frequency (Hz) = 1000 Attenuation (db) = 9.6 Fresnel N = 0.264
Frequency (Hz) = 500 Attenuation (db) = 8.1 Fresnel N = 0.132
Frequency (Hz) = 250 Attenuation (db) = 7.0 Fresnel N = 0.066
Frequency (Hz) = 125 Attenuation (db) = 5.9 Fresnel N = 0.033
Frequency (Hz) = 63 Attenuation (db) = 5.2 Fresnel N = 0.017

Elevated Point Source 3-story Office
Source to Receiver Horizontal Distance (ft) = 153.00
Source to Barrier Horizontal Distance (ft) = 10.00
Barrier to Receiver Horizontal Distance (ft) = 143.00
Source Height (ft) = 441.00
Receiver Height (ft) = 403.00
Barrier Height (ft) = 442.00
Distance Source to Receptor (ft) d = 157.65
Distance Source to Barrier top (ft) d1 = 10.05
Distance Barrier top to Receiver (ft) d2 = 148.22

Frequency (Hz) = 8000 Attenuation (db) = 20.0 Fresnel N = 8.864
Frequency (Hz) = 4000 Attenuation (db) = 19.4 Fresnel N = 4.432
Frequency (Hz) = 2000 Attenuation (db) = 16.4 Fresnel N = 2.216
Frequency (Hz) = 1000 Attenuation (db) = 13.7 Fresnel N = 1.108
Frequency (Hz) = 500 Attenuation (db) = 11.5 Fresnel N = 0.554
Frequency (Hz) = 250 Attenuation (db) = 9.7 Fresnel N = 0.277
Frequency (Hz) = 125 Attenuation (db) = 8.2 Fresnel N = 0.138
Frequency (Hz) = 63 Attenuation (db) = 7.1 Fresnel N = 0.069

Elevated Point Source 3-story Retail
Source to Receiver Horizontal Distance (ft) = 279.00
Source to Barrier Horizontal Distance (ft) = 10.00
Barrier to Receiver Horizontal Distance (ft) = 269.00
Source Height (ft) = 441.00
Receiver Height (ft) = 403.00
Barrier Height (ft) = 442.00
Distance Source to Receptor (ft) d = 281.58
Distance Source to Barrier top (ft) d1 = 10.05
Distance Barrier top to Receiver (ft) d2 = 271.81

Frequency (Hz) = 8000 Attenuation (db) = 19.0 Fresnel N = 4.066
Frequency (Hz) = 4000 Attenuation (db) = 16.0 Fresnel N = 2.033
Frequency (Hz) = 2000 Attenuation (db) = 13.4 Fresnel N = 1.016
Frequency (Hz) = 1000 Attenuation (db) = 11.3 Fresnel N = 0.508
Frequency (Hz) = 500 Attenuation (db) = 9.5 Fresnel N = 0.254
Frequency (Hz) = 250 Attenuation (db) = 8.1 Fresnel N = 0.127
Frequency (Hz) = 125 Attenuation (db) = 6.9 Fresnel N = 0.064
Frequency (Hz) = 63 Attenuation (db) = 5.9 Fresnel N = 0.032

ATTACHMENT B

FUTURE NOISE MODEL INPUT AND
OUTPUT FILES

MERGE 56 - GROUND LEVEL WITH WALLS
T-EB SR56, 1
 4092 , 65 , 85 , 65 , 85 , 65
T-WB SR56, 2
 4850 , 65 , 101 , 65 , 101 , 65
T-CMR1, 3
 640 , 45 , 13 , 45 , 13 , 45
T-CMR2, 4
 750 , 45 , 16 , 45 , 16 , 45
T-CDS1, 5
 2590 , 45 , 54 , 45 , 54 , 45
T-CDS2, 6
 1291 , 45 , 27 , 45 , 27 , 45
T-CDS3, 7
 809 , 45 , 17 , 45 , 17 , 45
L-EB SR56, 1
N,725,2583,394,
N,828,2472,391,
N,978,2315,386,
N,1071,2223,383,
N,1164,2136,380,
N,1316,2006,375,
N,1429,1916,372,
N,1551,1826,370,
N,1722,1714,369,
N,1966,1568,371,
N,2313.,1401,379,
L-WB SR56, 2
N,807,2655,390,
N,1070,2377,382,
N,1317,2149,374,
N,1527,1986,368,
N,1673,1881,362,
N,1930,1715,362,
N,2013,1671,364,
N,2096,1626,366,
N,2308.,1524,373,
L-CMR, 3
N,484.,257,388,
N,652.,392,392,
N,874.,596,404,
N,1037.,795,404,
N,1207.,924,402,
N,1522.,1078,400,
N,1662.,1199,400,
L-CMR2, 4
N,1662.,1199,400,
N,1750.,1253,400,
N,1845.,1364,398,
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N,185.,2197,366,
N,171.,1544,374,
L-CDS2, 6
N,171.,1544,374,
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L-CDS3, 7
N,458.,238,389,
N,512.,167,390,
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260.,1229,383,386,

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239.,1158,383,386,
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257.,1066,389,392,
250.,1051,389,392,
257.,988,389,392,
265.,982,393,396,
325.,681,396,399,
325.,677,395,398,
B-B2, 2 , 2 , 0 ,0
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358.,576,394,397,
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B-B3, 3 , 2 , 0 ,0
572.,400,396,399,
666.,468,396,399,
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B-B4, 4 , 2 , 0 ,0
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746.,558,397,397,
850.,674,398,398,
948.,782,398,398,
950.,784,396,396,
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1058.,894,394,394,
1180.,971,394,394,
1121.,996,394,394,
B-B5 MF, 5 , 2 , 0 ,0
1203.,977,402,402,
1475.,1107,400,400,
1521.,1135,400,400,
1559.,1171,400,400,
1573.,1186,400,400,
1578.,1196,400,400,
1577.,1208,400,400,
B-B6, 6 , 2 , 0 ,0
1709.,1274,400,404,
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1837.,1433,400,404,
1838.,1434,400,408,
1851.,1455,400,408,
1844.,1482,400,408,
1616.,1620,390,398,
B-OFFICE, 7 , 2 , 0 ,0
447.,1469,380,410,
237.,1480,380,410,
230.,1283,380,410,
B-PS1, 8 , 2 , 0 ,0
465.,1705,375,415,
514.,1887,375,415,
688.,1840,375,415,
639.,1659,375,415,
B-PS2, 9 , 2 , 0 ,0
699.,1642,380,410,
748.,1824,380,410,
1202.,1702,380,410,
1180.,1618,380,410,
1325.,1579,380,410,
1291.,1453,380,410,
B-PS3, 10 , 2 , 0 ,0
1358.,1466,388,418,
1407.,1647,388,418,
1581.,1601,388,418,
1532.,1419,388,418,
B-EX BERM, 11 , 1 , 0 ,0

714.,2401,388,388,
843.,2284,390,390,
996.,2158,388,388,
1305.,1922,380,380,
1524.,1766,376,376,
1677.,1616,385,385,
1865.,1527,394,394,
1984.,1447,394,394,
2165.,1381,384,384,
R, 1 , 65 ,10
244,1215,388.,
R, 2 , 65 ,10
263,1142,394.,
R, 3 , 65 ,10
290,903,398.,
R, 4 , 65 ,10
335,686,401.,
R, 5 , 65 ,10
399,508,399.,
R, 6 , 65 ,10
502,371,400.,
R, 7 , 65 ,10
635,460,401.,
R, 8 , 65 ,10
834,684,403.,
R, 9 , 65 ,10
941,802,401.,
R, 10 , 65 ,10
1131,970,399.,
R, 11 , 65 ,10
522,1460,385.,MF
R, 12 , 65 ,10
661,1414,391.,MF
R, 13 , 65 ,10
774,1246,390.,MF
R, 14 , 65 ,10
987,1156,398.,MF
R, 15 , 65 ,10
1181,1255,392.,MF
R, 16 , 65 ,10
1199,1043,398.,MF
R, 17 , 65 ,10
1335,1055,402.,MF
R, 18 , 65 ,10
1465,1118,402.,MF
R, 19 , 65 ,10
1564,1195,402.,MF
R, 20 , 65 ,10
1482,1252,398.,MF
R, 21 , 65 ,10
1648,1295,403.,MF
R, 22 , 65 ,10
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R, 23 , 65 ,10
1766,1370,405.,MF
R, 24 , 65 ,10
1817,1442,405.,MF
R, 25 , 65 ,10
1650,1532,398.,MF
R, 26 , 65 ,10
250,2035,368.,OFFICE
R, 27 , 65 ,10
252,1918,370.,OFFICE
R, 28 , 65 ,10
241,1628,372.,OFFICE
R, 29 , 65 ,10
246,1470,374.,OFFICE

R, 30 , 65 ,10
235,1282,376.,OFFICE
D, 4.5
1 ,ALL
D, 4.5
2 ,ALL
C,C

SOUND32 - RELEASE 07/30/91

TITLE:
MERGE 56 - GROUND LEVEL WITH WALLS

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	R-1	65.	10.	65.1
2	R-2	65.	10.	64.4
3	R-3	65.	10.	62.9
4	R-4	65.	10.	63.5
5	R-5	65.	10.	64.4
6	R-6	65.	10.	65.1
7	R-7	65.	10.	63.7
8	R-8	65.	10.	65.1
9	R-9	65.	10.	65.2
10	R-10	65.	10.	65.0
11	MF	65.	10.	61.0
12	MF	65.	10.	59.5
13	MF	65.	10.	57.9
14	MF	65.	10.	58.9
15	MF	65.	10.	58.4
16	MF	65.	10.	62.0
17	MF	65.	10.	63.0
18	MF	65.	10.	64.0
19	MF	65.	10.	64.4
20	MF	65.	10.	60.8
21	MF	65.	10.	64.8
22	MF	65.	10.	65.2
23	MF	65.	10.	65.2
24	MF	65.	10.	65.4
25	MF	65.	10.	65.0
26	OFFICE	65.	10.	71.6
27	OFFICE	65.	10.	71.5
28	OFFICE	65.	10.	71.5
29	OFFICE	65.	10.	53.7
30	OFFICE	65.	10.	66.3

MERGE 56 - UPPER LEVELS
T-EB SR56, 1
 4092 , 65 , 85 , 65 , 85 , 65
T-WB SR56, 2
 4850 , 65 , 101 , 65 , 101 , 65
T-CMR1, 3
 640 , 45 , 13 , 45 , 13 , 45
T-CMR2, 4
 750 , 45 , 16 , 45 , 16 , 45
T-CDS1, 5
 2590 , 45 , 54 , 45 , 54 , 45
T-CDS2, 6
 1291 , 45 , 27 , 45 , 27 , 45
T-CDS3, 7
 809 , 45 , 17 , 45 , 17 , 45
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N,978,2315,386,
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N,1429,1916,372,
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N,1966,1568,371,
N,2313.,1401,379,
L-WB SR56, 2
N,807,2655,390,
N,1070,2377,382,
N,1317,2149,374,
N,1527,1986,368,
N,1673,1881,362,
N,1930,1715,362,
N,2013,1671,364,
N,2096,1626,366,
N,2308.,1524,373,
L-CMR, 3
N,484.,257,388,
N,652.,392,392,
N,874.,596,404,
N,1037.,795,404,
N,1207.,924,402,
N,1522.,1078,400,
N,1662.,1199,400,
L-CMR2, 4
N,1662.,1199,400,
N,1750.,1253,400,
N,1845.,1364,398,
N,1922.,1483,396,
L-CDS1, 5
N,185.,2197,366,
N,171.,1544,374,
L-CDS2, 6
N,171.,1544,374,
N,161.,1175,378,
N,179.,996,380,
N,239.,659,384,
N,319.,469,386,
N,405.,309,388,
N,458.,238,389,
L-CDS3, 7
N,458.,238,389,
N,512.,167,390,
N,835.,-160,394,
B-B1, 1 , 2 , 0 ,0
260.,1229,383,386,

235.,1230,383,386,
239.,1158,383,386,
252.,1148,389,392,
257.,1066,389,392,
250.,1051,389,392,
257.,988,389,392,
265.,982,393,396,
325.,681,396,399,
325.,677,395,398,
B-B2, 2 , 2 , 0 ,0
325.,677,395,398,
358.,576,394,397,
452.,389,394,397,
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B-B3, 3 , 2 , 0 ,0
572.,400,396,399,
666.,468,396,399,
699.,499,396,399,
B-B4, 4 , 2 , 0 ,0
699.,499,396,396,
746.,558,397,397,
850.,674,398,398,
948.,782,398,398,
950.,784,396,396,
1029.,873,396,396,
1058.,894,394,394,
1180.,971,394,394,
1121.,996,394,394,
B-B5 MF, 5 , 2 , 0 ,0
1203.,977,402,402,
1475.,1107,400,400,
1521.,1135,400,400,
1559.,1171,400,400,
1573.,1186,400,400,
1578.,1196,400,400,
1577.,1208,400,400,
B-B6, 6 , 2 , 0 ,0
1709.,1274,400,404,
1738.,1297,400,404,
1837.,1433,400,404,
1838.,1434,400,408,
1851.,1455,400,408,
1844.,1482,400,408,
1616.,1620,390,398,
B-OFFICE, 7 , 2 , 0 ,0
447.,1469,380,410,
237.,1480,380,410,
230.,1283,380,410,
B-PS1, 8 , 2 , 0 ,0
465.,1705,375,415,
514.,1887,375,415,
688.,1840,375,415,
639.,1659,375,415,
B-PS2, 9 , 2 , 0 ,0
699.,1642,380,410,
748.,1824,380,410,
1202.,1702,380,410,
1180.,1618,380,410,
1325.,1579,380,410,
1291.,1453,380,410,
B-PS3, 10 , 2 , 0 ,0
1358.,1466,388,418,
1407.,1647,388,418,
1581.,1601,388,418,
1532.,1419,388,418,
B-EX BERM, 11 , 1 , 0 ,0

