County of San Diego

DEPARTMENT OF PARKS AND RECREATION
5500 OVERLAND AVENUE, SUITE 410, SAN DIEGO, CA 92123
www.sdparks.org

July 21, 2023

MITIGATED NEGATIVE DECLARATION

Project Name: Sycamore Canyon/Goodan Ranch County Preserve
Resource Management Plan Update

This Document is Considered Draft Until it is Adopted by the Appropriate County of San Diego Decision-Making Body.

This Mitigated Negative Declaration is composed of this form as well as the accompanying Environmental Initial Study, which includes the following:

a. Initial Study Form

b. Attached extended studies for biological resources, cultural resources, and air quality/greenhouse gas calculations.

1. California Environmental Quality Act Negative Declaration Findings:

   Find that this Mitigated Negative Declaration reflects the decision-making body's independent judgment and analysis, and that the decision-making body has reviewed and considered the information contained in this Mitigated Negative Declaration and the comments received during the public review period, and on the basis of the whole record before the decision-making body (including this Mitigated Negative Declaration) that there is no substantial evidence that the project will have a significant effect on the environment.

2. Required Mitigation Measures:

   Refer to the attached Environmental Initial Study for the rationale for requiring the following measures:

   A. Biological Resources

MM-BIO-1 Focused surveys for San Diego thorn-mint will be completed within areas of critical habitat during the blooming period for this species (April – May) prior to clearing and grubbing of the proposed Rock and Roll Trail (#22) segment improvements or reroutes. San Diego thorn-mint observed in the proposed impact area will be flagged and avoided during trail construction. If impacts to San Diego thorn-mint individuals cannot be avoided, they shall be quantified and limited to no more than 20 percent of the total population in the area, consistent

with the BMO Section 86.507.a.1, as determined during pre-construction surveys and documented in a letter report submitted by the County-approved biologist to DPR. The mapping of plant populations will extend beyond the impact area into the adjacent area that meets the species' habitat requirements, as determined by the County-approved biologist. DPR will review and approve the letter report and implement the mitigation according to the Mitigation Monitoring and Reporting Program for the project. Impacts shall be mitigated consistent with the BMO Section 86.507.a.1 at a 2:1 ratio if less than 10 percent of the total population is impacted, or 3:1 ratio if less than 20 percent of the total population is impacted. The proposed project will avoid impacting more than 20 percent of the total population.

Mitigation will consist of on- or off-site preservation, translocation, and/or restoration within a BRCA, with a preference for species salvage and transplantation on-site if feasible. Seed material will be sourced from within five miles of the Preserve, but if seed is not available, due to seasonality or a poor seeding year, seed collected from southeastern San Diego County may be used. Additionally, any trail or trail segment closure within areas of critical habitat for San Diego thorn-mint will include revegetation with species known as common associates to San Diego thorn-mint populations. If species are transplanted for mitigation, these species will be included in a plant salvage and translocation plan according to mitigation measure **BIO-2**.

MM-BIO-2 Prior to vegetation clearing for the proposed Rock and Roll Trail (#22) segment improvements or reroutes, if San Diego thorn-mint is being impacted and translocation is selected as part of the mitigation package according to the letter report prepared under mitigation measure **BIO-1**, a plant salvage and translocation plan shall be prepared for San Diego thorn-mint impacted by the project. The plan shall, at a minimum, evaluate options for plant salvage and relocation, including native plant mulching, selective soil salvaging, and application/relocation of resources within the Study Area. Relocation efforts may include seed collection and/or transplantation to a suitable receptor site and will be based on the most reliable methods of successful relocation. The program shall contain a recommendation for method of salvage and relocation/application based on feasibility of implementation and likelihood of success. The program shall include, at a minimum, an implementation plan, maintenance and monitoring program, success criteria, estimated completion time, and any relevant contingency measures. The resource salvage plan shall be prepared by a County-approved biologist and shall be implemented according to the Mitigation Monitoring and Reporting Program for the project.

MM-BIO-3 Grading or clearing of Diegan coastal sage scrub during the breeding season of the coastal California gnatcatcher (March 1 to August 15) shall be avoided to the extent feasible. If grubbing, clearing, or grading would occur during the breeding season, a pre-construction survey shall be conducted by a qualified biologist no more than three days prior to the commencement of activities to determine if active bird nests are present in the affected areas. If there are no nesting birds

(includes nest building or other breeding/nesting behavior) within 500 feet of the survey area, clearing, grubbing, and grading shall be allowed to proceed in that area. If active nests or nesting birds are observed within 500 feet of the survey area, the biologist shall flag a buffer around the active nests, and clearing, grubbing, or grading activities shall not occur within 500 feet of active nests until nesting behavior has ceased, nests have failed, or young have fledged as determined by a qualified biologist. If the qualified biologist determines that the species will not be impacted with a reduced buffer, potentially with the implementation of avoidance measures to reduce noise, as necessary, and/or the qualified biologist monitors the active nest during clearing, grubbing, or grading to ensure no impacts to the species occur, these activities may occur outside the reduced buffer during the breeding season, as long as the species is not impacted.

MM-BIO-4 Grubbing or clearing of vegetation during the general avian breeding season (February 15 – September 15) or raptor breeding season (January 15 – July 15) shall be avoided to the extent feasible. If grubbing, clearing, or grading would occur during the general avian breeding season, a pre-construction survey shall be conducted by a qualified biologist no more than three days prior to the commencement of grubbing or clearing activities to determine if active bird nests are present in the affected areas. If there are no nesting birds (includes nest building or other breeding/nesting behavior) within this area, clearing, grubbing, and grading shall be allowed to proceed. Furthermore, if construction activities are to resume in an area where they have not occurred for a period of seven or more days during the breeding season, an updated survey for avian nesting will be conducted. If active nests or nesting birds are observed within the area, the biologist shall flag the active nests and construction activities shall avoid active nests until nesting behavior has ceased, nests have failed, or young have fledged. If the qualified biologist determines that the species will not be impacted with a reduced buffer, potentially with the implementation of avoidance measures to reduce noise, as necessary, and/or the qualified biologist monitors the active nest during clearing, grubbing, or grading to ensure no impacts to the species occur, these activities may occur outside the reduced buffer during the breeding season, as long as the species is not impacted.

MM-BIO-5 Because the Preserve is a Biological Resource Core Area (BRCA), mitigation for impacts to 3.0 acres of Diegan coastal sage scrub and coastal sage-chaparral transition, Tier II habitats, shall occur at a 1.5:1 ratio through preservation, revegetation/restoration, or purchase of Tier II mitigation credits from an approved mitigation bank within the South County MSCP Subarea Plan per Attachment M of the BMO. The mitigation site will meet the criteria for a BRCA in order to use a 1.5:1 ratio, as the impacted land meets the criteria for BRCA. Otherwise, the mitigation ratio will be 2:1 if the mitigation site does not meet the criteria for BRCA. Some or all of the mitigation for impacts to 3.0 acres of Tier II habitat could occur as part of the revegetation of existing trail segments to be closed. Revegetation will be accomplished by a combination of barricade and sign installation, soil decompaction (where needed), and native seed application

(see also MM-BIO-6). Seed material will be sourced from within five miles of the Preserve, but if seed is not available, due to seasonality or a poor seeding year, seed collected from southeastern San Diego County may be used. Revegetation efforts will be monitored by a qualified biologist and maintained for a period of three years following implementation. Maintenance will be conducted by a qualified contractor with experience in native habitat restoration and will include control of non-native plant species and remedial measures, such as re-seeding and installation of additional barricades and signage, to help ensure the success of the revegetation efforts. Closed trail segments to be revegetated within occupied QCB habitat will be revegetated with passive methods that would avoid impacts to QCB and their larval host plants.

MM-BIO-6 Trail segments to be closed and revegetated will incorporate native species in seed mixes that will enhance sensitive species documented within the Preserve, including San Diego thorn-mint and habitat that supports QCB. Revegetation of trail segments within areas of critical habitat for San Diego thorn-mint will include seeding with native geophytes (i.e., wild onion [*Allium* spp.] and goldenstar [*Bloomeria crocea*]) known to occur with San Diego thorn-mint on gabbro soils. Revegetation of trail segments within areas of suitable habitat for QCB will include host plant species (i.e., dot-seed plantain) and nectar resources.

Table 4a
Mitigation Ratios – Tier I

Tier I	**Impacted Land**	
Mitigation Site	**Within BRCA**	**Outside BRCA**
Within BRCA	2:1	1:1
Outside BRCA	3:1	2:1

Table 4b
Mitigation Ratios – Tier II

Tier II	**Impacted Land**	
Mitigation Site	**Within BRCA**	**Outside BRCA**
Within BRCA	1.5:1	1:1
Outside BRCA	2:1	1.5:1

Table 4c
Mitigation Ratios – Tier III

Tier III	**Impacted Land**	
Mitigation Site	**Within BRCA**	**Outside BRCA**
Within BRCA	1:1	0.5:1
Outside BRCA	1.5:1	1:1

MM-BIO-7 Mitigation for permanent impacts to Potential Hermes Copper Butterfly Habitat within shall occur at a 1:1 ratio within the South County MSCP Subarea, within a

BRCA, or at the ratios identified in the BMO. Permanent impacts to Potential Hermes Copper Butterfly Habitat are expected to be 0.05 acre. Mitigation shall occur through one or a combination of the following: on- and/or off-site preservation, restoration, and/or purchase of mitigation credits at an approved mitigation bank.

MM-BIO-8 The following Hermes Copper Butterfly conservation measures apply along the Hermes Copper Butterfly Avoidance Area on Figure 8b of the proposed project's BRTR. Additional Hermes Copper Butterfly surveys will be conducted prior to construction, in order to ensure that potential habitat is delineated to the greatest extent feasible. This mitigation would be expanded to any additional area where Hermes Copper Butterfly is identified during preconstruction surveys.

Step 1: Survey

- Prior to initiating work within the Hermes Copper Butterfly Avoidance Area, a qualified biologist shall complete protocol flight season surveys for the Hermes Copper Butterfly in accordance with the survey guidelines outlined in Attachment B of the County's Report Format and Content Requirements for Biological Resources (County 2010a).

- During host plant mapping, host plant patches will be mapped using GPS, so they can be flagged prior to construction.

Step 2: Avoidance and Minimization Measures

- Following flight season surveys and host plant mapping, realign or leave potential impact areas unimproved, as needed, to avoid direct impacts to host plants (Spiny redberry plants that are within 15 feet of buckwheat) as much as possible.

- All construction within mapped Hermes Copper Butterfly habitat, including buckwheat within 15 feet of Spiny redberry, will be prohibited during the flight season (defined as the third full week of May through the first full week of July).

- A qualified biologist will monitor construction within the Hermes Copper Butterfly Avoidance Area to ensure that all flagged and mapped host plant locations planned for avoidance are avoided.

- The qualified biologist will conduct environmental awareness training for all personnel entering the site during the construction of the proposed project.

- Following trail installation, maintenance activities in areas supporting Hermes Copper Butterfly host plants within the Hermes Copper Butterfly Avoidance Area shall either occur outside of the Hermes Copper Butterfly flight season or be monitored, as appropriate, by a qualified biologist.

- Install signs and/or fencing along the avoided host plants stating, “Environmentally sensitive area. Please stay on trail,” or similar language.

Step 3: Compensatory Mitigation

If the flight season surveys conducted in Step 1 are positive and the proposed project cannot be redesigned to avoid impacts to all Hermes Copper Butterfly host plant patches, then in addition to the surveys and avoidance and minimization measures in Steps 1 and 2 above, the impacts to Occupied Hermes Copper Butterfly host plant patches will be mitigated at a 3:1 ratio through one or a combination of the following: on- and/or off-site preservation, restoration, and/or purchase of mitigation credits at an approved mitigation bank.

MM-BIO-9 The following QCB conservation measures apply along the Rock and Roll Trail (#22) segment, shown as QCB Avoidance Area on Figure 8b of the proposed project’s BRTR. Additional QCB host plant mapping will be conducted prior to construction when host plants are blooming, in order to ensure host plant patches are delineated to the greatest extent feasible. This mitigation would be expanded to any additional area where QCB host plants are identified during preconstruction plant mapping.

Step 1: Survey

- Additional QCB host plant mapping will be conducted prior to construction when host plants are blooming, in order to ensure host plant patches are delineated to the greatest extent feasible.

- During host plant mapping, host plant patches will be mapped using GPS, so they can be flagged prior to construction.

Step 2: Avoidance and Minimization Measures

- Following host plant mapping, realign or leave potential impact areas unimproved, as needed, to avoid direct impacts to host plants as much as possible.

- All construction within mapped QCB host plant patches will be prohibited during the QCB flight season (defined as the third week of February through the second Saturday in May).

- A qualified biologist will monitor construction within the QCB Avoidance Area to ensure that all flagged and mapped host plant locations planned for avoidance are avoided.

- The qualified biologist will conduct environmental awareness training for all personnel entering the site during the construction of the proposed project.

- Following construction, maintenance activities in areas supporting QCB host plants within the QCB Avoidance Area shall either occur outside of the QCB flight season or be monitored, as appropriate, by a qualified biologist.

- Install signs and/or fencing along the avoided host plants stating, “Environmentally sensitive area. Please stay on trail,” or similar language.

Step 3: Compensatory Mitigation

If the proposed project cannot be redesigned to avoid impacts to all QCB host plant patches, then in addition to the surveys and avoidance and minimization measures in Steps 1 and 2 above, consultation with USFWS will be required. Mitigation may consist of one or a combination of on- or off-site planting of host plants, providing long-term maintenance of existing host plants, preserving occupied QCB habitat, or similar measures to the satisfaction of the USFWS.

MM-BIO-10 Focused surveys for western spadefoot toad will be completed by a qualified biologist prior to clearing and grubbing of the proposed trail segment improvements or reroutes. Occupied western spadefoot toad habitat observed in the proposed impact area will be flagged and avoided during trail construction until the qualified biologist determines that western spadefoot toad are no longer using the habitat.

MM-BIO-11 To help ensure errant impacts to sensitive vegetation communities and jurisdictional waters outside of the impact footprint are avoided during construction, environmental exclusionary fencing, where determined necessary by the qualified biologist, would be installed at the edges of the impact limits prior to initiation of grading. All construction staging shall occur within the approved limits of construction. A qualified biologist will monitor the installation of environmental fencing wherever it would abut sensitive vegetation communities. The biologist also will conduct a pre-construction environmental awareness training for construction personnel prior to all phases of construction to inform personnel of the sensitive biological resources on-site and avoidance measures to remain in compliance with project approvals. The biologist will periodically monitor the limits of construction operations to ensure that avoidance areas are delineated with temporary fencing and that fencing remains intact.

MM-BIO-12 Because the Preserve is a BRCA, mitigation for impacts to 0.1 acre of open coast live oak woodland, a Tier I habitat, shall occur at a 2:1 ratio through on-site preservation of open or dense coast live oak woodland, on- or off-site revegetation of open or dense coast live oak woodland, or purchase of Tier I mitigation credits from an approved mitigation bank within the South County MSCP Subarea Plan per Attachment M of the BMO. The mitigation site will meet the criteria for a BRCA in order to use a 2:1 ratio, as the impacted land meets the criteria for BRCA. Otherwise, the mitigation ratio will be 3:1 if the mitigation site does not meet the criteria for BRCA. Some or all of the mitigation for impacts to 0.1 acre of open coast live oak woodland could occur as part of the revegetation of 5.6 acres of existing trail segments to be closed. Revegetation will be

accomplished by a combination of barricade and sign installation, soil decompaction (where needed), and native seed application (see also MM-BIO-6). Seed material will be sourced from within five miles of the Preserve, but if seed is not available, due to seasonality or a poor seeding year, seed collected from southeastern San Diego County may be used. Revegetation efforts will be monitored by a qualified biologist and maintained for a period of three years following implementation. Maintenance will be conducted by a qualified contractor with experience in native habitat restoration and will include control of non-native plant species and remedial measures, such as re-seeding and installation of additional barricades and signage, to help ensure the success of the revegetation efforts. Closed trail segments to be revegetated within occupied QCB habitat will be revegetated with passive methods that would avoid impacts to QCB and their larval host plants.

MM-BIO-13 Because the Preserve is a BRCA, mitigation for impacts to 2.2 acres of southern mixed chaparral, chamise chaparral, and non-native grassland, Tier III habitats, shall occur at a 1:1 ratio through on-site preservation, revegetation/restoration, or purchase of Tier III mitigation credits from an approved mitigation bank within the South County MSCP Subarea Plan per Attachment M of the BMO. The mitigation site will meet the criteria for a BRCA in order to use a 1:1 ratio, as the impacted land meets the criteria for BRCA. Otherwise, the mitigation ratio will be 1.5:1 if the mitigation site does not meet the criteria for BRCA. Some or all of the mitigation for impacts to 2.2 acres of Tier III habitat could occur as part of the revegetation of 5.6 acres of existing trail segments to be closed. Revegetation will be accomplished by a combination barricade and sign installation, soil decompaction (where needed), and native seed application (see also MM-BIO-6). Seed material will be sourced from within five miles of the Preserve, but if seed is not available, due to seasonality or a poor seeding year, seed collected from southeastern San Diego County may be used. Revegetation efforts will be monitored by a qualified biologist and maintained for a period of three years following implementation. Maintenance will be conducted by a qualified contractor with experience in native habitat restoration and will include control of non-native plant species and remedial measures, such as re-seeding and installation of additional barricades and signage, to help ensure the success of the revegetation efforts. Closed trail segments to be revegetated within occupied QCB habitat will be revegetated with passive methods that would avoid impacts to QCB and their larval host plants.

B. Cultural Resources

MM-CUL-1 Cultural resources CA-SDI-9706, -19170, -19171, -19181, -21921, -21922, and -21923; P-37-024271, -028924, -030084, -035980, -035992, -038958, -038959, and -038960 shall be identified as environmentally sensitive areas (ESAs) in order to ensure no adverse impacts to the resources occur.

- The ESAs shall consist of the recorded site boundary and a 20-foot buffer.

- The ESA locations shall be provided to the proposed project development team and the ESA locations shall be avoided by all project design considerations for new trail segments and existing trail segments to be improved.

- If during trail segment engineering, it is determined that avoidance of an ESA proves infeasible, a Historical Resources Treatment Plan (HRTP) shall be prepared. The HRTP will present the measures that will be implemented, and include appropriate methodologies, to address the preservation, minimization of impacts, or mitigation of potential impacts/adverse effects to significant cultural/historical resources. The County shall approve the HRTP prior to final engineering design, and all cultural resources investigations and reporting deliverables outlined in the HRTP shall be completed prior to trail segment construction.

- During the proposed project's construction, no ground disturbance shall occur within the boundary of the ESA unless otherwise addressed in the HRTP. During restoration efforts within trail routes to be closed, only passive revegetation shall occur within the boundary of the ESA. Archaeological monitors will be present during initial activities to confirm the ESA and buffer around each resource and ensure there are no direct or indirect impacts to the resources.

- During the proposed project's construction activities, the ESAs and buffer areas shall be temporarily flagged by the project archaeologist prior to construction activities occurring in the vicinity of the ESA.

- All construction activities within 100 feet of an ESA shall be monitored by an archaeological monitor; in addition, all construction activities within 100 feet of an ESA surrounding prehistoric archaeological resources shall be monitored by a Kumeyaay Native American monitor.

MM-CUL-2 The County DPR will retain a qualified project archaeologist and a Kumeyaay Native American representative to monitor all initial ground-disturbing activities related to the implementation of the proposed project in order to minimize impacts to unknown subsurface archaeological deposits. Specifically, the following measures will be implemented to reduce impacts:

- Prior to the start of construction, the project archaeologist shall prepare a monitoring plan that describes the nature of the archaeological monitoring work; a monitoring schedule and a map illustrating ESA boundaries (**MM-CUL-1**) and areas where monitoring shall occur; procedures to follow in the event of an unanticipated discovery; and reporting requirements.

- The monitoring program shall include attendance by the archaeologist and Native American monitor at a preconstruction meeting with the construction contractor to discuss monitoring scheduling and coordination and to inform all personnel of the high probability of archaeological materials being encountered during construction.

- Both archaeological and Native American monitors shall have the authority to temporarily halt or redirect grading and other ground-disturbing activity in the event that cultural resources are encountered. Isolates and non-significant deposits shall be minimally documented in the field. If significant cultural material is encountered, appropriate actions shall be implemented according to the protocols outlined in the monitoring plan.

MM-CUL-3 Should human remains be identified during ground-disturbing activities related to the proposed project, whether during construction, maintenance, or any other activity, California Public Resources Code §5097.98, CEQA Guidelines §15064.5 and California Health & Safety Code §7050.5 and County-mandated procedures will be followed for the treatment and disposition of those remains, as follow:

- A County (DPR) official is contacted.

- Upon identification of human remains, there will be no further excavation or disturbance in the area of the find or any nearby area reasonably suspected to overlie adjacent human remains until the County Coroner has made the necessary findings as to origin. If the human remains are to be taken offsite for evaluation, they shall be accompanied by the Kumeyaay Native American monitor.

- If the remains are determined to be of Native American origin, the coroner will contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC will identify a Most Likely Descendant (MLD), the person or persons it believes to be most likely descended from the deceased Native American.

- The immediate vicinity where the Native American human remains are located is not to be damaged or disturbed by further development activity until consultation with the MLD regarding their recommendations as required by Public Resources Code Section 5097.98 has been conducted.

- The MLD, as identified by the NAHC, shall be contacted by DPR or their representative in order to determine proper treatment and disposition of the remains. The MLD may make recommendations to the landowner (DPR), or the person responsible for the excavation work, for the treatment of human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.

C. Paleontological Resources

MM-PAL-1a The County will retain a qualified paleontologist. A qualified paleontologist is defined as an individual having an M.S. or Ph.D. degree in paleontology or geology who is familiar with paleontological procedures and techniques, is knowledgeable in the geology and paleontology of San Diego County, and who has worked as a paleontological mitigation project supervisor in the County for at least one year.

MM-PAL-1b A qualified paleontological monitor shall be on site on a full-time basis during the original cutting of previously undisturbed deposits in areas with high paleontological resource potential and sensitivity. A qualified paleontological monitor is defined as an individual having experience in the collection and salvage of fossil materials. The paleontological monitor shall work under the direction of a qualified paleontologist. If the qualified paleontologist or paleontological monitor ascertains that observed exposures of the formations are not fossil-bearing, the qualified paleontologist shall have the authority to terminate the monitoring program.

MM-PAL-1c If fossils are discovered during monitoring, they shall be recovered by the qualified paleontologist or paleontological monitor. In most cases, fossil salvage can be completed in a short period of time, although some fossil specimens (such as a complete large mammal skeleton) may require an extended salvage period. In these instances, the paleontologist (or paleontological monitor) shall be allowed to temporarily direct, divert, or halt grading to allow recovery of fossil remains in a timely manner. Because of the potential for recovering small fossil remains, such as isolated mammal teeth, it may be necessary to set up a screen washing operation on the recovery site.
If a fossil of greater than 12 inches in any dimension, including circumference, is encountered during excavation or grading, all excavation operations in the area where the fossil was found shall be suspended immediately, the County Planning and Development Services (PDS) Permit Compliance Coordinator shall be notified, the Project Paleontologist shall assess the significance of the find and, if the fossil is significant, the Project Paleontologist shall oversee the salvage program, including salvaging, cleaning, and curating the fossil(s), and documenting the find (as outlined below).

MM-PAL-1d If any sub-surface bones or other potential fossils are found anywhere within the proposed project impact footprint by construction personnel in the absence of a qualified paleontologist or paleontological monitor, the qualified paleontologist shall be notified immediately to assess their significance and make further recommendations.

MM-PAL-1e Fossil remains collected during monitoring and salvage shall be cleaned, repaired, sorted, and cataloged as part of the mitigation program.

MM-PAL-1f Prepared fossils, along with copies of all pertinent field notes, photos, and maps, shall be deposited (as a donation) in a scientific institution with permanent paleontological collections such as the San Diego Natural History Museum. Donation of the fossils shall be accompanied by financial support from the applicant for initial specimen storage.

MM-PAL-1g A final summary report outlining the results of the mitigation program shall be prepared by a qualified paleontologist and submitted to the County of San Diego for concurrence. This report shall include discussions of the methods used, stratigraphic section(s) exposed, fossils collected, and significance of recovered fossils.

3. Critical Project Design Elements:

The following project design elements were the result of compliance with specific environmental laws and regulations and were essential in reaching the conclusions within the attached Environmental Initial Study. While the following are not technically mitigation measures, their implementation must be assured to avoid potentially significant environmental effects.

A. Air Quality

1. Although the project would not be subject to the County Grading Ordinance, the project would be consistent with dust control measures to reduce potential fugitive dust emissions during construction. During site preparation and grading construction phases, all soil excavated or graded would be sufficiently watered to prevent excessive dust. Watering would occur as needed with complete coverage of disturbed soil areas. Watering would occur a minimum of twice daily on unpaved roads and on disturbed soil areas with active operations. All haul trucks transporting soil to or from the project site would be covered to prevent fugitive dust emissions, and traffic speeds on all unpaved portions of the project site would be reduced to 15 miles per hour or less.

B. Geology and Soils

1. Although the proposed project involves grading it is required to comply with the San Diego County Code of Regulations, Title 8, Zoning and Land Use Regulations, Division 7, Sections 87.414 (DRAINAGE – EROSION PREVENTION) and 87.417 (PLANTING).

2. The proposed project would comply with the State Water Resource Control Board National Pollution Discharge Elimination System General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (i.e. General Construction Permit). Compliance with the General Construction Permit would require the preparation of a Stormwater Pollution Prevention Plan (SWPPP) outlining best management practices to prevent soil erosion and runoff from the construction site.

C. Hazards and Hazardous Materials

1. The proposed project will not expose people or structures to a significant risk of loss, injury, or death involving wildland fires because the proposed project will comply with the regulations relating to emergency access, water supply, and defensible space specified in the County Code of Regulatory Ordinances, Title 3, Division 5, Chapter 3 and Appendix II-A of the Uniform Fire Code.

2. The County would post and enforce park facility regulations in accordance with the San Diego County Code of Regulatory Ordinances, Title 4 Public Property, Division

1. Parks and Recreation, Chapter 1. These rules include, but are not limited to the prohibition of smoking, campfires, open flames and the prohibition of fireworks, firearms, weapons, air guns, archery devices, slingshots, or explosives of any kind across, in or into a County park.

D. Hydrology and Water Quality

1. The project would be covered under the County's existing regional Waste Discharge Requirement Permit as long as the project's site design measures and/or source control Best Management Practices (BMPs) are consistent with the San Diego County Jurisdictional Urban Runoff Management Program (JURMP). The project also requires a National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Associated with Construction Activities. Compliance with the General Construction Permit would require the preparation of a SWPPP outlining BMPs that would be implemented during construction activities to prevent pollutants from entering nearby water bodies. The proposed project will comply with all requirements of these permits.

E. Noise

1. The proposed project will not generate construction noise that may exceed the standards of the County of San Diego Noise Ordinance (Section 36-410). Construction operations will occur only during permitted hours of operation pursuant to Section 36-410. Also, it is not anticipated that the proposed project will operate construction equipment in excess of an average sound level of 75 A-weighted decibels (dBA) between the hours of 7:00 a.m. and 7:00 p.m. Finally, it is not anticipated that the proposed project will operate construction equipment in excess of 75 dBA for more than 8 hours during a 24-hour period.

ADOPTION STATEMENT: This Draft Mitigated Negative Declaration and the above California Environmental Quality Act findings were made by the San Diego County Department of Parks and Recreation on July 21, 2023. This document is considered draft until it is adopted by the appropriate County of San Diego decision-making body.

Signature Date

Chelsea Oakes, Group Program Manager
Resource Management Division

County of San Diego Department of Parks and Recreation

Sycamore Canyon/Goodan Ranch County Preserve Resource Management Plan
July 21, 2023

Attachments:
California Environmental Quality Act Initial Study

County of San Diego

DEPARTMENT OF PARKS AND RECREATION
5500 OVERLAND AVENUE, SUITE 410, SAN DIEGO, CA 92123
www.sdparks.org

July 21, 2023

DRAFT

CEQA Initial Study – Environmental Checklist Form (Based on the State CEQA Guidelines, Appendix G)

1. Project Name:

   Sycamore Canyon/Goodan Ranch County Preserve Resource Management Plan Update

2. Lead agency name and address:
   County of San Diego, Department of Parks and Recreation
   5500 Overland Avenue, Suite 410
   San Diego, CA 92123-1239

3. a. Contact: Emily Pacholski, Project Manager
   b. Phone number: (619) 539-4294
   c. E-mail: Emily.Pacholski1@sdcounty.ca.gov

4. Project location:

   The proposed project is located within the Sycamore Canyon/Goodan Ranch County Preserve (Preserve), a 2,847-acre[1] preserve located at 16281 Sycamore Canyon Road. The preserve is located just northeast of Marine Corps Air Station (MCAS) Miramar, north of Santee, and southeast of Poway within the unincorporated community of Lakeside in the County of San Diego (Figure 1, Regional Map). More specifically, northeast of Marine Corps Air Station (MCAS) Miramar, southeast of the City of Poway, east and west of State Route (SR) 67, and approximately two miles north of the City of Santee (Figure 2, *Project Vicinity* and Figure 3, *Jurisdictional Boundaries*).

5. Project Applicant name and address:

   County of San Diego, Department of Parks and Recreation
   5500 Overland Avenue, Suite 410
   San Diego, CA 92123-1239

[1] The County reports both Assessor's and GIS acreages for conserved lands. Assessor's acreage is the formal unit of measurement the County utilizes internally for real estate acquisitions, accounting, and reporting. However, GIS acreage is calculated using data provided by the San Diego Geographic Information Source (SanGIS). Assessor's and GIS acreage totals can differ as records of the legal acreage of parcels are plotted on paper and then converted into GIS. For consistency, SanGIS data is used in this document when calculating acreage for the Preserve, such as land use, habitat, or vegetation areas within the Preserve.

6. General Plan

Community Plan:	Lakeside Community Plan
Land Use Designation:	Open Space-Conservation (OS-C) and Rural Land 40 (RL-40)

7. Zoning

Use Regulation:	Open Space (S80) and Limited Agricultural Use (A70)
Minimum Lot Size:	4 acres
Special Area Regulation:	C

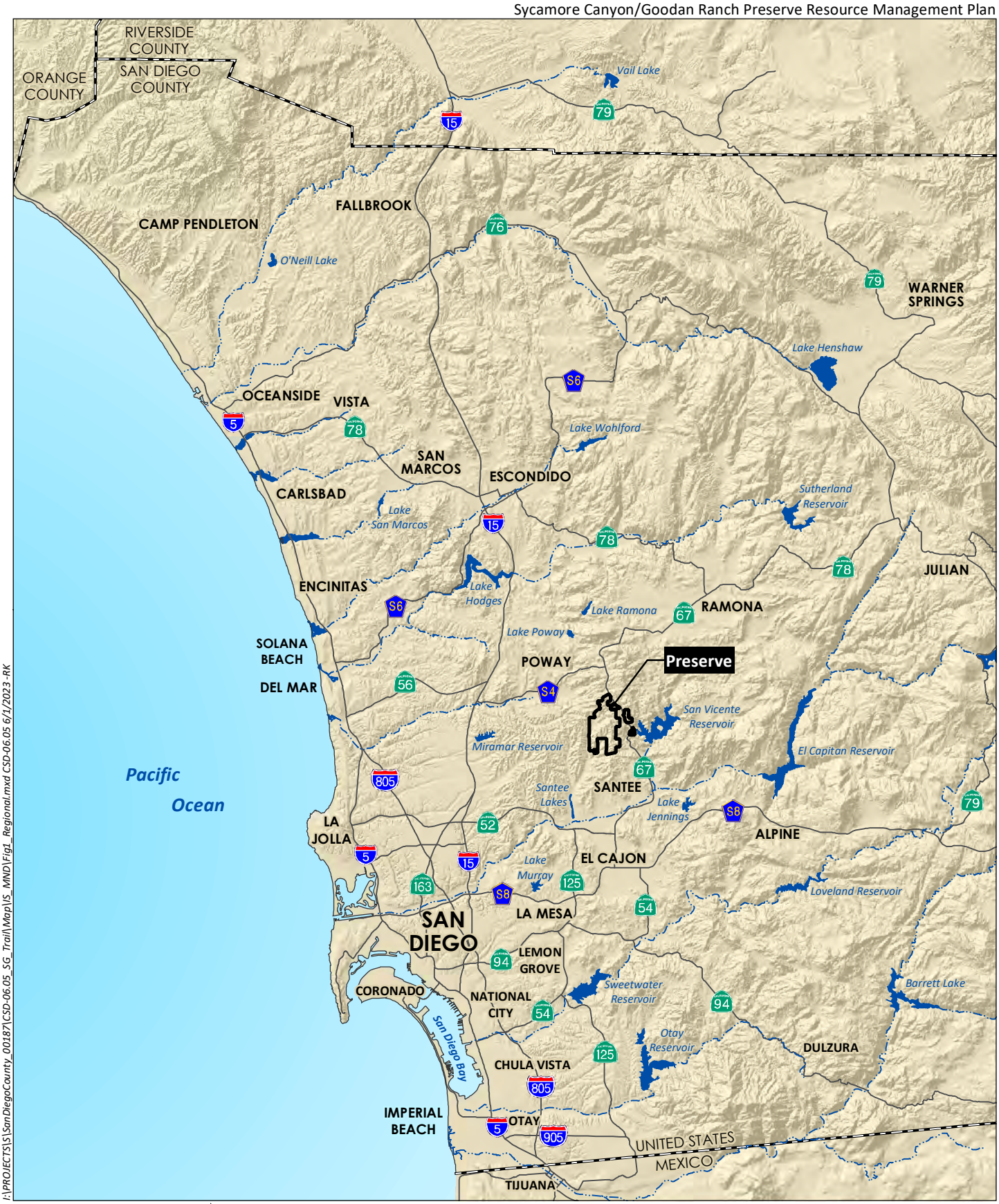
8. Description of project:

The proposed project is an update of the County's 2013 Resource Management Plan (RMP [County 2013]) for the Sycamore Canyon/Goodan Ranch County Preserve (Preserve). The RMP serves as a guidance document to manage and preserve the biological and cultural resources within the Preserve while balancing public access. The RMP provides Management Directives pursuant to the County's Multiple Species Conservation Program (MSCP) Subarea Plan (herein referred to as Subarea Plan), Framework Management Plan, and Implementing Agreement, which specify that the County is responsible for managing lands that it owns or acquires within the MSCP preserve system.

The proposed project also includes an update of the Preserve's Vegetation Management Plan (VMP) and Public Access Plan (PAP), which are supporting documents of the RMP. The VMP describes the current conditions within the Preserve and provides recommendations for invasive non-native plant species management, habitat restoration, and fire management. The PAP serves as the planning document for the Preserve's multi-use trail system. Proposed activities under the PAP include the retention of existing trails, rerouting or modifications to existing trails, the formal addition of new trails, and restoration of some informal trails or existing impacted areas that are not part of the formal trail system.

The 2,847-acre Preserve lies in the coastal foothills of San Diego County, approximately 16 miles from the Pacific Ocean. Its topography consists of steep hills, narrow ridges, ravines, and drainages, with elevations ranging from approximately 600 feet to 1,680 feet above mean sea level. The Preserve encompasses the following Assessor's Parcel Numbers: 323-111-04; 324-040-41; 324-040-42; 324-040-46; 324-040-50; 324-041-01; 324-041-02; 324-050-28; 325-020-01; 325-020-03; 325-060-01; 325-060-02; 325-060-03; 325-060-08; 325-060-09; 325-060-14; 325-060-15; 325-060-16; 325-060-25; 326-021-02; 326-050-18; 326- 070-01; 325-060-04; 325-060-05; 325-060-06; 325-060-07; 325-060-10; 325-060-11; 325-060-12; 325-060-17; 325-060-18; 325-060-19; 325-060-20; 325-060-21; 325-060-22, 325-060-23; 325-060-24; 324-040-25; 324-040-26; 32424-040-27; 324-040-28; 324-040-31; 324-040-32; 324-011-15; 324-070-29; 324-040-07; 324-040-08; 374-030-01; 324-050-05; 324-051-04; 324-051-05; 326-020-23; 326-030-06; and 326-020-07.

The Preserve currently contains publicly accessible multi-use trails and access roads, a ranger station, the Goodan Ranch Staging Area and Rock and Roll Trailhead Parking (#33), restrooms, and the Sycamore Canyon/Goodan Ranch Visitors Center (Visitors Center). The Visitors Center is home to demonstration and exhibit rooms.



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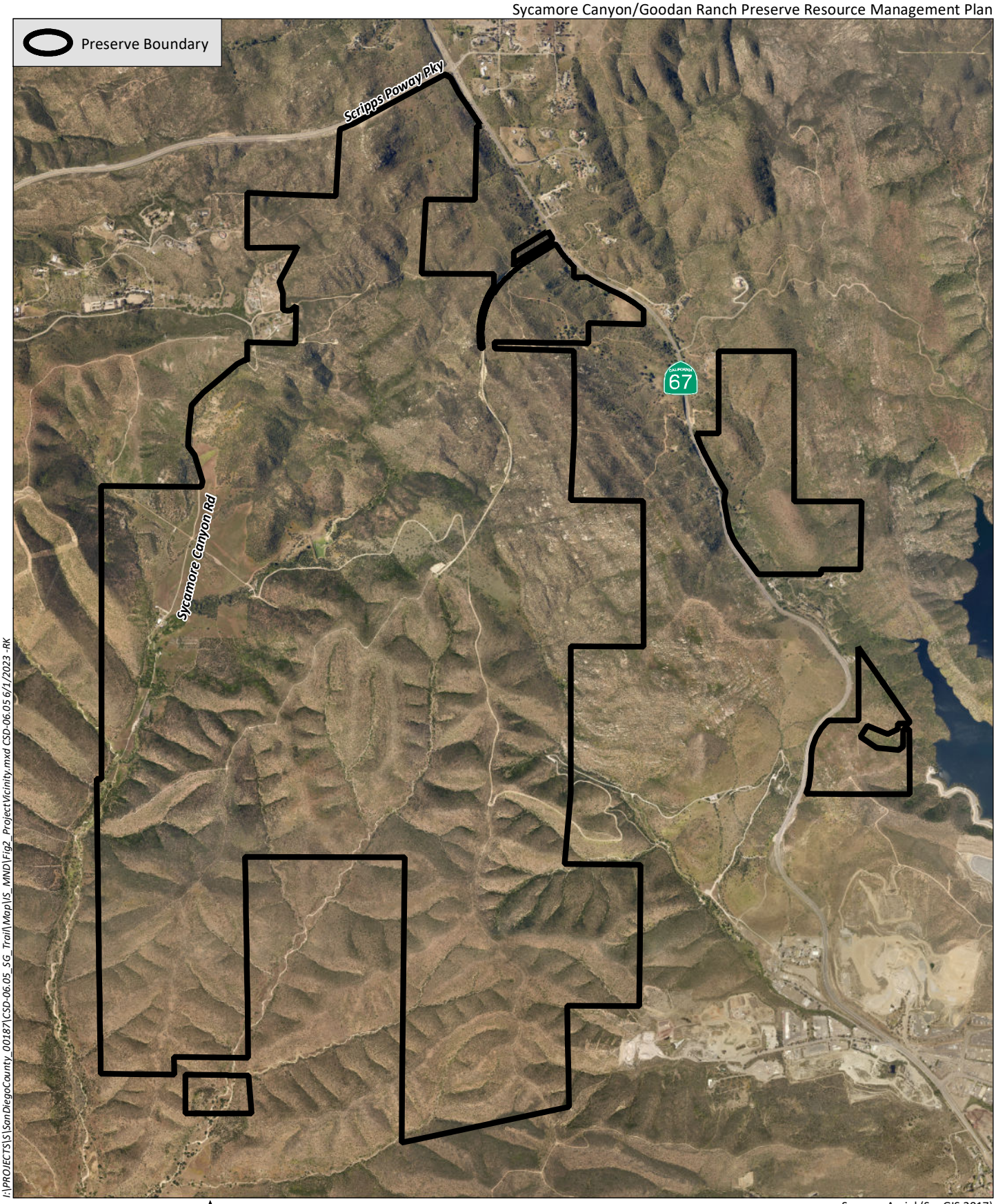
Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

Figure 1



Source: Aerial (SanGIS 2017)

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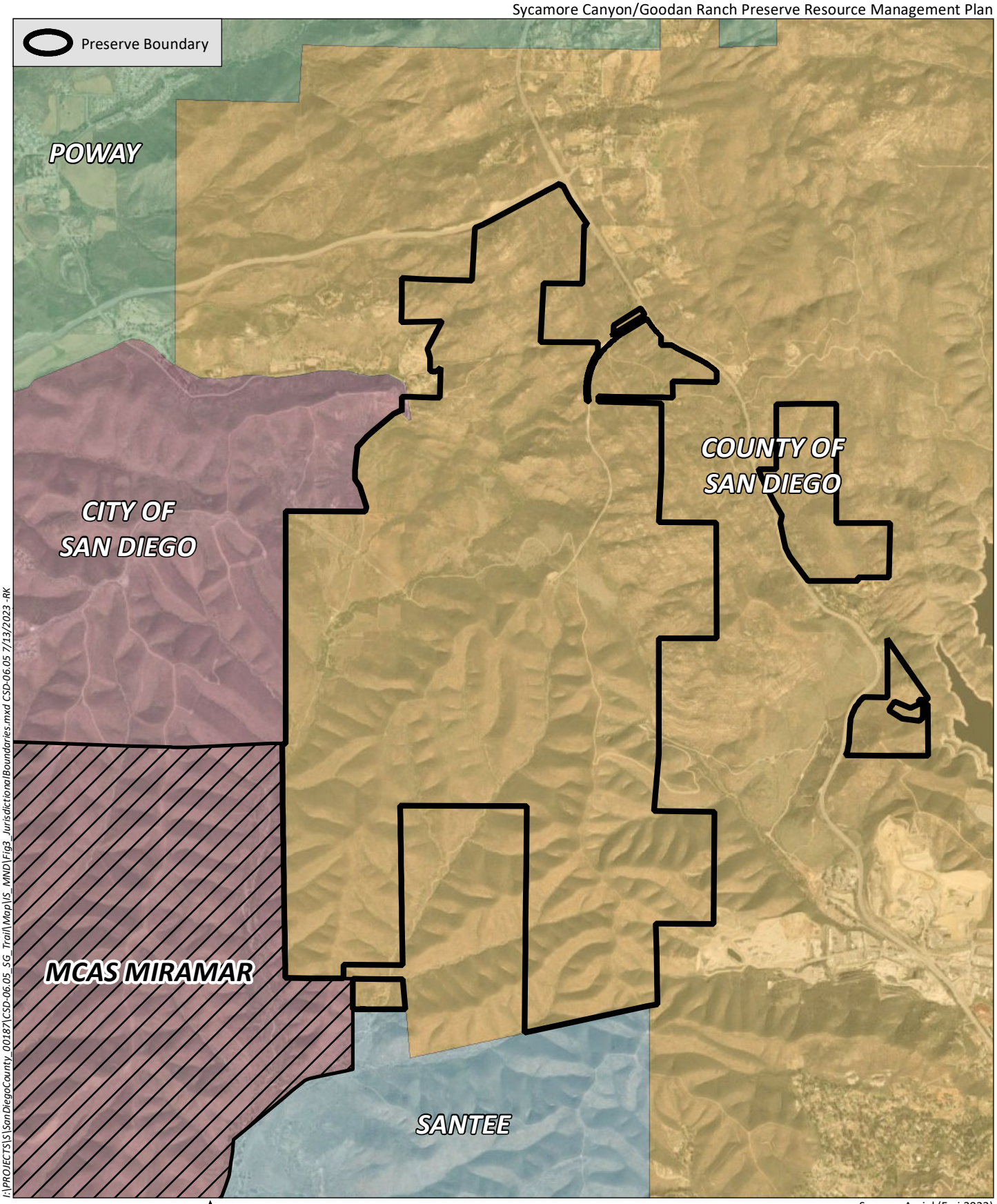
Project Vicinity

Figure 2



Source: Aerial (Esri 2022)

HELIX Environmental Planning

Jurisdictional Boundaries

Figure 3

The County of San Diego, Department of Parks and Recreation (DPR) has added several properties to the Preserve over the last 20 years. These include the Sycamore South and Sycamore North (formerly known as Hagey) properties in 2010 and 2011; the Southern Parcel in 2013; the 2015 Northern Addition (formerly known as Wu) in 2015, the 2015 Southern Addition (formerly known as Cielo) in 2015; the San Vicente Connector parcels east of SR-67 between 2003 and 2018; and the Southern Gap parcels in 2019 and 2020. As new additions to the Preserve, these properties are not currently open to the public, and do not include formalized trails.

As detailed in the PAP (RICK Engineering Company 2023), a multi-year effort involving technical analysis and stakeholder outreach was conducted by the County to evaluate existing and potential future public access within the Preserve. The PAP evaluates areas both open and not currently open for public access, including an evaluation of potential future opportunities for public access. The PAP supports the goals and policies outlined in the Community Trails Master Plan (CTMP; County 2005) that includes objectives, policies, goals, implementation strategies, and guidelines for the management and expansion of the recreational trail network throughout the County. In addition, the PAP supports the County's Subarea Plan by allowing for passive recreational uses (trails) within areas and in a manner that does not significantly impact natural resources within the Preserve.

The proposed project's full Study Area includes the entire Preserve. To assess the effects of implementation of the proposed project's PAP trail network, a survey area totaling approximately 108 acres has been identified. This survey area includes a 20- to 100-foot buffer for approximately 29 miles of existing formal trails, existing informal trails, and proposed trails and connections that traverse the entirety of the Preserve.

Implementation of the proposed project's PAP component would result in approximately 15 miles of trails (including both existing and new trails) dedicated to multi-use routes for hikers, mountain bikers, e-bikers, and horseback riders. The PAP would also maintain existing access roads within the Preserve. The proposed project would include the retention of existing trails, rerouting or modifications to existing trails, the formal addition of new trails, and restoration of some informal trails or existing impacted areas that are not part of the formal trail system.

Specifically, he PAP would provide approximately 3.78 miles of new proposed trails, 0.99-mile of potential future trail connections, 4.76 miles of formalization of trails on existing disturbed areas, and 5.56 miles of existing formal trails. The formal multi-use trail network would therefore increase to 15.09 miles. The PAP would also maintain 6.61 miles of existing access roads and would plan to close 7.24 miles of existing trails, including informal trails. A breakdown of the Preserve's proposed trails is provided in Table 1, *Public Access Plan Trail Network*. The PAP's proposed trails depicted by segment and trail type are shown in Figure 4, *Public Access Plan Trail Segments*.

Table 1 Public Access Plan Trail Network	
Trail Types	**Trail Length**
Existing Formal Trails to Remain	5.56 miles
Existing Informal Trails to be Formalized	4.76 miles
New Proposed Trails	3.78 miles
Future Trail Connections	0.99 miles
Total Multi-Use Trails	**15.09 miles**
Access Roads to Remain	6.61 miles
Total Multi-Use Trails and Access Roads	**21.7 miles**

The PAP proposes preferred trail routes within the Preserve based on constraints to trails and access points, opportunity destinations, and scenic experiences and routes. Recommendations for trail closures or trail re-routes throughout the Preserve are also provided in the PAP. The PAP evaluated trails by segments, as shown in Figure 4. Although the proposed project survey area includes a 20- to 100-foot survey buffer to provide a large trail corridor and provide flexibility for trail implementation, new trails or trail segments throughout the Preserve would be no more than eight feet wide. While the maximum width of existing trails is 12 feet, the maximum width of proposed trails or trail segments is 8 feet and surface material would consist of decomposed granite/binding agent or suitable native soil; therefore, impacts explained in this Initial Study's analysis that are expressed in terms of acreage represent the maximum impact that could occur, as some sections of trail may be narrower than the maximum widths.

The proposed trail segments have been designed to follow the County's Preserve Trail Guidelines (County 2018), to support the goals and policies outlined by the Community Trails Master Plan (CTMP; County 2005), and to comply with the Subarea Plan Framework Management Plan (County 2001). The PAP supports the goals and policies outlined by the CTMP, including objectives, policies, goals, implementation strategies, and guidelines for the management and expansion of the recreational trail network throughout the County. The Trans County Trail (TCT), which crosses the northern portion of the Preserve in an east-west direction, was identified in the CTMP as a regional trail, that once established, will span 110 miles in length and connect Anza-Borrego Desert State Park to Torrey Pines State Reserve. Regional trails have characteristics and conditions that serve a regional function by covering long linear distances, transcending community and/or municipal borders, having State or national significance, or providing important connections to existing parks and open space preserves.

A key objective of the MSCP is to provide public recreation and educational opportunities within the MSCP Preserve System, while providing adequate protection for biological resources. Riding and hiking trails are allowed within appropriate portions of the Preserve to provide passive recreational opportunities for the public. These activities are considered compatible with the biological objectives of the MSCP. In addition, the PAP supports the MSCP by establishing trails and allowing for passive recreational uses (trails) within areas and in a manner that does not significantly impact natural resources within the Preserve. Per Section 1.5.2 of the Subarea Plan, highly sensitive areas would be protected through the use of natural and artificial barriers. Trails, view overlooks, and staging areas are located or proposed within the least sensitive areas of the Preserve. Trails would be clearly demarcated and monitored for degradation as well as off-trail use.

Preserve Boundary
Maintenance Road
Access Road
Existing Formal Trail
Closed to be Revegetated
Proposed Trails
Potential Future Trail Connection*
Stowe Trail
One-way Trail Direction
Existing Staging Area
Proposed Staging Areas

** May be implemented if adjacent properties are acquired or if easements are granted.*

Scripps Poway Parkway
Goodan Ranch Staging Area
Rock and Roll Trailhead Parking (33)
67 Staging Area
Visitors Center
Sycamore Canyon Rd
Sycamore Park Drive
CALIFORNIA 67

0 1,500 Feet

Source: Aerial (SanGIS 2017)

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HELIX Environmental Planning

Public Access Plan Trail Segments

Figure 4

Per Section 1.9.2 *Public Access and Recreation* of the Subarea Plan, appropriate recreational activities shall be accommodated in concurrence with the goals of the MSCP and Subarea Plan. Per the Subarea Plan, public access and passive recreation are permitted uses within specified areas of the Preserve. Passive recreation includes hiking, scientific research, bird watching, and under specified conditions and locations identified in approved Projects and or management plans, mountain biking, and horseback riding. Equestrian, hiking, and bicycles are allowed when in accordance with approved management plans and if consistent with the Subarea Plan. Other forms of public access and recreation are also allowable per the Subarea Plan if determined to be consistent with the protection of the resources currently existing within the Preserve.

Proposed trails or trail segments consist of new trails or trail segments constructed in previously undisturbed areas, as well as trails or trail segments on existing disturbed areas. Existing disturbed areas generally include informal trails or existing ranch roads that would be formalized into the Preserve trail system by implementation of the PAP component of the proposed project. Formalization of the existing trails on disturbed areas would be compatible with the findings of the Subarea Plan, including the findings in Section 1.9.1, which states: “A. Until all the areas of open space have been dedicated through the processing of maps, there may be a continuation of existing uses within areas shown as Preserve. B. Existing uses shall be allowed to continue, including annual clearing, maintenance and replacement of existing facilities, roads, and structures.” The land within the Preserve was privately held at the time of the creation of the Subarea Plan, and ranch roads were present. Based on historical analysis, some of these areas were impacted prior to the adoption of the Subarea Plan in 1998 or prior to when DPR acquired the property, and are considered disturbed.

The proposed trail segments are designed to address maintenance challenges for existing trail segments that are affected by erosion or other issues, as well as to add new trail alignments that would expand the existing trail network. The new trail segments would follow the standards described in the CTMP (County 2005) and have been designed to follow the County’s Preserve Trail Guidelines (County 2018). In some cases, existing informal trails would be formalized, requiring realignment of segments to follow the standards for the wider rural trail type. The widened trails or trail segments would facilitate continued vehicular maintenance and emergency response access, as well as consistency with the rest of the trail network. Existing trail segments recommended to be closed primarily consist of segments that are unsustainable or would not add significant value to the trail system. Additionally, existing informal trails would be closed in Clark Canyon due to the presence of sensitive species and habitat in that area. The PAP only includes recommendations for implementation of additions or modifications to trails and trail segments within the Preserve. However, the PAP does also include recommendations for potential future trail connections that could link trails within the Preserve to future connections outside the Preserve, should those outside connections become publicly accessible in the future. Potential future trail connections are noted as such because they do not currently deliver users to approved trails on adjacent properties or are dependent on future acquisitions or actions by other parties. These segments would only be constructed when necessary authorizations have been obtained.

Other improvements include Rock and Roll Trailhead Parking, which would be located on an existing disturbed area near the center of the Preserve. Rock and Roll Trailhead Parking would formalize up to five parking spaces, one of which will be a van-accessible Americans with Disabilities Act (ADA) space on a concrete pad. The rest of the parking

area will be on bladed, compact soil or compacted decomposed granite. The PAP would also maintain access and maintenance roads and add barriers such as fencing within the Preserve to limit access to sensitive habitats, nesting locations, rare plants, and significant cultural resources. Additional barriers would be necessary for prevention of access to unauthorized trails, temporary closures due to unsafe conditions, and prevention of vehicular access. Signage would be provided to provide direction and orientation to visitors, display rules and regulations posted at staging areas and access points, provide educational information, and mark trails. The PAP also recommends accessible trails for use by the general public with varying levels of abilities, including consideration of trails that could be compliant with the requirements of the ADA.

The PAP recommends an approximately 21.7-mile trail and access road network that will provide approximately 15.09 miles of multi-use routes for hikers, mountain bikers, e-bikes, and horseback riders and 6.61 miles of access roads. The PAP network would include the following access roads (currently existing), maintenance roads (currently existing), proposed trails and trail segments (including trails within existing disturbed areas), potential future trail connections, and trails and trail segments to be closed for revegetation. Each segment has a designated number and name. These trail segments are described below and can be seen on Figure 4. Please note that some of the proposed trails discussed below connect to offsite areas that do not have currently authorized trails, for example the Scripps Poway Parkway tunnel. Under the PAP, DPR would allow trails to connect to other legal connections on offsite areas. However, should an access point become unusable for any reason, DPR would close the connection through the use of signage and potentially barriers, as appropriate.

0a – Sycamore Canyon - Access Road
The Sycamore Canyon Access Road is located in the western portion of the Preserve and connects to the Calle de Rob proposed trail segment (#10). The access road generally travels north to south paralleling the West Boundary Trail segment (#13) and the northwestern Preserve boundary. The majority of the access road is located within existing disturbed habitat.

0b – Sycamore Park Drive – Access Road
Sycamore Canyon Drive is located in the eastern portion of the Preserve, connecting the Preserve to SR-67. The access road generally travels north to south from SR-67 to the proposed Ridge Trail segment (#14). The majority of the access road is located within existing disturbed habitat.

1 – Paragon Mesa – West – Closed to Revegetate
The Paragon Mesa – West trail segment is located in the northwestern portion of the Preserve. The trail travels east to west and connects to the South Raptor Loop (#3) proposed trail segment. This trail segment is proposed to be closed for revegetation. The majority of the trail segment is composed of disturbed habitat.

2 – Paragon Mesa –– Informal – Closed to Revegetate
The Paragon Mesa informal trail segment is located in the northern portion of the Preserve. This trail segment is proposed to be closed for revegetation. The majority of the area to be revegetated is composed of chamise chaparral and southern mixed chaparral.

3 – South Raptor Loop - Proposed Trail, Proposed Trail on Existing Disturbed Area, Closed to Revegetate, and Potential Future Trail Connection
The South Raptor Loop proposed trail segment is located in the northern portion of the Preserve and would travel southwest to northeast. The trail segment is primarily located in the 2015 Northern Addition. The trail segment connects to South Raptor Loop – South (#5) trail segment and Paragon Mesa – South (#6) trail segment on the southwest and the southern point of the North Interior Loop (#26) trail segment on the northeast. Portions of the trail segment are proposed to be closed for revegetation; however, the majority of the trail segment proposed to be formalized occurs on existing disturbed areas. There is a portion of the South Raptor Loop trail segment with a potential future trail connection, which would include improvements on an existing trail.

4 – South Raptor Loop Northwest – Potential Future Trail Connection
The South Raptor Loop Northwest potential future trail connection would be located in the northern portion of the Preserve and travel east and west. The trail segment would be entirely located within the 2015 Northern Addition and connect to the middle of the South Raptor Loop (#3) proposed trail segment. The proposed trail segment would be primarily located within an existing trail with improvements proposed, with the surrounding habitat consisting of Diegan coastal sage scrub and coastal sage scrub–chaparral transitional habitat.

5 – South Raptor Loop South – Proposed Trail on Existing Disturbed Area
The South Raptor Loop South proposed trail segment would be located in the northern portion of the Preserve and enter the southern portion of the 2015 Northern Addition. The trail segment would generally travel east to west, starting at an intersection with the South Raptor Loop (#3) and Paragon Mesa – South (#6) trail segments. At its eastern end, the South Raptor Loop South trail segment would connect to the proposed South Raptor Loop (#3) trail segment and the South Raptor Loop trail segment's potential future connection. The South Raptor Loop South and South Raptor Loop (#3) trail segments would connect to form a loop. The majority of the trail segment is proposed on existing disturbed areas, as well as Diegan coastal sage scrub habitat, with improvements proposed.

6 – Paragon Mesa South – Proposed Trail, Proposed Trail on Existing Disturbed Area, and Closed to Revegetate
The Paragon Mesa South proposed trail segment would be located in the northern portion of the Preserve. The trail segment would generally travel north and south, connecting the South Raptor Loop (#3) trail segment and South Raptor Loop South (#5) trail segment at the north to the Calle de Rob (#10) proposed trail segments and maintenance road to the south. A small section of the trail segment connecting to Calle de Rob (#10) trail segment would be closed for revegetation. A portion of the trail segment is proposed on existing disturbed areas, with additional portions proposed primarily in Diegan coastal sage scrub. This trail segment is a reroute and extension of the original Paragon Mesa South trail.

7 – Waterfall Trail – Proposed Trail and Potential Future Trail Connection
The Waterfall proposed trail segment and proposed future trail connection would be located in the northern portion of the Preserve, and travels east and west. The Waterfall trail segment would connect to the Paragon Mesa South (#6) trail segment at its eastern end and the Preserve boundary at its western end. The proposed trail segment and potential future trail connection is proposed primarily on existing disturbed habitat as well as Diegan coastal sage scrub.

8 – Calle de Rob – Maintenance Road
The Calle de Rob Maintenance Road is located in the northwestern portion of the Preserve. The maintenance road travels east and west connecting to the Calle de Rob (#9) access road to an existing road outside of the Preserve boundary. The majority of the road is composed of disturbed habitat.

9 – Calle de Rob – From Access Road to Paragon – Access Road
The Calle de Rob Access Road is located in the northwestern portion of the Preserve along the western Preserve boundary. The access road travels northeast and southwest connecting to the Calle de Rob (#10) proposed trail segment and proposed section of the County Trans County Trail (TCT; #28a,b). The majority of the trail segment is composed of disturbed habitat.

10 – Calle de Rob – Proposed Trail on Existing Disturbed Area
The Calle de Rob proposed trail segment would be located in the northern portion of the Preserve and enter the northwest corner of the 2015 Southern Addition. The trail would travel east and west connecting to the Calle de Rob (#9) access road, County TCT (#31) proposed trail, and Paragon Mesa – South (#6) proposed trail segment. The majority of the proposed trail segment is composed of disturbed habitat, with improvements proposed.

11 – Calle de Rob – Eastern Segment; County TCT – Proposed Trail on Existing Disturbed Area
The Calle de Rob – Eastern Segment; County TCT proposed trail segment would be located in the northeastern portion of the Preserve. The trail segment connects to the Sycamore Park Drive (#0b) access road and Connection to Calle de Rob Eastern; County TCT trail segment. The proposed trail segment would extend southeast to the Preserve boundary. The majority of the proposed trail segment is composed of disturbed habitat, with improvements proposed.

12 – Martha's Grove – Existing Formal Trail, Proposed Trail, and Closed to Revegetate
Martha's Grove is an existing trail that extends generally south from the northwest Preserve boundary to the Sycamore Canyon (#0a) access road. A small section at the north end of the trail is proposed to be closed and revegetated. The closed section would be replaced by a new proposed trail segment. The proposed trail segment is located entirely within southern mixed chaparral.

13 – West Boundary Trail – Connects to Stowe Trail Connector – Existing Formal Trail
The West Boundary Trail is an existing formal trail and is located in the western portion of the Preserve and connects to the Sycamore Canyon (#0a) and Cardiac Hill (#27) access roads. The existing trail generally travels north to south paralleling the Sycamore Canyon access road along the northwestern Preserve boundary. The majority of the trail segment is located within existing disturbed habitat.

14 – Ridge Trail – Existing Formal Trail, Proposed Trail, and Closed to Revegetate
The Ridge Trail is an existing trail located in the western portion of the Preserve. The trail extends northeast from the western Preserve boundary and eventually joins with the Sycamore Park Drive (#0b) access road. A portion of trail would be closed to be revegetated and would be replaced by a section of proposed trail. The proposed trail

segment is primarily located within chamise chaparral and coastal sage – chaparral transitional habitat.