714.,2401,388,388,
843.,2284,390,390,
996.,2158,388,388,
1305.,1922,380,380,
1524.,1766,376,376,
1677.,1616,385,385,
1865.,1527,394,394,
1984.,1447,394,394,
2165.,1381,384,384,
R, 1 , 65 ,10
244,1215,398.,
R, 2 , 65 ,10
263,1142,404.,
R, 3 , 65 ,10
290,903,408.,
R, 4 , 65 ,10
335,686,411.,
R, 5 , 65 ,10
399,508,409.,
R, 6 , 65 ,10
502,371,410.,
R, 7 , 65 ,10
635,460,411.,
R, 8 , 65 ,10
834,684,413.,
R, 9 , 65 ,10
941,802,411.,
R, 10 , 65 ,10
1131,970,409.,
R, 11 , 65 ,10
522,1460,395.,MF
R, 12 , 65 ,10
661,1414,401.,MF
R, 13 , 65 ,10
774,1246,400.,MF
R, 14 , 65 ,10
987,1156,408.,MF
R, 15 , 65 ,10
1181,1255,402.,MF
R, 16 , 65 ,10
1199,1043,408.,MF
R, 17 , 65 ,10
1335,1055,412.,MF
R, 18 , 65 ,10
1465,1118,412.,MF
R, 19 , 65 ,10
1564,1195,412.,MF
R, 20 , 65 ,10
1482,1252,408.,MF
R, 21 , 65 ,10
1648,1295,413.,MF
R, 22 , 65 ,10
1727,1317,415.,MF
R, 23 , 65 ,10
1766,1370,415.,MF
R, 24 , 65 ,10
1817,1442,415.,MF
R, 25 , 65 ,10
1650,1532,408.,MF
R, 26 , 65 ,10
250,2035,378.,OFFICE
R, 27 , 65 ,10
252,1918,380.,OFFICE
R, 28 , 65 ,10
241,1628,382.,OFFICE
R, 29 , 65 ,10
246,1470,384.,OFFICE

R, 30 , 65 ,10
235,1282,386.,OFFICE
D, 4.5
1 ,ALL
D, 4.5
2 ,ALL
C,C

SOUND32 - RELEASE 07/30/91

TITLE:
MERGE 56 - UPPER LEVELS

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	R-1	65.	10.	68.0
2	R-2	65.	10.	67.1
3	R-3	65.	10.	67.5
4	R-4	65.	10.	67.5
5	R-5	65.	10.	67.9
6	R-6	65.	10.	68.2
7	R-7	65.	10.	66.8
8	R-8	65.	10.	65.2
9	R-9	65.	10.	65.5
10	R-10	65.	10.	65.3
11	MF	65.	10.	61.3
12	MF	65.	10.	60.0
13	MF	65.	10.	58.6
14	MF	65.	10.	59.5
15	MF	65.	10.	59.3
16	MF	65.	10.	62.4
17	MF	65.	10.	66.7
18	MF	65.	10.	66.9
19	MF	65.	10.	66.8
20	MF	65.	10.	61.7
21	MF	65.	10.	65.5
22	MF	65.	10.	68.2
23	MF	65.	10.	68.4
24	MF	65.	10.	70.2
25	MF	65.	10.	68.9
26	OFFICE	65.	10.	71.6
27	OFFICE	65.	10.	71.4
28	OFFICE	65.	10.	71.5
29	OFFICE	65.	10.	54.0
30	OFFICE	65.	10.	66.3

APPENDIX F

Climate Action Plan (CAP) Consistency Checklist

CAP CONSISTENCY CHECKLIST SUBMITTAL APPLICATION

- ✓ The Checklist is required only for projects subject to CEQA review.[2]
- ✓ If required, the Checklist must be included in the project submittal package. Application submittal procedures can be found in Chapter 11: Land Development Procedures of the City's Municipal Code.
- ✓ The requirements in the Checklist will be included in the project's conditions of approval.
- ✓ The applicant must provide an explanation of how the proposed project will implement the requirements described herein to the satisfaction of the Planning Department.

Application Information

Contact Information

Project No./Name: PTS No. 360009 Merge 56

Property Address: South of SR-56; west of Carmel Mountain Road

Applicant Name/Co.: Sea Breeze Properties, Inc. / Gary Levitt

Contact Phone: 858-361-8555 Contact Email: gary@seabreezeproperties.com

Was a consultant retained to complete this checklist? ☒ Yes ☐ No If Yes, complete the following

Consultant Name: Valorie Thompson Contact Phone: 858-488-2987

Company Name: SRA Contact Email: vltsra@earthlink.net

Project Information

1. What is the size of the project (acres)? 41 acres of mixed-use; 31 acres of public roads
2. Identify all applicable proposed land uses:
   - ☒ Residential (indicate # of single-family units): 84
   - ☒ Residential (indicate # of multi-family units): 158
   - ☒ Commercial (total square footage): 525,000
   - ☐ Industrial (total square footage):
   - ☒ Other (describe): Office integrated with commercial
3. Is the project located in a Transit Priority Area? ☐ Yes ☒ No
4. Provide a brief description of the project proposed:

The Mixed-Use Development would consist of a mixed-use center containing commercial, office, hotel and residential uses including construction of 525,000 square feet (sf) of commercial, office, theater/cinema, and hotel uses and 242 residences (i.e., both multi-family and single-family). Public roads would consist of the construction of two Circulation Element Roads.

[2] Certain projects seeking ministerial approval may be required to complete the Checklist. For example, projects in a Community Plan Implementation Overlay Zone may be required to use the Checklist to qualify for ministerial level review. See Supplemental Development Regulations in the project's community plan to determine applicability.

CAP CONSISTENCY CHECKLIST QUESTIONS

Step 1: Land Use Consistency

The first step in determining CAP consistency for discretionary development projects is to assess the project's consistency with the growth projections used in the development of the CAP. This section allows the City to determine a project's consistency with the land use assumptions used in the CAP.

Step 1: Land Use Consistency		
Checklist Item (Check the appropriate box and provide explanation and supporting documentation for your answer)	Yes	No
1. Is the proposed project consistent with the existing General Plan and Community Plan land use and zoning designations?;[3] OR, 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 would result in an equivalent or less GHG-intensive project when compared to the existing designations?; OR, 3. If the proposed project is not consistent with the existing land use plan and zoning designations, and includes a land use plan and/or zoning designation amendment that would result in an increase in GHG emissions when compared to the existing designations, would the project be located in a Transit Priority Area (TPA) and implement CAP Strategy 3 actions, as determined in Step 3 to the satisfaction of the Development Services Department?	☒	☐

If "***Yes***," proceed to Step 2 of the Checklist. For questions 2 and 3 above, provide estimated project emissions under both existing and proposed designation(s) for comparison. For question 3 above, complete Step 3.

If "***No***," in accordance with the City's Significance Determination Thresholds, the project's GHG impact is significant. The project must nonetheless incorporate each of the measures identified in Step 2 to mitigate cumulative GHG emissions impacts unless the decision maker finds that a measure is infeasible in accordance with CEQA Guidelines Section 15091. Proceed and complete Step 2 of the Checklist.

[3] This question may also be answered in the affirmative if the project is consistent with SANDAG Series 12 growth projections, which were used to determine the CAP projections, as determined by the Planning Department.

Step 2: CAP Strategies Consistency

The second step of the CAP consistency review is to review and evaluate a project's consistency with the applicable strategies and actions of the CAP. Step 2 only applies to development projects that involve permits that would require a certificate of occupancy from the Building Official or projects comprised of one and two family dwellings or townhouses as defined in the California Residential Code and their accessory structures.[4] All other development projects that would not require a certificate of occupancy from the Building Official shall implement Best Management Practices for construction activities as set forth in the Greenbook (for public projects).

Step 2: CAP Strategies Consistency			
Checklist Item (Check the appropriate box and provide explanation for your answer)	Yes	No	N/A
Strategy 1: Energy & Water Efficient Buildings			
1. *Cool/Green Roofs*. • Would the project include roofing materials with a minimum 3-year aged solar reflection and thermal emittance or solar reflection index equal to or greater than the values specified in the voluntary measures under California Green Building Standards Code (Attachment A)?; OR • Would the project roof construction have a thermal mass over the roof membrane, including areas of vegetated (green) roofs, weighing at least 25 pounds per square foot as specified in the voluntary measures under California Green Building Standards Code?; OR • Would the project include a combination of the above two options? Check "N/A" only if the project does not include a roof component.	☒	☐	☐
2. *Plumbing fixtures and fittings* With respect to plumbing fixtures or fittings provided as part of the project, would those low-flow fixtures/appliances be consistent with each of the following: Residential buildings: • Kitchen faucets: maximum flow rate not to exceed 1.5 gallons per minute at 60 psi; • Standard dishwashers: 4.25 gallons per cycle; • Compact dishwashers: 3.5 gallons per cycle; and • Clothes washers: water factor of 6 gallons per cubic feet of drum capacity? Nonresidential buildings: • Plumbing fixtures and fittings that do not exceed the maximum flow rate specified in Table A5.303.2.3.1 (voluntary measures) of the California Green Building Standards Code (See Attachment A); and • Appliances and fixtures for commercial applications that meet the provisions of Section A5.303.3 (voluntary measures) of the California Green Building Standards Code (See Attachment A)? Check "N/A" only if the project does not include any plumbing fixtures or fittings.	☒	☐	☐

[4] Actions that are not subject to Step 2 would include, for example: 1) discretionary map actions that do not propose specific development, 2) permits allowing wireless communication facilities, 3) special events permits, 4) use permits that do not result in the expansion or enlargement of a building, and 5) non-building infrastructure projects such as roads and pipelines. Because such actions would not result in new occupancy buildings from which GHG emissions reductions could be achieved, the items contained in Step 2 would not be applicable.

Step 2: CAP Strategies Consistency			
Checklist Item (Check the appropriate box and provide explanation for your answer)	Yes	No	N/A
Strategy 2: Clean & Renewable Energy			
3. *Energy Performance Standard / Renewable Energy* Is the project designed to have an energy budget that meets the following performance standards when compared to the Title 24, Part 6 Energy Budget for the Proposed Design Building as calculated by Compliance Software certified by the California Energy Commission (percent improvement over current code): • Low-rise residential – 15% improvement? • Nonresidential with indoor lighting OR mechanical systems, but not both – 5% improvement? • Nonresidential with both indoor lighting AND mechanical systems – 10% improvement?[5] The demand reduction may be provided through on-site renewable energy generation, such as solar, or by designing the project to have an energy budget that meets the above-mentioned performance standards, when compared to the Title 24, Part 6 Energy Budget for the Proposed Design Building (percent improvement over current code). Note: For Energy Budget calculations, high-rise residential and hotel/motel buildings are considered non-residential buildings. Check "N/A" only if the project does not contain any residential or non-residential buildings.	☒	☐	☐
Strategy 3: Bicycling, Walking, Transit & Land Use			
4. *Electric Vehicle Charging* • Single-family projects: Would the required parking serving each new single-family residence and each unit of a duplex be constructed with a listed cabinet, box or enclosure connected to a raceway linking the required parking space to the electrical service, to allow for the future installation of electric vehicle supply equipment to provide an electric vehicle charging station for use by the resident? • Multiple-family projects of 10 dwelling units or less: Would 3% of the total parking spaces required, or a minimum of one space, be provided with a listed cabinet, box or enclosure connected to a conduit linking the parking spaces with the electrical service, in a manner approved by the building and safety official, to allow for the future installation of electric vehicle supply equipment to provide electric vehicle charging stations at such time as it is needed for use by residents? • Multiple-family projects of more than 10 dwelling units: Would 3% of the total parking spaces required, or a minimum of one space, be provided with a listed cabinet, box or enclosure connected to a conduit linking the parking spaces with the electrical service, in a manner approved by the building and safety official? Of the total listed cabinets, boxes or enclosures provided, would 50% have the necessary electric vehicle supply equipment installed to provide active electric vehicle charging stations ready for use by residents?	☒	☐	☐

[5] CALGreen defines mechanical systems as equipment, appliances, fixtures, fittings and/or appurtenances, including ventilating, heating, cooling, air-conditioning and refrigeration systems, incinerators and other energy-related systems.

<table>
<tr><th colspan="4">Step 2: CAP Strategies Consistency</th></tr>
<tr><th>Checklist Item
(Check the appropriate box and provide explanation for your answer)</th><th>Yes</th><th>No</th><th>N/A</th></tr>
<tr><td>

- Non-residential projects: If the project includes new commercial, industrial, or other uses with the building or land area, capacity, or numbers of employees listed in Attachment A, would 3% of the total parking spaces required, or a minimum of one space, be provided with a listed cabinet, box or enclosure connected to a conduit linking the parking spaces with the electrical service, in a manner approved by the building and safety official? Of the total listed cabinets, boxes or enclosures provided, would 50% have the necessary electric vehicle supply equipment installed to provide active electric vehicle charging stations ready for use?