15 – South of Ridge Trail – Proposed Trail, Proposed Trail on Existing Disturbed Area, Potential Future Trail Connection, and Closed to Revegetate
The South of Ridge Trail segment is a proposed trail segment located in the western portion of the Preserve. The trail segment would extend south from the existing Ridge Trail segment (#14), with improvements proposed. A portion of trail would be closed to be revegetated and would be replaced by a section of the proposed trail segment. The proposed trail segment is primarily located within existing chamise chaparral, Diegan coastal sage scrub, and disturbed habitats.

16 – Canyon Trail – Informal – Closed to Revegetate
The Canyon Trail informal trail segment, located in the center of the Preserve, is proposed to be closed for revegetation. The trail segment extends north to south from the Ridge Trail (#14) segment to the Preserve boundary. The closed to revegetate area is primarily located within Diegan coastal sage scrub habitat.

17 – Clark Canyon to Ridge West – Informal – Closed to Revegetate
The Clark Canyon to Ridge West informal trail segment, located in the center of the Preserve, is proposed to be closed for revegetation. The trail segment extends north to south from the Ridge Trail (#14) segment to the Preserve boundary. The closed to revegetate area is primarily located within chamise chaparral and non-native grassland habitat.

18 – Clark Canyon to Ridge East – Informal - Closed to Revegetate
The Clark Canyon Ridge East informal trail segment, located in the center of the Preserve, is proposed to be closed for revegetation. The trail segment extends north to south from the Ridge Trail (#14) segment to the Preserve boundary. The closed to revegetate area is primarily located within southern mixed chaparral and coastal sage-chaparral transition habitat.

19 – North Slaughterhouse – Informal – Closed to Revegetate
The North Slaughterhouse informal trail segment, located in the center of the Preserve, is proposed to be closed for revegetation. The trail segment extends northeast to southwest from Slaughterhouse Canyon Trail (#21) access road to Canyon Trail (#16) segment. The closed to revegetate area is primarily located within southern mixed chaparral habitat.

20 – South Slaughterhouse – Closed to Revegetate
The South Slaughterhouse informal trail segment consists of three informal trails located in the southeastern portion of the Preserve that are proposed to be closed for revegetation. The three trail segments extend southwest from the Slaughterhouse Canyon Trail (#21) segment to the Preserve boundary. The closed to revegetate area is primarily located within southern mixed chaparral habitat and chamise chaparral habitat.

21 – Slaughterhouse Canyon Trail – Access Road and Existing Formal Trail
Slaughterhouse Canyon Trail segment is an existing access road and formal trail that extends generally south from Sycamore Park Drive (#0b) access road to the southern Preserve boundary. Slaughterhouse Canyon Trail segment is an access road north of Slaughterhouse Canyon Trail (#24) maintenance road and an existing formal trail segment

south of the maintenance road. The existing access road and formal trail segment are primarily composed of disturbed habitat.

22 – Rock and Roll Trail — Proposed Trail, Proposed Trail on Existing Disturbed Area, Potential Future Trail Connection, and Closed to Revegetate
The proposed Rock and Roll Trail segment is located near the eastern Preserve boundary. The one-way trail segment would generally extend travel from north to south and connect to Sycamore Park Drive (#0b) and Slaughterhouse Canyon Trail (#21) access roads. Several sections of informal trails are proposed to be closed for revegetation. A Potential Future Trail Connection would travel north from the main trail to the edge of the Preserve. At the trail segment's southern end, one of two options, 22a and 22b, would be chosen. The proposed trail segment is composed primarily of disturbed habitat and Diegan coastal sage scrub habitat.

23 – Sidewinder Rogue Trail – Closed to Revegetate
The Sidewinder Rogue Trail informal trail segment, located in the southwestern portion of the Preserve, is proposed to be closed for revegetation. The trail segment extends east to west from the South of Ridge Trail (#15) segment that is also proposed to be closed for revegetation to the Preserve boundary. The closed to revegetate area is primarily located within chamise chaparral habitat.

24 – Slaughterhouse Canyon Trail – Maintenance Road
The Slaughterhouse Canyon Trail Maintenance Road is located along the eastern boundary of the Preserve near the southern end. The maintenance road extends east from the Slaughterhouse Canyon Trail (#21) segment and connects to an existing dirt road outside of the Preserve at the Preserve boundary. The maintenance road is composed primarily of disturbed habitat.

25 – Connection to Calle de Rob and Rock and Roll Trail – Potential Future Trail
The Connection to Calle de Rob (#10) and Rock and Roll Trail (#22) potential future trail connection would be located in the northern portion of the Preserve. The potential future trail segment would travel north and south and is located immediately east of the 2015 Southern Addition and would connect to Calle de Rob – Eastern Segment; County TCT (#11) trail segment to the north. The potential future trail connection would be located primarily within southern mixed chaparral habitat.

26 – Northern Interior Loop – Proposed Trail on Existing Disturbed Area, Potential Future Trail Connection, and Closed to Revegetate
The Northern Interior Loop proposed trail segment would be located in the northernmost portion of the Preserve and would be entirely located within the 2015 Northern Addition. The trail segment would generally travel north and south forming a loop and connecting to the loop formed by the South Raptor Loop (#3) and South Raptor Loop - South (#5) proposed trail segments. The majority of the trail segment is proposed on non-native grassland. There is also a potential future trail connection which would connect the Northern Interior Loop (#26) trail segment to Scripps Poway Parkway and SR-67 primarily within Diegan coastal sage scrub. The close to revegetate areas are primarily within non-native grassland habitat.

27 – Cardiac Hill – Access Road
The Cardiac Hill – Access Road is located in the center of the Preserve connecting Sycamore Canyon (#0a) and Sycamore Park Drive (#0b) access roads. The access road

connects to an existing dirt road at the western Preserve boundary through the middle of the Preserve. The access road turns into Slaughterhouse Canyon Trail (#21) access road at Sycamore Park Drive (#0b) access road. The majority of the access road is composed of disturbed habitat.

28 – County TCT; Goodan Staging Area to Access Road and Martha's Grove to Access Road – Proposed Trails
The County TCT; Goodan Staging Area to Access Road and Martha's Grove to Access Road proposed trail segments would be located in the northwestern portion of the Preserve along the western boundary of the Preserve. There would be two trail segment options: 28a and 28b. The 28a option would connect from the Calle de Rob – From Access Road to Paragon (#9) access road to the Goodan Ranch Staging Area. The 28b option would connect Martha's Grove (#12) to the Calle de Rob – From Access Road to Paragon (#9) access road. Only one option would be selected for implementation. The majority of the trail segment alignment is composed of coastal sage–chaparral transitional habitat within Martha's Grove (#12) and the Goodan Ranch Staging Area.

29 – Connection to Calle de Rob Eastern; County TCT –- Proposed Trail on Existing Disturbed Area
The Connection – Calle de Rob Eastern; County TCT proposed trail segment on existing disturbed area would be located in the northeastern portion of the Preserve. The proposed trail segment on existing disturbed area would generally travel east and west connecting SR-67 and Calle de Rob – Eastern Segment; County TCT (#11). The majority of the trail segment is composed of Diegan coastal sage scrub and non-native grassland, with improvements proposed.

30 – Connection to Calle de Rob and South Raptor Loop South - Proposed Trail
The Connection to Calle de Rob (#10) and South Raptor Loop South (#5) proposed trail segment would be located in the northern portion of the Preserve. The trail segment would generally travel north and south connecting to the Waterfall Trail (#7) to the south and South Raptor Loop South (#5) to the north. The majority of the trail segment is composed of Diegan coastal sage scrub and southern mixed chaparral habitat.

31 – County TCT – Proposed Trail
The County TCT proposed trail segment would be located in the northwestern portion of the Preserve and entirely within the northeast corner of the 2015 Southern Addition. The trail segment would travel east and west connecting to the Calle de Rob (#10) trail segment and Sycamore Park Drive (#0b) access road. The majority of the trail segment alignment is composed of coastal sage – chaparral transitional habitat.

32 – Overlook - Proposed Trail
The Overlook proposed trail segment would be located in the northern portion of the Preserve. The trail segment would generally travel north and south, connecting to the Calle de Rob (#10) existing informal trail segment to the north. The majority of the proposed trail segment alignment is composed of southern mixed chaparral.

33 – Rock and Roll Trailhead Parking
The Rock and Roll Trailhead Parking is located in the center of the Preserve near the intersection of the Sycamore Park Drive (#0b) access road and the Rock and Roll Trail (#22) proposed trail segment. The Trailhead Parking is located entirely within existing disturbed habitat and Diegan coastal sage scrub habitat.

34 – Stowe Trail Connector – Existing Formal Trail
The Stowe Trail Connector is an existing formal trail segment located in the western portion of the Preserve. The trail segment generally travels north and south, connecting to the Sycamore Canyon (#0a) access road to the Preserve boundary. The existing formal trail segment is primarily composed of southern mixed chaparral habitat.

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

Permit Type/Action	**Agency**
General Construction Storm Water Permit Compliance	Regional Water Quality Control Board

9. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code §21080.3.1? If so, has consultation begun?

YES ☒ NO ☐

Note: Conducting consultation early in the California Environmental Quality Act (CEQA) process allows tribal governments, public lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts on Tribal Cultural Resources, and to reduce the potential for delay and conflict in the environmental review process (see Public Resources Code §21083.3.2). Information is also available from the Native American Heritage Commission's Sacred Lands File per Public Resources Code §5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code §21082.3(e) contains provisions specific to confidentiality.

Notification with registered tribes in accordance with the provisions of Assembly Bill (AB) 52 was provided by the County to each tribal contact starting on February 7, 2020. These tribes included the Barona Band of Mission Indians, Campo Band of Mission Indians, Iipay Nation of Santa Ysabel, Jamul Indian Village, Kwaaymii Laguna Band, Manzanita Band of Kumeyaay Nation, Sycuan Band of the Kumeyaay Nation, San Pasqual Band of Mission Indians, and Viejas Band of Kumeyaay Indians. Five tribes (Barona Band of Mission Indians, Iipay Nation of Santa Ysabel, Jamul Indian Village, San Pasqual Band of Mission Indians, and the Viejas Band of Kumeyaay Indians) requested consultation. Barona Band of Mission Indians requested information about the watercourses located within the Preserve and inquired whether trails would be situated near them; while existing trails do travel through water features, the implementation of the PAP would not impact watercourses. The Iipay Nation of Santa Ysabel deferred all consultation to Jamul Indian Village. Jamul Indian Village inquired about clearing on the proposed trail segments during the implementation of the PAP and requested to receive a copy of the CEQA document. San Pasqual Band of Mission Indians indicated that the Preserve is within the boundaries of the territory that the Tribe considers its Traditional Use Area and requested to receive additional information as the proposed project progresses. Viejas Band of Kumeyaay Indians requested that a Kumeyaay Cultural Monitor be present for ground-disturbing activities, in order to inform them of new developments, such as inadvertent discovery of cultural artifacts, cremation sites, or human remains. While all tribes asserted that the area

was culturally sensitive, no Tribal Cultural Resources within the Study Area were identified.

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

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

DETERMINATION: (To be completed by the Lead Agency)
On the basis of this initial evaluation:

☐ On the basis of this Initial Study, Department of Parks and Recreation finds that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ On the basis of this Initial Study, Department of Parks and Recreation finds that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ On the basis of this Initial Study, Department of Parks and Recreation finds that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Signature	Date
Printed Name	Title

INSTRUCTIONS ON EVALUATION OF ENVIRONMENTAL IMPACTS

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

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

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, Less Than Significant With Mitigation Incorporated, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.

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

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

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

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

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

7. The explanation of each issue should identify:

   a) The significance criteria or threshold, if any, used to evaluate each question; and
   b) The mitigation measure identified, if any, to reduce the impact to less than significance

I. AESTHETICS -- Except as provided in Public Resources Code Section 21009, would the project:

a) Have a substantial adverse effect on a scenic vista?

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

Discussion/Explanation:

A vista is a view from a particular location or composite views along a public roadway or trail. Scenic vistas often refer to views of natural lands but may also be compositions of natural and developed areas, or even entirely of developed and unnatural areas, such as a scenic vista of a rural town and surrounding agricultural lands. What is scenic to one person may not be scenic to another, so the assessment of what constitutes a scenic vista must consider the perceptions of a variety of viewer groups.

The features that can be seen within a vista are visual resources. Adverse impacts on individual visual resources or the addition of structures or developed areas may or may not adversely affect the vista. Determining the level of impact on a scenic vista requires both analyzing the changes to the vista as a whole and to individual visual resources.

Less Than Significant Impact: The proposed project is located within the existing Preserve, a habitat preserve that contains trails, a ranger station, restrooms, picnic benches, and the Goodan Ranch Center. Scenic vistas and resources analyzed include those within the Preserve that may be viewed from areas outside the Preserve, and those outside the Preserve that may be viewed from within the Preserve. Views from within the Preserve that may be viewed from elsewhere in the Preserve are also considered.

As the Preserve itself provides scenic and natural landscapes, it is considered to be within the viewshed of a scenic vista. The visual composition consists of rocky ridges as well as vegetated slopes and valleys. Existing trails, staging areas, and structures related to Goodan Ranch are occasionally visible within the viewshed. Views to the Preserve from publicly accessible areas outside the Preserve include views from SR-67, southerly views from Scripps Poway Parkway to the north, easterly views from the West Sycamore portion of the City of San Diego's Mission Trails Regional Park to the west, and southerly views from Iron Mountain (a public recreational use) to the north.

The PAP proposes new trails for hiking, biking, and equestrian use, with associated staging area and infrastructure improvements. The proposed project would have minimal grading, primarily to flatten the trails and staging areas. In addition, the proposed project would not require import or export of soil. The proposed project would be compatible with the existing visual environment in terms of visual character and quality because it would not significantly alter the existing uses or visual features of the proposed project site. The proposed trail would be unpaved, consistent with the rudimentary design of the existing trails, and would serve to connect many of the existing trails. The RMP, VMP, and PAP do not propose additional structures that would interrupt or block a currently uninterrupted viewshed, or prevent individuals from accessing a viewshed. Furthermore, the PAP proposes the closure and revegetation of some existing disturbed areas, which would enhance the visual character of those areas. The proposed project's PAP component would provide more public access to the Preserve, including previously inaccessible County-

owned parcels, thereby providing additional viewsheds available for public use. Therefore, the proposed project would not have a substantial adverse effect on a scenic vista.

The proposed project would not result in cumulative impacts on a scenic vista based on an evaluation of the proposed project viewshed and past, present, and future projects within that viewshed to determine their cumulative effects. Refer to Section XXI, Mandatory Findings of Significance, for a comprehensive list of the projects considered. Those projects listed in Section XXI would not contribute to a cumulative impact because they would not interrupt the viewshed provided to or from the Preserve. Therefore, the proposed project would not result in adverse project or cumulative impacts on a scenic vista.

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

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

Discussion/Explanation:

State scenic highways refer to those highways that are officially designated by the California Department of Transportation (Caltrans) as scenic (Caltrans - California Scenic Highway Program). Generally, the area defined within a State scenic highway is the land adjacent to and visible from the vehicular right-of-way (ROW). The dimension of a scenic highway is usually identified using a motorist's line of vision, but a reasonable boundary is selected when the view extends to the distant horizon. The scenic highway corridor extends to the visual limits of the landscape abutting the scenic highway.

No Impact: Scenic resources constitute the general visual appearance of a location or landscape, which is dependent on natural features such as geology, vegetation, landforms, and human developments. The proposed project is not near or visible within the composite viewshed of a State scenic highway and would not damage or remove visual resources within a State scenic highway. The proposed project is adjacent to SR-67, which has been designated as a County Scenic Highway from the Santee city limits to SR-78 (excluding the portion within the City of Poway) by the County of San Diego General Plan, Conservation and Open Space Element (2011). While the proposed project site would be visible from SR-67, the proposed project does not propose changes that would cause a substantial damage to trees, rock outcroppings, historic buildings, or other scenic resources. The proposed project would include management of the Preserve, trails, and staging areas, all of which currently exist on site. The existing visual character of the Preserve would not be altered as viewed from nearby public ROW. Therefore, the proposed project would not substantially damage scenic resources with a State scenic highway. No impact would occur.

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

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

Discussion/Explanation:

Less Than Significant Impact: Visual character is the objective composition of the visible landscape within a viewshed. Visual quality is the viewer's perception of the visual environment and varies based on exposure, sensitivity, and expectation of the viewers. The existing visual character and quality of the proposed project site and its surroundings can be described as a natural landscape characterized by rocky ridges as well as vegetated slopes and valleys. The surrounding area has high visual continuity, with the visual quality of surrounding areas interrupted infrequently by rural residential structures and roadways.

Implementation of the PAP would alter the existing trail system to enhance public access and usage of the Preserve for recreational use. The proposed project would be compatible with the existing visual environment's visual character and quality because the proposed trails would be narrow and constructed of natural materials and materials consistent with the existing visual environment. The proposed trails are intended to be rudimentary and rugged, and therefore, would not alter the existing landforms. Furthermore, the proposed project's PAP component proposes the closure and revegetation of some existing trail segments, which would be consistent with the existing natural character of the Preserve. The proposed Rock and Roll Trailhead Parking (#33) would be located on an existing disturbed area along the western edge of Sycamore Park Drive and would not be paved or otherwise substantially different from the existing condition. The proposed project would also include the continued management of the Preserve, trails, and staging areas. Therefore, the proposed project would not substantially degrade the existing visual character and/or visual quality of the site or the surrounding area.

The proposed project would not result in cumulative impacts on visual character or quality based on an evaluation of the entire existing viewshed and a list of past, present, and future projects within that viewshed. Refer to Section XXI, Mandatory Findings of Significance, for a comprehensive list of the projects considered. Those projects listed in Section XXI are located within the viewshed surrounding the project and would not contribute to a cumulative impact because, due to the surrounding mountainous topography, the cumulative projects would not be visible from the proposed project site. In addition, the cumulative projects do not include development of features that would conflict with the visual character of the proposed project vicinity. Therefore, the proposed project would not result in any adverse project- or cumulative-level effect on visual character or quality on site or in the surrounding area. Impacts would be less than significant.

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

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

Discussion/Explanation:

Less Than Significant Impact: The proposed project does not propose changes to the Preserve's operating hours, which would be limited to daytime use. Therefore, the Preserve would continue to be open only to the public during daylight hours, from sunrise to sunset; thus, the use of vehicle headlights at night would not increase significantly due to the proposed project. Currently, nighttime light from vehicle headlights is generated infrequently by the rangers and volunteers working in the existing Preserve. Consequently, the proposed project would not create

a substantial source of light pollution that could contribute to sky glow, light trespass, or glare and adversely affect day or nighttime views in area.

Additionally, construction of the proposed project would comply with the San Diego County Noise Ordinance, which limits construction activities to between the hours of 7:00 a.m. to 7:00 p.m. Monday through Saturday. There would not be any nighttime construction and there would be no nighttime lighting associated with construction. The proposed project would not use building materials with highly reflective properties such as highly reflective glass or high-gloss surface colors. Consequently, the proposed project would not create a substantial source of light pollution or glare that could adversely affect day or nighttime views in the area.

The proposed project will not contribute to significant cumulative impacts on day or nighttime views because the proposed project would not create a new source of substantial light or glare. The standards in the County's Light Pollution Code establish an acceptable level for new lighting. Compliance with the Code is required prior to issuance of any building permit for any project. Mandatory compliance for all new building permits ensures that past, present, and future projects will not contribute to a cumulatively considerable impact. Therefore, the proposed project design ensures that the proposed project will not create a significant new source of substantial light or glare, which would adversely affect daytime or nighttime views in the area, on a project or cumulative level.

II. AGRICULTURE AND FORESTRY RESOURCES -- Would the project:

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

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

Discussion/Explanation:

Less Than Significant Impact: According to the Farmland Mapping and Monitoring Program of the California Department of Conservation, the proposed project area includes land that is designated as Farmland of Local Importance, Grazing Land, and Other Land (California Department of Conservation 2018). The Preserve consists of approximately 742 acres of Grazing Land, which is mapped along the northern and southern portions of the Preserve. Approximately 171 acres of Farmland of Local Importance are also mapped in the western portion of the proposed project site. The Preserve is not currently used for agricultural cultivation or grazing purposes, and the proposed trail network in this area would not affect future agricultural cultivation through rezoning or formal changes in land use. The proposed project would not involve project elements that would prevent the potential use of agricultural land in the future.

The proposed project would not result in cumulative impacts to Prime Farmland, Unique Farmland, or Farmland of Statewide or Local Importance based on an evaluation of the proposed project's less than significant impact and the list of past, present, and future projects within the area. Refer to Section XXI, Mandatory Findings of Significance, for a comprehensive list of the projects considered. Therefore, no potentially significant project- or cumulative-level conversion

of agricultural resources to a non-agricultural use would result from the proposed project's implementation.

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

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

Discussion/Explanation:

No Impact: The proposed project area includes land with several zoning designations, including Open Space (S80) and Limited Agricultural Use (A70), which is considered an agricultural zone. However, the proposed project would not result in a conflict with zoning for agricultural use because passive recreation uses are allowed uses in these zones and would not impact other agricultural uses on or adjacent to the proposed project site. The proposed project site is currently a habitat preserve, with no agricultural cultivation presently occurring. Moreover, the proposed project would not preclude the Preserve from being used for agricultural cultivation in the future. Finally, the County of San Diego Department of Parks and Recreation's park facilities are exempt from the Zoning Ordinance in accordance with County Ordinance No. 10095 (San Diego County 2010). Additionally, the proposed project site's land is not under a Williamson Act Contract. Therefore, there would be no conflict with existing zoning for agricultural use, or a Williamson Act contract.

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

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

Discussion/Explanation:

Public Resources Code Section 12220(g) identifies forest land as land that can support 10 percent native tree cover of any species, including hardwoods under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality recreation, and other public benefits.

No Impact: The proposed project site does not contain forest lands or timberland. The County of San Diego does not have any existing Timberland Production Zones. In addition, the proposed project is consistent with existing zoning, and a rezone of the property is not proposed. Therefore, the proposed project's implementation would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland production zones and no impact would occur.

d) Result in the loss of forest land, conversion of forest land to non-forest use, or involve other changes in the existing environment, which, due to their location or nature, could result in conversion of forest land to non-forest use?

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

Discussion/Explanation:

No Impact: The proposed project site does not contain any forest lands as defined in Public Resources Code Section 12220(g); therefore, the proposed project's implementation would not result in the loss or conversion of forest land to a non-forest use. In addition, the proposed project is not located in the vicinity of off-site forest resources. As described in Section II.c, the proposed project development area does not contain any forest lands as defined in Public Resources Code Section 12220(g). Refer to the response to Section II.c above. Implementation of the proposed project would not result in the loss or conversion of forest land to non-forest use. The proposed trail segments and other improvements would not convert forest land to other land uses. In addition, the proposed project is not located in the vicinity of, and would not indirectly affect, offsite forest resources. Therefore, implementation of the proposed project would not result in the disturbance, loss, or conversion of forest resources to a non-forest use.

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

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

Discussion/Explanation:

No Impact: The Preserve has approximately 742 acres of Grazing Land and 171 acres of Farmland of Local Importance mapped within its boundaries. No Prime Farmland occurs within the Preserve, and no agricultural uses currently exist. Additionally, the 4.76 miles of new proposed trails and trail segments would not limit or prevent the proposed project site from being used as grazing land or agricultural operations in the future. As a result, the proposed project would not have a significant adverse impact related to the conversion of Prime Farmland, Unique Farmland, Farmland of Statewide or Local Importance, or active agricultural operations to a non-agricultural use.

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

a) Conflict with or obstruct implementation of the San Diego Regional Air Quality Strategy (RAQS) or applicable portions of the State Implementation Plan (SIP)?

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

Discussion/Explanation:

Less Than Significant Impact: The proposed project site is located within the San Diego Air Basin (SDAB), which is governed by the San Diego Air Pollution Control District (SDAPCD). The SDAPCD develops and administers local regulations for stationary air pollutant sources within the SDAB, and also develops plans and programs to meet attainment requirements for both Federal and State ambient air quality standards (National Ambient Air Quality Standards [NAAQS] and California Ambient Air Quality Standards [CAAQS], respectively). The SDAPCD and the San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the Ambient Air Quality Standards (AAQS) in the SDAB. The SDAPCD has developed a series of policies and guidelines collectively known as the Regional Air Quality Strategy (RAQS). The RAQS outlines the SDAPCD's plans and control measures designed to attain the State air quality standards, including applicable portions of the California State Implementation Plan (SIP).

Included in the RAQS are short- and long-term goals for those pollutants that the SDAB is designated as a "nonattainment" area because the SDAPCD does not meet the NAAQS or CAAQS. Criteria pollutants of primary concern include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter (including both respirable particulate matter 10 microns or less in diameter [PM_{10}] and fine particulate matter 2.5 microns or less in diameter [$PM_{2.5}$]), sulfur dioxide (SO_2), and lead. The NAAQS and CAAQS were designed to protect the health of the most susceptible individuals. As part of its air quality permitting process, the SDAPCD has established thresholds in Rule 20.2. In the absence of a SDAPCD adopted threshold for particulate matter less than 2.5 microns (PM2.5), the South Coast Air Quality Management District's (SCAQMD) screening threshold of 55 pounds per day or 10 tons per year is used. The Rule 20.2 screening thresholds were designed to attain the NAAQS established by the U.S. Environmental Protection Agency and the CAAQS established by CARB. Therefore, by not exceeding the Rule 20.2 screening thresholds, it is numerically demonstrated that a project's total emissions would not result in a significant impact to air quality for CEQA purposes, and that there would be no potential for adverse health effects to the public. The screening thresholds are included in Table 2, *Screening Level Thresholds for Air Quality Impact Analysis*.

Table 2
Screening Level Thresholds for Air Quality Impact Analysis

Pollutant	**Total Construction Emissions (Pounds per Day)**
Respirable Particulate Matter (PM10)	100
Fine Particulate Matter (PM2.5)	55
Oxides of Nitrogen (NOX)	250
Oxides of Sulfur (SOX)	250
Carbon Monoxide (CO)	550
Volatile Organic Compounds (VOCs)	75

Source: SDAPCD Rule 20.2 and Rule 1210

The SDAB is currently designated as a basic nonattainment area for the 8-hour NAAQS for ozone. The SDAB is designated as being in attainment for all other applicable criteria pollutants under the NAAQS. The SDAB is currently classified as a nonattainment area under the CAAQS for ozone, PM_{10}, and $PM_{2.5}$. It is in attainment for CO, NO_2, SO_2, and lead relative to State air standards.

The proposed project proposes recreational components that are consistent with SANDAG's growth projections used in development of the RAQS and SIP. As such, the proposed project would not conflict with either the RAQS or the SIP. Emissions associated with the proposed project would primarily result from construction activities. Some mechanized equipment, such as a tractors, loaders, backhoes, and haul trucks would likely be used to construct the trail segments. Hand tools would also be used to construct the trail alignments, especially in areas inaccessible to larger equipment or for improvements to existing trails. Existing access and maintenance roads and trails would be used for access within the Preserve. Once constructed, operational emissions are not anticipated to exceed existing conditions because the PAP would involve a realignment of the Preserve's trail network in support of pedestrians, bicyclists, and equestrians. Following completion of construction related to implementation of the PAP, the proposed project would continue to operate as a preserve. The proposed project would not construct features that would generate operational emissions, although routine maintenance as described in the VMP would continue.

As described in Section III.b, proposed project construction activity would not exceed any threshold for ambient air quality standards. Because the proposed project would not violate ambient air quality standards, it would also not result in a cumulatively considerable impacts on ambient air quality standards when combined with the cumulative projects listed in Section XXI. Mandatory Findings of Significance, below.

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

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

Discussion/Explanation:

As discussed above, the SDAB is currently designated as a basic nonattainment area for the 8-hour NAAQS for ozone, but is in attainment for all other applicable criteria pollutants under the NAAQS. The SDAB is currently classified as a nonattainment area under the CAAQS for ozone, PM_{10}, and $PM_{2.5}$. It is in attainment for CO, NO_2, SO_2, and lead relative to State air standards. O_3 is formed when volatile organic compounds (VOCs) and nitrogen oxides (NO_X) react in the presence of sunlight. VOC sources include any source that burns fuels (e.g., gasoline, natural gas, wood, oil), solvents, petroleum processing and storage, and pesticides. Sources of PM_{10} in both urban and rural areas include motor vehicles, wood burning stoves and fireplaces, dust from construction, landfills, agriculture, wildfires, brush/waste burning, and industrial sources of windblown dust from open lands.

Less Than Significant Impact: The proposed project would generate criteria pollutants including emissions of PM_{10}, $PM_{2.5,}$ NO_X, oxides of sulfur (SO_x), CO, and VOCs in the short term during construction/ grading activities. Although the proposed project would not be subject to the County Grading Ordinance, the proposed project would be consistent with dust control measures to reduce potential fugitive dust emissions during construction. Emissions from the construction phase would be minimal and localized, resulting in emissions below the quantitative emission thresholds established by the SDAPCD. Implementation of the proposed project would result in a small number of additional trips to the Preserve, but it would not substantially increase long-term

air pollutants in the vicinity of the proposed project, and operational emissions are not anticipated to meaningfully exceed existing conditions.

The proposed project's criteria pollutant emissions were calculated using equipment emission factors from the California Emissions Estimator Model (CalEEMod) version 2022.1.1.13. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects. The model was developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the California air districts. Emissions resulting from worker commutes were quantified using emission factors from the California Air Resources Board's (CARB's) EMFAC Emissions Inventory (CARB 2021).

Construction of the proposed project would generate short-term criteria air pollutant emissions, including emissions of volatile organic compounds (VOCs), NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$. An estimate of the maximum daily emissions of each criteria air pollutant during the proposed project's construction is presented in Table 3, *Construction Emissions*.

Table 3
Construction Emissions

Construction Activity	Pollutant Emissions (pounds per day)					
	VOC	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Trail and Road Construction and Improvements	<0.5	3	6	<0.5	<0.5	<0.5
Screening-Level Thresholds	75	250	550	250	100	55
Exceedance?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod; Appendix A

Construction emissions would be generated by vehicle engine exhaust from off-road construction equipment, hauling trucks, and worker commuting trips. As shown in Table 3, construction would not exceed screening-level emissions thresholds for each criteria pollutant.

The screening-level thresholds shown in Table 3 were established specifically to address cumulative impacts. Implementation of the proposed project would have temporary, short-term, and localized emissions that would be well below screening thresholds, and would therefore not cumulatively contribute to air quality in the vicinity of the Preserve. Management activities performed under the RMP and VMP are part of the existing condition for the proposed project, and implementation of the proposed project would not substantially alter these ongoing activities. As discussed in Section XXI, Mandatory Findings of Significance, the emissions associated with the proposed project would not create a cumulatively considerable impact nor a considerable net increase of PM_{10}, $PM_{2.5}$, NO_X, SO_X, CO, or VOCs. The proposed project as well as the past, present, and future projects within the surrounding area have emissions below the screening-level criteria established by the quantitative emission thresholds established by the SDAPCD. Therefore, the construction and operational emissions associated with the proposed project would not create a cumulatively considerable impact nor a considerable net increase of PM_{10}, $PM_{2.5,}$ NO_X, $SO_{X,}$ CO, or VOCs.

c) Expose sensitive receptors to substantial pollutant concentrations?

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

Discussion/Explanation:

Air quality regulators typically define sensitive receptors as schools (Preschool–12th Grade), hospitals, resident care facilities, or day-care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. The County of San Diego also considers residences as sensitive receptors because they house children and the elderly.

Less Than Significant Impact: Sensitive receptors identified within a quarter-mile (the radius determined by the SCAQMD in which the dilution of pollutants is typically significant) of the proposed project's proposed trail segments include those just outside the Preserve boundary. These include residences east of the Paragon Mesa – South (#6) trail segment, east of the North Interior Loop (#26) trail segment, and east of the Calle de Rob Eastern County TCT (#11) connection. However, the proposed project does not propose uses or activities that would result in exposure of sensitive receptors to significant pollutant concentrations and would not place sensitive receptors near CO hotspots. Construction activities would be temporary and would require minimal equipment. The proposed project would be consistent with dust control measures identified in the County's Grading Ordinance. During site preparation and grading construction phases, all soil graded would be sufficiently watered to prevent excessive dust. Watering would occur as needed with complete coverage of disturbed soil areas. Watering would occur a minimum of twice daily on unpaved roads and on disturbed soil areas with active operations. All haul trucks transporting materials to or from the proposed project site would be covered to prevent fugitive dust emissions, and traffic speeds on all unpaved portions of the project site would be reduced to 15 miles per hour or less. As shown in Section III.b. above, the proposed project would not generate emissions that exceed the SDAPCD thresholds. Following completion of the proposed project construction activities, the project site would continue to operate as a preserve that would not generate significant air quality emissions. In addition, the proposed project would not contribute to a cumulatively considerable exposure of sensitive receptors to substantial pollutant concentrations. Refer to XXI, Mandatory Findings of Significance, for a comprehensive list of the projects considered.

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

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

Discussion/Explanation:

Less Than Significant Impact: According to CARB's Air Quality and Land Use Handbook, typical sources of emissions leading to odors include sewage treatment plants, landfills, livestock operations, and recycling facilities, among other uses. The proposed project does not include uses that would generate significant ongoing odors.

Construction of the proposed project may produce discernible odors typical of most construction sites, such as exhaust from construction equipment. Additionally, material deliveries and heavy-duty haul trucks could create an occasional "whiff" of diesel exhaust for nearby receptors. However, such odors would be a temporary source of nuisance to adjacent uses and would not affect a substantial number of people or violate San Diego Air Pollution Control District Rule 51. The improvements at the proposed project site would also not generate additional odors during normal operations, relative to existing conditions. As such, impacts, as a result of odors generated by the proposed project would be less than significant.

A list of past, present, and future projects within the surrounding area were evaluated, and none would create objectionable odors. Refer to XXI, Mandatory Findings of Significance, for a comprehensive list of the projects considered. Additionally, none would result in other emissions (such as those leading to odors) that would adversely affect a substantial number of people. As such, impacts as a result of odors generated by the proposed project would be less than significant. Moreover, the effects of any small generation of objectionable odors would be localized to the immediate surrounding area and would not result in a cumulatively considerable impact.

IV. BIOLOGICAL RESOURCES -- Would the project:

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

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

Discussion/Explanation:

Less Than Significant With Mitigation Incorporated: A Biological Resources Technical Report (BRTR) was prepared for the PAP component of the proposed project (Appendix B). The BRTR includes a comprehensive review of the biological resources present and potentially present within the Preserve, determined by several surveys completed in 2019, 2020, and 2022. The purpose of the 2019 general biological and rare plant surveys was to verify and update biological resources documented within the survey area during previous survey efforts completed for the RMP (County 2013) and previous baseline surveys.

Baseline biological surveys of the Preserve were conducted in 2008 (County 2009) and in 2012 (Dudek 2013) for the Preserve. Baseline biological surveys of the 2015 Northern Addition and 2015 Southern Addition were conducted in 2016 (AECOM 2018). Baseline biological surveys of the Southern Parcel were conducted in 2019 (HELIX 2020). Baseline surveys were conducted in 2019 (ICF 2021) for the San Vicente Connector Parcels. Baseline surveys have not been conducted for the Southern Gap Parcels Addition.

Biological resources documented during the baseline biological surveys are assumed present in the general biological survey for the PAP component of the proposed project. In June 2020, an additional flight survey/habitat assessment was conducted for those areas designated by the United States Fish and Wildlife Service (USFWS) as Hermes copper butterfly (*Lycaena hermes*) Critical Habitat, as it overlaps with portions of the Preserve, and locations near proposed trail

segments where there could be potential issues. Additionally, County Protocol surveys for Hermes copper butterfly were conducted in the survey area of the PAP component of the proposed project from June 7 through July 7, 2022. The proposed project is exempt from the Biological Mitigation Ordinance (BMO) as it is a public project determined to be essential by the County that meets the criteria identified in the BMO to qualify it for exemption. Additionally, the proposed project has been designed to avoid impacts to sensitive species, consistent with the BMO, as feasible.

As documented in the BRTR, the PAP component of the proposed project would result in potential impacts to sensitive species and their habitats. The RMP and VMP components of the proposed project would not result in impacts to sensitive species and their habitats.

Special Status Plant Species

Five special status plant species were observed within the survey area for the PAP during the 2019-2022 biological surveys. Additionally, eleven other special status plant species have been documented within the Study Area during previous surveys for the Preserve. Surveys and documentation indicated that 16 special status plant species occur within the survey area. This includes six County List A species (San Diego thorn-mint [*Acanthomintha ilicifolia*], willowy monardella [*Monardella viminea*], variegated dudleya [*Dudleya variegata*], Deane's milkvetch [*Astragalus deanei*], delicate clarkia [*Clarkia delicata*], and San Diego goldenstar [*Bloomeria clevelandii*]) and ten County List D species (graceful tarplant [*Holocarpha virgata* ssp. *elongata*], small-flowered morning glory [*Convolvulus simulans*], rush chaparral-star [*Xanthisma junceum*], San Diego County viguiera [*Bahiopsis laciniata*], ashy spike moss [*Selaginella cinerascens*], California adder's-tongue [*Ophioglossum californicum*], Palmer's grappling hook [*Harpagonella palmeri*], golden-rayed pentachaeta [*Pentachaeta aurea* ssp. *aurea*], Engelmann oak [*Quercus engelmannii*], and Palmer's sagebrush [*Artemisia palmeri*]).

San Diego Thorn-mint

The proposed project would potentially result in significant impacts to San Diego thorn-mint (Federally Endangered, State Endangered, County List A, and California Rare Plant Rank [CRPR] 1B.1). The species occurs adjacent to existing trail segments and access roads (Martha's Grove [#12], Sycamore Canyon [#0a], Cardiac Hill [#27]) and within the survey area for both the proposed trail segment on existing disturbed areas and the proposed re-route of the Rock and Roll Trail (#22) segment. Although critical habitat for this species would not be impacted by the formalization of existing trail segments that cross through the critical habitat, some critical habitat would be impacted by widening portions of the proposed trail segments on existing disturbed areas and/or establishing the proposed Rock and Roll Trail (#22) segments through the critical habitat. During the 2019 general biological survey and 2019 rare plant survey, San Diego thorn-mint was not observed within the survey area, including the existing and proposed Rock and Roll Trail (#22) alignments. No new impacts would result from the formalization of other existing formal trails or access roads (Cardiac Hill [#27], Martha's Grove [#12], and Sycamore Canyon [#0a]) where no improvements are proposed.

The proposed project would result in a potential maximum impact of 0.33 acre of the 73.43 acres (less than one percent) of critical habitat located within the Preserve for this species. Significant impacts are associated with either proposed improvements to the southwestern portion of the existing Rock and Roll Trail (#22) segment (0.18 acre of critical habitat), or by the construction of the proposed re-route of the southwestern portion of this trail (0.15 acre of critical habitat). Both options for the southwestern portion of the Rock and Roll Trail (#22) segment pass through an

area where this species was observed in 2008. The number of individuals within the maximum impact footprint is not known, because the species was not visible during the 2019 general biology survey and 2019 rare plant survey. Mitigation measures **BIO-1, BIO-2,** and **BIO-6** (described below) would reduce proposed project impacts to less than significant.

Willowy Monardella

Willowy monardella (Federally Endangered; State Endangered; County List A and CRPR 1B.1) is documented throughout the Southern Parcel and the San Vicente Connector parcels, where no trail segments or public access are proposed. No impacts to this species are expected.

Variegated Dudleya

Variegated dudleya (County List A and CRPR 1B.2) is documented within the critical habitat for San Diego thorn-mint and was observed within historical locations of this species. While variegata dudleya was observed outside the survey area during the 2019 survey, no variegated dudleya was observed within the survey area or the existing and proposed Rock and Roll Trail (#22) segment alignments. Additionally, the variegated dudleya populations are more than 50 feet from any of the existing or proposed trail segment locations. Therefore, no impacts to this species are expected.

Remaining Sensitive Plant Species

Delicate clarkia (County List A and CRPR 1B.2) occurs to the west and south of Sidewinder Rogue Trail (#23) segment. The delicate clarkia was mapped immediately west of and more than 50 feet from the Preserve boundary; therefore, no project impacts on this species are proposed. Seven special status plant species (Deane's milkvetch [County List A and CRPR 1B.1], graceful tarplant [County List D and CRPR 1B.1], small-flowered morning glory [County List D and CRPR 4.2], Palmer's grappling hook [County List D and CRPR 4.2], Engelmann oak [County List D, CRPR 4.2], San Diego goldenstar [County List A, CRPR 1B.1, MSCP Covered], and Palmer's sagebrush [County List D, CRPR 4.2]) occur adjacent to existing trail segments and access roads where no improvements are proposed, and, thus, project impacts on these species are unlikely. Golden-rayed pentachaeta occurs within the Southern Parcel Addition and San Vicente Connector Parcels of the Preserve, but no trail segments are proposed in these areas, and impacts are not expected. Additionally, California adder's-tongue occurs adjacent to the survey area for the portion of Rock and Roll Trail (#22) segment proposed for improvements and is unlikely to be impacted.

Three of the thirteen special status plant species occur within the survey area adjacent to existing trail segments where no improvements are proposed, but also occur within areas of proposed trail improvements and re-routes: rush chaparral-star [County List D and CRPR 4.3], San Diego County viguiera [County List D and CRPR 4.3], and ashy spike-moss (County List D and CRPR 4.1). Rush chaparral-star occurs within 50 feet of the South Raptor Loop (#3) and Paragon Mesa South (#6) trail segments. San Diego County viguiera occurs within 20 feet of the Ridge Trail (#14) segment. Ashy-spike-moss occurs within 20 feet of the Ridge Trail (#14), South of Ridge Trail (#15), and South Raptor Loop South (#5) trail segments. Ashy spike-moss and rush chaparral-star also occur along trail segments proposed to be closed and revegetated (Sidewinder Rogue [#23] and Paragon Mesa West [#1], respectively).

Special Status Animal Species

The proposed project, including the VMP and the PAP components, would potentially result in impacts to 44 special status animal species. These include 16 County Group 1 species, 25 County Group 2 species, and two species not on the County lists, but are State species of special concern species. Implementation of the proposed project, including the VMP and PAP component of the proposed project, would affect special status animal species through the reduction in suitable habitat used by the species; however, due to the amount of habitat available within the Preserve, most impacts would be less than significant. Four special status animal species were observed or detected within the survey area during the 2019 general biological survey and 2022 Hermes copper butterfly survey: Quino checkerspot butterfly (QCB; *Euphydryas editha quino*), San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*), coastal California gnatcatcher (*Polioptila californica californica*), and southern mule deer (*Odocoileus hemionus*). The 40 other special status animal species have been documented within the Preserve during previous surveys for the Preserve prior to 2019, including: western spadefoot toad (*Spea hammondii*), Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*), red diamond rattlesnake (*Crotalus ruber*), Coronado skink (*Plestiodon skiltonianus interparietalis*), northern three-lined boa (*Lichanura orcuttii*), Blainville's horned lizard (*Phrynosoma blainvillii*), coast patch-nosed snake (*Salvadora hexalepis virgultea*), two-striped garter snake (*Thamnophis hammondii*), Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), Bell's sage sparrow (*Amphispiza bellii bellii*), golden eagle (*Aquila chrysaetos*), red-shouldered hawk (*Buteo lineatus*), turkey vulture (*Cathartes aura*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), California horned lark (*Eremophila alpestris actia*), bald eagle (*Haliaeetus leucocephalus*), yellow-breasted chat (*Icteria virens*), Osprey (*Pandion haliaetus*), yellow warbler (*Setophaga petechia*), western bluebird (*Sialia mexicana*), barn owl (*Tyto alba*), burrowing owl (*Athene cunicularia*), Vaux's swift (*Chaetura vauxi*), pallid bat (*Antrozous pallidus*), Dulzura pocket mouse (*Chaetodipus californicus femoralis*), Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), Townsend's big-eared bat (*Corynorhinus townsendii*), western mastiff bat (*Eumops perotis californicus*), western red bat (*Lasiurus blossevillii*), western yellow bat (*Lasiurus xanthinus*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), western small-footed myotis (*Myotis ciliolabrum*), Yuma myotis (*Myotis yumanensis*), San Diego desert woodrat (*Neotoma lepida intermedia*), pocketed free-tailed bat (*Nyctinomops femorosaccus*), big free-tailed bat (*Nyctinomops macrotis*), and mountain lion (*Puma concolor*). The effects of the proposed project on these species are discussed below.

Coastal California Gnatcatcher

The Diegan coastal sage scrub habitat and other scrub habitats within the Study Area are known to support the federally threatened coastal California gnatcatcher. One coastal California gnatcatcher was observed during the 2019 surveys within the coastal sage-chaparral transition of the proposed Rock and Roll Trail (#22) alignment, and two were observed during 2022 surveys within Diegan coastal sage scrub of the proposed South Raptor Loop South (#5) alignment. Several locations of this species have been documented during previous survey efforts in the Preserve within Diegan coastal sage scrub and chamise chaparral vegetation communities. Gnatcatchers in the region could use other scrub-vegetated portions of the site and immediate vicinity for foraging, dispersal, and migration activities.

A maximum amount of approximately 3.0 acres of suitable habitat for coastal California gnatcatcher may be impacted by the PAP component of the proposed project, although this includes the entire survey area. The survey area is between 20 and 100 feet wide, while the

maximum width of existing trails is 12 feet, and eight feet for proposed trails; therefore, the total acreage impacted should be far less than that which exists in the survey area. Impacts from the PAP component of the proposed project total no more than 2.1 acres of Diegan coastal sage scrub and 0.9 acre of coastal sage-chaparral. The PAP component of the proposed project would not preclude use of suitable habitat by this species, and occupied habitat would remain contiguous with the suitable habitat throughout the Preserve. The PAP component of the proposed project construction within 500 feet of breeding habitat for this sensitive bird species could result in adverse indirect impacts related to construction noise. Impacts to breeding coastal California gnatcatchers, occupied habitat, and temporary (foraging, migration, and dispersal) habitat would be significant. However, because impacts to occupied habitat would be small in relation to the total occupied habitat within the Preserve, and through implementation of mitigation measures **BIO-3**, **BIO-4**, and **BIO-5**, impacts to this species would be reduced to less than significant.

Hermes Copper Butterfly

A Hermes copper butterfly was recorded within the Preserve before the 2003 Cedar Fire (County of San Diego 2008) but has not been documented in the Preserve since. Although the survey area for the PAP component of the proposed project supports a limited amount of Potential Hermes Copper Butterfly Habitat as defined by the County guidelines (spiny redberry within 15 feet of buckwheat), Hermes copper butterfly was not observed during the 2019, 2020, and 2022 surveys for the PAP component of the proposed project. The HELIX 2022 surveys included protocol surveys for Hermes copper butterfly, in accordance with the survey guidelines outlined in Attachment B of the County's Report Format and Content Requirements for Biological Resources (County 2010a). While small portions of the critical habitat for the Hermes copper butterfly that occurs within the survey area may be impacted by the PAP component of the proposed project, this would not impact the species recovery because the Preserve functions to protect large areas of existing suitable habitat (approximately 507 acres of critical habitat occur on the Preserve). Additionally, established trail segments would function as dispersal corridor connectivity areas among subpopulations if present within the Preserve. While the HELIX 2019, 2020, and 2022 surveys for the PAP component of the proposed project found the survey area to be unoccupied by Hermes copper butterfly, the proposed project would impact 0.05 acre of Potential Hermes Copper Butterfly Habitat. This would be a significant impact and would be mitigated through the implementation of mitigation measures **BIO-7** and **BIO-8**.

Quino Checkerspot Butterfly

One QCB was incidentally documented during the 2019 general biological survey within the southern portion of existing Slaughterhouse Canyon Trail (#21) segment and within the vicinity of where the species was previously documented in 2005. Suitable habitat for this species occurs throughout the Preserve, and the habitat adjacent to the 2019 QCB observation would be considered occupied. Therefore, a portion of the existing Slaughterhouse Canyon Trail (#21), and adjacent ridgeline trails proposed for closure, are considered occupied. No improvements to the existing Slaughterhouse Canyon Trail (#21) segment are proposed. Also, the adjacent trail segments to be closed will be revegetated with passive methods that would avoid impacts to QCB and their larval plants.

QCB host plants were observed along the Rock and Roll Trail (#22) segments (dot-seed plantain [*Plantago erecta*], woolly plantain [*Plantago patagonica*], purple owl's clover [*Castilleja exserta*], and rigid bird's beak [*Cordylanthus rigidus*]). Project construction within on-site breeding habitat for this sensitive species would therefore result in significant impacts. These impacts would be mitigated through the implementation of Mitigation Measure **BIO-9**. Therefore, the proposed

project impacts to QCB associated with the Rock and Roll Trail (#22) segment would be less than significant following mitigation. The revegetation of adjacent trail segments to be closed (see Mitigation Measure **BIO-6**) would include habitat enhancement (inclusion of host plant species in seed mixes) for the QCB. Therefore, the proposed project impacts to QCB associated with the Slaughterhouse Canyon Trail (#21) segment and adjacent ridgelines as well as Rock and Roll Trail (#22) segments would be less than significant following mitigation. Additionally, project impacts to QCB within the Preserve would be less than significant.

Western Spadefoot Toad

The western spadefoot toad was observed in the southwestern portion of the Southern Parcel during the 2019 baseline biological surveys. This species was also detected in the Preserve during the 2008 surveys near the eastern edge of the Preserve and in the central part of the Preserve near the Martha's Grove (#12) trail. Construction related to implementation of the proposed project could impact western spadefoot toad. These impacts would be mitigated through Mitigation Measures **BIO-10** and **BIO-11**. Therefore, the proposed project impacts to western spadefoot toad would be less than significant.

Nesting Birds

The proposed project would impact potential habitat for seven Species of Special Concern (SSC) species, including bald eagle, burrowing owl, coastal California gnatcatcher, northern harrier, Vaux's swift, yellow-breasted chat, and yellow warbler. The proposed project would impact potential habitat for 12 special-status species not listed as SSC, including barn owl, Bell's sage sparrow, California horned lark, Cooper's hawk, golden eagle, osprey, red-shouldered hawk, sharp-shinned hawk, southern California rufous-crowned sparrow, turkey vulture, western bluebird, and white-tailed kite. Construction related to the proposed project could impact the nesting success of nesting birds and raptors, which have the potential to nest on and/or within 500 feet of impact areas. Noise from such sources as clearing and grading activities could result in an impact to these species. Noise-related impacts would be considered significant if these sensitive avian species were displaced from their nests and failed to breed. Impacts to nesting birds and raptors would be reduced to a level below significance through the implementation of mitigation measure **BIO-4.**

Remaining Species

The proposed project would impact potential habitat for the following 16 SSC species, including five reptile species (San Diegan tiger whiptail, Blainville's horned lizard, red-diamond rattlesnake, coast patch-nosed snake, and two-striped garter snake) and 11 mammal species (pallid bat, Dulzura pocket mouse, northwestern San Diego pocket mouse, San Diego woodrat, Townsend's big-eared bat, western mastiff bat, western red bat, western yellow bat, San Diego black-tailed jackrabbit, pocketed free tailed bat, and southern mule deer). The proposed project would impact potential habitat for seven special status species not listed as SSC, including three reptile species (Belding's orange-throated whiptail, Coronado skink, and northern three-lined boa) and four mammal species (western small-footed myotis, Yuma myotis, mule deer, and mountain lion).

Impacts from the PAP component of the proposed project would be less than significant as these are highly mobile animals, any development of trail segments in previously undeveloped areas would occur as thin strips, no woodrat nests were observed within the proposed trail segment alignments, and the proposed project footprint comprises a small fraction of the available habitat within the Preserve for these species.

Additionally, as a regional conservation program, the MSCP also protects covered and 'non-target' species such as these through habitat acquisition and preservation efforts. Because the Preserve includes extensive habitat occupied by these relatively common species and these species are conserved through the MSCP program, the PAP component of the proposed project impacts on these species would not be significant.

Cumulative Impact Analysis

A list of past, present, and future projects within the surrounding area were evaluated, and none would contribute to a significant cumulative impact on San Diego thorn-mint or coastal California gnatcatcher. Refer to XXI, Mandatory Findings of Significance, for a comprehensive list of the projects considered. Additionally, the PAP component of the proposed project would implement San Diego thorn-mint and coastal California gnatcatcher avoidance measures and compensate for the loss of habitat for both species through on or off-site revegetation or purchase of mitigation credits. Because the proposed project is designed to avoid, minimize, and mitigate impacts in conformance with the Subarea Plan and any other projects proposed in the vicinity would also have to be in conformance with the Subarea Plan, cumulative impacts would be considered fully mitigated.

With implementation of the mitigation measures, the proposed project, including the VMP and the PAP component of the proposed project, would result in less than significant impacts to sensitive species and their habitats. A breakdown of the County mitigation ratios is provided in Tables 4a through 4c, *Mitigation Ratios.* Implementation of the proposed project would not contribute to a significant cumulative impact on San Diego thorn-mint, coastal California gnatcatcher, QCB, Hermes Copper Butterfly, western spadefoot toad, or other species through implementation of the following mitigation measures:

MM-BIO-1 Focused surveys for San Diego thorn-mint will be completed within areas of critical habitat during the blooming period for this species (April – May) prior to clearing and grubbing of the proposed Rock and Roll Trail (#22) segment improvements or reroutes. San Diego thorn-mint observed in the proposed impact area will be flagged and avoided during trail construction. If impacts to San Diego thorn-mint individuals cannot be avoided, they shall be quantified and limited to no more than 20 percent of the total population in the area, consistent with the BMO Section 86.507.a.1, as determined during pre-construction surveys and documented in a letter report submitted by the County-approved biologist to DPR. The mapping of plant populations will extend beyond the impact area into the adjacent area that meets the species' habitat requirements, as determined by the County-approved biologist. DPR will review and approve the letter report and implement the mitigation according to the Mitigation Monitoring and Reporting Program for the project. Impacts shall be mitigated consistent with the BMO Section 86.507.a.1 at a 2:1 ratio if less than 10 percent of the total population is impacted, or 3:1 ratio if less than 20 percent of the total population is impacted. The proposed project will avoid impacting more than 20 percent of the total population.

Mitigation will consist of on- or off-site preservation, translocation, and/or restoration within a BRCA, with a preference for species salvage and transplantation on-site if feasible. Seed material will be sourced from within five miles of the Preserve, but if seed is not available, due to seasonality or a poor seeding year, seed collected from southeastern San Diego County may be used. Additionally, any trail or trail segment closure within areas of critical habitat for San

Diego thorn-mint will include revegetation with species known as common associates to San Diego thorn-mint populations. If species are transplanted for mitigation, these species will be included in a plant salvage and translocation plan according to mitigation measure **BIO-2**.

MM-BIO-2 Prior to vegetation clearing for the proposed Rock and Roll Trail (#22) segment improvements or reroutes, if San Diego thorn-mint is being impacted and translocation is selected as part of the mitigation package according to the letter report prepared under mitigation measure **BIO-1**, a plant salvage and translocation plan shall be prepared for San Diego thorn-mint impacted by the project. The plan shall, at a minimum, evaluate options for plant salvage and relocation, including native plant mulching, selective soil salvaging, and application/relocation of resources within the Study Area. Relocation efforts may include seed collection and/or transplantation to a suitable receptor site and will be based on the most reliable methods of successful relocation. The program shall contain a recommendation for method of salvage and relocation/application based on feasibility of implementation and likelihood of success. The program shall include, at a minimum, an implementation plan, maintenance and monitoring program, success criteria, estimated completion time, and any relevant contingency measures. The resource salvage plan shall be prepared by a County-approved biologist and shall be implemented according to the Mitigation Monitoring and Reporting Program for the project.

MM-BIO-3 Grading or clearing of Diegan coastal sage scrub during the breeding season of the coastal California gnatcatcher (March 1 to August 15) shall be avoided to the extent feasible. If grubbing, clearing, or grading would occur during the breeding season, a pre-construction survey shall be conducted by a qualified biologist no more than three days prior to the commencement of activities to determine if active bird nests are present in the affected areas. If there are no nesting birds (includes nest building or other breeding/nesting behavior) within 500 feet of the survey area, clearing, grubbing, and grading shall be allowed to proceed in that area. If active nests or nesting birds are observed within 500 feet of the survey area, the biologist shall flag a buffer around the active nests, and clearing, grubbing, or grading activities shall not occur within 500 feet of active nests until nesting behavior has ceased, nests have failed, or young have fledged as determined by a qualified biologist. If the qualified biologist determines that the species will not be impacted with a reduced buffer, potentially with the implementation of avoidance measures to reduce noise, as necessary, and/or the qualified biologist monitors the active nest during clearing, grubbing, or grading to ensure no impacts to the species occur, these activities may occur outside the reduced buffer during the breeding season, as long as the species is not impacted.

MM-BIO-4 Grubbing or clearing of vegetation during the general avian breeding season (February 15 – September 15) or raptor breeding season (January 15 – July 15) shall be avoided to the extent feasible. If grubbing, clearing, or grading would occur during the general avian breeding season, a pre-construction survey shall be conducted by a qualified biologist no more than three days prior to the commencement of grubbing or clearing activities to determine if active bird nests are present in the affected areas. If there are no nesting birds (includes nest building or other breeding/nesting behavior) within this area, clearing, grubbing, and grading shall be allowed to proceed. Furthermore, if construction activities are

to resume in an area where they have not occurred for a period of seven or more days during the breeding season, an updated survey for avian nesting will be conducted. If active nests or nesting birds are observed within the area, the biologist shall flag the active nests and construction activities shall avoid active nests until nesting behavior has ceased, nests have failed, or young have fledged. If the qualified biologist determines that the species will not be impacted with a reduced buffer, potentially with the implementation of avoidance measures to reduce noise, as necessary, and/or the qualified biologist monitors the active nest during clearing, grubbing, or grading to ensure no impacts to the species occur, these activities may occur outside the reduced buffer during the breeding season, as long as the species is not impacted.

MM-BIO-5 Because the Preserve is a Biological Resource Core Area (BRCA), mitigation for impacts to 3.0 acres of Diegan coastal sage scrub and coastal sage-chaparral transition, Tier II habitats, shall occur at a 1.5:1 ratio through preservation, revegetation/restoration, or purchase of Tier II mitigation credits from an approved mitigation bank within the South County MSCP Subarea Plan per Attachment M of the BMO. The mitigation site will meet the criteria for a BRCA in order to use a 1.5:1 ratio, as the impacted land meets the criteria for BRCA. Otherwise, the mitigation ratio will be 2:1 if the mitigation site does not meet the criteria for BRCA. Some or all of the mitigation for impacts to 3.0 acres of Tier II habitat could occur as part of the revegetation of existing trail segments to be closed. Revegetation will be accomplished by a combination of barricade and sign installation, soil decompaction (where needed), and native seed application (see also MM-BIO-6). Seed material will be sourced from within five miles of the Preserve, but if seed is not available, due to seasonality or a poor seeding year, seed collected from southeastern San Diego County may be used. Revegetation efforts will be monitored by a qualified biologist and maintained for a period of three years following implementation. Maintenance will be conducted by a qualified contractor with experience in native habitat restoration and will include control of non-native plant species and remedial measures, such as re-seeding and installation of additional barricades and signage, to help ensure the success of the revegetation efforts. Closed trail segments to be revegetated within occupied QCB habitat will be revegetated with passive methods that would avoid impacts to QCB and their larval host plants.

MM-BIO-6 Trail segments to be closed and revegetated will incorporate native species in seed mixes that will enhance sensitive species documented within the Preserve, including San Diego thorn-mint and habitat that supports QCB. Revegetation of trail segments within areas of critical habitat for San Diego thorn-mint will include seeding with native geophytes (i.e., wild onion [*Allium* spp.] and goldenstar [*Bloomeria crocea*]) known to occur with San Diego thorn-mint on gabbro soils. Revegetation of trail segments within areas of suitable habitat for QCB will include host plant species (i.e., dot-seed plantain) and nectar resources.

Table 4a
Mitigation Ratios – Tier I

Tier I	Impacted Land	
Mitigation Site	**Within BRCA**	**Outside BRCA**
Within BRCA	2:1	1:1
Outside BRCA	3:1	2:1

Table 4b
Mitigation Ratios – Tier II

Tier II	Impacted Land	
Mitigation Site	**Within BRCA**	**Outside BRCA**
Within BRCA	1.5:1	1:1
Outside BRCA	2:1	1.5:1

Table 4c
Mitigation Ratios – Tier III

Tier III	Impacted Land	
Mitigation Site	**Within BRCA**	**Outside BRCA**
Within BRCA	1:1	0.5:1
Outside BRCA	1.5:1	1:1

MM-BIO-7 Mitigation for permanent impacts to Potential Hermes Copper Butterfly Habitat within shall occur at a 1:1 ratio within the South County MSCP Subarea, within a BRCA, or at the ratios identified in the BMO. Permanent impacts to Potential Hermes Copper Butterfly Habitat are expected to be 0.05 acre. Mitigation shall occur through one or a combination of the following: on- and/or off-site preservation, restoration, and/or purchase of mitigation credits at an approved mitigation bank.

MM-BIO-8 The following Hermes Copper Butterfly conservation measures apply along the Hermes Copper Butterfly Avoidance Area on Figure 8b of the proposed project's BRTR. Additional Hermes Copper Butterfly surveys will be conducted prior to construction, in order to ensure that potential habitat is delineated to the greatest extent feasible. This mitigation would be expanded to any additional area where Hermes Copper Butterfly is identified during preconstruction surveys.