Check "N/A" only if the project is does not include new commercial, industrial, or other uses with the building or land area, capacity, or numbers of employees listed in Attachment A.
</td><td></td><td></td><td></td></tr>
<tr><td colspan="4">Strategy 3: Bicycling, Walking, Transit & Land Use
(Complete this section if project includes non-residential or mixed uses)</td></tr>
<tr><td>5. Bicycle Parking Spaces

Would the project provide more short- and long-term bicycle parking spaces than required in the City's Municipal Code (Chapter 14, Article 2, Division 5)?[6]

Check "N/A" only if the project is a residential project.</td><td>☒</td><td>☐</td><td>☐</td></tr>
<tr><td>6. Shower facilities

If the project includes nonresidential development that would accommodate over 10 tenant occupants (employees), would the project include changing/shower facilities in accordance with the voluntary measures under the California Green Building Standards Code as shown in the table below?
<table>
<tr><th>Number of Tenant Occupants (Employees)</th><th>Shower/Changing Facilities Required</th><th>Two-Tier (12" X 15" X 72") Personal Effects Lockers Required</th></tr>
<tr><td>0-10</td><td>0</td><td>0</td></tr>
<tr><td>11-50</td><td>1 shower stall</td><td>2</td></tr>
<tr><td>51-100</td><td>1 shower stall</td><td>3</td></tr>
<tr><td>101-200</td><td>1 shower stall</td><td>4</td></tr>
<tr><td>Over 200</td><td>1 shower stall plus 1 additional shower stall for each 200 additional tenant-occupants</td><td>1 two-tier locker plus 1 two-tier locker for each 50 additional tenant-occupants</td></tr>
</table>
Check "N/A" only if the project is a residential project, or if it does not include nonresidential development that would accommodate over 10 tenant occupants (employees).</td><td>☒</td><td>☐</td><td>☐</td></tr>
</table>

[6] Non-portable bicycle corrals within 600 feet of project frontage can be counted towards the project's bicycle parking requirements.

Step 2: CAP Strategies Consistency

Checklist Item (Check the appropriate box and provide explanation for your answer)	Yes	No	N/A
7. *Designated Parking Spaces* If the project includes an employment use in a TPA, would the project provide designated parking for a combination of low-emitting, fuel-efficient, and carpool/vanpool vehicles in accordance with the following table? **Number of Required Parking Spaces** / **Number of Designated Parking Spaces** 0-9 / 0 10-25 / 2 26-50 / 4 51-75 / 6 76-100 / 9 101-150 / 11 151-200 / 18 201 and over / At least 10% of total This measure does not cover electric vehicles. See Question 4 for electric vehicle parking requirements. Note: Vehicles bearing Clean Air Vehicle stickers from expired HOV lane programs may be considered eligible for designated parking spaces. The required designated parking spaces are to be provided within the overall minimum parking requirement, not in addition to it. Check "N/A" only if the project is a residential project, or if it does not include an employment use in a TPA.	☒	☐	☐
8. *Transportation Demand Management Program* If the project would accommodate over 50 tenant-occupants (employees), would it include a transportation demand management program that would be applicable to existing tenants and future tenants that includes: At least one of the following components: • Parking cash out program • Parking management plan that includes charging employees market-rate for single-occupancy vehicle parking and providing reserved, discounted, or free spaces for registered carpools or vanpools • Unbundled parking whereby parking spaces would be leased or sold separately from the rental or purchase fees for the development for the life of the development And at least three of the following components: • Commitment to maintaining an employer network in the SANDAG iCommute program and promoting its RideMatcher service to tenants/employees • On-site carsharing vehicle(s) or bikesharing • Flexible or alternative work hours • Telework program • Transit, carpool, and vanpool subsidies	☒	☐	☐

Step 2: CAP Strategies Consistency			
Checklist Item (Check the appropriate box and provide explanation for your answer)	Yes	No	N/A
• Pre-tax deduction for transit or vanpool fares and bicycle commute costs • Access to services that reduce the need to drive, such as cafes, commercial stores, banks, post offices, restaurants, gyms, or childcare, either onsite or within 1,320 feet (1/4 mile) of the structure/use? Check "N/A" only if the project is a residential project or if it would not accommodate over 50 tenant-occupants (employees).			

CAP CONSISTENCY SUPPORTING DOCUMENTATION

Step 1: Land Use Consistency

Planned Land Use

The 41.4-acre Mixed-Use Development component of the Merge 56 Development Project is designated in the Torrey Highlands Subarea Plan for Commercial Regional (CR) and Medium High Density Residential (MH) uses (refer to Figure 2-6 of the EIR). According to the Subarea Plan, the Commercial Regional designation allows for "a broad range of commercial uses, including neighborhood-serving commercial, area-serving retail, automotive service, commercial recreational facilities, visitor-serving commercial and offices" (page 46). Typically, a regional commercial center would draw customers from outside the part of town where it is located. The Medium-High Density Residential allows for "low- to mid-rise stacked units with subterranean or wrapped parking structure(s)" at a density of 20-40 dwelling units per acre).

The Subarea Plan contemplates that the Commercial Regional area planned on site would "allow for a broad range of retail commercial uses and is intended to serve both the Torrey Highlands and Rancho Peñasquitos communities. Up to 250,000 square feet of commercial development and 275,000 square feet of self-storage are expected to occur on approximately 23 acres with the current alignment of Carmel Mountain Road and Camino Ruiz. Even if the acreage of the Commercial Regional site should increase based on the final alignments of Carmel Mountain Road and Camino Ruiz, the commercial square footage will remain at 250,000 square feet."

Proposed Land Use

The proposed Community Plan Amendment (CPA) would change the land use designation of the Mixed-Use Development component to Local Mixed Use Center (LMXU) South (to differentiate it from the existing LMXU to the north of SR-56). According to the Torrey Highlands Subarea Plan, the LMXU designation is intended for major grocery and drug stores, pedestrian-oriented shops and stores, including restaurants and civic uses; multi-family housing and mixed-use residential units interspersed with ground floor commercial; and residential densities that decrease as the distance from the commercial center increases. The Subarea Plan further indicates that trails and pedestrian links should be created between residential areas and the center.

In the case of the proposed Merge 56 Development Project, the LMXU would consist of 525,000 square feet of commercial, office, theater/cinema, and hotel uses and 242 residences (i.e., 158 multi-family and 84 single-family).

Consistency with Land Use Assumptions in the CAP

The project would result in a reduction in vehicle miles traveled (VMT) and a commensurate reduction in greenhouse gas emissions as compared to the planned land uses assumed in the CAP in the following manners:

1) The LMXU would shift the character of the commercial center from regional tenants, such as self storage, outdoor garden center and automobile serve center, that would draw users from locations beyond the area to local-serving retail tenants;
2) The commercial tenants in the LMXU would include a balanced mix of local serving uses, such as a market hall, grocery store, hardware, fitness, restaurants and retail, that would be convenient to local residents;
3) Rather than building two bordering uses (regional commercial and higher density residential) that are independent from one another, the LMXU would blend and intermingle commercial, office, hotel and residential uses which would encourage residents to obtain goods and services from on-site uses;
4) The LMXU would focus regional growth into a mixed-use activity center that is pedestrian and bike friendly and feature accessible private streets and public spaces (i.e., central plaza) consistent with a community village center envisioned in the Strategic Framework Element of the General Plan;
5) The LMXU would construct both affordable and market-rate housing, rather than only market-rate housing, in close proximity to commercial and office employment opportunities reducing the need to travel off-site for jobs;
6) Instead of relying on the regional and local circulation system for access, the LMXU may create enough density through the mix and range of uses to become a staging area that could support future transit.

Comparison of Estimated Project Emissions with Existing Land Use Designation Emissions

To further evaluate whether the Merge 56 project would result is less GHG emissions than assumed in the CAP, a quantification of estimated project emissions and VMT under the existing and proposed land use designations for the Merge 56 project site was conducted. To calculate GHG emissions under both land use scenarios, the CalEEMod model was run. For the purposes of this analysis, state and federal GHG reduction measures were included in the calculations consistent with the regulatory assumptions in the CAP, including the following:

- The 33% Renewable Portfolio Standard would be achieved with the City of San Diego, resulting in a reduction in GHG emissions of 27% from the default values within the CalEEMod Model based on the SDCGHGI, which indicates that SDG&E was already achieving a 6% renewable goal (University of San Diego 2008).
- Buildings would meet the energy efficiency requirements of Title 24 as of 2013, which results in a 21.8% decrease in electricity use over Title 24 as of 2008, and a 16.8% decrease in natural gas use over Title 24 as of 2008 (CEC 2013). The decreases in energy use were accounted for in the model.
- Vehicles would meet the Pavley I, Low Carbon Fuel Standard, and Advanced Clean Cars (i.e., electric vehicle) standards. The default emission factors within the CalEEMod model were adjusted by 3% downward to account for the Advanced Clean Cars program (ARB 2011).
- The project would include low-flow plumbing fixtures, including hybrid waterless urinals, low-flow toilets, low-flow sinks, and low-flow showers in accordance with the requirements of Title 24.

- The project would meet the City's goal of 50% solid waste diversion through recycling and waste reduction programs. This assumption is conservative in comparison with the CAP because the City has adopted a goal of 75% solid waste diversion by 2020 in its CAP.

Because the proposed land use designations would provide an integrated mix of uses that would serve the residential portion of the project, credit was taken for VMT reductions based on the CAPCOA Land Use Index. *Creation of Mixed Use Village Design Promotes Live/Work and Diversity Resolves Vehicle Use and Emissions.* The VMT reduction associated with this land use index was calculated based on the CAPCOA reference, *Quantifying Greenhouse Gas Mitigation Measures* (CAPCOA 2010). Based on that reference, a Land Use Index calculation was conducted for the project's mix of uses as specified under Measure LUT-3, which recommends the use of the Land Use Index to calculate VMT reductions. According to the reference, the reduction in vehicle miles traveled is calculated as follows:

% VMT Reduction = Land Use * B [not to exceed 30%]

Where:
Land Use = Percentage increase in land use index versus single use development
= (land use index – 0.15)/0.15
Land use index = -a / ln(6)

$$a = \sum_{i=1}^{6} a_i \times \ln(a_i)$$

a_i = building floor area of land use i / total square feet of area considered

a_1 = single family residential
a_2 = multi-family residential
a_3 = commercial
a_4 = industrial
a_5 = institutional
a_6 = park

Based on the CAPCOA land use index methodology, VMT for the proposed project would be reduced by 24.29%. This reduction was not included in the CalEEMod model, but was taken into account by reducing the GHG emissions and VMT from vehicles by 24.29% from the CalEEMod estimates. The detailed calculations are provided in Appendix A of this report. The land use assumptions used in the GHG calculations are presented in Tables 1 and 3, while the GHG emissions estimates for the two land use scenarios are presented in Tables 2 and 4.

Existing Land Use Designations

Under the existing land use designations in the Torrey Highlands Subarea Plan, the project site can build the following land uses (as discussed on Page 53 of the Torrey Highlands Subarea Plan) as shown in Table 1.

Table 1
EXISTING LAND USE DESIGNATIONS – MERGE 56 SITE

Land Use	Square Feet
Commercial - Regional Shopping Center	250,000
Commercial – Self-Storage	273,855
Multi-Family Residential Units	244

Source: City of San Diego 2006.

The calculated GHG emissions for the Existing Land Use Designations for the Merge 56 project site are presented in Table 2. The existing land use designation's VMT is 27,077,257 according to the CalEEMod output.

Table 2
ESTIMATED OPERATIONAL GREENHOUSE GAS EMISSIONS
EXISTING LAND USE DESIGNATIONS – MERGE 56 SITE

Emission Source	Annual Emissions (Metric tons/year)			
	CO_2	CH_4	N_2O	CO_2e
Operational Emissions				
Area Sources	195	0.0066	0.0000	195
Electricity Use	1,626	0.0649	0.0124	1,631
Natural Gas Use	364	0.0070	0.0067	366
Water Use	324	2.5597	0.0624	412
Solid Waste Management	73	4.2847	0.0000	193
Vehicle Emissions	10,343	0.4267	0.0000	10,355
Total	**12,925**	**7.3496**	**0.0815**	**13,152**
Global Warming Potential Factor	**1**	**28**	**265**	
CO_2 Equivalent Emissions	12,925	206	22	13,152
TOTAL CO_2 Equivalent Emissions	**13,152**			

Proposed Land Use Designations

Under the proposed land use designations, the project site would build the following land uses as shown in Table 3. Without adjusting for the mix of uses, the CalEEMod model calculates the VMT for the project to be 28,887,860. Adjusting for the mix of uses on the site as permitted by CAPCOA's Land Use Index methodology, the proposed project's VMT would be 21,870,999.

Table 3
PROPOSED LAND USE DESIGNATIONS – MERGE 56 PROJECT

Land Use	Square Feet or Units
General Office Building	296,263
Pharmacy/Drugstore w/o Drive Thru	15,000
Hotel	120 Rooms
Movie Theater (No Matinee)	45,450
Apartments Low Rise	47 Units
Condo/Townhouse	111 Units
Single Family Housing	84 Units
Regional Shopping Center	101,280
Specialty Retail	9,000

Source: LLG 2016

The calculated GHG emissions for the Proposed Land Use Designations for the Merge 56 project site are presented in Table 4. As demonstrated in this analysis through a comparison of Tables 2 and 4, the Merge 56 project would result in annual operational GHG emissions that are lower than the existing land use designations assumed in the CAP by 640 metric tons of CO_2e and the site's VMT would be reduced by 5,206,258. Therefore, the project would result in equivalent or less GHG emissions than assumed in the CAP under existing land use designations and meet the requirements of Step 1 of the CAP Consistency Checklist.