Step 1: Survey

- Prior to initiating work within the Hermes Copper Butterfly Avoidance Area, a qualified biologist shall complete protocol flight season surveys for the Hermes Copper Butterfly in accordance with the survey guidelines outlined in Attachment B of the County's Report Format and Content Requirements for Biological Resources (County 2010a).

- During host plant mapping, host plant patches will be mapped using GPS, so they can be flagged prior to construction.

Step 2: Avoidance and Minimization Measures

- Following flight season surveys and host plant mapping, realign or leave potential impact areas unimproved, as needed, to avoid direct impacts to host plants (Spiny redberry plants that are within 15 feet of buckwheat) as much as possible.

- All construction within mapped Hermes Copper Butterfly habitat, including buckwheat within 15 feet of Spiny redberry, will be prohibited during the flight season (defined as the third full week of May through the first full week of July).

- A qualified biologist will monitor construction within the Hermes Copper Butterfly Avoidance Area to ensure that all flagged and mapped host plant locations planned for avoidance are avoided.

- The qualified biologist will conduct environmental awareness training for all personnel entering the site during the construction of the proposed project.

- Following trail installation, maintenance activities in areas supporting Hermes Copper Butterfly host plants within the Hermes Copper Butterfly Avoidance Area shall either occur outside of the Hermes Copper Butterfly flight season or be monitored, as appropriate, by a qualified biologist.

- Install signs and/or fencing along the avoided host plants stating, “Environmentally sensitive area. Please stay on trail,” or similar language.

Step 3: Compensatory Mitigation

If the flight season surveys conducted in Step 1 are positive and the proposed project cannot be redesigned to avoid impacts to all Hermes Copper Butterfly host plant patches, then in addition to the surveys and avoidance and minimization measures in Steps 1 and 2 above, the impacts to Occupied Hermes Copper Butterfly host plant patches will be mitigated at a 3:1 ratio through one or a combination of the following: on- and/or off-site preservation, restoration, and/or purchase of mitigation credits at an approved mitigation bank.

MM-BIO-9 The following QCB conservation measures apply along the Rock and Roll Trail (#22) segment, shown as QCB Avoidance Area on Figure 8b of the proposed project’s BRTR. Additional QCB host plant mapping will be conducted prior to construction when host plants are blooming, in order to ensure host plant patches are delineated to the greatest extent feasible. This mitigation would be expanded to any additional area where QCB host plants are identified during preconstruction plant mapping.

Step 1: Survey

- Additional QCB host plant mapping will be conducted prior to construction when host plants are blooming, in order to ensure host plant patches are delineated to the greatest extent feasible.

- During host plant mapping, host plant patches will be mapped using GPS, so they can be flagged prior to construction.

Step 2: Avoidance and Minimization Measures

- Following host plant mapping, realign or leave potential impact areas unimproved, as needed, to avoid direct impacts to host plants as much as possible.

- All construction within mapped QCB host plant patches will be prohibited during the QCB flight season (defined as the third week of February through the second Saturday in May).

- A qualified biologist will monitor construction within the QCB Avoidance Area to ensure that all flagged and mapped host plant locations planned for avoidance are avoided.

- The qualified biologist will conduct environmental awareness training for all personnel entering the site during the construction of the proposed project.

- Following construction, maintenance activities in areas supporting QCB host plants within the QCB Avoidance Area shall either occur outside of the QCB flight season or be monitored, as appropriate, by a qualified biologist.

- Install signs and/or fencing along the avoided host plants stating, “Environmentally sensitive area. Please stay on trail,” or similar language.

Step 3: Compensatory Mitigation

If the proposed project cannot be redesigned to avoid impacts to all QCB host plant patches, then in addition to the surveys and avoidance and minimization measures in Steps 1 and 2 above, consultation with USFWS will be required. Mitigation may consist of one or a combination of on- or off-site planting of host plants, providing long-term maintenance of existing host plants, preserving occupied QCB habitat, or similar measures to the satisfaction of the USFWS.

MM-BIO-10 Focused surveys for western spadefoot toad will be completed by a qualified biologist prior to clearing and grubbing of the proposed trail segment improvements or reroutes. Occupied western spadefoot toad habitat observed in the proposed impact area will be flagged and avoided during trail construction until the qualified biologist determines that western spadefoot toad are no longer using the habitat.

MM-BIO-11 To help ensure errant impacts to sensitive vegetation communities and jurisdictional waters outside of the impact footprint are avoided during construction, environmental exclusionary fencing, where determined necessary by the qualified biologist, would be installed at the edges of the impact limits prior to initiation of grading. All construction staging shall occur within the approved limits of construction. A qualified biologist will monitor the installation of environmental fencing wherever it would abut sensitive vegetation communities. The biologist also will conduct a pre-construction environmental awareness training for construction personnel prior to all phases of construction to inform personnel of

the sensitive biological resources on-site and avoidance measures to remain in compliance with project approvals. The biologist will periodically monitor the limits of construction operations to ensure that avoidance areas are delineated with temporary fencing and that fencing remains intact.

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

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

Discussion/Explanation:

Less than Significant with Mitigation Incorporated: The proposed project would not impact riparian habitats or jurisdictional features because the at-grade crossings proposed as part of the proposed project would not grade, develop, or alter the substrate of the features, nor would the proposed project utilize mechanized earth moving equipment as part of construction. In addition, loose soil material kicked up from walking, riding, or biking across the features would not constitute a regulated discharge of fill material to jurisdictional non-wetland waters. The proposed project would not modify existing culverts, channels, or streams. Thus, no impacts on the identified features or on CDFW jurisdictional habitat would occur. In addition, the proposed project does not propose any new uses for groundwater that would otherwise impact the functions and values of existing wetlands on the Preserve. Therefore, the proposed project would result in less than significant impacts, and would not result in cumulatively considerable impacts, on potentially jurisdictional waterways. No State or Federally protected wetlands would be impacted, and therefore no direct, indirect, or cumulative impacts would occur on State or Federally protected wetlands.

The proposed project would result in impacts to sensitive vegetation communities, including coast live oak woodland, Diegan coastal sage scrub, coastal sage-chaparral transition, chamise chaparral, southern mixed chaparral, and non-native grassland. The chaparral to be impacted consists of granitic chamise chaparral and granitic southern mixed chaparral, which are Tier III habitats, and not mafic chamise chaparral or mafic southern mixed chaparral, which would be Tier I habitats. The proposed trail segments, future trail connections, and proposed trail segments on existing disturbed areas have been sited and designed to avoid oak trees, and no impacts to oak trees would occur. Impacts to sensitive natural communities may occur if improvements are necessary for the formalization of some of the existing trail segments, and possibly from the development of new trail connections. Implementation of the PAP would impact up to 5.3 acres of sensitive habitat. While the survey buffer ranges from 20 to 100 feet wide, the maximum width of proposed trail segments is eight feet, and surface material would consist of decomposed granite/binding agent or suitable native soil; therefore, impacts explained in this Initial Study's analysis that are expressed in terms of acreage represent the maximum impact that could occur.

The proposed project would impact these sensitive natural communities through the development of established trail segments in previously undeveloped areas and through the improvements to existing trail segments (e.g., widening of existing disturbed areas). Impacts include up to 0.1 acre of open coast live oak woodland, 2.1 acres of Diegan coastal sage scrub: coastal form, 0.9 acre of coastal sage-chaparral transition, 0.6 acre of chamise chaparral, 0.9 acre of southern mixed chaparral, and 0.7 acre of non-native grassland. Impacts to sensitive vegetation communities

would be reduced to less than significant levels through implementation of mitigation measures **MM-BIO-5** and **BIO-12** through **BIO-13**. Although there would be no impacts to jurisdictional wetlands and riparian habitats, mitigation measure **MM-BIO-11** would provide additional protections for jurisdictional waters and riparian habitats within the Preserve.

A list of past, present, and future projects within the surrounding area were evaluated, and none would contribute to a significant cumulative impact on riparian habitat or wetlands. Refer to Section XXI, Mandatory Findings of Significance, for a comprehensive list of the projects considered. The maximum proposed impacts to sensitive upland communities, while significant at the project level, are not considered cumulatively significant, as the proposed project would provide mitigation for these impacts in accordance with County guidelines. The County-approved mitigation ratios are standardized and not dependent upon the quality of habitat. Rather, the mitigation ratios recognize the regional importance of the habitat, the overall rarity of the habitat, and the number and variety of species it supports. Mitigation for habitat loss is required to compensate for direct impacts, as well as cumulative loss of habitat. Impacts to sensitive upland communities would be fully mitigated at County-approved ratios. As the proposed project would be in conformance with County guidelines and mitigation ratios, the proposed project's contribution to cumulative impacts to sensitive vegetation communities would be less than significant.

Potential indirect impacts to sensitive habitat resulting from human access, domestic animals, and exotic plant species would be avoided through the implementation of project design features. These include the posting of signs precluding access to areas outside of established trails and the posting of signs prohibiting off-leash pets. No project or cumulative level significant impact would occur.

Impacts to sensitive vegetation communities would require the following mitigation:

MM-BIO-12 Because the Preserve is a BRCA, mitigation for impacts to 0.1 acre of open coast live oak woodland, a Tier I habitat, shall occur at a 2:1 ratio through on-site preservation of open or dense coast live oak woodland, on- or off-site revegetation of open or dense coast live oak woodland, or purchase of Tier I mitigation credits from an approved mitigation bank within the South County MSCP Subarea Plan per Attachment M of the BMO. The mitigation site will meet the criteria for a BRCA in order to use a 2:1 ratio, as the impacted land meets the criteria for BRCA. Otherwise, the mitigation ratio will be 3:1 if the mitigation site does not meet the criteria for BRCA. Some or all of the mitigation for impacts to 0.1 acre of open coast live oak woodland could occur as part of the revegetation of 5.6 acres of existing trail segments to be closed. Revegetation will be accomplished by a combination of barricade and sign installation, soil decompaction (where needed), and native seed application (see also MM-BIO-6). Seed material will be sourced from within five miles of the Preserve, but if seed is not available, due to seasonality or a poor seeding year, seed collected from southeastern San Diego County may be used. Revegetation efforts will be monitored by a qualified biologist and maintained for a period of three years following implementation. Maintenance will be conducted by a qualified contractor with experience in native habitat restoration and will include control of non-native plant species and remedial measures, such as re-seeding and installation of additional barricades and signage, to help ensure the success of the revegetation efforts. Closed trail segments to be revegetated within occupied QCB habitat will be revegetated with passive methods that would avoid impacts to QCB and their larval host plants.

MM-BIO-13 Because the Preserve is a BRCA, mitigation for impacts to 2.2 acres of southern mixed chaparral, chamise chaparral, and non-native grassland, Tier III habitats, shall occur at a 1:1 ratio through on-site preservation, revegetation/restoration, or purchase of Tier III mitigation credits from an approved mitigation bank within the South County MSCP Subarea Plan per Attachment M of the BMO. The mitigation site will meet the criteria for a BRCA in order to use a 1:1 ratio, as the impacted land meets the criteria for BRCA. Otherwise, the mitigation ratio will be 1.5:1 if the mitigation site does not meet the criteria for BRCA. Some or all of the mitigation for impacts to 2.2 acres of Tier III habitat could occur as part of the revegetation of 5.6 acres of existing trail segments to be closed. Revegetation will be accomplished by a combination barricade and sign installation, soil decompaction (where needed), and native seed application (see also MM-BIO-6). Seed material will be sourced from within five miles of the Preserve, but if seed is not available, due to seasonality or a poor seeding year, seed collected from southeastern San Diego County may be used. Revegetation efforts will be monitored by a qualified biologist and maintained for a period of three years following implementation. Maintenance will be conducted by a qualified contractor with experience in native habitat restoration and will include control of non-native plant species and remedial measures, such as re-seeding and installation of additional barricades and signage, to help ensure the success of the revegetation efforts. Closed trail segments to be revegetated within occupied QCB habitat will be revegetated with passive methods that would avoid impacts to QCB and their larval host plants.

Implementation of these mitigation measures would reduce the proposed project's impacts to sensitive communities to less than significant. Furthermore, as the proposed project would provide mitigation in accordance with County and regulatory agency guidelines, the proposed project's contribution to cumulative impacts would not be considered significant.

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

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

Discussion/Explanation:

No Impact: No wetland waters of the U.S. or State were identified within the PAP survey area. Non-wetland waters of the U.S./State and CDFW jurisdictional streambed and riparian habitat were identified within the survey area; however, the proposed project would not impact riparian habitats or jurisdictional features because the at-grade crossings proposed as part of the proposed project would not grade, develop, or alter the substrate of the features, nor would the proposed project utilize mechanized earth moving equipment as part of construction. In addition, loose soil material kicked up from walking, riding, or biking across the features would not constitute a discharge of fill material to jurisdictional non-wetland waters. The proposed project would not modify existing culverts, channels, or streams. Thus, no impacts on the identified non-wetland waters or on CDFW jurisdictional habitat would occur. In addition, the proposed project does not propose any new uses for groundwater that would otherwise impact the functions and values of existing riparian areas on the Preserve. No State or Federally protected wetlands would be impacted, and therefore no direct, or indirect impacts would occur on State or Federally

protected wetlands. Although there would be no impacts to jurisdictional wetlands and riparian habitats, mitigation measure **MM-BIO-11** would provide additional protections for jurisdictional waters and riparian habitats within the Preserve.

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

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

Discussion/Explanation:

Less than Significant Impact: The Preserve currently consists of 2,847 acres of open space, including approximately 19.5 acres of existing trails, maintenance, and access roads. At a maximum, approximately 2.9 acres of impact would result from establishing new proposed trails, 0.6 acre of impact from potential future trail connections, and approximately 3.3 acres of impact would result from the PAP component of the proposed project for improvements to existing trails in previously disturbed areas. Implementation of the RMP and VMP would provide Management Directives for the ongoing maintenance of the Preserve, but would not result in additional impacts. The proposed project would therefore impact 6.8 acres, including impacts to disturbed habitat and developed land. Additionally, a total of 5.6 acres of trails will be closed and revegetated through implementation of the PAP. All impacts to habitat within the Preserve would occur as thin strips to either establish trail segments in previously undeveloped areas or in previously disturbed areas.

Construction related to the proposed project could impact the nesting success of coastal California gnatcatcher and tree-nesting raptors, all of which have the potential to nest on and/or within 500 feet of construction impact areas. Noise from clearing and grading activities could result in an impact to wildlife. Noise-related impacts would be considered significant if sensitive species (such as coastal California gnatcatcher and raptors) were displaced from their nests and failed to breed. Impacts to coastal California gnatcatchers and tree-nesting raptors would be significant, but would be reduced to less than significant through the implementation of mitigation measures **MM-BIO-3 and MM-BIO-4.**

The proposed trail segments would not substantially interfere with the ability of wildlife species to disperse to adjacent conserved land areas, as adequate connectivity is maintained. The proposed project would not propose fixed nighttime lighting that would promote nighttime usage. The proposed project would conform to the goals and requirements of the Subarea Plan and BMO, including effects on habitat linkages and wildlife corridors. The proposed project would maintain connectivity within the core wildlife habitat, to adjacent linkages, and to adjacent, undeveloped habitat. With the proposed project's location within and adjacent to undeveloped areas, incorporation of design features, and implementation of the previously identified habitat mitigation measures, the proposed project's impacts would be less than significant.

Biological open space extends uninterrupted across the Preserve and includes large expanses of native scrub habitats, as well as riparian areas. Due to the lack of permanent water, wildlife likely forage, seek shelter, and move through the Preserve following routes to areas with fresh water, such as San Vicente Reservoir to the east. These habitats within the Preserve will continue to provide foraging and breeding habitat for a variety of species, including coastal California gnatcatcher. Proposed project construction would not impede access or lessen the area available

for terrestrial wildlife movement. Coyotes are frequently observed throughout the Preserve and do not avoid the existing trails. Southern mule deer and mountain lion are the largest mammal species that could potentially occur on-site, and suitable expanses of habitat will be maintained for deer and mountain lion to move through the area. Movement of other medium-sized mammals, such as bobcat, is more likely to follow riparian areas associated with Sycamore Canyon Creek and other areas with sufficient vegetative cover. Small animals could also cross the proposed trail segments. No new impacts are proposed for the existing trail segment along Sycamore Canyon Creek, including the West Boundary (#13) trail segment, and vegetation impacts associated with the construction of new trail segments will be minimized. The proposed project would maintain a continuous connection of undeveloped land and native habitat, including connections to Sycamore Canyon Creek, Clark Canyon, and to adjacent open space areas. Therefore, the proposed project would not impede wildlife access to habitat necessary for reproduction. Impacts would be less than significant.

The proposed project is in a relatively undeveloped part of San Diego County. The area consists of continuous blocks of habitat. Wildlife movement in the area has already been impacted by the construction of nearby roadways, including Scripps Poway Parkway and SR-67, residential and commercial development, nearby mineral extraction activities, military activities, agriculture, and the presence of existing trails, maintenance, and access roads.

Trails would be expected to be used by medium and large mammals for ease of movement through the Preserve. No features would be constructed that would impinge any movement areas, including ridgelines or canyons. Wildlife movement is not expected to be substantially constrained by the construction of new trail segments as (1) trail construction would not substantially change topography; (2) the proposed project maintains connectivity to core wildlife habitat along the Sycamore Canyon Creek and Clark Canyon to the surrounding undeveloped areas; (3) the proposed project would not impact existing Waters of the U.S./State at trail crossings; (4) trails would not be so wide or heavily-trafficked as to prevent animals from moving across them; and (5) existing lines-of-sight would be maintained across trails. The Study Area provides adequate space and resources for wildlife known to use the site, maintains connectivity to off-site resources, and functions to facilitate bird and mammal movement through the area, including for species targeted for conservation in the region, such as the coastal California gnatcatcher. Therefore, the proposed project would not significantly impact the viability of a core wildlife area and biological connectivity between the Preserve and adjacent open space areas would be maintained.

A list of past, present, and future projects within the surrounding area were evaluated, and none would contribute to a significant cumulative impact on wildlife movement. Refer to XXI, Mandatory Findings of Significance, for a comprehensive list of the projects considered. Wildlife movement in the area has already been impacted by the construction of SR-67 and Scripps Poway Parkway. The proposed project maintains connectivity to the core wildlife habitat along the Sycamore Canyon Creek and Clark Canyon to the surrounding undeveloped areas. With the proposed project's location within and adjacent to biological open space, proposed trail segment closures, incorporation of design features, and implementation of mitigation measures at the specified ratios, the contribution of the proposed project to the cumulative impact on wildlife movement would not be considerable and would be less than significant. Therefore, the proposed project would not have a significant direct, indirect, or cumulative impact on wildlife movement in the area.

e) Conflict with the provisions of any adopted Habitat Conservation Plan, Natural Communities Conservation Plan, other approved local, regional, or State habitat conservation plan or any other local policies or ordinances that protect biological resources?

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

Discussion/Explanation:

Less than Significant Impact: Based on the findings of the BRTR (Appendix B), the proposed project is covered by the MSCP, which is an adopted Natural Community Conservation Plan (NCCP), and the County of San Diego maintains an Implementing Agreement with CDFW and USFWS. The Preserve is located within the Metro-Lakeside-Jamul segment of the Subarea Plan. The proposed project would not result in a conflict with the following local policies, ordinances, and adopted plans:

- Proposed project impacts to Diegan coastal sage scrub are all located within the adopted Subarea Plan. No impacts outside of the MSCP would occur.

- The proposed project is consistent with an existing NCCP—the County of San Diego MSCP Subarea Plan—and would not prelude the preparation of another subregional NCCP.

- The Resource Protection Ordinance (RPO) does not apply to the proposed project as the proposed project is not a listed project type in RPO Section 86.603(a).

- The proposed project is consistent with the BMO.

- This proposed project is consistent with the Subarea Plan. The Preserve is managed under an existing Resource Management Plan (RMP). The proposed project will update the existing RMP to manage the entire Preserve including recently acquired parcels. The RMP would be consistent with the MSCP and would promote the implementation of the MSCP preserve system.

- The proposed project does not preclude connectivity. No features of the proposed project would block the movement of animals. Additional trails would be expected to be used by nocturnal mammals and reptiles for movement.

- The proposed project would not result in impacts on existing movement corridors or habitat linkages.

- Narrow endemic species are present on the Preserve. The proposed project was sited to avoid all impacts on narrow endemic species.

- The proposed project would not reduce the likelihood of recovery of listed species.

- The proposed project would not result in take of golden eagles. The proposed project is situated within eagle foraging habitat, but the small impacts associated with implementation of the proposed project and Preserve access would not significantly impact eagle foraging. No trails or other project elements are proposed within 4,000 feet of a golden eagle nest.

The proposed project may include construction-related activities that could result in the killing of migratory birds or destruction of active migratory bird nests and/or eggs protected under the

MBTA and California Fish and Game Code (CFGC) during breeding season. However, implementation of mitigation measure **MM-BIO-4** would ensure that potential violation of the MBTA or CFGC would be avoided and impacts would not occur.

Because this site is within the MSCP, it has been designed to minimize impacts on BRCAs and Pre-Approved Mitigation Areas (PAMAs). Multi-use trails are an allowed use in the MSCP Preserve and have been designed to be as narrow as possible while allowing for the resource-dependent use of public access.

The proposed project is consistent with the MSCP and BMO, is entirely within lands covered by the MSCP, and would not conflict with any local policies or ordinances or any HCP, NCCP, or other approved local, regional, or State HCP. Therefore, the proposed project would not add to cumulative impacts related to local policies or plans.

The RMP is used by DPR as guidance for Preserve management and is required per the MSCP Subarea Plan and Framework Management Plan (County 2001). One of the general Management Directives of the Framework Management Plan pertains to public access, trails, and recreation and states that appropriate recreational activities shall be accommodated in concurrence with the goals of the MSCP. For this reason, a PAP is necessary to support the RMP and to ensure that public access is consistent with the biological goals of the MSCP.

A list of past, present, and future projects within the surrounding area were evaluated, and none would conflict with local policies or ordinances, or other approved local, regional, or State Habitat Conservation Plans. Refer to Section XXI, Mandatory Findings of Significance, for a comprehensive list of the projects considered. The proposed project would comply with the requirements of the MBTA, RPO, Bald and Golden Eagle Protection Act, BMO, and MSCP. All currently proposed and future projects within the cumulative survey area also would be required to comply with these regulations; therefore, no significant cumulative impacts would occur as a result of the proposed project. Therefore, the proposed project would not conflict with local policies or ordinances, or other approved local, regional, or State Habitat Conservation Plans, and the proposed project would have less than significant project and cumulative impacts.

V. CULTURAL RESOURCES -- Would the project:

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

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

Discussion/Explanation:

Less Than Significant With Mitigation Incorporated: A Cultural Resources Inventory and Assessment Report was prepared for the proposed project (HELIX 2023b; Appendix C). A file search, field survey, and review of previous studies undertaken within the Preserve were conducted to determine the presence or potential presence of historic resources within Preserve and survey area. A total of 13 historic-period resources (or resources with historic-period components) were identified within the survey area. Of these 13 resources, 7 would not be impacted by implementation of the proposed project, as the resources are located outside existing or proposed trail segments or roadways identified in the PAP. Implementation of the RMP and

VMP would continue DPR's management practices within the Preserve, and would not involve activities that would impact resources.

Three historic-period resources would be located within potential disturbance areas requiring avoidance. Resource P-37-028924 consists of a cement cistern along Rock and Roll Trail (#22) segment. Resource P-37-035992 is an outbuilding near the North Interior Loop, and Resource P-37-038958 is a rock foundation near the Ridge Trail (#14) segment. To ensure these sites would not be impacted by implementation of the RMP, including the PAP and VMP, they would be identified as environmentally sensitive areas (ESAs). Mitigation measure **MM-CUL-1** would ensure impacts would be reduced to a less than significant level.

One historic resource, CA-SDI-21923, is located in a trail segment to be revegetated. Passive revegetation would be required to ensure impacts to the resource's homestead stone foundations are reduce to less than significant levels. Mitigation measure **MM-CUL-1** would be required.

Two historic resources consist of road segments that would be incorporated into proposed trail segments. Resource CA-SDI-12821 is a spur of the historic Foster Truck Trail and Resource P-37-035993 is a historic road segment. Both segments would be incorporated into proposed trails. Following an evaluation of these segments, it was determined that the portions to be impacted by the proposed project are not eligible for listing in the California Register of Historic Resources (CRHR) or Local Register, and would not affect the overall integrity of the route's eligibility.

The proposed project would have less than significant impacts to historical resources with the inclusion of mitigation. Current and future projects in the surrounding area would be evaluated under the same requirements as the proposed project, and would be required to implement project-based mitigation if impacts were to be found. The proposed project would not impact a historical resource that would span more than one project site, and therefore cumulative impacts would not occur. Refer to XXI, Mandatory Findings of Significance, for a comprehensive list of the projects considered. The proposed project, with the incorporation of mitigation, would not have a significant project or cumulative impact on cultural and historical resources.

MM-CUL-1 Cultural resources CA-SDI-9706, -19170, -19171, -19181, -21921, -21922, and -21923; P-37-024271, -028924, -030084, -035980, -035992, -038958, -038959, and -038960 shall be identified as environmentally sensitive areas (ESAs) in order to ensure no adverse impacts to the resources occur.

- The ESAs shall consist of the recorded site boundary and a 20-foot buffer.
- The ESA locations shall be provided to the proposed project development team and the ESA locations shall be avoided by all project design considerations for new trail segments and existing trail segments to be improved.
- If during trail segment engineering, it is determined that avoidance of an ESA proves infeasible, a Historical Resources Treatment Plan (HRTP) shall be prepared. The HRTP will present the measures that will be implemented, and include appropriate methodologies, to address the preservation, minimization of impacts, or mitigation of potential impacts/adverse effects to significant cultural/historical resources. The County shall approve the HRTP prior to final engineering design, and all cultural resources investigations and reporting deliverables outlined in the HRTP shall be completed prior to trail segment construction.

- During the proposed project's construction, no ground disturbance shall occur within the boundary of the ESA unless otherwise addressed in the HRTP. During restoration efforts within trail routes to be closed, only passive revegetation shall occur within the boundary of the ESA. Archaeological monitors will be present during initial activities to confirm the ESA and buffer around each resource and ensure there are no direct or indirect impacts to the resources.

- During the proposed project's construction activities, the ESAs and buffer areas shall be temporarily flagged by the project archaeologist prior to construction activities occurring in the vicinity of the ESA.

- All construction activities within 100 feet of an ESA shall be monitored by an archaeological monitor; in addition, all construction activities within 100 feet of an ESA surrounding prehistoric archaeological resources shall be monitored by a Kumeyaay Native American monitor.

Additionally, ground-disturbing activity from revegetation and Preserve management identified in the RMP and VMP may occur outside the survey area and/or in areas with no known cultural resources. It is therefore possible that ground-disturbing activity could impact previously unrecorded cultural resources. For this reason, mitigation measure **MM-CUL-2** will be required for all ground-disturbing activity associated with implementation of the proposed project.

MM-CUL-2 The County DPR will retain a qualified project archaeologist and a Kumeyaay Native American representative to monitor all initial ground-disturbing activities related to the implementation of the proposed project in order to minimize impacts to unknown subsurface archaeological deposits. Specifically, the following measures will be implemented to reduce impacts:

- Prior to the start of construction, the project archaeologist shall prepare a monitoring plan that describes the nature of the archaeological monitoring work; a monitoring schedule and a map illustrating ESA boundaries (**MM-CUL-1**) and areas where monitoring shall occur; procedures to follow in the event of an unanticipated discovery; and reporting requirements.

- The monitoring program shall include attendance by the archaeologist and Native American monitor at a preconstruction meeting with the construction contractor to discuss monitoring scheduling and coordination and to inform all personnel of the high probability of archaeological materials being encountered during construction.

- Both archaeological and Native American monitors shall have the authority to temporarily halt or redirect grading and other ground-disturbing activity in the event that cultural resources are encountered. Isolates and non-significant deposits shall be minimally documented in the field. If significant cultural material is encountered, appropriate actions shall be implemented according to the protocols outlined in the monitoring plan.

Should the project limits change to incorporate new areas of proposed disturbance, an archaeological survey of these areas would be required. With the implementation of mitigation measures **MM-CUL-1** and **MM-CUL-2,** potential impacts to cultural resources would be reduced

to a less than significant level and would not contribute to a potentially cumulative impact on archaeological resources.

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

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

Discussion/Explanation:

Less Than Significant With Mitigation Incorporated: A Cultural Resources Inventory and Assessment Report was prepared for the proposed trail segment (HELIX 2023b; Appendix C). A file search and field survey were conducted to determine the presence or potential presence of archaeological resources within the Preserve and survey area. Of the 48 prehistoric archaeological resources identified, 28 are archaeological prehistoric sites (or sites with prehistoric components) and 20 are prehistoric isolates. Of these 48 resources, 37 would not be impacted by implementation of the PAP due to their location along existing formal trails or access roads with no new disturbance proposed, or have been evaluated as not eligible for listing in the CRHR or the Local Register. Impacts would be less than significant.

Seven archaeological resources would be located within potential disturbance areas requiring avoidance. These resources include CA-SDI-9706, CA-SDI-19170, CA-SDI-19171, CA-SDI-19181, CA-SDI-21921, CA-SDI-21922, and P-37-035980. To ensure these sites would not be impacted by implementation of the PAP, they would be identified as ESAs. Mitigation measure **MM-CUL-1** would ensure impacts would be reduced to a less than significant level.

Four prehistoric archaeological sites (Resources P-37-024271, P-37-030084, P-37-038959, and P-37-038960) are located along existing trail segments or disturbed areas proposed for closure and revegetation. Passive revegetation would be required to ensure impacts to these resources are reduce to less than significant levels. Mitigation measure **MM-CUL-1** would be required.

A list of past, present, and future projects within the surrounding area were evaluated, and none would contribute to a substantial adverse change in the significance of an archaeological resource. The proposed project would have less than significant impacts to archeological resources with the inclusion of mitigation. Current and future projects in the surrounding area would be evaluated under the same requirements and regulations as the proposed project, and would be required to implement project based mitigation if impacts were to be found. The proposed project would not impact an archaeological resource that would span more than one project site, and therefore cumulative impacts would not occur. Refer to XXI, Mandatory Findings of Significance, for a comprehensive list of the projects considered.

With the implementation of mitigation measures **MM-CUL-1** and **MM-CUL-2,** potential impacts to archeological resources would be reduced to a less than significant level and would not contribute to a potentially cumulative impact on archaeological resources.

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

☐ Potentially Significant Impact
☐ Less than Significant Impact

☒ Less Than Significant With Mitigation Incorporated ☐ No Impact

Discussion/Explanation:

Less Than Significant With Mitigation Incorporated: As previously discussed, a file search and field survey were conducted for the proposed project to determine the presence or potential presence of cultural resources, including human remains, within the proposed project site. Due to the number of archaeological resources recorded in the surrounding area, there is a potential for unidentified human remains to be present within the proposed project site. If present, the human remains could be damaged by ground-disturbing activities associated with the proposed project. The proposed project would not impact an archaeological resource that would span more than one project site, and therefore cumulative impacts to human remains would not occur. Mitigation measure **MM-CUL-3** would reduce impacts to a level less than significant.

MM-CUL-3 Should human remains be identified during ground-disturbing activities related to the proposed project, whether during construction, maintenance, or any other activity, California Public Resources Code §5097.98, CEQA Guidelines §15064.5 and California Health & Safety Code §7050.5 and County-mandated procedures will be followed for the treatment and disposition of those remains, as follow:

- A County (DPR) official is contacted.
- Upon identification of human remains, there will be no further excavation or disturbance in the area of the find or any nearby area reasonably suspected to overlie adjacent human remains until the County Coroner has made the necessary findings as to origin. If the human remains are to be taken offsite for evaluation, they shall be accompanied by the Kumeyaay Native American monitor.
- If the remains are determined to be of Native American origin, the coroner will contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC will identify a Most Likely Descendant (MLD), the person or persons it believes to be most likely descended from the deceased Native American.
- The immediate vicinity where the Native American human remains are located is not to be damaged or disturbed by further development activity until consultation with the MLD regarding their recommendations as required by Public Resources Code Section 5097.98 has been conducted.
- The MLD, as identified by the NAHC, shall be contacted by DPR or their representative in order to determine proper treatment and disposition of the remains. The MLD may make recommendations to the landowner (DPR), or the person responsible for the excavation work, for the treatment of human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.

Implementation of mitigation measure **MM-CUL-3** would protect potential human remains that could be encountered at the proposed project site. Therefore, the proposed project would not result in significant impacts or cumulatively considerable impacts on human remains.

VI. Energy -- Would the project:

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

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

Discussion/Explanation:

San Diego County is served by San Diego Gas and Electric (SDG&E), which provides energy service to over 3.4 million customers (with 1.4 million accounts) in the county and portions of southern Orange County. The utility has a diverse power production portfolio, composed of a variety of renewable and non-renewable sources. Energy production typically varies by season and by year. Regional electricity loads also tend to be higher in the summer because the higher summer temperatures drive increased demand for air-conditioning. In contrast, natural gas loads are higher in the winter because the colder temperatures drive increased demand for natural gas heating.

Less than Significant Impact: During construction activities, energy consumption would be in the form of fuel consumed for construction equipment and motor vehicles used to access the site. Operation of the proposed project would not generate additional energy usage over existing conditions as the proposed project does not propose permanent structures, lighting, or other features requiring energy use. Because the Preserve is currently available for public use, and the proposed project would not significantly expand capacity, and energy usage from increased use of the Preserve would be minimal. The proposed project would generate a small demand on local and regional fuel supplies during construction activities that would be easily accommodated. Moreover, this demand for fuel would have no noticeable effect on peak or baseline demands for energy.

A list of past, present, and future projects within the surrounding area were evaluated, and none would contribute to a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. The proposed project would have less than significant impacts to the consumption of energy resources. Current and future projects in the surrounding area would be evaluated under the same requirements and would be required to meet the same applicable regulations as the proposed project. Refer to Section XXI, Mandatory Findings of Significance, for a comprehensive list of the projects considered. Therefore, the proposed project would not result in a wasteful, inefficient, or unnecessary usage of direct or indirect energy, and project and cumulative impacts would be less than significant.

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

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

Discussion/Explanation:

No Impact: The applicable renewable energy plan for the proposed project area would be the State Renewables Portfolio Standard (RPS), which requires utility agencies to ensure a certain

percentage of the electricity they sell is from a renewable source. Senate Bill (SB) 350 requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from eligible renewable energy resources by 2030. Moreover, the County has installed renewable energy at many of its facilities. The County itself produces almost 19,620,591 kilowatt-hours each year, which provides clean and renewable energy for 22.56 percent of the County's annual energy usage (County Department of General Services 2019).

Construction activities related to implementation of the proposed project would consume energy in the form of fuel for construction equipment and motor vehicles to access the site. However, operation of the proposed project would not require energy in excess of the existing usage. As previously analyzed in Section VI.a, energy usage associated with construction would be minimal. Therefore, the proposed project would not obstruct the implementation of the RPS, nor would it result in energy consumption that would require the County to install more production. The continuation of the use of the proposed project as a recreational site would not result in impacts on applicable State renewable energy plans. Therefore, the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and impacts would be less than significant.

VII. GEOLOGY AND SOILS -- Would the project:

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

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

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

Discussion/Explanation:

No Impact: The proposed project is not located in or adjacent to a fault rupture hazard zone identified by the Alquist-Priolo Earthquake Fault Zoning Act, Special Publication 42, Revised 1997, Fault-Rupture Hazards Zones in California, or located within a County Special Study Zone (County of San Diego 2007). The nearest Alquist-Priolo earthquake fault zone is the Newport-Inglewood-Rose Canyon fault zone, approximately 16 miles southwest of the Preserve. Additionally, the proposed project would not introduce new inhabitants to the site. Therefore, there would be no direct or indirect impact from a known fault-rupture hazard zone as a result of this proposed project.

ii. Strong seismic ground shaking?

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

Discussion/Explanation:

Less Than Significant Impact: The County is located within a seismically active region, and the entire County could be subject to seismic ground shaking. While visitors to the Preserve could be exposed to strong seismic ground shaking during a seismic event, this would not differ from existing conditions with proposed project implementation. The proposed project would not construct new buildings or structures subject to the California Building Code or County Code, nor would the proposed project add new residents to the region. Moreover, the proposed project and the listed cumulative projects (see Section XXI) would not involve elements that would exacerbate the existing conditions of strong seismic ground shaking, and, therefore, would not result in a cumulatively significant impact. Therefore, the proposed project would not result in a potentially significant impact, or a cumulatively considerable impact, from the exposure of people or structures to potential adverse effects from strong seismic ground shaking.

iii. Seismic-related ground failure, including liquefaction?

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

Discussion/Explanation:

Less Than Significant Impact: The proposed project site is not within a "Potential Liquefaction Area" as identified in the County Guidelines for Determining Significance for Geologic Hazards (2007a). This indicates that the liquefaction potential at the site is low. In addition, the Preserve is not underlain by poor artificial fill or located within a floodplain. The proposed project does not propose structures for human occupancy that would be affected by liquefaction. Therefore, there would be a less than significant impact from the exposure of people or structures to adverse effects from a known area susceptible to ground failure, including liquefaction. In addition, because liquefaction potential at the site is low, earthquake-induced lateral spreading is not considered to be a seismic hazard at the site, and impacts would be less than significant. Although the proposed project does include ground-disturbing activities, such activities would not result in ground failure. The proposed project would not include features that would exacerbate the liquefaction potential at the proposed project site and, thus, would not result in a cumulatively considerable impact.

iv. Landslides?

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

Discussion/Explanation:

Less Than Significant Impact: A portion of the proposed project site is located within a "Landslide Susceptibility Area," or area where slopes are greater than 25 percent, as identified in the County Guidelines for Determining Significance for Geologic Hazards (2007a). Landslide Susceptibility Areas were developed based on landslide risk profiles included in the *Multi-Jurisdictional Hazard Mitigation Plan, San Diego, CA* (URS 2004). Landslide risk areas from this plan were based on data including steep slopes (greater than 25 percent); soil series data (SANDAG based on US Geological Survey [USGS] 1970s series); soil-slip susceptibility from

USGS; and Landslide Hazard Zone Maps (limited to western portion of the County) developed by the California Department of Conservation, Division of Mines and Geology. Also included within Landslide Susceptibility Areas are gabbroic soils on slopes steeper than 15 percent in grade because these soils are slide prone. However, the proposed project would not increase landslide hazards at the site. The proposed project includes constructing multi-use trail segments, which would not involve activities that would exacerbate existing landslide susceptibility conditions on the proposed project site. The proposed project would not add new slopes at a high risk for landslide susceptibility. Furthermore, the proposed project does not include the construction of structures that could experience landslide hazards.

A cumulative impact could occur if the proposed project, in combination with the cumulative projects, would include features that would exacerbate existing geological conditions, such as resource extraction, or unsafe construction on unstable, landslide-prone land. Because the proposed project and the relevant cumulative projects would comply with regulations and would not exacerbate existing conditions, there would not be a significant cumulative impact related to directly or indirectly causing potential substantial adverse effects, including the risk of loss, injury, or death involving landslides. Therefore, there would be no potentially significant impact, or cumulatively considerable impact, from the exposure of people or structures to adverse effects of landslides.

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

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

Discussion/Explanation:

Less Than Significant Impact: The Preserve consists of 14 soil types belonging to nine soil series. These include Arlington coarse sandy loam (2 to 9 percent slopes); Escondido very fine sandy loam (5 to 9 percent slopes, 9 to 15 percent slopes, eroded; and 15 to 30 percent slopes, eroded); Friant rocky fine sandy loam (9 to 30 percent slopes; and 30 to 70 percent slopes); Huerhuero loam (2 to 9 percent slopes; and 9 to 15 percent slopes, eroded); Metamorphic rock land, Olivenhain cobbly loam (9 to 30 percent slopes; and 30 to 50 percent slopes), Redding cobbly loam, dissected (15 to 50 percent slopes); Stony land; and Visalia gravelly sandy loam (2 to 5 percent slopes; Natural Resource Conservation Service 2023).The majority of the Preserve is composed of Redding cobbly loam and Friant rocky fine sandy loam. Escondido very fine sandy loam is considered highly erodible while the remaining soil types are considered moderately erodible.

Development of the proposed project includes minor grading and ground disturbance which could result in soil erosion. Compliance with the National Pollution Discharge Elimination System (NPDES) General Construction Permit may require the preparation of a Stormwater Pollution Prevention Plan (SWPPP) for the proposed project site, which would outline the Best Management Practices (BMPs) and erosion control devices that would be implemented during construction activities to prevent soil erosion and runoff from the construction site to nearby water bodies. Erosion control devices would typically include hydroseeding with a mulch and tackifying agent, fiber rolls, gravel bags, jute netting, or another device. All erosion control devices would be installed per manufacturer's recommendations for the application type. The plan would include operational BMPs to ensure sediment does not erode from the proposed project site. Please see Section X, Hydrology and Water Quality, for further discussion of the stormwater plan to be

prepared for the proposed project. Due to these factors, the proposed project would not result in substantial soil erosion or the loss of topsoil.

In addition, the proposed project would not contribute to a cumulatively considerable impact because all past, present, and future projects that involve grading or land disturbance are required to follow the requirements of the San Diego County Code of Regulations, Title 8, Zoning and Land Use Regulations, Division 7, Sections 87.414 (Drainage – Erosion Prevention) and 87.417 (Planting); Order 2001-01 (NPDES No. CAS 0108758), adopted by the San Diego Region RWQCB on February 21, 2001; County Watershed Protection, Storm Water Management, and Discharge Control Ordinance (WPO) (Ord. No. 9424); and County Storm Water Standards Manual adopted on February 20, 2002, and amended January 10, 2003 (Ordinance No. 9426). Impacts would be less than significant.

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

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

Discussion/Explanation:

Less Than Significant Impact. The proposed project involves minor soil disturbance for the construction of the proposed trail segments and staging area. The multi-use trail segments would not involve activities that would exacerbate existing landslide, lateral spreading, subsidence, or liquefaction susceptibility conditions on the proposed project site. Additionally, subsidence is most commonly caused by the removal of water, oil, natural gas, or mineral resources out of the ground by pumping, fracking, or mining activities, none of which are proposed by the proposed project. Following construction, the restored habitat conditions would not exacerbate existing landslide, lateral spreading, subsidence, or liquefaction susceptibility conditions on the proposed project site.

A cumulative impact could occur if the proposed project, in combination with the cumulative projects, would include features that would exacerbate existing geological conditions, such as resource extraction, or unsafe construction on unstable, landslide-prone land. Because the proposed project and the relevant cumulative projects would comply with regulations and would not exacerbate existing conditions, there would not be a significant cumulative impact related to directly or indirectly causing potential substantial adverse effects regarding an on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. Therefore, there would be no potentially significant impact, or cumulatively considerable impact, from the exposure of people or structures to adverse effects of landslides. For further information, refer to Section VII.a (iii–iv) above.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

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

Discussion/Explanation:

No Impact: The identified soils at the proposed project site are identified as having a low shrink swell potential that is not categorized as expansive. Additionally, the proposed project does not propose to construct structures on the site or introduce new inhabitants to the area. Therefore, these soils would not create direct or indirect substantial risks to life or property, and no impact would occur.

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

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

Discussion/Explanation:

No Impact: The proposed project does not include the installation of septic tanks or alternative wastewater disposal systems. Therefore, no impacts would occur.

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

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

Discussion/Explanation:

San Diego County has a variety of geologic environments and geologic processes that generally occur in other parts of the state, country, and the world. However, some features stand out as being unique in one way or another within the boundaries of the County. High paleontological resource sensitivity is assigned to geologic formations known to contain paleontological localities with rare, well preserved, critical fossil materials for stratigraphic or paleoenvironmental interpretation, and fossils providing important information about the paleoclimatic, paleobiological and/or evolutionary history of animal and plant groups.

Less Than Significant Impact With Mitigation Incorporated: A review of the County's Paleontological Resources Maps indicates that the Preserve is partially underlain by sensitive geologic material with a high potential for producing fossil remains. High resource sensitivity is assigned to geologic formations known to contain paleontological localities with rare, well preserved, critical fossil materials for stratigraphic or paleoenvironmental interpretation, and fossils providing important information about the paleoclimatic, paleobiological and/or evolutionary history of animal and plant groups.

Since the proposed project would include trail segment construction, minor grading and ground disturbance would be necessary to flatten and contour trail segments with the existing topography. Ground disturbance would be shallow and is not expected to excavate into the substratum, where paleontological resources would be located. However, since ground-disturbing activities are not guaranteed to avoid the substratum, the proposed project may have the potential to adversely

impact a paleontological resource. Implementation of mitigation measures **MM-PAL-1a through MM-PAL-1g**, would reduce potential impacts to a less than significant level. The proposed project would have less than significant impacts to paleontological resources with the inclusion of mitigation. A cumulative impact would occur if the listed cumulative projects (see Section XXI) would result in impacts on paleontologically or geologically significant areas that would negatively affect the integrity of potential paleontological and geologic resources. Current and future projects in the surrounding area would be evaluated under the same requirements and regulations as the proposed project, and would be required to implement project based mitigation if impacts were to be found. The proposed project would not impact a paleontological resource that would span more than one project site, and therefore cumulative impacts would not occur. Therefore, with the inclusion of mitigation measures, the proposed project would have a less than significant cumulative and project impact on paleontological resources.

MM-PAL-1a The County will retain a qualified paleontologist. A qualified paleontologist is defined as an individual having an M.S. or Ph.D. degree in paleontology or geology who is familiar with paleontological procedures and techniques, is knowledgeable in the geology and paleontology of San Diego County, and who has worked as a paleontological mitigation project supervisor in the County for at least one year.

MM-PAL-1b A qualified paleontological monitor shall be on site on a full-time basis during the original cutting of previously undisturbed deposits in areas with high paleontological resource potential and sensitivity. A qualified paleontological monitor is defined as an individual having experience in the collection and salvage of fossil materials. The paleontological monitor shall work under the direction of a qualified paleontologist. If the qualified paleontologist or paleontological monitor ascertains that observed exposures of the formations are not fossil-bearing, the qualified paleontologist shall have the authority to terminate the monitoring program.

MM-PAL-1c If fossils are discovered during monitoring, they shall be recovered by the qualified paleontologist or paleontological monitor. In most cases, fossil salvage can be completed in a short period of time, although some fossil specimens (such as a complete large mammal skeleton) may require an extended salvage period. In these instances, the paleontologist (or paleontological monitor) shall be allowed to temporarily direct, divert, or halt grading to allow recovery of fossil remains in a timely manner. Because of the potential for recovering small fossil remains, such as isolated mammal teeth, it may be necessary to set up a screen washing operation on the recovery site.

If a fossil of greater than 12 inches in any dimension, including circumference, is encountered during excavation or grading, all excavation operations in the area where the fossil was found shall be suspended immediately, the County Planning and Development Services (PDS) Permit Compliance Coordinator shall be notified, the Project Paleontologist shall assess the significance of the find and, if the fossil is significant, the Project Paleontologist shall oversee the salvage program, including salvaging, cleaning, and curating the fossil(s), and documenting the find (as outlined below).

MM-PAL-1d If any sub-surface bones or other potential fossils are found anywhere within the proposed project impact footprint by construction personnel in the absence of a qualified paleontologist or paleontological monitor, the qualified paleontologist

shall be notified immediately to assess their significance and make further recommendations.

MM-PAL-1e. Fossil remains collected during monitoring and salvage shall be cleaned, repaired, sorted, and cataloged as part of the mitigation program.

MM-PAL-1f. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, shall be deposited (as a donation) in a scientific institution with permanent paleontological collections such as the San Diego Natural History Museum. Donation of the fossils shall be accompanied by financial support from the applicant for initial specimen storage.

MM-PAL-1g: A final summary report outlining the results of the mitigation program shall be prepared by a qualified paleontologist and submitted to the County of San Diego for concurrence. This report shall include discussions of the methods used, stratigraphic section(s) exposed, fossils collected, and significance of recovered fossils.

VIII. GREENHOUSE GAS EMISSIONS – Would the project:

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

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

Discussion/Explanation:

The State of California has developed guidelines to address the significance of climate change impacts based on Appendix G of the CEQA Guidelines, which contains two significance criteria for evaluating GHG emissions of a project. CEQA Guidelines Section 15064.4 states that the "determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in Section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project."

Section 15064.4(b) further states that a lead agency should consider the following nonexclusive list of factors when assessing the significance of GHG emissions:

1. The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;

2. The extent to which project emissions exceed a threshold of significance that the lead agency determines applies to the project; and

3. The extent to which the project complies with regulations or requirements adopted to implement statewide, regional, or local plans for the reduction or mitigation for GHG emissions.

CEQA Guidelines Section 15064(h)(1) states that "the lead agency shall consider whether the cumulative impact is significant and whether the effects of the project are cumulatively considerable." A cumulative impact may be significant when the project's incremental effect, though individually limited, is cumulatively considerable.

GHGs include carbon dioxide, methane, hydrofluorocarbons, and nitrous oxide, among others. Human-induced GHG emissions are a result of energy production and consumption, and personal vehicle use, among other sources.

Less Than Significant Impact: GHG emissions associated with the proposed project would result from construction activities. Once constructed, operational emissions would primarily result from the continued use of motor vehicles by trail users driving to the Preserve to start out on the trail by foot, horse, or bike and then returning to their motor vehicle to drive to their final destination. Operational emissions would not represent a substantial increase in the number of vehicle trips of visitors accessing the Preserve. A set of project-specific implementing thresholds are included in the County's Guidelines for Determining Significance and are used to ensure the proposed project's consistency with the County's General Plan.

The County of San Diego adopted the 2018 County of San Diego Climate Action Plan (CAP) on February 14, 2018. The CAP outlined strategies and measures to reduce the County's contribution to GHG emissions and to meet the State's 2020 and 2030 emissions targets, as well as ensure progress towards the 2050 reduction goal. The CAP identifies 11 strategies and 26 measures plus numerous supporting efforts to reduce GHG emissions in the largely rural, unincorporated county as well as within County government operations (County of San Diego 2021). These strategies and measures would focus on energy efficiency, developing renewable sources of energy, improving waste recycling, and improving access to sustainable transportation. Measures relevant to the proposed project include:

- Measure T-3.4: Reduce the County's Fleet Emissions
- Measure W-1.2: Reduce Outdoor Water Use

On September 30, 2020, the County of San Diego Board of Supervisors voted to set aside the approval of the CAP because a court found a portion of the Supplemental Environmental Impact Report (EIR) was out of compliance with CEQA. The County is currently preparing a CAP Update to revise the 2018 CAP and associated EIR in response to the court's direction. In accordance with the State CEQA Guidelines, consistency with the 2018 CAP cannot be relied upon for determination of project-related GHG emissions impact significant until it is reapproved in compliance with CEQA.

Although the court ruling stuck down part of the 2018 CAP EIR, the court did not find fault with its 26 GHG reduction measures. While the 2018 CAP may not be used for the proposed project's impact significance determination, the relevant GHG reducing measures may be used to mitigate project specific GHG impacts (County of San Diego 2021).

Therefore, a screening level based on the CAPCOA report CEQA & Climate Change is being used to determine whether further analysis would be needed to examine the GHG impacts of a proposed project (CAPCOA 2008). CAPCOA developed a screening threshold of 900 metric tons (MT) of carbon dioxide equivalents (CO_2e). Direct and cumulative impacts would be potentially significant and require further analysis if the project results in emissions that exceed this threshold beyond current baseline emissions. Because the proposed project would be completed after

2020, the 900 MT CO_2e screening threshold would no longer be applicable. SB 32 sets a GHG emission reduction target of 40 percent below 1990 levels by 2030, which would equate to a screening threshold of 540 MT CO_2e.

The CalEEMod version 2022.1.1.13 was used to quantify project-generated construction emissions for the proposed project. Construction emissions would be generated by vehicle engine exhaust from off-road construction equipment, hauling trucks, and worker commuting trips. Construction assumptions included construction of the staging area, access road work, and the new proposed trail segments. The primary GHG emissions would be carbon dioxide (CO_2) from gasoline and diesel combustion. Greenhouse gas emissions would be approximately 6.9 MT of CO_2e. This would be well below the 2030 screening threshold of 540 MT CO_2e; therefore, GHG impacts from the proposed project would be less than significant. Refer to Appendix A for CalEEMod outputs for annual emissions. Due to the minimal equipment required for trail segment construction, total proposed project emissions (the sum of construction and operations) would be far below any relevant numerical threshold in the state. Furthermore, the proposed project's incremental contribution to cumulative GHG emissions is determined to not be cumulatively considerable because emissions are far below relevant numerical thresholds. Impacts would be less than significant.

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

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

Discussion/Explanation:

Less Than Significant Impact: The State passed the Global Warming Solutions Act of 2006, commonly referred to as AB 32, which set the GHG emissions reduction goal for the State of California into law. The law requires that by 2020, State emissions must be reduced to 1990 levels by reducing GHG emissions from significant sources via regulation, market mechanisms, and other actions. The State subsequently passed SB 32, which set an additional GHG emissions reduction goal for the State of California into law. The law requires that by 2030, State emissions must be reduced to 40 percent below 1990 levels by reducing GHG emissions from significant sources via regulation, market mechanisms, and other actions.

To implement State mandates to address climate change in local land use planning, local land use jurisdictions are generally preparing GHG emission inventories and reduction plans and incorporating climate change policies into local general plans to ensure development is guided by a land use plan that reduces GHG emissions. The County's General Plan incorporates various climate change goals and policies. These policies provide direction for individual development projects to reduce GHG emissions and help the County meet its GHG emission reduction targets identified in the County's CAP.

A set of project-specific implementing thresholds are included in the County's Guidelines for Determining Significance and are used to ensure the proposed project's consistency with the County's CAP and therefore the County General Plan. Regardless of CAP implementation, consistency with the CAP will help ensure consistency with other regional and statewide plans, policies, and regulations. As discussed in Section VIII.a, a screening level based on the CAPCOA report *CEQA & Climate Change* has typically been used to determine whether further analysis

would be needed to examine the GHG impacts of a proposed project (CAPCOA 2008). Direct and cumulative impacts would be potentially significant and require further analysis if the project results in emissions that exceed the threshold of 540 MT CO_2e beyond current baseline emissions. As noted in Section VIII.a above, the proposed project would generate 6.9 MT CO_2e during construction. This would be far below the 2030 screening threshold.

Implementation of the proposed project would not change the current recreational use of the Preserve, or substantially increase its current use or significantly increase vehicular traffic. The proposed project would construct the Rock and Roll Trailhead Parking (#33), which would formalize up to five parking spaces. Implementation of the PAP therefore does not propose a significant increase in parking over existing conditions, and parking along the roads is prohibited. Therefore, the PAP would not encourage a substantial increase in visitors to the Preserve and traffic would not significantly increase. Furthermore, the proposed project's incremental contribution to cumulative GHG emissions is determined to not be cumulatively considerable because emissions are far below relevant numerical thresholds. The proposed project's GHG emissions are, therefore, determined to be consistent with the CAP and General Plan which together are the most applicable plans, policies, or regulations adopted for the purpose of reducing the emissions of GHGs. Therefore, the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Impacts would be less than significant.

The proposed project's minimal incremental contribution to cumulative GHG emissions is determined to not be cumulatively considerable because GHG emissions would be approximately 3.6 MT CO_2e emissions per year, an amount far below any relevant numerical thresholds. The proposed project's GHG emissions are, therefore, determined to be consistent with the County's General Plan. Therefore, the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

IX. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, storage, use, or disposal of hazardous materials or wastes or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

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

Discussion/Explanation:

Less Than Significant Impact: The proposed project would implement changes to the existing network of trails in the Preserve and provide management directives for the ongoing maintenance of the Preserve. The use of hazardous materials (e.g., fuels, lubricants, solvents) would be required during construction of the proposed project. However, the proposed project would not result in a significant hazard to the public or environment because all storage, handling, transport, emission, and disposal of hazardous substances would be in full compliance with applicable regulations such as the Federal Resource Conservation and Recovery Act (RCRA), Department of Transportation (DOT) Hazardous Materials Regulations, and the local Certified Unified Program Agency (CUPA) regulations. These regulations provide tracking methods, standards, and procedures for the management of hazardous materials, as well as spill response measures.

Because compliance with these regulations is mandatory, construction activities are not anticipated to create a significant hazard to the public through use, transport, or disposal of hazardous materials.

Following construction, implementation of the proposed project, including new trail segments and staging areas, would not involve the routine use and storage of hazardous materials. California Government Code Section 65850.2 requires that no final certificate of occupancy or its substantial equivalent be issued unless there is verification that the owner or authorized agent has met, or is meeting, the applicable requirements of the Health and Safety Code, Division 20, Chapter 6.95, Article 2, Section 25500-25520.

Aside from the use of hazardous materials, such as fuels, for operation of vehicles and maintenance equipment, the continued operation of the Preserve as a recreational facility would not involve the routine use and storage of hazardous materials. The San Diego County Department of Environmental Health Hazardous Materials Division (DEH HMD) is the CUPA for San Diego County responsible for enforcing Chapter 6.95 of the Health and Safety Code. As the CUPA, the DEH HMD is required to regulate hazardous materials business plans and chemical inventory, hazardous waste and tiered permitting, underground storage tanks, and risk management plans. The Hazardous Materials Business Plan is required to contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of on site. The plan also contains an emergency response plan that describes the procedures for mitigating a hazardous release, procedures and equipment for minimizing the potential damage of a hazardous materials release, and provisions for immediate notification of the HMD, the Office of Emergency Services, and other emergency response personnel such as the local fire agency having jurisdiction. Implementation of the emergency response plan facilitates rapid response in the event of an accidental spill or release, thereby reducing potential adverse impacts. Furthermore, the DEH HMD is required to conduct ongoing routine inspections to ensure compliance with existing laws and regulations, to identify safety hazards that could cause or contribute to an accidental spill or release, and to suggest preventative measures to minimize the risk of a spill or release of hazardous substances.

Therefore, due to the limited use of hazardous materials during construction and the strict requirements that regulate hazardous substances outlined above, the proposed project would not result in any potentially significant, or cumulatively considerable, impacts related to the routine transport, use, and disposal of hazardous substances or related to the accidental explosion or release of hazardous substances.

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

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

Discussion/Explanation:

No Impact: The proposed project is not located within one-quarter mile of an existing or proposed school. The nearest school is Garden Road Elementary School, located approximately two miles northwest of the proposed project. Additionally, as stated in Section IX.a. above, the use of hazardous materials required during the proposed project's implementation would comply with applicable regulations. The proposed project would not involve the routine use, storage, disposal,

and/or transport of hazardous materials. Therefore, the proposed project would not result in any potentially significant impacts on an existing or proposed school.

c) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, or is otherwise known to have been subject to a release of hazardous substances and, as a result, would it create a significant hazard to the public or the environment?

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

Discussion/Explanation:

No Impact: A regulatory database search was conducted for the proposed project site using the Department of Toxic Substances Control (DTSC) Envirostor Database, compiled pursuant to Government Code Section 65962.5, and the State Water Resources Control Board's Geotracker database. The proposed project site was included in the DTSC Envirostor Database, complied pursuant to Government Code Section 65962.5. A portion of the proposed project site at Goodan Ranch was previously subject to a release of hazardous substances. The hazardous materials released at the ranch included diesel, heating oil, motor oil, and paint thinner. In addition, waste oil was stored in a small drum on site, and combustible trash was burned in a small incinerator. In total, six locations of concern were identified on the ranch: above-ground storage tanks in three locations; a waste oil drum; an incinerator; and a refuse pile. Excavation and disposal were the remediation methods employed at the site; the stockpile volume was calculated at approximately 22 cubic yards. The remaining soils were tested after remediation and the case was closed in 1992. The locations are not considered to pose a hazard to the public or the environment. The proposed project does not propose constructing trails in the immediate vicinity of these formerly hazardous sites. Therefore, the proposed project would not create a significant hazard to the public or environment or result in impacts related hazardous materials sites.

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

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

Discussion/Explanation:

Less Than Significant Impact: The proposed project site is located as close as approximately 8.6 miles from the Marine Corps Air Station (MCAS) Miramar. According to the MCAS Miramar Airport Land Use Compatibility Plan (ALUCP), a portion of the proposed project site is located within the Airport Influence Area, Review Area 2, and the Overflight Notification Area for the MCAS Miramar (ALUC 2011). The Review Area 2 is beyond Review Area 1 of the Airport Influence Area but is within the airspace overflight area. The only restrictions on land uses within Review Area 2 are height restrictions, particularly in areas of high terrain. The proposed project does not propose construction of any structures. Therefore, the proposed project would not constitute a safety hazard or excessive noise for people residing or working in the proposed project area, and would not result in a cumulatively considerable impact related to such a safety hazard.