Table 4 ESTIMATED OPERATIONAL GREENHOUSE GAS EMISSIONS PROPOSED LAND USE DESIGNATIONS - MERGE 56 PROJECT				
Emission Source	**Annual Emissions (Metric tons/year)**			
	CO_2	**CH_4**	**N_2O**	**CO_2e**
Operational Emissions				
Area Sources	69	0.0042	0.0012	69
Electricity Use	2,307	0.0921	0.0176	2,314
Natural Gas Use	1,040	0.0199	0.0191	1,046
Water Use	402	2.5940	0.0637	491
Solid Waste Management	95	5.5918	0.0000	252
Vehicle Emissions	8,330	0.3415	0.0000	8,340
Total	**12,243**	**8.6435**	**0.1016**	**12,512**
Global Warming Potential Factor	**1**	**28**	**265**	
CO_2 Equivalent Emissions	12,243	242	27	12,512
TOTAL CO_2 Equivalent Emissions	**12,512**			

Step 2: CAP Strategies Consistency

Strategy 1: Energy & Water Efficient Buildings

1) Cool/Green Roofs – The project architecture details have not been determined to date and roofing materials have not been identified. However, the project will include roofing materials with a minimum 3-year aged solar reflection index equal to or greater than the values specified in the voluntary measures under the California Green Building Standards Code. In addition, the project will include the following **California Green Building Standards Voluntary Measure:**
    a. **A5.106.11.1, Heat Island Effect.** This measure will reduce non-roof heat islands as follows: Hardscape alternatives. Use one or a combination of strategies 1 through 2 for 50 percent of site hardscape or put 50 percent of parking underground; Use light colored materials with an initial solar reference value of at least 30 as determined in accordance with ASTM standards E 1918 or C 1549; Use open-grid pavement system or pervious or permeable pavement system.

2) Plumbing Fixtures and Fittings – The project will include low-flow fixtures as required under current Title 24 buildings codes. With respect to plumbing fixtures or fitting provided as part of the project, the fixtures/appliances will be consistent with each of the following:

    Residential Buildings:

- Kitchen faucets: Maximum flow rate not to exceed 1.5 gallons per minute at 60 psi;
- Standard dishwashers: 4.25 gallons per cycle;
- Compact dishwashers: 3.5 gallons per cycle; and
- Clothes washers: water factor of 6 gallons per cubic feet of drum capacity.

Non-Residential Buildings

- Plumbing fixtures and fittings will not exceed the maximum flow rate specified in Table A5.303.2.3.1 (voluntary measures) of the California Green Building Standards Code; and
- Appliances and fixtures for commercial applications will meet the provisions of Section A5.303.3 (voluntary measures) of the California Green Building Standards Code

Strategy 2: Clean and Renewable Energy

1) Energy Performance Standard/Renewable Energy – To meet the Energy Performance Standard, the project will exceed Title 24 by 15% above Title 24 for all 3-story Townhomes/Multifamily (64 units), 10% for 4-story Multifamily/Apartments (94 units), 15% for single-family (84 units) and 5% for Office/Retail/Hotel. To meet the Renewable Energy goal, the project has committed to install solar panels to provide 20% of the overall project's electricity. This exceeds the CAP Checklist Requirement to improve energy efficiency over the current Title 24 standards for residential projects by 15% and non-residential buildings with indoor lighting or mechanical systems by 5%. The project, therefore, exceeds the CAP requirements for clean and renewable energy.

Strategy 3: Bicycling, Walking, Transit & Land Use

1) Electric Vehicle Charging – The project would meet the requirements of this strategy by providing electric vehicle charging stations on site. As discussed in the Parking Summary of the Traffic Impact Analysis, the retail/commercial uses will require 671 parking spaces and the office uses will require 863 parking spaces. The project will provide a total of 1,683 non-residential parking spaces. The project will provide EV charging stations in 3 percent of the commercial spaces, for a total of 50 EV charging stations in the commercial parking area. The residential uses will require 300 parking spaces throughout the project for residents and visitors. The project will provide EV charging stations in 5 percent of the residential spaces, for a total of 15 EV charging stations in the residential parking area.

2) Bicycle Parking Spaces – The project will construct in the commercial area 198 long-term bicycle parking spaces and 112 short-term bicycle parking spaces. For the multi-family residential dwellings, the project will construct 89 bicycle parking spaces in private garages. The single-family residential dwellings will have garages in which bicycle

parking is provided. Bicycle parking will therefore exceed 5 percent of the 1,683 commercial parking spaces and will also exceed 5 percent of the 196 spaces required for the multi-family residential dwellings.

3) Shower Facilities – As discussed in the Transportation Demand Management Program, the project will include changing/shower facilities in commercial development in accordance with the California Green Building Standards Code, as specified in the CAP Consistency Checklist.

4) Designated Parking Spaces – The project is not an employment use in a Transit Priority Area (TPA). As discussed in the Transportation Demand Management Program, the project's parking facilities will include parking spaces designated for a combination of low-emitting, fuel-efficient, and carpool/vanpool vehicles in accordance with the CAP Consistency Checklist.

5) Transportation Demand Management Program – The project includes a Transportation Demand Management Program as detailed in the Transportation Impact Analysis by Linscott, Law and Greenspan that includes the following measures:

    1. The Project will coordinate with the Metropolitan Transit System (MTS) to determine how and when routes should be implemented to serve the area.
    2. The Project will encourage office and retail tenants to offer partially subsidized monthly passes for employees.
    3. Transportation information will be displayed in common areas accessible to retail and office employees in each building. Transportation Information Displays should include, at a minimum, the following materials:
        - Ridesharing promotional material
        - Bicycle route and parking including maps and bicycle safety information
        - Materials publicizing internet and telephone numbers for referrals on transportation information
        - Promotional materials supplied by NCTD, MTS, and/or other publicly supported transportation organizations
        - A listing of facilities at the site for carpoolers/vanpoolers, transit riders, bicyclist and pedestrians, including information on the availability of preferential carpool/vanpool parking spaces and the methods for obtaining these spaces
        - Information on "Guaranteed ride home" programs like those provided by SANDAG's iCommute to ensure that employees that share rides to work are provided with a ride to their home or location near their residence in the event that an emergency occurs during the work day.
    4. Carpool/vanpool parking spaces will be provided in preferentially located areas (closest to building entrances) for use by qualified employees. These spaces will be signed and striped "Car/Vanpool Parking Only". Information about the

availability of and the means of accessing the car/vanpool parking spaces will be posted on Transportation Information Displays located in retail back-offices, common areas or on intranets, as appropriate.

5. Retail and office employees will be offered the opportunity to register for commuter ridematching provided through publicly sponsored services (e.g., SANDAG sponsored "iCommute Ridetracker")
6. Biannual events will be held to promote use of alternative transportation.
7. Bicycle racks, lockers and showers will be provided for office and/or retail employee use.
8. Employers will be encouraged to provide flexible work schedules to stagger arrivals and departures.
9. An employee commute travel survey will be conducted within six months of occupancy to help evaluate the efficacy of the TDM plan as proposed, and to inform/validate any changes that may be proposed or needed. A copy of the results of this survey will be provided to the City Development Services Department.
10. Access to services: The project will have on-site cafes, commercial stores, restaurants, a fitness center and additional services at the existing Local Mixed Use Center located north of SR-56, including banks and restaurants.

Merge 56 CAP Consistency Checklist:
CalEEMod Model Calculations Output

Merge 56 Existing Land Use Designations

San Diego Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	273.86	1000sqft	4.00	273,855.00	0
Condo/Townhouse	244.00	Dwelling Unit	10.00	244,000.00	698
Regional Shopping Center	250.00	1000sqft	4.00	257,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	525.96	**CH4 Intensity (lb/MWhr)**	0.021	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	265,528.00	320,620.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	796,583.00	961,860.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	164,700.00	208,710.00
tblArchitecturalCoating	ConstArea_Residential_Interior	494,100.00	626,130.00
tblAreaMitigation	UseLowVOCPaintNonresidentialExterior Value	250	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInterior Value	250	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorVa lue	250	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorVal ue	250	0

tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	300.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	30.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	10.00	0.00
tblConstructionPhase	PhaseEndDate	12/30/2016	12/31/2010
tblConstructionPhase	PhaseStartDate	1/1/2011	1/2/2011
tblConstructionPhase	PhaseStartDate	1/1/2011	1/2/2011
tblConstructionPhase	PhaseStartDate	1/1/2017	1/2/2011
tblConstructionPhase	PhaseStartDate	1/1/2011	1/2/2011
tblConstructionPhase	PhaseStartDate	1/1/2011	1/2/2011
tblConstructionPhase	PhaseStartDate	1/1/2011	1/2/2011
tblEnergyUse	T24E	206.69	158.53
tblEnergyUse	T24E	1.48	1.16
tblEnergyUse	T24E	3.89	3.04
tblEnergyUse	T24NG	10,789.48	10,379.48
tblEnergyUse	T24NG	4.54	3.78
tblEnergyUse	T24NG	1.20	1.00
tblFireplaces	NumberGas	134.20	244.00
tblFireplaces	NumberNoFireplace	24.40	0.00
tblFireplaces	NumberWood	85.40	0.00
tblLandUse	LandUseSquareFeet	273,860.00	273,855.00
tblLandUse	LandUseSquareFeet	250,000.00	257,200.00
tblLandUse	LotAcreage	6.29	4.00
tblLandUse	LotAcreage	15.25	10.00
tblLandUse	LotAcreage	5.74	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.021
tblProjectCharacteristics	CO2IntensityFactor	720.49	525.96
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	VendorTripNumber	113.00	131.00
tblTripsAndVMT	WorkerTripNumber	18.00	10.00
tblTripsAndVMT	WorkerTripNumber	13.00	5.00
tblTripsAndVMT	WorkerTripNumber	23.00	10.00
tblTripsAndVMT	WorkerTripNumber	373.00	0.00
tblTripsAndVMT	WorkerTripNumber	23.00	18.00
tblTripsAndVMT	WorkerTripNumber	75.00	0.00
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	244.25	236.93
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	297.79	288.86
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	364.72	353.78
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	489.56	474.87

tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CW_TL	9.50	5.80
tblVehicleTrips	CW_TL	9.50	5.80
tblVehicleTrips	HO_TL	7.50	5.80
tblVehicleTrips	HS_TL	7.30	5.80
tblVehicleTrips	HW_TL	10.80	5.80
tblVehicleTrips	ST_TR	7.16	6.00
tblVehicleTrips	ST_TR	1.32	2.00
tblVehicleTrips	ST_TR	49.97	70.00
tblVehicleTrips	SU_TR	6.07	6.00
tblVehicleTrips	SU_TR	0.68	2.00
tblVehicleTrips	SU_TR	25.24	70.00
tblVehicleTrips	WD_TR	6.59	6.00
tblVehicleTrips	WD_TR	6.97	2.00
tblVehicleTrips	WD_TR	42.94	70.00
tblWaterMitigation	UseWaterEfficientIrrigationSystemPercentReduction	6.1	0
tblWoodstoves	NumberCatalytic	12.20	0.00
tblWoodstoves	NumberNoncatalytic	12.20	0.00

2.0 Emissions Summary

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	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
Category	tons/yr										MT/yr					
Area	4.0993	0.0211	1.8237	1.0000e-004		0.0234	0.0234		0.0233	0.0233	0.0000	195.1553	195.1553	6.5900e-003	3.5200e-003	196.3861
Energy	0.0368	0.3249	0.2105	2.0100e-003		0.0254	0.0254		0.0254	0.0254	0.0000	1,990.0505	1,990.0505	0.0719	0.0190	1,997.4630
Mobile	8.7741	13.4440	71.0992	0.1524	10.1817	0.1844	10.3661	2.7231	0.1702	2.8933	0.0000	10,342.5137	10,342.5137	0.4267	0.0000	10,351.4752
Waste						0.0000	0.0000		0.0000	0.0000	145.0025	0.0000	145.0025	8.5694	0.0000	324.9600
Water						0.0000	0.0000		0.0000	0.0000	31.0102	360.2891	391.2994	3.1994	0.0780	482.6507
Total	**12.9101**	**13.7899**	**73.1334**	**0.1545**	**10.1817**	**0.2333**	**10.4149**	**2.7231**	**0.2189**	**2.9420**	**176.0128**	**12,888.0086**	**13,064.0214**	**12.2741**	**0.1005**	**13,352.9350**

Mitigated Operational

	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
Category	tons/yr										MT/yr					
Area	4.0993	0.0211	1.8237	1.0000e-004		0.0234	0.0234		0.0233	0.0233	0.0000	195.1553	195.1553	6.5900e-003	3.5200e-003	196.3861
Energy	0.0368	0.3249	0.2105	2.0100e-003		0.0254	0.0254		0.0254	0.0254	0.0000	1,990.0505	1,990.0505	0.0719	0.0190	1,997.4630
Mobile	8.7741	13.4440	71.0992	0.1524	10.1817	0.1844	10.3661	2.7231	0.1702	2.8933	0.0000	10,342.5137	10,342.5137	0.4267	0.0000	10,351.4752
Waste						0.0000	0.0000		0.0000	0.0000	72.5013	0.0000	72.5013	4.2847	0.0000	162.4800
Water						0.0000	0.0000		0.0000	0.0000	24.8082	299.5608	324.3690	2.5597	0.0624	397.4594
Total	**12.9101**	**13.7899**	**73.1334**	**0.1545**	**10.1817**	**0.2333**	**10.4149**	**2.7231**	**0.2189**	**2.9420**	**97.3095**	**12,827.2803**	**12,924.5898**	**7.3496**	**0.0849**	**13,105.2636**

	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	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.71	0.47	1.07	40.12	15.49	1.85

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/2/2011	12/31/2010	5	0	
2	Site Preparation	Site Preparation	1/2/2011	12/31/2010	5	0	
3	Grading	Grading	1/2/2011	12/31/2010	5	0	
4	Building Construction	Building Construction	1/2/2011	12/31/2010	5	0	
5	Paving	Paving	1/2/2011	12/31/2010	5	0	
6	Architectural Coating	Architectural Coating	1/2/2011	12/31/2010	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 626,130; Residential Outdoor: 208,710; Non-Residential Indoor: 961,860; Non-Residential Outdoor: 320,620