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

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

Discussion/Explanation:

The following sections summarize the proposed project's consistency with applicable emergency response plans or emergency evacuation plans.

i. Operational area Emergency Plan and multi-jurisdictional hazard mitigation plan

Less Than Significant Impact: The County-wide Operational Area Emergency Plan is a comprehensive emergency plan that defines responsibilities, establishes an emergency organization, defines lines of communications, and is designed to be part of the statewide Standardized Emergency Management System. The Operational Area Emergency Plan provides guidance for emergency planning and requires subsequent plans to be established by each jurisdiction that has responsibilities in a disaster situation. The Multi-Jurisdictional Hazard Mitigation Plan includes an overview of the risk assessment process, identifies hazards present in the jurisdiction, hazard profiles, and vulnerability assessments. The plan also identifies goals, objectives, and actions for each jurisdiction in San Diego County, including all cities and the County unincorporated areas. The proposed project would not interfere with these plans because it would not prohibit subsequent plans from being established or prevent the goals and objectives of existing plans from being carried out. Impacts to the Operational Area Emergency Plan and Multi-Jurisdictional Hazard Mitigation Plan would be less than significant.

ii. San Diego County Nuclear Power Station Emergency Response Plan

No Impact: The nearest operating or formerly operating nuclear power station is the San Onofre Nuclear Generating Station, approximately 45 miles northwest of the proposed project. The proposed project would not interfere with the San Diego County Nuclear Power Station Emergency Response Plan due to its location and the specific requirements of the plan. The emergency plan for the San Onofre Nuclear Generating Station includes an emergency planning zone within a 10-mile radius. The proposed project is not within 10 miles of the plant and as such it is not expected to interfere with any response or evacuation.

iii. Oil Spill Contingency Element

No Impact: The proposed project would not interfere with the Oil Spill Contingency Element because the proposed project is not located along the coastal zone or coastline.

iv. Emergency Water Contingencies Annex and Energy Shortage Response Plan

No Impact: The proposed project would not interfere with the Emergency Water Contingencies Annex and Energy Shortage Response Plan because the proposed project does not propose altering major water or energy supply infrastructure, such as the California Aqueduct.

v. Dam Evacuation Plan

No Impact: The proposed project would not interfere with the Dam Evacuation Plan because the proposed project site is not located within a dam inundation zone.

Due to the proposed project's consistency with all applicable emergency response plans or emergency evacuation plans, the proposed project would not have the potential to result in cumulatively considerable impacts related to emergency planning.

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

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

Discussion/Explanation:

Less Than Significant Impact: The Preserve is within a Very High Fire Hazard Severity Zone as designated by the California Department of Forestry and Fire Protection (CAL FIRE) in the "Very High Fire Hazard Severity Zones in LRA" (CAL FIRE 2022). The Preserve has burned during previous wildfires, including the 2003 Cedar Fire, which burned the entire Preserve.

The proposed project could exacerbate existing conditions on the proposed project site by introducing people to a Very High Fire Hazard Severity Zone, which could increase the possibility of fires started from human-made sources (i.e., lighters, campfires, sparks from vehicles, etc.). However, the proposed project would include several standard operational procedures that DPR typically implements at all park facilities. These rules have been developed by the County to reduce risk of loss of property, injury, or death due to exposure to wildland fire throughout the County jurisdiction. The VMP component of the RMP provides fire management methods to prioritize public safety while meeting habitat management goals. These directives include providing suitable emergency fire access, creating and maintaining fuel modification zones, delineating fuel modification areas, maintaining fire suppression, sharing of access data with appropriate fire agencies, controlling illegal access, conducting education outreach, and reducing ignition sources. Additionally, the proposed project would comply with the rules relating to emergency access, water supply, and defensible space specified in the County Code of Regulatory Ordinances, Title 3, Division 5, Chapter 3 and Appendix II-A of the Uniform Fire Code.

The Preserve would be closed to the public during a wildfire event, and County DPR would work closely with the Lakeside, San Diego, and Poway Fire Departments, CAL FIRE, and the County Office of Emergency Services (OES) to manage potential wildfire events.

The County would post and enforce park facility regulations in accordance with the San Diego County Code of Regulatory Ordinances, Title 4, Division 1, Chapter 1. These rules include, but are not limited to the prohibition of smoking, campfires, open flames and the prohibition of fireworks, firearms, weapons, air guns, archery devices, slingshots, or explosives of any kind across, in or into a County park. These park rules would reduce potential impacts related to human-caused wildland fires along the trails.

The access roads in the Preserve are periodically managed for brush encroachment to keep them open for wildland firefighting efforts. SDG&E and San Diego County Water Authority also conduct

brush clearing to maintain their easements for access to electrical components and an underground pipeline. The brush management along these roads provides the Preserve with sufficient firebreaks to help prevent the spread of wildfires. As a County best management practice, vehicles are also equipped with a fire extinguisher to eliminate and prevent the spread of a fire if a spark were to result from fire prevention or maintenance activities. Brush management is also conducted around the Goodan Staging Area and Highway 67 Staging Area to provide emergency safety zones if needed. Additionally, the Preserve has a groundwater well which is used to fill a 10,000-gallon, above-ground storage tank near the Visitors Center. There is a hose connection adjacent to the tank for use by the Fire Department.

The Preserve staff also maintains defensible space around each of the Preserve's facilities which includes the Visitors Center, vault restrooms, volunteer pad, pump houses, and garage. Two water trailers are also available on site if needed to assist in any active fire suppression efforts. Additional best management practices in place at the Preserve include closure during wildfire events, coordination with the Fire Authority, and maintenance of fire suppression equipment such as vehicle fire extinguishers and onsite water tank, as discussed above.

The Preserve follows DPR Policy C-33 during red flag warnings and Policy C-40 during a fire event. During each of these times there is an increase in patrols around the preserve and more frequent interactions with visitors by the staff. Additionally, campfires, smoking, and open flames are never allowed and their prohibition is strictly enforced. The Preserve also has an existing Wildfire Emergency Plan, which includes the following:

- Facility contact list
    - Contains the names, responsibilities, and contact numbers of key facility contacts
- Building and Site Map
    - Evacuation map outlining route(s) and assembly area(s) for the Preserve. A copy of this map is provided to emergency responders.
    - Plan for vehicle access routes and water tank locations.
- Exit routes for the Preserve
- Personnel roster description
    - Used to take attendance at the assembly area following an evacuation of staff.
- Site evacuation team
    - Responsible for complete evacuation of, and accounting for all employees, visitors, and customers in their area of responsibility.
- Checklist for the facility evacuation coordinator
    - Ensures consistency and completeness during an emergency.
- Checklist for the site warden
    - Ensures consistency and completeness during an emergency.
- Evacuation/fire drill observation form

- Voluntary individual site evacuation plan
    - Designed to assist any employee with limitations or disabilities to evacuate in an emergency; created by the individual employee; is voluntary; and not a confidential document.
- Fire Safety Plan overview
    - Establishes procedures for identifying fire hazards and preventing fires.

Therefore, based on compliance with the County Code of Regulatory Ordinances, Title 3, Division 5, Chapter 3 and Appendix II-A of the Uniform Fire Code, the County of San Diego Fire Service conditions, and enforcement of County park rules and regulations, in conjunction with the Wildfire Emergency Plan, the potential impact related to exposure of people or structures either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires would be less than significant.

The proposed project would allow for the continued use of the property for recreation and would not introduce new uses to the Preserve. Additionally, the proposed project, as well as the past, present, and future projects, are all required to comply with the County Code of Regulatory Ordinances and the Uniform Fire Code. Therefore, the proposed project would not have a cumulatively considerable contribution to the potential cumulative impact. While implementation of the proposed project would allow people to access the Preserve, the proposed project would not introduce new structures to the area that may be exposed to wildland fires. Implementation of the proposed project would be subject to DPR's standard operational procedures and would therefore not increase wildland fire risk or expose people or structures to hazards related to wildland fires. Impacts would be less than significant.

g) Propose a use, or place residents adjacent to an existing or reasonably foreseeable use that would substantially increase current or future resident's exposure to vectors, including mosquitoes, rats or flies, which are capable of transmitting significant public health diseases or nuisances?

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

Discussion/Explanation:

Less Than Significant Impact: The proposed project would occur within the Preserve, which consists primarily of vegetated open space and may support vectors such as mosquitoes, rats, or flies. However, the proposed project does not involve or support uses that allow water to stand for a period of 72 hours (3 days) or more. Additionally, the County Vector Control program (VCP), managed by DEH, implements vector management activities to protect public health from the impacts of vector-borne diseases. DEH regularly inspects and treats as necessary, mosquito-breeding sources. Treatment of County water sources, if needed, may include biological control, such as fish, or chemical control. The proposed project would involve uses that would produce additional animal waste at the site by continuing to provide trails for equestrian day-use. Manure from the equestrian uses could attract flies or other vectors; however, the proposed project would not be designed to congregate trail users in singular locations for long periods of time. Equestrian users would be distributed throughout the Preserve's multi-use trails and would not be concentrated in a manner that would expose off-site receptors such as nearby residences to flies

or other vectors. The proposed project would continue the existing day-use of the Preserve and does not propose residences or permanent horse stalls, so it would not expose existing or future residents to vectors.

The proposed project would allow for the continued use of the Preserve for recreation and would not introduce new uses to the Preserve. Additionally, the proposed project, as well as the past, present, and future projects, are all required to comply with the County Vector Control program. Therefore, the proposed project would not have a cumulatively considerable contribution to the potential cumulative impact. Therefore, the proposed project would not substantially increase current or future residents' exposure to vectors, including mosquitoes, rats, or flies or create a cumulatively considerable impact because no uses on site would produce significant sources of vectors. Impacts would be less than significant.

X. HYDROLOGY AND WATER QUALITY – Would the project:

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

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

Discussion/Explanation:

Less Than Significant Impact: The construction of the proposed project would include activities that would disturb surface soils. During construction, exposed soils have the potential to temporarily increase the amount of sediment in runoff from the proposed project site during a storm event. In all areas where soil has been disturbed, erosion control devices would be considered. Erosion control devices would be installed to reduce erosion and sedimentation, bank stabilization, and runoff management, and may also function to facilitate revegetation efforts.

The proposed project would be required to comply with the SWRCB requirements on NPDES General Construction Permits. Compliance with the General Construction Permit would require the preparation of a SWPPP for the proposed project site, which would identify potential pollutants and outline the BMPs that would be implemented during construction activities to prevent those pollutants from entering nearby water bodies. Erosion control devices would typically include hydroseeding with a mulch and tackifying agent, fiber rolls, gravel bags, jute netting, or another device. All erosion control devices would be installed per manufacturer's recommendations for the application type. Therefore, the proposed project would not violate waste discharge requirements or substantially degrade surface or ground water quality. In addition, the proposed project would not create cumulatively considerable water quality impacts related to waste discharge because, through the permit, the proposed project would conform to Countywide watershed standards in the BMP Design Manual, derived from State regulation to address water quality concerns.

In addition, the proposed project would be covered under the County's existing regional Waste Discharge Requirement Permit. Under the regional permit the proposed project site would be required to implement site design measures and/or source control BMPs and/or treatment control BMPs to reduce potential pollutants to the maximum extent practicable from entering stormwater runoff that would be consistent with the San Diego County Jurisdictional Urban Runoff Management Program (JURMP) and Standard Urban Storm Water Mitigation Plan (SUSMP).

These measures would enable the proposed project to meet waste discharge requirements as required. Therefore, the proposed project would not violate waste discharge requirements or substantially degrade surface or ground water quality.

Finally, the proposed project's conformance to the waste discharge requirements listed above ensures the proposed project would not create cumulatively considerable water quality impacts related to waste discharge because, through the permit, the proposed project would conform to Countywide watershed standards in the JRMP and BMP Design Manual, derived from State regulation to address human health and water quality concerns. Therefore, the proposed project would not contribute to a cumulatively considerable impact on water quality from waste discharges.

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

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

Discussion/Explanation:

Less Than Significant Impact: The PAP would involve a realignment of the existing trail network. A small amount of water would be brought to the site during construction for dust control; however, the proposed project would not involve the use groundwater for irrigation, or domestic or commercial demands. In certain cases, groundwater may be used in the event of a wildland fire on the proposed project site. Discrete use of groundwater for emergency situations would not result in a substantial decrease in groundwater supplies or interfere substantially with groundwater recharge. In addition, the proposed project does not involve operations that would interfere substantially with groundwater recharge including, but not limited to, the following: the proposed project does not involve regional diversion of water to another groundwater basin or diversion or channelization of a stream course or waterway with impervious layers, such as concrete lining or culverts, for substantial distances (e.g., ¼ mile). These activities and operations can substantially affect rates of groundwater recharge. Therefore, no direct or cumulative impact on groundwater resources is anticipated.

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

i. Result in substantial erosion or siltation on- or off-site?

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

Discussion/Explanation:

Less Than Significant Impact: Implementation of management directives in the RMP and VMP would not lead to significant changes or ground disturbances that would result in substantial erosion or siltation. The PAP component of the proposed project would develop the Preserve with

additional multi-use trail segments. The trail segments would not be paved with impervious materials. As previously discussed, a SWPPP would be prepared for the proposed project site, which would contain site-specific design measures, source control, and/or treatment control BMPs to reduce potential pollutants, including sediment from erosion or siltation, to the maximum extent practicable from entering stormwater runoff. These measures would control erosion and sedimentation and satisfy waste discharge requirements as required by the Land-Use Planning for New Development and Redevelopment Component of the San Diego Municipal Permit (San Diego RWQCB Order No. R9-2013-0001), as implemented by the San Diego County JRMP and County BMP Design Manual. Erosion control devices would typically include hydroseeding with a mulch and tackifying agent, fiber rolls, gravel bags, jute netting, or another device. All erosion control devices would be installed per manufacturer's recommendations for the application type. The SWQMP would specify and describe the implementation process of all BMPs that would address equipment operation and materials management, prevent the erosion process from occurring, and prevent sedimentation in any on-site and downstream drainage swales. The Department of Public Works (DPW) would ensure that the Plan is implemented as proposed. Due to these factors, it has been found that the proposed project would not result in significantly increased erosion or sedimentation potential and would not alter drainage patterns of the site or area on- or off site. In addition, because erosion and sedimentation would be controlled within the boundaries of the proposed project, the proposed project would not contribute to a cumulatively considerable impact.

ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

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

Discussion/Explanation:

Less Than Significant Impact: The proposed project would not create or contribute significant runoff water which would exceed the capacity of stormwater drainage systems or provide substantial additional sources of polluted runoff. There are no planned stormwater drainage systems proposed by the proposed project, nor does the proposed project require such systems. Construction of the proposed project would involve construction activities, such as grading, that may temporarily alter drainage patterns. However, these are temporary activities, and construction BMPs would be implemented as part of the SWPPP required for the proposed project in order to reduce potential impacts on drainage patterns. Construction activities would not include the addition of impervious surfaces that would result in increased runoff quantities or rates. The proposed project would involve minor grading for new trail segments and a staging area which may change the localized conditions surrounding those areas. However, the proposed project trail segments would be designed to maintain the overall water flows and direction of runoff across the Study Area. The PAP does not propose grading that would substantially modify existing landforms or create significant changes in the existing drainage patterns in the proposed project area which would result in flooding on- or off site.

Therefore, the proposed project would not substantially increase impervious surfaces at the proposed project site in such a way that would substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off site. Moreover, the proposed project would not contribute to a cumulatively considerable increase in the rate or amount of runoff

because the proposed project would not substantially increase water surface elevation or runoff exiting the site, as detailed above.

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

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

Discussion/Explanation:

Less Than Significant Impact: Refer to the discussion under Section X.c.ii. The proposed project would not create or contribute significant runoff water which would exceed the capacity of stormwater drainage systems or provide substantial additional sources of polluted runoff. There are no existing or planned stormwater drainage systems proposed by the proposed project, nor does the proposed project require such systems. The proposed project would involve the construction of pervious trails and would not involve paving. Trail segments and stream crossings would be designed to facilitate existing drainage and flows similar to existing conditions. A SWPPP and BMPs would be implemented to prevent impacts to water quality and runoff during construction. Therefore, the proposed project would result in less than significant impacts related to stormwater drainage systems, and would not have the potential for cumulatively considerable impacts.

iv. Impede or redirect flood flows?

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

Discussion/Explanation:

Less Than Significant Impact: The proposed project would not impede or redirect flood flows. There are no existing or planned stormwater drainage systems proposed by the proposed project, nor does the proposed project require such systems. The proposed project would not include substantial grading or earthmoving that would impede or redirect water flow on site in the case of a flood. Trail segments and stream crossings would be designed to facilitate existing drainage and flows. Therefore, the proposed project would not include features that would result in a significant impact, or potentially cumulatively considerable impact, on flood flows.

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

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

Discussion/Explanation:

i. FLOOD

Less Than Significant Impact: Refer to the discussion under Sections X.c.i and X.c.iv. The trail segments would not be paved with impervious materials. As previously discussed, a SWPPP would be prepared for the proposed project site, which would contain site-specific design measures, source control, and/or treatment control BMPs to reduce potential pollutants, including sediment from erosion or siltation, to the maximum extent practicable from entering stormwater runoff. The proposed project would not impede or redirect flood flows. There are no existing or planned stormwater drainage systems proposed by the proposed project, nor does the proposed project require such systems. The proposed project would not include substantial grading or earthmoving that would impede or redirect water flow on site in the case of a flood.

Therefore, the proposed project would not substantially increase impervious surfaces at the proposed project site in such a way that would substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off site. Impacts would be less than significant. Therefore, the proposed project would not include features that would result in a significant impact, or potentially cumulatively considerable impact, on flooding.

ii. SEICHE

No Impact: The proposed project site is not located along the shoreline of a lake or reservoir; therefore, it could not be inundated by a seiche.

iii. TSUNAMI

No Impact: The proposed project site is located approximately 16 miles from the coast at elevations exceeding 640 feet; therefore, in the event of a tsunami, it would not be inundated.

iv. MUDFLOW

Less Than Significant Impact: Mudflow is a type of landslide. The site is located within a moderate to high landslide susceptibility zone. However, the trail segments would be constructed in a manner that would not exacerbate the existing risk of mudflows in the Preserve. Therefore, the proposed project would not include features that would result in a significant impact, or potentially cumulatively considerable impact, in regards to mudflow.

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

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

Discussion/Explanation:

Less Than Significant Impact: The San Diego County JURMP and SUSMP are the countywide water quality management plans that apply to the proposed project. As discussed under Section X.a., the proposed project would be covered under the County's existing regional Waste Discharge Requirement Permit, which would require the proposed project to implement site

design measures and BMPs to reduce or prevent runoff pollution, that would be consistent with the JURMP and the SUSMP. Therefore, the proposed project would not conflict with or obstruct implementation of the applicable water quality management plans for the region. In addition, the proposed project's conformance with the site design measures and BMPs of the required permit would ensure the proposed project would not have the potential for cumulatively considerable impacts to potentially conflict or obstruct implementation of applicable plans.

XI. LAND USE AND PLANNING -- Would the project:

a) Physically divide an established community?

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

Discussion/Explanation:

No Impact: The proposed project does not propose the introduction of new infrastructure such as major roadways or water supply systems, or utilities to the area. The proposed project would occur within the Preserve and would not interfere with, or physically divide, nearby residences. Therefore, the proposed project would not significantly disrupt or divide the established community. Impacts related to dividing an established community would not occur.

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

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

Discussion/Explanation:

Less Than Significant Impact: The proposed project is subject to the General Plan Rural Lands Regional Category and contains lands with the Open Space-Conservation (OS-C) Land Use Designation. No residential development is allowed in these areas. The General Plan establishes the OS-C Land Use Designation for large tracts of land dedicated to conservation, usually owned by an agency or jurisdiction. The OS-C Land Use Designation allows for uses including passive recreation and habitat preserves. The General Plan Land Use Element states, "Grazing and other uses or structures ancillary to the primary open space use may be permitted if they do not substantially diminish protected resources or alter the character of the area." However, the County of San Diego Department of Parks and Recreation's park facilities are exempt from the Zoning Ordinance in accordance with County Ordinance No. 10095 (San Diego County 2010). In addition, the following goals and policies of the Land Use Element are relevant to the proposed project:

Policy LU-6.7: Open Space Network: Require projects with open space to design contiguous open space areas that protect wildlife habitat and corridors; preserve scenic vistas and areas; and connect with existing or planned recreational opportunities.

The proposed project would be consistent with this open space policy because it would not diminish the existing opportunities for habitat preservation, and it would connect existing trails.

The following goals and policies established by the Lakeside Community Plan would be relevant to the proposed project:

> **Community Character Goal:** Foster development which will preserve a rural atmosphere and enhance a sense of spaciousness.
>
> **Environmental Goal:** Provide a desirable, healthy, and comfortable environment for living, while preserving Lakeside's rural atmosphere and unique resources.

Policy 2: Preserve the best natural features of the area in their natural state and avoid the creation of a totally urbanized landscape.

Policy 4: Ensure that land uses within or adjacent to recreational, natural preserve, agricultural or industrial areas are compatible with those areas.

> **Recreation Goal:** Provide a wide variety of recreational activities and facilities that will meet the needs and enrich the lives of all the residents of Lakeside.

Policy 1: Maintain a high level of recreational programs and services appropriate to Lakeside to obtain maximum benefit from parks and recreational facilities.

Policy 15: Promote a system of trails for horseback riding, bicycling, and hiking, for both transportation and recreation.

The CTMP (County 2005) reflects countywide goals to increase the access to non-motorized trails throughout the region. The Countywide Goals and Policies included in this planning document were also part of the Public Facilities Element of the General Plan. The following goals and policies are relevant to the proposed project.

> **Goal 1**: Provide a system of "non-motorized trails" (trails) that meets the needs of County residents by providing scenic and enjoyable experiences that include connections with other public facilities, such as parks, open spaces, trail systems of other jurisdictions, points of interest, and/or sites with educational or historical significance.

Policy 1.1: Continue to provide and expand the variety of trail experiences, including urban/suburban, rural, wilderness, multi-use and single use, staging areas and support facilities.

Policy 1.2: Encourage trail routes that highlight the County's recreational and educational resources, including natural, scenic, cultural, and historic resources whenever possible.

Policy 1.3: Provide a variety of linear distances for users to experience such as trails that offer long distance experiences and connect with other public trail systems, points of interest or transit facilities; and trails that offer short distance and loop experiences.

> **Goal 2**: Initiate and sustain an effective and efficient trail system, using the Regional Trails Map contained within the General Plan and a Community Trails Master Plan as the basis for future planning, coordination, implementation, and management of the trail system.

Policy 2.4: Consider long-range "connectivity" as a principal planning element for regional trails.

> **Goal 3**: Consider both public and private lands for trail implementation.

Policy 3.1: Seek opportunities to designate or construct future trails on County-owned lands, such as parks, open space preserves and/or lands within the MSCP or other lands already under public ownership or proposed for public acquisition.

> **Goal 4**: Strive to manage, operate, and maintain trails so that proper use is encouraged, and that user safety, resource conditions, the environment, and adjacent land uses are not compromised.

Policy 4.1: Coordinate the operations and maintenance of pathways with similar activities for adjacent roads and road rights-of-way.

Policy 4.5: Establish specific guidelines for trails in areas with active agricultural operations or active grazing lands that will minimize potential impacts and accommodate operational necessities through proper location, design, construction, and active management.

Policy 4.7: When locating specific trail segments, prioritize locations that avoid significant impacts to sensitive environmental resources.

Policy 4.8: Establish and designate trails, whenever feasible, that correspond to existing (non designated) trails, paths, or unpaved roadbeds that already have a disturbed tread.

Policy 4.9: Trails should be closed when conditions become unsafe or environmental resources are severely impacted. Such conditions could include soil erosion, flooding, fire hazard, environmental damage, or failure to follow an outlined management plan.

The proposed project would be consistent with the abovementioned goals and policies because the proposed project would provide passive recreation for the local and regional citizens while maintaining the habitat preserve. Finally, the County of San Diego Department of Parks and Recreation's park facilities are exempt from the Zoning Ordinance in accordance with County Ordinance No. 10095. Therefore, the proposed project would not result in a conflict with the applicable land use plans, ordinances, and policies, and would have a less than significant impact.

The past, present, and future projects in the vicinity are land use projects that do not conflict with the applicable land use policies and plans; thus, they do not result in a cumulatively considerable impact. The proposed project would not result in a potential cumulative impact related to an environmental effect due to a conflict with an applicable plan because there would not be a cumulative impact in the communities in which the cumulative projects are located (see Section XXI for a comprehensive list of the projects considered).

XII. MINERAL RESOURCES -- Would the project:

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

☐ Potentially Significant Impact	☒ Less Than Significant Impact
☐ Less Than Significant With Mitigation Incorporated	☐ No Impact

Discussion/Explanation:

Less Than Significant Impact: The lands within the Preserve have been classified by the California Department of Conservation – Division of Mines and Geology as MRZ-2 (California Department of Conservation 1996). The MRZ-2 designation is applied to lands where mineral deposits are present or where it is judged that a high likelihood for their presence exists. The proposed project site has a zoning designation of Open Space-Conservation (OS-C) and Rural Land 40 (RL-40). The proposed project site is currently a habitat preserve, and no mining operations are presently occurring on the site. The proposed project would continue the use of the Preserve for conservation and recreation purposes, and would therefore not itself prevent the Preserve from being used for mining operations in the future. Moreover, because the resources are not considered significant mineral deposits, the proposed project would not contribute to a potentially significant cumulative impact. Therefore, no loss of availability of a known mineral resource of value to the region and the residents of the State would result from proposed project implementation. Impacts would be less than significant.

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

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

Discussion/Explanation:

Less Than Significant Impact: The proposed project would involve the realignment of existing trail segments within the Preserve. No structures would be constructed, and trail segments would only require grading to the surface. The proposed project would not result in the loss of availability of locally important mineral resource(s), and there would be no potentially significant loss of availability of a known mineral resource of locally important mineral resource recovery (extraction) site delineated on a local general plan, specific plan, or other land use plan would result from the proposed project's implementation. The proposed project would not result in a loss of a known mineral resource; thus, it would not contribute to the cumulative loss of a mineral resource. Impacts would be less than significant.

XIII. NOISE -- Would the project result in:

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

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

Discussion/Explanation:

Less Than Significant With Mitigation Incorporated: The proposed project proposes realignment of multi-use trail segments that would be occupied by daytime hikers, walkers, and horseback riders. Sources of noise currently consist of vehicles from the resident and rangers working on site, maintenance equipment used for routine brush clearing and general operational

maintenance, and occasional SDG&E equipment to maintain their easement. The surrounding area supports primarily open space and is occupied by open space, parks, and very low-density residential properties.

The proposed project would not involve uses that would create permanent increases in ambient noise levels in the proposed project vicinity. Periodic maintenance of the new trail segments would be similar to the existing maintenance activities (mowing, trimming, etc.) that currently occur within the Preserve and would not involve high-intensity noise sources. All maintenance-related noise would be temporary and would only occur for a short time period at any single location.

Permanent noise sources would also include noise from trail users and the continued use of vehicles along access roads and maintenance roads. The trails would be passive uses and not open to motor vehicles. The only noise from the trails would generally be from the conversations of trail users, which would generate very low levels of noise. Vehicle noise from park rangers and visitors accessing the Preserve would be similar to existing conditions. Given the low noise levels and the distances to the closest off-site receptors, operational noise from on-site activities would not increase existing ambient noise levels. Because implementation of the proposed project is not expected to significantly increase visitors to the site as compared to existing conditions, proposed project traffic contributions to nearby roadways would be negligible. The proposed project would therefore not generate direct noise impacts on existing or planned noise-sensitive land uses. As indicated in the discussion below, the proposed project would not expose existing or planned noise-sensitive areas in the vicinity to a substantial permanent increase in noise levels that exceed the allowable limits of the County of San Diego General Plan, County of San Diego Noise Ordinance, and other applicable local, State, and Federal noise control regulations.

Temporary or periodic increases in ambient noise levels associated with the proposed project would be limited to noise from construction activity. Additionally, due to the distances between the Preserve and nearby noise-sensitive land uses, general construction noise is not expected to exceed the construction noise limits of the County of San Diego Noise Ordinance (Section 36.409), which are derived from State regulations to address human health and quality of life concerns. Construction operations would occur only during permitted hours of operation pursuant to Section 36-410. Also, it is not anticipated that the proposed project would operate construction equipment in excess of 75 decibels (dB) for more than 8 hours during a 24-hour period. Therefore, the proposed project would not result in a substantial temporary or periodic increase in ambient noise levels in the proposed project vicinity.

Within the Preserve, construction during the breeding season for coastal California gnatcatcher (March 1 to August 15) or the general avian breeding season (February 15 to September 15) would be avoided to the extent feasible. However, if construction is necessary during these time periods, noise from clearing and grading activities could result in an impact to wildlife. Noise-related impacts would be considered significant if sensitive species (such as coastal California gnatcatcher and raptors) were displaced from their nests and failed to breed. Construction activity has the potential to disturb nesting birds if conducted within 500 feet of construction impact areas. Mitigation measures **MM-BIO-2** and **MM-BIO-3** would require pre-construction surveys for nesting birds prior to construction during the breeding season. The proposed project would not result in a substantial temporary or periodic increase in ambient noise levels in the proposed project vicinity.

The proposed project would not result in cumulative noise impacts based on the evaluation of past, present, and future projects in the vicinity. It was determined that the proposed project would not have a cumulatively considerable contribution to elevated noise levels for existing or planned

noise-sensitive areas. Refer to Section XXI, Mandatory Findings of Significance, for a comprehensive list of the projects considered.

The proposed project would not expose people to potentially significant noise levels that exceed the allowable limits of the County of San Diego General Plan, County of San Diego Noise Ordinance, and other applicable standards for the following reasons:

General Plan–Noise Element

The County of San Diego General Plan, Noise Element (Tables N-1 and N-2) addresses noise-sensitive areas and requires an acoustical study be prepared for any use that may expose noise-sensitive areas Noise-sensitive areas include residences, hospitals, schools, libraries, or similar facilities as mentioned in Tables N-1 and N-2. Based on the nature of the proposed project, its implementation is not expected to expose existing or planned noise sensitive areas excessive noise levels. Therefore, the proposed project would not expose people to potentially significant noise levels that exceed the allowable limits of the County of San Diego General Plan, Noise Element.

Noise Ordinance–Section 36.404

Non-transportation noise generated by the proposed project is not expected to exceed the standards of the County of San Diego Noise Ordinance (Section 36.404) at or beyond the proposed project's property line. The site is zoned open space, which has a 1-hour average noise limit of 50 dBA. The proposed project involves the implementation of a RMP, VMP, and PAP which does not involve the permanent installation of stationary noise-generating equipment that would exceed noise limits. Routine maintenance would involve the use of equipment such as mowers or trimmers which is not expected to exceed noise limits.

Noise Ordinance–Section 36.409

The proposed project would not generate construction noise that may exceed the standards of the County of San Diego Noise Ordinance (Section 36.409). Construction operations would occur only during permitted hours of operation pursuant to Section 36.409. Also, it is not anticipated that the proposed project would operate construction equipment in excess of an average sound level of 75 dBA between the hours of 7:00 a.m. and 7:00 p.m. due to the limited use of mechanized construction equipment, the relatively small areas to be constructed, and the large distances (typically hundreds, or even thousands, of feet) to the nearest off-site sensitive receptors, depending on the location under construction.