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	174	0.41
Paving	Pavers	1	7.00	125	0.42

Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Demolition	Excavators	3	8.00	162	0.38
Grading	Excavators	2	8.00	162	0.38
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	174	0.41
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

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
Demolition	7	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	5	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	9	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	0.00	131.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	9	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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
Category	tons/yr										MT/yr					
Mitigated	8.7741	13.4440	71.0992	0.1524	10.1817	0.1844	10.3661	2.7231	0.1702	2.8933	0.0000	10,342.5137	10,342.5137	0.4267	0.0000	10,351.4752
Unmitigated	8.7741	13.4440	71.0992	0.1524	10.1817	0.1844	10.3661	2.7231	0.1702	2.8933	0.0000	10,342.5137	10,342.5137	0.4267	0.0000	10,351.4752

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	1,464.00	1,464.00	1464.00	2,744,681	2,744,681
General Light Industry	547.72	547.72	547.72	1,078,891	1,078,891
Regional Shopping Center	17,500.00	17,500.00	17500.00	23,253,685	23,253,685
Total	19,511.72	19,511.72	19,511.72	27,077,257	27,077,257

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
Condo/Townhouse	5.80	5.80	5.80	41.60	18.80	39.60	86	11	3
General Light Industry	5.80	5.80	5.80	59.00	28.00	13.00	92	5	3
Regional Shopping Center	5.80	5.80	5.80	16.30	64.70	19.00	54	35	11

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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
Category	tons/yr										MT/yr					
NaturalGas Mitigated	0.0368	0.3249	0.2105	2.0100e-003		0.0254	0.0254		0.0254	0.0254	0.0000	364.1090	364.1090	6.9800e-003	6.6800e-003	366.3249
NaturalGas Unmitigated	0.0368	0.3249	0.2105	2.0100e-003		0.0254	0.0254		0.0254	0.0254	0.0000	364.1090	364.1090	6.9800e-003	6.6800e-003	366.3249
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,625.9415	1,625.9415	0.0649	0.0124	1,631.1381
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,625.9415	1,625.9415	0.0649	0.0124	1,631.1381

5.2 Energy by Land Use - NaturalGas

Unmitigated

	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
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	3.26498e+006	0.0176	0.1504	0.0640	9.6000e-004		0.0122	0.0122		0.0122	0.0122	0.0000	174.2316	174.2316	3.3400e-003	3.1900e-003	175.2919
General Light Industry	3.02062e+006	0.0163	0.1481	0.1244	8.9000e-004		0.0113	0.0113		0.0113	0.0113	0.0000	161.1918	161.1918	3.0900e-003	2.9600e-003	162.1728
Regional Shopping Center	537548	2.9000e-003	0.0264	0.0221	1.6000e-004		2.0000e-003	2.0000e-003		2.0000e-003	2.0000e-003	0.0000	28.6856	28.6856	5.5000e-004	5.3000e-004	28.8602
Total		**0.0368**	**0.3249**	**0.2105**	**2.0100e-003**		**0.0254**	**0.0254**		**0.0254**	**0.0254**	**0.0000**	**364.1090**	**364.1090**	**6.9800e-003**	**6.6800e-003**	**366.3249**

Mitigated

	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
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	3.26498e+006	0.0176	0.1504	0.0640	9.6000e-004		0.0122	0.0122		0.0122	0.0122	0.0000	174.2316	174.2316	3.3400e-003	3.1900e-003	175.2919
General Light Industry	3.02062e+006	0.0163	0.1481	0.1244	8.9000e-004		0.0113	0.0113		0.0113	0.0113	0.0000	161.1918	161.1918	3.0900e-003	2.9600e-003	162.1728
Regional Shopping Center	537548	2.9000e-003	0.0264	0.0221	1.6000e-004		2.0000e-003	2.0000e-003		2.0000e-003	2.0000e-003	0.0000	28.6856	28.6856	5.5000e-004	5.3000e-004	28.8602
Total		**0.0368**	**0.3249**	**0.2105**	**2.0100e-003**		**0.0254**	**0.0254**		**0.0254**	**0.0254**	**0.0000**	**364.1090**	**364.1090**	**6.9800e-003**	**6.6800e-003**	**366.3249**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	1.04579e+006	249.4965	9.9600e-003	1.9000e-003	250.2939
General Light Industry	2.37706e+006	567.0990	0.0226	4.3100e-003	568.9115
Regional Shopping Center	3.39247e+006	809.3460	0.0323	6.1600e-003	811.9327
Total		**1,625.9415**	**0.0649**	**0.0124**	**1,631.1381**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	1.04579e+006	249.4965	9.9600e-003	1.9000e-003	250.2939
General Light Industry	2.37706e+006	567.0990	0.0226	4.3100e-003	568.9115
Regional Shopping Center	3.39247e+006	809.3460	0.0323	6.1600e-003	811.9327
Total		**1,625.9415**	**0.0649**	**0.0124**	**1,631.1381**

6.0 Area Detail

6.1 Mitigation Measures Area

	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
Category	tons/yr										MT/yr					
Mitigated	4.0993	0.0211	1.8237	1.0000e-004		0.0234	0.0234		0.0233	0.0233	0.0000	195.1553	195.1553	6.5900e-003	3.5200e-003	196.3861
Unmitigated	4.0993	0.0211	1.8237	1.0000e-004		0.0234	0.0234		0.0233	0.0233	0.0000	195.1553	195.1553	6.5900e-003	3.5200e-003	196.3861

6.2 Area by SubCategory

Unmitigated

	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
SubCategory	tons/yr										MT/yr					

Architectural Coating	0.9971					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.0270					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0194	0.0000	1.0600e-003	0.0000		0.0134	0.0134		0.0133	0.0133	0.0000	192.1866	192.1866	3.6800e-003	3.5200e-003	193.3562
Landscaping	0.0558	0.0211	1.8226	1.0000e-004		0.0100	0.0100		0.0100	0.0100	0.0000	2.9688	2.9688	2.9100e-003	0.0000	3.0299
Total	**4.0993**	**0.0211**	**1.8237**	**1.0000e-004**		**0.0234**	**0.0234**		**0.0233**	**0.0233**	**0.0000**	**195.1553**	**195.1553**	**6.5900e-003**	**3.5200e-003**	**196.3861**

Mitigated

	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
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.9971					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.0270					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0194	0.0000	1.0600e-003	0.0000		0.0134	0.0134		0.0133	0.0133	0.0000	192.1866	192.1866	3.6800e-003	3.5200e-003	193.3562
Landscaping	0.0558	0.0211	1.8226	1.0000e-004		0.0100	0.0100		0.0100	0.0100	0.0000	2.9688	2.9688	2.9100e-003	0.0000	3.0299
Total	**4.0993**	**0.0211**	**1.8237**	**1.0000e-004**		**0.0234**	**0.0234**		**0.0233**	**0.0233**	**0.0000**	**195.1553**	**195.1553**	**6.5900e-003**	**3.5200e-003**	**196.3861**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	391.2994	3.1994	0.0780	482.6507
Mitigated	324.3690	2.5597	0.0624	397.4594

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	15.8976 / 10.0224	80.9931	0.5211	0.0128	95.9061
General Light Industry	63.3301 / 0	216.8229	2.0715	0.0502	275.8927
Regional Shopping Center	18.5181 / 11.3498	93.4834	0.6069	0.0149	110.8520
Total		**391.2994**	**3.1994**	**0.0779**	**482.6508**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			

Condo/Townhouse	12.7181 / 10.0224	70.1074	0.4170	0.0103	82.0504
General Light Industry	50.6641 / 0	173.4583	1.6570	0.0401	220.6967
Regional Shopping Center	14.8145 / 11.3498	80.8033	0.4857	0.0120	94.7123
Total		**324.3690**	**2.5597**	**0.0624**	**397.4594**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	72.5013	4.2847	0.0000	162.4800
Unmitigated	145.0025	8.5694	0.0000	324.9600

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	112.24	22.7837	1.3465	0.0000	51.0598

General Light Industry	339.59	68.9337	4.0739	0.0000	154.4849
Regional Shopping Center	262.5	53.2851	3.1491	0.0000	119.4154
Total		**145.0025**	**8.5694**	**0.0000**	**324.9600**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	56.12	11.3919	0.6732	0.0000	25.5299
General Light Industry	169.795	34.4669	2.0369	0.0000	77.2424
Regional Shopping Center	131.25	26.6426	1.5745	0.0000	59.7077
Total		**72.5013**	**4.2847**	**0.0000**	**162.4800**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Merge 56 Proposed Land Uses

San Diego Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	296.26	1000sqft	6.80	296,263.00	0
Pharmacy/Drugstore w/o Drive Thru	15.00	1000sqft	0.34	15,000.00	0
Hotel	120.00	Room	4.00	174,240.00	0
Movie Theater (No Matinee)	45.45	1000sqft	1.04	45,453.00	0
Apartments Low Rise	47.00	Dwelling Unit	1.78	47,000.00	134
Condo/Townhouse	111.00	Dwelling Unit	4.22	111,000.00	317
Single Family Housing	84.00	Dwelling Unit	10.40	151,200.00	240
Regional Shopping Center	101.28	1000sqft	2.33	101,284.00	0
Strip Mall	9.00	1000sqft	0.21	9,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	525.96	**CH4 Intensity (lb/MWhr)**	0.021	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Area Coating - Rule 67.0.1 coatings

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	100

tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	0
tblConstructionPhase	NumDays	35.00	296.00
tblConstructionPhase	NumDays	35.00	297.00
tblConstructionPhase	PhaseEndDate	5/10/2018	5/10/2017
tblConstructionPhase	PhaseEndDate	3/23/2018	3/22/2017
tblConstructionPhase	PhaseStartDate	3/23/2017	3/23/2016
tblConstructionPhase	PhaseStartDate	2/2/2017	2/2/2016
tblEnergyUse	T24E	184.75	141.70
tblEnergyUse	T24E	206.69	158.53
tblEnergyUse	T24E	5.69	4.45
tblEnergyUse	T24E	5.84	4.57
tblEnergyUse	T24E	1.48	1.16
tblEnergyUse	T24E	3.89	3.04
tblEnergyUse	T24E	3.89	3.04
tblEnergyUse	T24E	425.62	270.69
tblEnergyUse	T24E	3.89	3.04
tblEnergyUse	T24NG	8,285.40	7,970.55
tblEnergyUse	T24NG	10,789.48	10,379.48
tblEnergyUse	T24NG	16.83	14.00
tblEnergyUse	T24NG	49.75	41.39
tblEnergyUse	T24NG	4.54	3.78
tblEnergyUse	T24NG	1.20	1.00
tblEnergyUse	T24NG	1.20	1.00
tblEnergyUse	T24NG	21,834.49	20,415.25
tblEnergyUse	T24NG	1.20	1.00
tblFireplaces	NumberGas	25.85	0.00
tblFireplaces	NumberGas	61.05	0.00

tblFireplaces	NumberGas	46.20	84.00
tblFireplaces	NumberNoFireplace	4.70	47.00
tblFireplaces	NumberNoFireplace	11.10	111.00
tblFireplaces	NumberNoFireplace	8.40	0.00
tblFireplaces	NumberWood	16.45	0.00
tblFireplaces	NumberWood	38.85	0.00
tblFireplaces	NumberWood	29.40	0.00
tblLandUse	LandUseSquareFeet	296,260.00	296,263.00
tblLandUse	LandUseSquareFeet	45,450.00	45,453.00
tblLandUse	LandUseSquareFeet	101,280.00	101,284.00
tblLandUse	LotAcreage	2.94	1.78
tblLandUse	LotAcreage	6.94	4.22
tblLandUse	LotAcreage	27.27	10.40
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.021
tblProjectCharacteristics	CO2IntensityFactor	720.49	525.96
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	WorkerTripNumber	23.00	20.00
tblTripsAndVMT	WorkerTripNumber	23.00	15.00

tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	244.25	236.93
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	297.79	288.86
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	364.72	353.78
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	489.56	474.87
tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CW_TL	9.50	5.80
tblVehicleTrips	CW_TL	9.50	5.80
tblVehicleTrips	CW_TL	9.50	5.80
tblVehicleTrips	CW_TL	9.50	5.80
tblVehicleTrips	CW_TL	9.50	5.80
tblVehicleTrips	CW_TL	9.50	5.80
tblVehicleTrips	HO_TL	7.50	5.80
tblVehicleTrips	HO_TL	7.50	5.80
tblVehicleTrips	HO_TL	7.50	5.80
tblVehicleTrips	HS_TL	7.30	5.80

tblVehicleTrips	HS_TL	7.30	5.80
tblVehicleTrips	HS_TL	7.30	5.80
tblVehicleTrips	HW_TL	10.80	5.80
tblVehicleTrips	HW_TL	10.80	5.80
tblVehicleTrips	HW_TL	10.80	5.80
tblVehicleTrips	ST_TR	7.16	6.00
tblVehicleTrips	ST_TR	7.16	8.00
tblVehicleTrips	ST_TR	2.37	12.95
tblVehicleTrips	ST_TR	8.19	8.00
tblVehicleTrips	ST_TR	90.06	90.00
tblVehicleTrips	ST_TR	49.97	70.00
tblVehicleTrips	ST_TR	10.08	10.00
tblVehicleTrips	ST_TR	42.04	100.00
tblVehicleTrips	SU_TR	6.07	6.00
tblVehicleTrips	SU_TR	6.07	8.00
tblVehicleTrips	SU_TR	0.98	12.95
tblVehicleTrips	SU_TR	5.95	8.00
tblVehicleTrips	SU_TR	90.06	90.00
tblVehicleTrips	SU_TR	25.24	70.00
tblVehicleTrips	SU_TR	8.77	10.00
tblVehicleTrips	SU_TR	20.43	100.00
tblVehicleTrips	WD_TR	6.59	6.00
tblVehicleTrips	WD_TR	6.59	8.00
tblVehicleTrips	WD_TR	11.01	12.95
tblVehicleTrips	WD_TR	8.17	8.00
tblVehicleTrips	WD_TR	90.06	90.00
tblVehicleTrips	WD_TR	42.94	70.00
tblVehicleTrips	WD_TR	9.57	10.00
tblVehicleTrips	WD_TR	44.32	100.00
tblWaterMitigation	UseWaterEfficientIrrigationSystemPercentReduction	6.1	0