Finally, the proposed project's conformance to the County of San Diego General Plan Noise Element and County of San Diego Noise Ordinance (Section 36-404 and 36.410) ensures the proposed project would not create cumulatively considerable noise impacts, because the proposed project would not exceed the local noise standards for noise-sensitive areas and would not exceed the applicable noise level limits at the property line or construction noise limits, derived from State regulation to address human health and quality of life concerns. Therefore, the proposed project would not contribute to a cumulatively considerable exposure of persons or generation of noise levels in excess of standards established in the local general plan, noise ordinance, and applicable standards of other agencies.

b) Generation of excessive ground borne vibration or ground borne noise levels?

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

Discussion/Explanation:

No Impact: The proposed project does not propose land uses that can be impacted by groundborne vibration or groundborne noise levels. Also, the proposed project does not propose any major, new or expanded infrastructure such as mass transit, highways or major roadways or intensive extractive industry that could generate excessive groundborne vibration or groundborne noise levels onsite or in the surrounding area.

Construction of the proposed project would not involve equipment or activities that would generate elevated vibration levels or ground borne noise levels such as a vibratory roller or pile driving, and the public's use of the proposed project site would not result in excessive ground borne vibration or ground borne noise levels. Following completion of the proposed project, the proposed project site would continue to operate as a preserve, which would not generate excessive ground borne vibration or ground borne noise levels. Therefore, the proposed project would not generate excessive ground borne vibration or ground borne noise levels on a project level.

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

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

Discussion/Explanation:

No Impact: MCAS Miramar is located adjacent to the Preserve, with the installation's airfield located approximately nine miles to the west. According to the MCAS Miramar ALUCP, the 60 dBA Community Noise Equivalent Level (CNEL) noise exposure contours for the flight operations does not extend into the proposed project site (ALUC 2011). Therefore, the proposed project would not expose people residing or working in the proposed project area to excessive airport related noise levels.

There are no new or expanded public airports projects in the vicinity that may extend the boundaries of the 60 dBA CNEL noise contour. Therefore, the proposed project would not expose people residing or working in the proposed project area to excessive airport-related noise on a project level.

XIV. POPULATION AND HOUSING -- Would the project:

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

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

Discussion/Explanation:

No Impact: The proposed project would not induce substantial population growth because it does not propose a physical or regulatory change that would remove a restriction to or encourage population growth in an area including, but limited to, the following: new or extended infrastructure or public facilities that would serve additional development; new commercial or industrial facilities; large-scale residential development; accelerated conversion of homes to commercial or multi-family use; or regulatory changes such as General Plan amendments, specific plan amendments, zone reclassifications, sewer or water annexations, or Local Agency Formation Commission (LAFCO) annexation actions. Therefore, the proposed project would not induce substantial unplanned population growth in the proposed project area, nor would it result in cumulative impacts related to unplanned population growth when considered in combination with the cumulative projects in the area.

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

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

Discussion/Explanation:

No Impact: The proposed project would be located entirely within the Preserve. The housing for volunteers for the Preserve is located within the Preserve boundaries. The proposed project would not displace the existing volunteer's residence within the Preserve. Therefore, the DPR volunteers living on the Preserve would not be displaced as part of the proposed project, and construction of replacement housing elsewhere would not be necessary. Therefore, no impact to existing people or housing would occur.

XV. PUBLIC SERVICES

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

i. Fire protection?
ii. Police protection?
iii. Schools?
iv. Parks?
v. Other public facilities?

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

Discussion/Explanation:

Less Than Significant With Mitigation Incorporated: The proposed project involves the update of the Preserve's RMP, VMP, and implementation of a PAP that would maintain existing resources, and realign and maintain trails within the Preserve. The construction of the proposed project is not necessary to maintain acceptable service ratios, response times, or other performance service ratios or objectives for any public services. The proposed project is being conducted to provide additional recreational facilities for the existing and planned population. Long-term maintenance and management of the Preserve, including biological resources, cultural resources, and trails, would be executed by DPR. Specifically, the Preserve would be part of the DPR Preserve system, and as such, would be patrolled regularly by existing DPR rangers. Because the proposed project is not growth accommodating, new or physically altered government facilities, including fire stations, police stations, schools, other park facilities, or other public facilities, would not be required. This Initial Study outlines the potential environmental impacts resulting from the proposed project. The new facilities would not result in a substantial adverse physical impact because all related impacts from the proposed recreation facilities have been mitigated to below a level of significance. Mitigation incorporated into this Initial Study include **MM-BIO-1** through **MM-BIO-13**, which would mitigate impacts on biological resources to below a significant level, **MM-CUL-1** through **MM-CUL-3**, which would reduce impacts on historical resources, archaeological resources, and Tribal Cultural Resources, and **MM-PAL-1a** through **MM-PAL-1g**. Refer to sections IV. *Biological Resources*, V. *Cultural Resources*, VII. *Geology and Soils*, and XVIII. *Tribal Cultural Resources*, for more information. This proposed project, in combination with cumulative projects in the vicinity, would not contribute to more demand on public services, and would not have the potential for cumulatively considerable adverse physical effects on the environment. The proposed project would provide more access to public parks, thus reducing overall demand on regional parks; therefore, it would not result in a cumulatively considerable impact.

XVI. RECREATION

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

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

Discussion/Explanation:

Less Than Significant Impact: Improvements to the trail system as determined by the PAP could potentially result in additional use of the TCT. However, the connecting portions of the TCT east and west of the Preserve are currently not developed. Therefore, the development of the portion of the TCT within the Preserve is not anticipated to result in substantial or accelerated deterioration of the trail, as users would be limited geographically. The proposed project also does not propose residential use would increase the use of existing neighborhood and regional parks or other recreational facilities in the vicinity. Additionally, the proposed project would not add a significant amount of new parking spaces such that the use of the Preserve would increase. Rock and Roll Trailhead Parking (#33) would formalize up to five parking spaces in an area that is currently being informally utilized for parking. Therefore, the proposed project would result in less than significant direct or cumulative impacts on recreational facilities.

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

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

Discussion/Explanation:

Less Than Significant With Mitigation Incorporated: The proposed project does not propose any residential use, including, but not limited to, a residential subdivision, mobile home park, or construction for a single-family residence that may increase the use of existing neighborhood and regional parks or other recreational facilities in the vicinity. The park facilities were designed in a sustainable manner to reduce potential physical deterioration. The proposed project includes the development of multi-use trail segments to expand public access to the Preserve. This Initial Study outlines the potential environmental impacts resulting from the proposed project. The new facilities would not result in a substantial adverse physical impact because all related impacts from the proposed recreation facilities have been mitigated to below a level of significance. Mitigation incorporated into this Initial Study include **MM-BIO-1** through **MM-BIO-13,** which would mitigate impacts on biological resources to below a significant level, **MM-CUL-1** through **MM-CUL-3**, which would reduce impacts on historical resources, archaeological resources, and Tribal Cultural Resources, and **MM-PAL-1a** through **MM-PAL-1g**. Refer to sections IV. *Biological Resources*, V. *Cultural Resources*, VII. *Geology and Soils*, and XVIII. *Tribal Cultural Resources*, for more information. As outlined in this Initial Study, the new facilities would not result in adverse physical effect on the environment because all related impacts from the proposed recreation facilities would be mitigated to a level below significance. Therefore, with the incorporation of

mitigation, the proposed project would result in less than significant direct or cumulative impacts on recreational facilities.

XVII. TRANSPORTATION -- Would the project:

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

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

Discussion/Explanation:

Less Than Significant Impact: The County of San Diego Guidelines for Determining Significance for Traffic and Transportation (Guidelines) establish measures of effectiveness for the performance of the circulation system. These Guidelines incorporate standards from the County of San Diego Public Road Standards and Mobility Element, the County of San Diego Transportation Impact Fee Program, and the Congestion Management Program.

The proposed project would not conflict with a program plan, ordinance, or policy addressing the performance of the circulation system. The PAP component of the proposed project involves the creation of new trail segments, the restoration of existing trail segments and the closure of existing trail segments. The proposed project would not close roads or access points for the proposed project site during temporary construction activities. Additionally, the proposed project would not construct any structures or introduce inhabitants to the region that would result in a permanent increase in usage of roadways or bicycle/pedestrian pathways. Therefore, the proposed project would not conflict with a program plan, ordinance or policy addressing the performance of the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Project level and cumulative impacts would be less than significant.

b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b)?

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

Discussion/Explanation:

Less Than Significant Impact: CEQA Guidelines Section 15064.3, Subdivision (b) describes specific considerations for evaluating a project's transportation impacts. This section provides specific criteria for determining significance of transportation impacts, including guidelines for evaluating land use projects and transportation projects, for performing a qualitative analysis, and for choosing an appropriate methodology.

The County of San Diego adopted additional Transportation Study Guidelines to provide additional guidance on addressing vehicle miles traveled (VMT) per requirements of SB 743 (County of San Diego 2022). There are seven CEQA screening criteria outlined in the Transportation Study Guidelines, including Projects Located in VMT Efficient Areas Based on Regional Average, Projects Located in Infill Village Areas, Small Residential and Employment Projects, Locally Serving Retail Projects, Locally Serving Public Facilities, Redevelopment

Projects with Lower Total VMT, and Affordable Housing. Locally Serving Public Facilities are facilities that serve the local community including parks, trailheads, and passive public uses.

Per the Screening Criteria outlined in the County's Transportation Study Guidelines, the proposed project meets screening criteria for VMT that demonstrate there would be a less than significant impact related to VMT and no additional VMT analysis is required. Specifically, the Preserve qualifies as a "Locally Serving Public Facility," and the proposed project, an RMP and associated VMP and PAP, would have a less than significant impact. Public facilities serving the surrounding community or public facilities that are passive use may be presumed to have a less than significant impact absent substantial evidence to the contrary (County of San Diego 2022).

In addition, implementation of the proposed project would lead to a negligible amount of additional vehicles. The Preserve is currently developed with a trail network and users are able to park in existing formal lots at the Goodan Staging Area and Sycamore Staging Area. The PAP does not propose additional access roads within the Preserve, though it proposes the construction of the Rock and Roll Trailhead Parking area (#33), which would provide up to five additional parking spaces to the Preserve in an area that is currently being informally utilized for parking. As the parking capacity of the Preserve is not significantly increasing, it is not anticipated that the amount of visitors would substantially increase at the Preserve such that VMT impacts would be significant. VMT-related impacts would be less than significant as a result of the proposed project.

Following project completion, the proposed project site would continue to operate as a Preserve, consistent with existing conditions. Since the proposed project would not result in transportation impacts, it would not conflict with the guidelines provided in CEQA Guidelines Section 15064.3, Subdivision (b). Impacts would be less than significant.

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

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

Discussion/Explanation:

No Impact: The proposed project would not alter traffic patterns or roadway design, place incompatible uses (e.g., farm equipment) on existing roadways, or create or place curves, slopes, or walls that impede adequate sight distance on a road. The proposed project would not introduce permanent structures or new uses that may cause hazards. In addition, the proposed project site would continue to operate as a Preserve, consistent with existing conditions. Therefore, the proposed project would not result in project impacts related to substantially increasing hazards due to geometric design features.

d) Result in inadequate emergency access?

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

Discussion/Explanation:

Less Than Significant Impact: The proposed project would not close roads or access points for the proposed project site. In addition, as described in Section IX, the proposed project would require a Wildfire Emergency Plan to be prepared for the proposed project site, as part of the proposed project. The Wildfire Emergency Plan would include appropriate routes for evacuation as well as fire safety procedures. Additionally, the proposed project would not interfere with the Operational Area Emergency Plan, Multi-Jurisdictional Hazard Mitigation Plan, or Dam Evacuation Plan. The proposed project includes the implementation of an updated VMP, which provides long-term fire management plan directives for fire prevention, fire suppression, and post-fire monitoring and rehabilitation. As such, impacts related to emergency access would be less than significant.

XVIII. TRIBAL CULTURAL RESOURCES -- Would the project:

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

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

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

Discussion/Explanation:

Less Than Significant With Mitigation Incorporated. Tribal Cultural Resources are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either included or determined to be eligible for inclusion in the CRHR or included in a local register of historical resources, as defined in subdivision (k) of Public Resources Code Section 5020.1.

The County initiated AB 52 consultation with registered tribes, which occurred between February 7, 2020 and May 8, 2023. Formal notification of the project was submitted to the Barona Band of Mission Indians, Campo Band of Mission Indians, Iipay Nation of Santa Ysabel, Jamul Indian Village, Kwaaymii Laguna Band, Manzanita Band of Kumeyaay Nation, Sycuan Band of the Kumeyaay Nation, San Pasqual Band of Mission Indians, and Viejas Band of Kumeyaay Indians, which are the tribes that have requested the County provide notification of projects in the tribe's area of traditional and cultural affiliation.

Five tribes (Barona Band of Mission Indians, Iipay Nation of Santa Ysabel, Jamul Indian Village, San Pasqual Band of Mission Indians, and the Viejas Band of Kumeyaay Indians) requested consultation. Barona Band of Mission Indians requested information about the watercourses located within the Preserve and inquired whether trails would be situated near them; while existing trails do travel through water features, the implementation of the PAP would not impact watercourses. The Iipay Nation of Santa Ysabel deferred all consultation to Jamul Indian Village. Jamul Indian Village inquired about clearing on the proposed trails during the implementation of the PAP and requested to receive a copy of the CEQA document. San Pasqual Band of Mission

Indians indicated that the Preserve is within the boundaries of the territory that the Tribe considers its Traditional Use Area and requested to receive additional information as the proposed project progresses. Viejas Band of Kumeyaay Indians requested that a Kumeyaay Cultural Monitor be present for ground-disturbing activities, in order to inform them of any new developments, such as inadvertent discovery of cultural artifacts, cremation sites, or human remains. While all tribes asserted that the area was culturally sensitive, no Tribal Cultural Resources within the Study Area were identified.

The proposed project would avoid impacts to known cultural resources through mitigation measure **MM-CUL-1** and would require monitoring, including Native American monitors, through mitigation measure **MM-CUL-2.** Mitigation measure **MM-CUL-3** would ensure the proper protocol to protect human remains. Therefore, through implementation of these mitigation measures, project level and cumulative impacts to Tribal Cultural Resources as defined in subdivision (k) of Public Resources Code Section 5020.1 would be less than significant.

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

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

Discussion/Explanation:

Less Than Significant With Mitigation Incorporated. AB 52 consultation with appropriate tribes was initiated between the County and each tribal contact, which occurred between February 7 and February 10, 2020. These tribes included the Barona Band of Mission Indians, Campo Band of Mission Indians, Iipay Nation of Santa Ysabel, Jamul Indian Village, Kwaaymii Laguna Band, Manzanita Band of Kumeyaay Nation, Sycuan Band of the Kumeyaay Nation, San Pasqual Band of Mission Indians, and Viejas Band of Kumeyaay Indians.

Five tribes (Barona Band of Mission Indians, Iipay Nation of Santa Ysabel, Jamul Indian Village, San Pasqual Band of Mission Indians, and the Viejas Band of Kumeyaay Indians) requested AB 52 consultation. No Tribal Cultural Resources within the Study Area were identified. A California Historical Resources Information System file search and cultural survey identified significant archaeological resources, as described in Section V, Cultural Resources. In addition, the NAHC indicated that the results of the Sacred Lands File search were positive for the Study Area.

The proposed project would avoid impacts to known cultural resources through mitigation measure **MM-CUL-1** and would require monitoring, including Native American monitors, through mitigation measure **MM-CUL-2.** Mitigation measure **MM-CUL-3** would ensure the proper protocol to protect human remains. Therefore, through implementation of these mitigation measures, project level and cumulative impacts to Tribal Cultural Resources as defined in subdivision (k) of Public Resources Code Section 5020.1 would be less than significant.

XIX. UTILITIES AND SERVICE SYSTEMS -- Would the project:

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

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

Discussion/Explanation:

Less Than Significant Impact: Implementation of the proposed project does not include construction of new or expanded facilities, which could cause significant environmental effects to water, wastewater, storm water, electric power, natural gas, or telecommunications facilities. The proposed project would not increase demand on existing utilities because it would not change the use of the recreational facility to any other uses that would demand more water or electrical use, such as residential or commercial uses. Therefore, the proposed project would not result in the environmental impacts due to the reconstruction or relocation of water, wastewater, or electrical facilities, or result in related cumulatively considerable impacts.

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

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

Discussion/Explanation:

No Impact. The proposed project includes developing a network of multi-use trail segments in the Preserve. The proposed project would require the use of minimal water during construction. Restoration activities associated with the VMP may require operational use of water for supplemental irrigation related to ongoing restoration work in the Preserve, although this use of water would be similar to existing management practices. Therefore, no impact would occur.

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

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

Discussion/Explanation:

No Impact: Portable restroom facilities would be provided for workers during construction of the proposed trail segments and staging areas. Wastewater generated at the portable restroom facilities would be minimal and not be disposed of at the proposed project site, but would be hauled away, and the waste disposed at an appropriate facility in accordance with applicable

regulations. The proposed project does not propose additional permanent restroom facilities, and visitor use of the Preserve's facilities is not expected to significantly increase due to the proposed project. Therefore, the proposed project would not interfere with any wastewater treatment provider's service capacity.

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

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

Discussion/Explanation:

Less Than Significant Impact: Implementation of the proposed project would generate minimal solid waste (e.g., litter). All solid waste facilities, including landfills, require solid waste facility permits to operate. In San Diego County, the County Department of Environmental Health, Local Enforcement Agency issues solid waste facility permits with concurrence from the California Integrated Waste Management Board (CIWMB) under the authority of the Public Resources Code (Sections 44001-44018) and California Code of Regulations Title 27, Division 2, Subdivision 1, Chapter 4 (Section 21440 et seq.). There are five permitted active landfills in San Diego County with remaining capacity. Therefore, there is sufficient existing permitted solid waste capacity to accommodate the proposed project's solid waste disposal needs. Therefore, the proposed project would not result in the environmental impacts due to the excess generation of solid waste, or result in related cumulatively considerable impacts.

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

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

Discussion/Explanation:

Less than Significant Impact: In San Diego County, the County DEH, Local Enforcement Agency issues solid waste facility permits with concurrence from the CIWMB under the authority of the Public Resources Code (Sections 44001-44018) and California Code of Regulations Title 27, Division 2, Subdivision 1, Chapter 4 (Section 21440 et seq.).

Implementation of the proposed project would generate solid waste. All solid waste facilities, including landfills, require solid waste facility permits to operate. The proposed project would deposit all solid waste at a permitted solid waste facility and, therefore, would comply with Federal, State, and local statutes and regulations related to solid waste. All cumulative projects in the region would be required to comply with the aforementioned regulations associated with solid waste facilities intended to manage and reduce solid waste disposal. Therefore, in combination with the cumulative projects, the proposed project would not result in cumulatively considerable impacts related to conflict with existing State, local, and Federal statutes and regulations.

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

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

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

Discussion/Explanation:

Less Than Significant Impact: As discussed under Section IX.e, the proposed project would not conflict with the Operational Area Emergency Plan, the Multi-Jurisdictional Hazard Mitigation Plan, the San Diego County Nuclear Power Station Emergency Response Plan, the Oil Spill Contingency Element, the Emergency Water Contingencies Annex and Energy Shortage Response Plan, or the Dam Evacuation Plan for the County of San Diego. The proposed project also would not conflict with local Community Wildfire Protection Plans, including the neighboring Eucalyptus Hills and El Capitan Community Wildfire Protection Plans, which identify areas of potential risk and provides hazard reduction priorities. The proposed project site is within a Very High Fire Hazard Severity Zone as designated by the California Department of Forestry and Fire Protection (CAL FIRE) in the "Very High Fire Hazard Severity Zones in LRA" (CAL FIRE 2022). The Preserve has burned during previous wildfires, including the 2003 Cedar Fire, which burned the entire Preserve.

The proposed project would not conflict with any of the priorities and would not conflict with mapped evacuation routes. In addition, a Wildfire Emergency Plan would be prepared for the Preserve, which would include guidance for emergency response and evacuation in the case of a wildland fire (refer to Section IX. Hazards and Hazardous Materials, for further discussion of the contents of the Wildfire Emergency Plan). Further, the VMP would implement fire management directives to address fire prevention, suppression, and monitoring and rehabilitation.

All access roads in the Preserve are periodically managed for brush encroachment to keep them open for wildland firefighting efforts. SDG&E and San Diego County Water Authority also conduct brush clearing to maintain their easements for access to electrical components and an underground pipeline. The brush management along these roads provide the Preserve with sufficient firebreaks to help prevent the spread of wildfires. As a County best practice, vehicles are also equipped with a fire extinguisher to eliminate and prevent the spread of a fire if a spark were to result from fire prevention or maintenance activities. Brush management is also conducted around the Goodan Staging Area and Highway 67 Staging Area to provide emergency safety zones if needed. The Preserve also has a groundwater well which is used to fill a 10,000-gallon, above-ground storage tank near the Visitors Center. Additionally, there is a hose connection adjacent to the tank for the Fire Department.

The staff also maintains a defensible space around each of the Preserve's facilities which includes the Visitors Center, vault restrooms, volunteer pad, pump houses, and garage. Two water trailers are also available on site if needed to assist in any active fire suppression efforts. Additional best practices in place at the Preserve include closure during wildfire events, coordination with the Fire Authority, and maintenance of fire suppression equipment such as vehicle fire extinguishers and on-site water tank.

The Preserve follows DPR Policy C-33 during red flag warnings and Policy C-40 during a fire event. During each of these times there is an increase in patrols around the preserve and more frequent interactions with visitors by the staff. Additionally, campfires, smoking, and open flames are never allowed and their prohibition is strictly enforced.

Therefore, the proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan. The proposed project would not contribute to a cumulatively considerable impact because future projects are required to comply with the County Codes and emergency evacuation plans. Potential impacts related to conflict with an adopted emergency response or emergency evacuation plan would be less than significant.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

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

Discussion/Explanation:

Less Than Significant Impact: The Preserve is located within a Very High Fire Hazard Severity Zone as designated by CAL FIRE in their *San Diego County Very High Fire Hazard Severity Zones in LRA* (CAL FIRE 2022). The conditions of the Preserve, including the climate and vegetation, make it suitable for potential wildland fires, and the Preserve has burned during wildland fire events in the past, including the 2003 Cedar Fire. The Preserve currently has a groundwater well and two water tanks located near the ranger station, which are used for fire suppression. The park road and truck trails in the southern portion of the Preserve are periodically managed for brush encroachment, in an effort to keep the roads open for wildland firefighting efforts.

The proposed project's VMP component would implement long-term management strategies to address fire prevention, suppression, and post-fire monitoring and rehabilitation. The proposed project's RMP and VMP component would maintain habitat and other natural resources within the Preserve, and the PAP component would realign trail segments for recreational use throughout the Preserve. Although some trail segments may be located in areas where previously there were none, the proposed project would not change the overall uses or conditions of the Preserve or introduce new conditions to the proposed project site that would exacerbate the existing high fire threat.

As described in Section IX.f, the County would post and enforce park facility regulations in accordance with the San Diego County Code of Regulatory Ordinances, Title 4 Public Property, Division 1. Parks and Recreation, Chapter 1. These rules include, but are not limited to the prohibition of smoking, campfires, open flames and the prohibition of fireworks, firearms, weapons, air guns, archery devices, slingshots, or explosives of any kind across, in or into a County park. These park rules would reduce potential impacts related to human-caused wildland fires along the trails.

Furthermore, as described in Section IX.f, implementation of a Wildfire Emergency Plan ensures that County staff and visitors can safely and quickly evacuate in an emergency. The purpose of the Wildfire Emergency Plan is to assist staff during an evacuation. The elements of the proposed

project would not add features to the proposed project site that would exacerbate wildfire risks. The proposed project would continue to allow the general public to access the Preserve. However, the Preserve would be closed to the public during a fire event, and would not result in the exposure of visitors, or the public outside of the Preserve, to an increased risk of exposure to pollutant concentrations from a wildfire or an uncontrolled wildfire.

Additionally, DPR would continue best management practices for fire protection, including the following:

- All maintenance vehicles must carry a fire extinguisher in case of accidental fire ignition.
- Brush encroachment along roads and truck trails will be managed.
- Two water tanks will be maintained for purposes of fire suppression.
- Grazing will be allowed for fuel management.

The proposed project would not contribute to a cumulatively considerable impact because future projects are required to comply with the County Codes. Therefore, potential impacts related to wildfire risks would be less than significant.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

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

Discussion/Explanation:

Less than Significant Impact: The proposed project would not include installation of new infrastructure, or ongoing maintenance of infrastructure that would not already occur as general maintenance at the Preserve. The proposed project's PAP component would implement a network of trails and access roads throughout the Preserve, which would also serve as fuel breaks; however the proposed project, including the VMP, does not propose specific fire prevention or suppression infrastructure that would result in impacts on the environment. Therefore, the proposed project would not include activities related to infrastructure that would result in direct or cumulatively considerable impacts on the environment.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

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

Discussion/Explanation:

Less Than Significant Impact: The proposed project site is located in a climate and topography that is prone to wildfires, and has natural habitats of vegetation that could be a fuel source for wildfires, especially during droughts or dry periods. Wildfire risk tends to be high in locations where dense vegetation occurs on a steep slope. Post-wildfire risks associated with slopes, including mudflow or landslides, could occur when the vegetation that anchors soils to the hillside has

burned, increasing the potential for mudflow or landslide in the event of heavy rains (CAL FIRE 2018).

The proposed project does not include features that would alter or exacerbate these existing conditions on the proposed project site because the proposed project would not otherwise alter the existing slopes, hills, and other landform features of the Preserve. The Preserve would continue to allow daily visitors to the Preserve, but it would not introduce new residential development. The proposed project does not propose changes to existing drainage patterns or increase surface runoff in such a way that would result in significant downslope flooding or landslides. Therefore, the proposed project would not expose people or structures to significant risk as a result of runoff, post-fire slope instability, or drainage changes that would result in direct or cumulatively considerable impacts on the environment.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE:

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

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

Discussion/Explanation:

Less Than Significant With Mitigation Incorporated. Per the instructions for evaluating environmental impacts in this Initial Study, the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory were considered in the response to each question in sections IV,V, and XVIII of this form. In addition to project-specific impacts, this evaluation considered the proposed project's potential for significant cumulative effects. Resources that have been evaluated as significant would be potentially impacted by the proposed project, particularly biological resources, cultural resources, paleontological resources, and Tribal Cultural Resources. However, mitigation has been included that clearly reduces these effects to a level below significance. This mitigation includes mitigation measures **MM-BIO-1** through **MM-BIO-13** to reduce potential impacts on sensitive species and habitats; **MM-CUL-1** through **MM-CUL-2** to avoid potential impacts on historic or buried cultural resources; **MM-CUL-3** to protect human remains, and **MM-PAL-1a** through **MM-PAL-1g** to avoid potential impacts to paleontological resources. As a result of this evaluation, there is no substantial evidence that, after mitigation, significant effects associated with this proposed project would result. Therefore, this proposed project has been determined not to meet this Mandatory Finding of Significance.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

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

Discussion/Explanation:

The following list of past, present, and future projects were considered and evaluated as part of this Initial Study:

Project Name	**Permit/Map Number**
Slaughterhouse Canyon MUP Modification/RP Amendment	PDS2020-ER-78-14-182C
Crown Castle Fisher Property Wireless Site	PDS2018-ER-98-14-001A
Slaughter House Road AT&T Mobility	PDS2012-3910-1214006
Asphalt Inc., Major Use Permit Modification	PDS2012-3399-78-083-06
Cajon Park	PDS2012-3300-72-594
Albert Castiglione Major Use Permit	PDS2012-3300-73-147
Sturckow Borrow Pit & Tree Farm MUP	PDS2011-3300-73-119
Fanita Ranch	SCH 2005061118

Less Than Significant Impact. The potential for adverse cumulative effects was considered in the response to each question in sections I through XX of this form. In addition to project-specific impacts, this evaluation considered the proposed project's potential for incremental effects that are cumulatively considerable. As a result of this evaluation, there is no substantial evidence that there are cumulative effects associated with the proposed project. Therefore, the proposed project has been determined not to meet this Mandatory Finding of Significance.

c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

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

Discussion/Explanation:

Less Than Significant Impact: In the evaluation of environmental impacts in this Initial Study, the potential for adverse direct or indirect impacts on human beings were considered in the response to certain questions in sections I. Aesthetics, III. Air Quality, VII. Geology and Soils, VIII. Greenhouse Gas, IX. Hazards and Hazardous Materials, X Hydrology and Water Quality XIII. Noise, XIV. Population and Housing, XVII. Transportation, and XX. Wildfire. As a result of this evaluation, there is no substantial evidence of adverse effects to human beings associated with this proposed project. Therefore, this proposed project has been determined not to meet this Mandatory Finding of Significance.

XXII. REFERENCES USED IN THE COMPLETION OF THE INITIAL STUDY CHECKLIST

All references to Federal, State, and local regulation are available on the Internet. For Federal regulation refer to http://www4.law.cornell.edu/uscode/. For State regulation refer to www.leginfo.ca.gov. For County regulation refer to www.amlegal.com. All other references are available upon request.

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Initial Study Appendix A

CalEEMod Output

Sycamore Canyon/Goodan Ranch Preserve Public Access Detailed Report

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6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Sycamore Canyon/Goodan Ranch Preserve Public Access
Construction Start Date	1/1/2024
Operational Year	2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.60
Precipitation (days)	40.0
Location	32.932279045296966, -116.96860312230939
County	San Diego
City	Unincorporated
Air District	San Diego County APCD
Air Basin	San Diego
TAZ	6104
EDFZ	13
Electric Utility	San Diego Gas & Electric
Gas Utility	San Diego Gas & Electric
App Version	2022.1.1.13

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

City Park	6.40	Acre	6.40	0.00	27,878	27,878	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-13	Use Low-VOC Paints for Construction

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.39	0.33	3.32	5.66	0.01	0.13	0.06	0.20	0.12	0.01	0.14	—	894	894	0.04	0.01	898
Mit.	0.39	0.33	3.32	5.66	0.01	0.13	0.06	0.20	0.12	0.01	0.14	—	894	894	0.04	0.01	898
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.02	0.02	0.15	0.26	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	0.01	—	41.7	41.7	< 0.005	< 0.005	41.9
Mit.	0.02	0.02	0.15	0.26	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	0.01	—	41.7	41.7	< 0.005	< 0.005	41.9
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	< 0.005	< 0.005	0.03	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.90	6.90	< 0.005	< 0.005	6.93
Mit.	< 0.005	< 0.005	0.03	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.90	6.90	< 0.005	< 0.005	6.93

% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.39	0.33	3.32	5.66	0.01	0.13	0.06	0.20	0.12	0.01	0.14	—	894	894	0.04	0.01	898
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.02	0.02	0.15	0.26	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	0.01	—	41.7	41.7	< 0.005	< 0.005	41.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	< 0.005	< 0.005	0.03