tblWoodstoves	NumberCatalytic	2.35	0.00
tblWoodstoves	NumberCatalytic	5.55	0.00
tblWoodstoves	NumberCatalytic	4.20	0.00
tblWoodstoves	NumberNoncatalytic	2.35	0.00
tblWoodstoves	NumberNoncatalytic	5.55	0.00
tblWoodstoves	NumberNoncatalytic	4.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	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
Year	tons/yr										MT/yr					
2015	0.7761	5.6820	6.5479	0.0109	0.4935	0.2721	0.7656	0.1284	0.2556	0.3840	0.0000	945.2576	945.2576	0.1015	0.0000	947.3889
2016	9.3872	6.9499	8.3285	0.0150	0.5741	0.3548	0.9288	0.1548	0.3334	0.4882	0.0000	1,271.7482	1,271.7482	0.1430	0.0000	1,274.7505
2017	3.9842	0.9555	1.1137	2.0900e-003	0.0751	0.0520	0.1271	0.0202	0.0489	0.0691	0.0000	172.7988	172.7988	0.0236	0.0000	173.2943
Total	**14.1475**	**13.5875**	**15.9901**	**0.0280**	**1.1427**	**0.6788**	**1.8215**	**0.3034**	**0.6380**	**0.9414**	**0.0000**	**2,389.8046**	**2,389.8046**	**0.2680**	**0.0000**	**2,395.4337**

Mitigated Construction

	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
Year	tons/yr										MT/yr					
2015	0.7761	5.6820	6.5479	0.0109	0.4935	0.2721	0.7656	0.1284	0.2556	0.3840	0.0000	945.2572	945.2572	0.1015	0.0000	947.3885

2016	9.3872	6.9499	8.3285	0.0150	0.5741	0.3548	0.9288	0.1548	0.3334	0.4882	0.0000	1,271.7477	1,271.7477	0.1430	0.0000	1,274.7499
2017	3.9842	0.9555	1.1137	2.0900e-003	0.0751	0.0520	0.1271	0.0202	0.0489	0.0691	0.0000	172.7987	172.7987	0.0236	0.0000	173.2942
Total	**14.1475**	**13.5875**	**15.9901**	**0.0280**	**1.1427**	**0.6788**	**1.8215**	**0.3034**	**0.6380**	**0.9414**	**0.0000**	**2,389.8036**	**2,389.8036**	**0.2680**	**0.0000**	**2,395.4326**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	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
Category	tons/yr										MT/yr					
Area	4.8893	0.0209	1.8086	1.0000e-004		0.0146	0.0146		0.0145	0.0145	0.0000	69.1082	69.1082	4.1600e-003	1.2100e-003	69.5716
Energy	0.1051	0.9427	0.7120	5.7300e-003		0.0726	0.0726		0.0726	0.0726	0.0000	3,346.9387	3,346.9387	0.1121	0.0366	3,360.6401
Mobile	8.9890	14.1364	74.0424	0.1621	10.8625	0.1952	11.0577	2.9052	0.1802	3.0853	0.0000	11,002.3148	11,002.3148	0.4511	0.0000	11,011.7877
Waste						0.0000	0.0000		0.0000	0.0000	189.2383	0.0000	189.2383	11.1837	0.0000	424.0953
Water						0.0000	0.0000		0.0000	0.0000	31.3907	438.2242	469.6149	3.2416	0.0795	562.3218
Total	**13.9834**	**15.1000**	**76.5631**	**0.1680**	**10.8625**	**0.2823**	**11.1448**	**2.9052**	**0.2672**	**3.1724**	**220.6290**	**14,856.5860**	**15,077.2150**	**14.9926**	**0.1173**	**15,428.4164**

Mitigated Operational

	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

Category	tons/yr										MT/yr					
Area	4.8893	0.0209	1.8086	1.0000e-004		0.0146	0.0146		0.0145	0.0145	0.0000	69.1082	69.1082	4.1600e-003	1.2100e-003	69.5716
Energy	0.1051	0.9427	0.7120	5.7300e-003		0.0726	0.0726		0.0726	0.0726	0.0000	3,346.9387	3,346.9387	0.1121	0.0366	3,360.6401
Mobile	8.9890	14.1364	74.0424	0.1621	10.8625	0.1952	11.0577	2.9052	0.1802	3.0853	0.0000	11,002.3148	11,002.3148	0.4511	0.0000	11,011.7877
Waste						0.0000	0.0000		0.0000	0.0000	94.6192	0.0000	94.6192	5.5918	0.0000	212.0476
Water						0.0000	0.0000		0.0000	0.0000	25.1125	376.7509	401.8635	2.5940	0.0637	476.0854
Total	**13.9834**	**15.1000**	**76.5631**	**0.1680**	**10.8625**	**0.2823**	**11.1448**	**2.9052**	**0.2672**	**3.1724**	**119.7317**	**14,795.1127**	**14,914.8444**	**8.7531**	**0.1015**	**15,130.1324**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**45.73**	**0.41**	**1.08**	**41.62**	**13.44**	**1.93**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2015	3/4/2015	5	45	
2	Building Construction	Building Construction	3/5/2015	2/1/2017	5	500	
3	Paving	Paving	2/2/2016	3/22/2017	5	297	
4	Architectural Coating	Architectural Coating	3/23/2016	5/10/2017	5	296	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 626,130; Residential Outdoor: 208,710; Non-Residential Indoor: 961,860; Non-Residential Outdoor: 320,620

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	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
Grading	9	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	371.00	131.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	9	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Architectural Coating		1	74.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2015

Unmitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Fugitive Dust					0.0766	0.0000	0.0766	0.0158	0.0000	0.0158	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1394	1.5691	0.9861	1.3200e-003		0.0780	0.0780		0.0725	0.0725	0.0000	124.4698	124.4698	0.0349	0.0000	125.2016
Total	**0.1394**	**1.5691**	**0.9861**	**1.3200e-003**	**0.0766**	**0.0780**	**0.1546**	**0.0158**	**0.0725**	**0.0883**	**0.0000**	**124.4698**	**124.4698**	**0.0349**	**0.0000**	**125.2016**

Unmitigated Construction Off-Site

	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
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-003	2.2500e-003	0.0215	4.0000e-005	3.6100e-003	3.0000e-005	3.6400e-003	9.6000e-004	3.0000e-005	9.9000e-004	0.0000	3.4849	3.4849	1.9000e-004	0.0000	3.4890
Total	**1.7000e-003**	**2.2500e-003**	**0.0215**	**4.0000e-005**	**3.6100e-003**	**3.0000e-005**	**3.6400e-003**	**9.6000e-004**	**3.0000e-005**	**9.9000e-004**	**0.0000**	**3.4849**	**3.4849**	**1.9000e-004**	**0.0000**	**3.4890**

Mitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Fugitive Dust					0.0766	0.0000	0.0766	0.0158	0.0000	0.0158	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1394	1.5691	0.9861	1.3200e-003		0.0780	0.0780		0.0725	0.0725	0.0000	124.4696	124.4696	0.0349	0.0000	125.2014
Total	**0.1394**	**1.5691**	**0.9861**	**1.3200e-003**	**0.0766**	**0.0780**	**0.1546**	**0.0158**	**0.0725**	**0.0883**	**0.0000**	**124.4696**	**124.4696**	**0.0349**	**0.0000**	**125.2014**

Mitigated Construction Off-Site

	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
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-003	2.2500e-003	0.0215	4.0000e-005	3.6100e-003	3.0000e-005	3.6400e-003	9.6000e-004	3.0000e-005	9.9000e-004	0.0000	3.4849	3.4849	1.9000e-004	0.0000	3.4890
Total	**1.7000e-003**	**2.2500e-003**	**0.0215**	**4.0000e-005**	**3.6100e-003**	**3.0000e-005**	**3.6400e-003**	**9.6000e-004**	**3.0000e-005**	**9.9000e-004**	**0.0000**	**3.4849**	**3.4849**	**1.9000e-004**	**0.0000**	**3.4890**

3.3 Building Construction - 2015

Unmitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	0.3017	2.3191	1.5298	2.2100e-003		0.1660	0.1660		0.1574	0.1574	0.0000	198.1284	198.1284	0.0466	0.0000	199.1069
Total	**0.3017**	**2.3191**	**1.5298**	**2.2100e-003**		**0.1660**	**0.1660**		**0.1574**	**0.1574**	**0.0000**	**198.1284**	**198.1284**	**0.0466**	**0.0000**	**199.1069**

Unmitigated Construction Off-Site

	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
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1822	1.5916	2.0924	3.3700e-003	0.0920	0.0254	0.1174	0.0263	0.0234	0.0497	0.0000	308.8787	308.8787	2.7100e-003	0.0000	308.9355
Worker	0.1511	0.2001	1.9181	3.9600e-003	0.3213	2.5800e-003	0.3239	0.0854	2.3700e-003	0.0878	0.0000	310.2958	310.2958	0.0172	0.0000	310.6559
Total	**0.3333**	**1.7917**	**4.0105**	**7.3300e-003**	**0.4133**	**0.0280**	**0.4413**	**0.1117**	**0.0257**	**0.1375**	**0.0000**	**619.1745**	**619.1745**	**0.0199**	**0.0000**	**619.5915**

Mitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	0.3017	2.3191	1.5298	2.2100e-003		0.1660	0.1660		0.1574	0.1574	0.0000	198.1282	198.1282	0.0466	0.0000	199.1067

Total	**0.3017**	**2.3191**	**1.5298**	**2.2100e-003**		**0.1660**	**0.1660**		**0.1574**	**0.1574**	**0.0000**	**198.1282**	**198.1282**	**0.0466**	**0.0000**	**199.1067**

Mitigated Construction Off-Site

	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
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1822	1.5916	2.0924	3.3700e-003	0.0920	0.0254	0.1174	0.0263	0.0234	0.0497	0.0000	308.8787	308.8787	2.7100e-003	0.0000	308.9355
Worker	0.1511	0.2001	1.9181	3.9600e-003	0.3213	2.5800e-003	0.3239	0.0854	2.3700e-003	0.0878	0.0000	310.2958	310.2958	0.0172	0.0000	310.6559
Total	**0.3333**	**1.7917**	**4.0105**	**7.3300e-003**	**0.4133**	**0.0280**	**0.4413**	**0.1117**	**0.0257**	**0.1375**	**0.0000**	**619.1745**	**619.1745**	**0.0199**	**0.0000**	**619.5915**

3.3 Building Construction - 2016

Unmitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	0.3371	2.6547	1.8250	2.6700e-003		0.1854	0.1854		0.1756	0.1756	0.0000	237.8487	237.8487	0.0548	0.0000	238.9995
Total	**0.3371**	**2.6547**	**1.8250**	**2.6700e-003**		**0.1854**	**0.1854**		**0.1756**	**0.1756**	**0.0000**	**237.8487**	**237.8487**	**0.0548**	**0.0000**	**238.9995**

Unmitigated Construction Off-Site

	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
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1945	1.6703	2.3400	4.0600e-003	0.1112	0.0246	0.1358	0.0318	0.0226	0.0545	0.0000	368.8300	368.8300	2.8900e-003	0.0000	368.8907
Worker	0.1661	0.2194	2.0911	4.7800e-003	0.3883	2.9800e-003	0.3912	0.1032	2.7400e-003	0.1059	0.0000	361.8141	361.8141	0.0191	0.0000	362.2155
Total	**0.3606**	**1.8896**	**4.4310**	**8.8400e-003**	**0.4995**	**0.0276**	**0.5271**	**0.1350**	**0.0254**	**0.1604**	**0.0000**	**730.6441**	**730.6441**	**0.0220**	**0.0000**	**731.1061**

Mitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	0.3371	2.6547	1.8250	2.6700e-003		0.1854	0.1854		0.1756	0.1756	0.0000	237.8484	237.8484	0.0548	0.0000	238.9992
Total	**0.3371**	**2.6547**	**1.8250**	**2.6700e-003**		**0.1854**	**0.1854**		**0.1756**	**0.1756**	**0.0000**	**237.8484**	**237.8484**	**0.0548**	**0.0000**	**238.9992**

Mitigated Construction Off-Site

	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
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1945	1.6703	2.3400	4.0600e-003	0.1112	0.0246	0.1358	0.0318	0.0226	0.0545	0.0000	368.8300	368.8300	2.8900e-003	0.0000	368.8907
Worker	0.1661	0.2194	2.0911	4.7800e-003	0.3883	2.9800e-003	0.3912	0.1032	2.7400e-003	0.1059	0.0000	361.8141	361.8141	0.0191	0.0000	362.2155
Total	**0.3606**	**1.8896**	**4.4310**	**8.8400e-003**	**0.4995**	**0.0276**	**0.5271**	**0.1350**	**0.0254**	**0.1604**	**0.0000**	**730.6441**	**730.6441**	**0.0220**	**0.0000**	**731.1061**

3.3 Building Construction - 2017

Unmitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	0.0270	0.2171	0.1579	2.4000e-004		0.0148	0.0148		0.0140	0.0140	0.0000	20.7614	20.7614	4.7000e-003	0.0000	20.8601
Total	**0.0270**	**0.2171**	**0.1579**	**2.4000e-004**		**0.0148**	**0.0148**		**0.0140**	**0.0140**	**0.0000**	**20.7614**	**20.7614**	**4.7000e-003**	**0.0000**	**20.8601**

Unmitigated Construction Off-Site

	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
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0157	0.1316	0.1948	3.6000e-004	9.8000e-003	1.8800e-003	0.0117	2.8000e-003	1.7300e-003	4.5400e-003	0.0000	31.9529	31.9529	2.4000e-004	0.0000	31.9579
Worker	0.0133	0.0176	0.1661	4.2000e-004	0.0342	2.5000e-004	0.0345	9.0900e-003	2.4000e-004	9.3300e-003	0.0000	30.6521	30.6521	1.5600e-003	0.0000	30.6848
Total	**0.0290**	**0.1491**	**0.3609**	**7.8000e-004**	**0.0440**	**2.1300e-003**	**0.0462**	**0.0119**	**1.9700e-003**	**0.0139**	**0.0000**	**62.6049**	**62.6049**	**1.8000e-003**	**0.0000**	**62.6427**

Mitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	0.0270	0.2171	0.1579	2.4000e-004		0.0148	0.0148		0.0140	0.0140	0.0000	20.7614	20.7614	4.7000e-003	0.0000	20.8601
Total	**0.0270**	**0.2171**	**0.1579**	**2.4000e-004**		**0.0148**	**0.0148**		**0.0140**	**0.0140**	**0.0000**	**20.7614**	**20.7614**	**4.7000e-003**	**0.0000**	**20.8601**

Mitigated Construction Off-Site

	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
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0157	0.1316	0.1948	3.6000e-004	9.8000e-003	1.8800e-003	0.0117	2.8000e-003	1.7300e-003	4.5400e-003	0.0000	31.9529	31.9529	2.4000e-004	0.0000	31.9579
Worker	0.0133	0.0176	0.1661	4.2000e-004	0.0342	2.5000e-004	0.0345	9.0900e-003	2.4000e-004	9.3300e-003	0.0000	30.6521	30.6521	1.5600e-003	0.0000	30.6848
Total	**0.0290**	**0.1491**	**0.3609**	**7.8000e-004**	**0.0440**	**2.1300e-003**	**0.0462**	**0.0119**	**1.9700e-003**	**0.0139**	**0.0000**	**62.6049**	**62.6049**	**1.8000e-003**	**0.0000**	**62.6427**

3.4 Paving - 2016

Unmitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	0.2072	2.1226	1.4794	2.2900e-003		0.1213	0.1213		0.1120	0.1120	0.0000	207.8139	207.8139	0.0594	0.0000	209.0621
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2072**	**2.1226**	**1.4794**	**2.2900e-003**		**0.1213**	**0.1213**		**0.1120**	**0.1120**	**0.0000**	**207.8139**	**207.8139**	**0.0594**	**0.0000**	**209.0621**

Unmitigated Construction Off-Site

	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
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1500e-003	8.1200e-003	0.0774	1.8000e-004	0.0144	1.1000e-004	0.0145	3.8200e-003	1.0000e-004	3.9200e-003	0.0000	13.3955	13.3955	7.1000e-004	0.0000	13.4104
Total	**6.1500e-003**	**8.1200e-003**	**0.0774**	**1.8000e-004**	**0.0144**	**1.1000e-004**	**0.0145**	**3.8200e-003**	**1.0000e-004**	**3.9200e-003**	**0.0000**	**13.3955**	**13.3955**	**7.1000e-004**	**0.0000**	**13.4104**

Mitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	0.2072	2.1226	1.4794	2.2900e-003		0.1213	0.1213		0.1120	0.1120	0.0000	207.8137	207.8137	0.0594	0.0000	209.0618

Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2072**	**2.1226**	**1.4794**	**2.2900e-003**		**0.1213**	**0.1213**		**0.1120**	**0.1120**	**0.0000**	**207.8137**	**207.8137**	**0.0594**	**0.0000**	**209.0618**

Mitigated Construction Off-Site

	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
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1500e-003	8.1200e-003	0.0774	1.8000e-004	0.0144	1.1000e-004	0.0145	3.8200e-003	1.0000e-004	3.9200e-003	0.0000	13.3955	13.3955	7.1000e-004	0.0000	13.4104
Total	**6.1500e-003**	**8.1200e-003**	**0.0774**	**1.8000e-004**	**0.0144**	**1.1000e-004**	**0.0145**	**3.8200e-003**	**1.0000e-004**	**3.9200e-003**	**0.0000**	**13.3955**	**13.3955**	**7.1000e-004**	**0.0000**	**13.4104**

3.4 Paving - 2017

Unmitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	0.0466	0.4717	0.3572	5.5000e-004		0.0268	0.0268		0.0247	0.0247	0.0000	49.7133	49.7133	0.0144	0.0000	50.0162
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0466**	**0.4717**	**0.3572**	**5.5000e-004**		**0.0268**	**0.0268**		**0.0247**	**0.0247**	**0.0000**	**49.7133**	**49.7133**	**0.0144**	**0.0000**	**50.0162**

Unmitigated Construction Off-Site

	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
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3500e-003	1.7900e-003	0.0169	4.0000e-005	3.4900e-003	3.0000e-005	3.5100e-003	9.3000e-004	2.0000e-005	9.5000e-004	0.0000	3.1252	3.1252	1.6000e-004	0.0000	3.1285
Total	**1.3500e-003**	**1.7900e-003**	**0.0169**	**4.0000e-005**	**3.4900e-003**	**3.0000e-005**	**3.5100e-003**	**9.3000e-004**	**2.0000e-005**	**9.5000e-004**	**0.0000**	**3.1252**	**3.1252**	**1.6000e-004**	**0.0000**	**3.1285**

Mitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Off-Road	0.0466	0.4717	0.3572	5.5000e-004		0.0268	0.0268		0.0247	0.0247	0.0000	49.7132	49.7132	0.0144	0.0000	50.0162
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0466**	**0.4717**	**0.3572**	**5.5000e-004**		**0.0268**	**0.0268**		**0.0247**	**0.0247**	**0.0000**	**49.7132**	**49.7132**	**0.0144**	**0.0000**	**50.0162**

Mitigated Construction Off-Site

	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
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3500e-003	1.7900e-003	0.0169	4.0000e-005	3.4900e-003	3.0000e-005	3.5100e-003	9.3000e-004	2.0000e-005	9.5000e-004	0.0000	3.1252	3.1252	1.6000e-004	0.0000	3.1285
Total	**1.3500e-003**	**1.7900e-003**	**0.0169**	**4.0000e-005**	**3.4900e-003**	**3.0000e-005**	**3.5100e-003**	**9.3000e-004**	**2.0000e-005**	**9.5000e-004**	**0.0000**	**3.1252**	**3.1252**	**1.6000e-004**	**0.0000**	**3.1285**

3.5 Architectural Coating - 2016

Unmitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Archit. Coating	8.4130					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0374	0.2408	0.1912	3.0000e-004		0.0200	0.0200		0.0200	0.0200	0.0000	25.9155	25.9155	3.0600e-003	0.0000	25.9797
Total	**8.4504**	**0.2408**	**0.1912**	**3.0000e-004**		**0.0200**	**0.0200**		**0.0200**	**0.0200**	**0.0000**	**25.9155**	**25.9155**	**3.0600e-003**	**0.0000**	**25.9797**

Unmitigated Construction Off-Site

	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
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0258	0.0340	0.3244	7.4000e-004	0.0602	4.6000e-004	0.0607	0.0160	4.3000e-004	0.0164	0.0000	56.1305	56.1305	2.9700e-003	0.0000	56.1928
Total	**0.0258**	**0.0340**	**0.3244**	**7.4000e-004**	**0.0602**	**4.6000e-004**	**0.0607**	**0.0160**	**4.3000e-004**	**0.0164**	**0.0000**	**56.1305**	**56.1305**	**2.9700e-003**	**0.0000**	**56.1928**

Mitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Archit. Coating	8.4130					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0374	0.2408	0.1912	3.0000e-004		0.0200	0.0200		0.0200	0.0200	0.0000	25.9155	25.9155	3.0600e-003	0.0000	25.9797
Total	**8.4504**	**0.2408**	**0.1912**	**3.0000e-004**		**0.0200**	**0.0200**		**0.0200**	**0.0200**	**0.0000**	**25.9155**	**25.9155**	**3.0600e-003**	**0.0000**	**25.9797**

Mitigated Construction Off-Site

	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
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0258	0.0340	0.3244	7.4000e-004	0.0602	4.6000e-004	0.0607	0.0160	4.3000e-004	0.0164	0.0000	56.1305	56.1305	2.9700e-003	0.0000	56.1928
Total	**0.0258**	**0.0340**	**0.3244**	**7.4000e-004**	**0.0602**	**4.6000e-004**	**0.0607**	**0.0160**	**4.3000e-004**	**0.0164**	**0.0000**	**56.1305**	**56.1305**	**2.9700e-003**	**0.0000**	**56.1928**

3.5 Architectural Coating - 2017

Unmitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Archit. Coating	3.8542					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0155	0.1016	0.0869	1.4000e-004		8.0600e-003	8.0600e-003		8.0600e-003	8.0600e-003	0.0000	11.8726	11.8726	1.2500e-003	0.0000	11.8990
Total	**3.8697**	**0.1016**	**0.0869**	**1.4000e-004**		**8.0600e-003**	**8.0600e-003**		**8.0600e-003**	**8.0600e-003**	**0.0000**	**11.8726**	**11.8726**	**1.2500e-003**	**0.0000**	**11.8990**

Unmitigated Construction Off-Site

	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
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0107	0.0142	0.1340	3.4000e-004	0.0276	2.1000e-004	0.0278	7.3300e-003	1.9000e-004	7.5200e-003	0.0000	24.7214	24.7214	1.2600e-003	0.0000	24.7478
Total	**0.0107**	**0.0142**	**0.1340**	**3.4000e-004**	**0.0276**	**2.1000e-004**	**0.0278**	**7.3300e-003**	**1.9000e-004**	**7.5200e-003**	**0.0000**	**24.7214**	**24.7214**	**1.2600e-003**	**0.0000**	**24.7478**

Mitigated Construction On-Site

	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
Category	tons/yr										MT/yr					
Archit. Coating	3.8542					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.0155	0.1016	0.0869	1.4000e-004		8.0600e-003	8.0600e-003		8.0600e-003	8.0600e-003	0.0000	11.8726	11.8726	1.2500e-003	0.0000	11.8989
Total	**3.8697**	**0.1016**	**0.0869**	**1.4000e-004**		**8.0600e-003**	**8.0600e-003**		**8.0600e-003**	**8.0600e-003**	**0.0000**	**11.8726**	**11.8726**	**1.2500e-003**	**0.0000**	**11.8989**

Mitigated Construction Off-Site

	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
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0107	0.0142	0.1340	3.4000e-004	0.0276	2.1000e-004	0.0278	7.3300e-003	1.9000e-004	7.5200e-003	0.0000	24.7214	24.7214	1.2600e-003	0.0000	24.7478
Total	**0.0107**	**0.0142**	**0.1340**	**3.4000e-004**	**0.0276**	**2.1000e-004**	**0.0278**	**7.3300e-003**	**1.9000e-004**	**7.5200e-003**	**0.0000**	**24.7214**	**24.7214**	**1.2600e-003**	**0.0000**	**24.7478**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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
Category	tons/yr										MT/yr					
Mitigated	8.9890	14.1364	74.0424	0.1621	10.8625	0.1952	11.0577	2.9052	0.1802	3.0853	0.0000	11,002.3148	11,002.3148	0.4511	0.0000	11,011.7877
Unmitigated	8.9890	14.1364	74.0424	0.1621	10.8625	0.1952	11.0577	2.9052	0.1802	3.0853	0.0000	11,002.3148	11,002.3148	0.4511	0.0000	11,011.7877

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	282.00	282.00	282.00	528,689	528,689
Condo/Townhouse	888.00	888.00	888.00	1,664,806	1,664,806
General Office Building	3,836.57	3,836.57	3836.57	6,627,140	6,627,140
Hotel	960.00	960.00	960.00	1,369,455	1,369,455
Movie Theater (No Matinee)	3,636.00	3,636.00	3636.00	5,415,117	5,415,117
Pharmacy/Drugstore w/o Drive Thru	1,350.00	1,350.00	1350.00	1,237,345	1,237,345
Regional Shopping Center	7,089.60	7,089.60	7089.60	9,420,533	9,420,533
Single Family Housing	840.00	840.00	840.00	1,574,817	1,574,817
Strip Mall	900.00	900.00	900.00	1,049,958	1,049,958
Total	19,782.17	19,782.17	19,782.17	28,887,860	28,887,860

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	5.80	5.80	5.80	41.60	18.80	39.60	86	11	3
Condo/Townhouse	5.80	5.80	5.80	41.60	18.80	39.60	86	11	3
General Office Building	5.80	5.80	5.80	33.00	48.00	19.00	77	19	4
Hotel	5.80	5.80	5.80	19.40	61.60	19.00	58	38	4
Movie Theater (No Matinee)	5.80	5.80	5.80	1.80	79.20	19.00	66	17	17
Pharmacy/Drugstore w/o Drive	5.80	5.80	5.80	7.40	73.60	19.00	41	6	53
Regional Shopping Center	5.80	5.80	5.80	16.30	64.70	19.00	54	35	11
Single Family Housing	5.80	5.80	5.80	41.60	18.80	39.60	86	11	3
Strip Mall	5.80	5.80	5.80	16.60	64.40	19.00	45	40	15

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,307.3034	2,307.3034	0.0921	0.0176	2,314.6777
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,307.3034	2,307.3034	0.0921	0.0176	2,314.6777
NaturalGas Mitigated	0.1051	0.9427	0.7120	5.7300e-003		0.0726	0.0726		0.0726	0.0726	0.0000	1,039.6353	1,039.6353	0.0199	0.0191	1,045.9624
NaturalGas Unmitigated	0.1051	0.9427	0.7120	5.7300e-003		0.0726	0.0726		0.0726	0.0726	0.0000	1,039.6353	1,039.6353	0.0199	0.0191	1,045.9624

5.2 Energy by Land Use - NaturalGas

Unmitigated

	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
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	1.4853e+006	8.0100e-003	0.0684	0.0291	4.4000e-004		5.5300e-003	5.5300e-003		5.5300e-003	5.5300e-003	0.0000	79.2611	79.2611	1.5200e-003	1.4500e-003	79.7435
General Office Building	5.39199e+006	0.0291	0.2643	0.2220	1.5900e-003		0.0201	0.0201		0.0201	0.0201	0.0000	287.7369	287.7369	5.5100e-003	5.2800e-003	289.4881
Hotel	9.14586e+006	0.0493	0.4483	0.3766	2.6900e-003		0.0341	0.0341		0.0341	0.0341	0.0000	488.0578	488.0578	9.3500e-003	8.9500e-003	491.0280
Movie Theater (No Matinee)	501347	2.7000e-003	0.0246	0.0206	1.5000e-004		1.8700e-003	1.8700e-003		1.8700e-003	1.8700e-003	0.0000	26.7538	26.7538	5.1000e-004	4.9000e-004	26.9166
Pharmacy/Drugstore w/o Drive Thru	31350	1.7000e-004	1.5400e-003	1.2900e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.6730	1.6730	3.0000e-005	3.0000e-005	1.6831
Regional Shopping Center	211684	1.1400e-003	0.0104	8.7200e-003	6.0000e-005		7.9000e-004	7.9000e-004		7.9000e-004	7.9000e-004	0.0000	11.2962	11.2962	2.2000e-004	2.1000e-004	11.3650
Single Family Housing	2.20368e+006	0.0119	0.1015	0.0432	6.5000e-004		8.2100e-003	8.2100e-003		8.2100e-003	8.2100e-003	0.0000	117.5966	117.5966	2.2500e-003	2.1600e-003	118.3123

Strip Mall	18810	1.0000e-004	9.2000e-004	7.7000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	1.0038	1.0038	2.0000e-005	2.0000e-005	1.0099
Apartments Low Rise	492022	2.6500e-003	0.0227	9.6500e-003	1.4000e-004		1.8300e-003	1.8300e-003		1.8300e-003	1.8300e-003	0.0000	26.2562	26.2562	5.0000e-004	4.8000e-004	26.4160
Total		**0.1050**	**0.9427**	**0.7120**	**5.7400e-003**		**0.0726**	**0.0726**		**0.0726**	**0.0726**	**0.0000**	**1,039.6353**	**1,039.6353**	**0.0199**	**0.0191**	**1,045.9624**

Mitigated

	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
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	5.39199e+006	0.0291	0.2643	0.2220	1.5900e-003		0.0201	0.0201		0.0201	0.0201	0.0000	287.7369	287.7369	5.5100e-003	5.2800e-003	289.4881
Hotel	9.14586e+006	0.0493	0.4483	0.3766	2.6900e-003		0.0341	0.0341		0.0341	0.0341	0.0000	488.0578	488.0578	9.3500e-003	8.9500e-003	491.0280
Movie Theater (No Matinee)	501347	2.7000e-003	0.0246	0.0206	1.5000e-004		1.8700e-003	1.8700e-003		1.8700e-003	1.8700e-003	0.0000	26.7538	26.7538	5.1000e-004	4.9000e-004	26.9166
Pharmacy/Drugstore w/o Drive Thru	31350	1.7000e-004	1.5400e-003	1.2900e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.6730	1.6730	3.0000e-005	3.0000e-005	1.6831
Regional Shopping Center	211684	1.1400e-003	0.0104	8.7200e-003	6.0000e-005		7.9000e-004	7.9000e-004		7.9000e-004	7.9000e-004	0.0000	11.2962	11.2962	2.2000e-004	2.1000e-004	11.3650
Single Family Housing	2.20368e+006	0.0119	0.1015	0.0432	6.5000e-004		8.2100e-003	8.2100e-003		8.2100e-003	8.2100e-003	0.0000	117.5966	117.5966	2.2500e-003	2.1600e-003	118.3123
Strip Mall	18810	1.0000e-004	9.2000e-004	7.7000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	1.0038	1.0038	2.0000e-005	2.0000e-005	1.0099
Apartments Low Rise	492022	2.6500e-003	0.0227	9.6500e-003	1.4000e-004		1.8300e-003	1.8300e-003		1.8300e-003	1.8300e-003	0.0000	26.2562	26.2562	5.0000e-004	4.8000e-004	26.4160
Condo/Townhouse	1.4853e+006	8.0100e-003	0.0684	0.0291	4.4000e-004		5.5300e-003	5.5300e-003		5.5300e-003	5.5300e-003	0.0000	79.2611	79.2611	1.5200e-003	1.4500e-003	79.7435
Total		**0.1050**	**0.9427**	**0.7120**	**5.7400e-003**		**0.0726**	**0.0726**		**0.0726**	**0.0726**	**0.0000**	**1,039.6353**	**1,039.6353**	**0.0199**	**0.0191**	**1,045.9624**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	168635	40.2315	1.6100e-003	3.1000e-004	40.3601
Condo/Townhouse	475750	113.5005	4.5300e-003	8.6000e-004	113.8632
General Office Building	4.07362e+006	971.8485	0.0388	7.3900e-003	974.9546
Hotel	2.32088e+006	553.6949	0.0221	4.2100e-003	555.4646
Movie Theater (No Matinee)	394532	94.1241	3.7600e-003	7.2000e-004	94.4249
Pharmacy/Drugstore w/o Drive Thru	197850	47.2014	1.8800e-003	3.6000e-004	47.3522
Regional Shopping Center	1.33594e+006	318.7162	0.0127	2.4200e-003	319.7348
Single Family Housing	585425	139.6656	5.5800e-003	1.0600e-003	140.1120
Strip Mall	118710	28.3208	1.1300e-003	2.2000e-004	28.4113
Total		**2,307.3034**	**0.0921**	**0.0176**	**2,314.6777**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	168635	40.2315	1.6100e-003	3.1000e-004	40.3601
Condo/Townhouse	475750	113.5005	4.5300e-003	8.6000e-004	113.8632
General Office Building	4.07362e+006	971.8485	0.0388	7.3900e-003	974.9546
Hotel	2.32088e+006	553.6949	0.0221	4.2100e-003	555.4646

Movie Theater (No Matinee)	394532	94.1241	3.7600e-003	7.2000e-004	94.4249
Pharmacy/Drugstore w/o Drive Thru	197850	47.2014	1.8800e-003	3.6000e-004	47.3522
Regional Shopping Center	1.33594e+006	318.7162	0.0127	2.4200e-003	319.7348
Single Family Housing	585425	139.6656	5.5800e-003	1.0600e-003	140.1120
Strip Mall	118710	28.3208	1.1300e-003	2.2000e-004	28.4113
Total		**2,307.3034**	**0.0921**	**0.0176**	**2,314.6777**

6.0 Area Detail

6.1 Mitigation Measures Area

	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
Category	tons/yr										MT/yr					
Mitigated	4.8893	0.0209	1.8086	1.0000e-004		0.0146	0.0146		0.0145	0.0145	0.0000	69.1082	69.1082	4.1600e-003	1.2100e-003	69.5716
Unmitigated	4.8893	0.0209	1.8086	1.0000e-004		0.0146	0.0146		0.0145	0.0145	0.0000	69.1082	69.1082	4.1600e-003	1.2100e-003	69.5716

6.2 Area by SubCategory

Unmitigated

	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
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.1153					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Consumer Products	3.7119					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.6900e-003	0.0000	3.6000e-004	0.0000		4.6200e-003	4.6200e-003		4.5700e-003	4.5700e-003	0.0000	66.1626	66.1626	1.2700e-003	1.2100e-003	66.5652
Landscaping	0.0554	0.0209	1.8083	1.0000e-004		9.9300e-003	9.9300e-003		9.9300e-003	9.9300e-003	0.0000	2.9457	2.9457	2.8900e-003	0.0000	3.0064
Total	**4.8893**	**0.0209**	**1.8086**	**1.0000e-004**		**0.0146**	**0.0146**		**0.0145**	**0.0145**	**0.0000**	**69.1082**	**69.1082**	**4.1600e-003**	**1.2100e-003**	**69.5716**

Mitigated

	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
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.1153					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.7119					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.6900e-003	0.0000	3.6000e-004	0.0000		4.6200e-003	4.6200e-003		4.5700e-003	4.5700e-003	0.0000	66.1626	66.1626	1.2700e-003	1.2100e-003	66.5652
Landscaping	0.0554	0.0209	1.8083	1.0000e-004		9.9300e-003	9.9300e-003		9.9300e-003	9.9300e-003	0.0000	2.9457	2.9457	2.8900e-003	0.0000	3.0064
Total	**4.8893**	**0.0209**	**1.8086**	**1.0000e-004**		**0.0146**	**0.0146**		**0.0145**	**0.0145**	**0.0000**	**69.1082**	**69.1082**	**4.1600e-003**	**1.2100e-003**	**69.5716**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	401.8635	2.5940	0.0637	476.0854
Unmitigated	469.6149	3.2416	0.0795	562.3218

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	3.06224 / 1.93054	15.6011	0.1004	2.4700e-003	18.4737
Condo/Townhouse	7.2321 / 4.55937	36.8452	0.2370	5.8300e-003	43.6294
General Office Building	52.6554 / 32.2727	265.8155	1.7257	0.0424	315.2021
Hotel	3.04401 / 0.338224	11.3182	0.0996	2.4200e-003	14.1603
Movie Theater (No Matinee)	18.2528 / 1.16507	65.5800	0.5972	0.0145	82.6148
Pharmacy/Drugstore w/o Drive Thru	1.05671 / 0.647663	5.3345	0.0346	8.5000e-004	6.3256
Regional Shopping Center	7.50206 / 4.59804	37.8720	0.2459	6.0400e-003	44.9083
Single Family Housing	5.47294 / 3.45033	27.8829	0.1794	4.4100e-003	33.0169
Strip Mall	0.666653 / 0.408594	3.3654	0.0219	5.4000e-004	3.9907
Total		**469.6149**	**3.2416**	**0.0795**	**562.3218**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	2.44979 / 1.93054	13.5043	0.0803	1.9800e-003	15.8048
Condo/Townhouse	5.78568 / 4.55937	31.8931	0.1897	4.6800e-003	37.3262
General Office Building	42.1243 / 32.2727	229.7604	1.3811	0.0340	269.3098
Hotel	2.43521 / 0.338224	9.2339	0.0797	1.9400e-003	11.5073
Movie Theater (No Matinee)	14.6022 / 1.16507	53.0816	0.4777	0.0116	66.7064
Pharmacy/Drugstore w/o Drive Thru	0.84537 / 0.647663	4.6109	0.0277	6.8000e-004	5.4046
Regional Shopping Center	6.00165 / 4.59804	32.7351	0.1968	4.8500e-003	38.3698
Single Family Housing	4.37835 / 3.45033	24.1353	0.1436	3.5400e-003	28.2469
Strip Mall	0.533322 / 0.408594	2.9089	0.0175	4.3000e-004	3.4096
Total		**401.8635**	**2.5940**	**0.0637**	**476.0854**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e

	MT/yr			
Mitigated	94.6192	5.5918	0.0000	212.0476
Unmitigated	189.2383	11.1837	0.0000	424.0953

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	21.62	4.3887	0.2594	0.0000	9.8353
Condo/Townhouse	51.06	10.3647	0.6125	0.0000	23.2280
General Office Building	275.52	55.9281	3.3053	0.0000	125.3384
Hotel	65.7	13.3365	0.7882	0.0000	29.8880
Movie Theater (No Matinee)	259.06	52.5868	3.1078	0.0000	117.8505
Pharmacy/Drugstore w/o Drive Thru	45.1	9.1549	0.5410	0.0000	20.5167
Regional Shopping Center	106.34	21.5861	1.2757	0.0000	48.3758
Single Family Housing	98.4	19.9743	1.1805	0.0000	44.7637
Strip Mall	9.45	1.9183	0.1134	0.0000	4.2990
Total		**189.2383**	**11.1837**	**0.0000**	**424.0953**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	10.81	2.1943	0.1297	0.0000	4.9176
Condo/Townhouse	25.53	5.1824	0.3063	0.0000	11.6140
General Office Building	137.76	27.9640	1.6526	0.0000	62.6692
Hotel	32.85	6.6683	0.3941	0.0000	14.9440
Movie Theater (No Matinee)	129.53	26.2934	1.5539	0.0000	58.9253
Pharmacy/Drugstore w/o Drive Thru	22.55	4.5775	0.2705	0.0000	10.2584
Regional Shopping Center	53.17	10.7930	0.6379	0.0000	24.1879
Single Family Housing	49.2	9.9872	0.5902	0.0000	22.3819
Strip Mall	4.725	0.9591	0.0567	0.0000	2.1495
Total		**94.6192**	**5.5918**	**0.0000**	**212.0476**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation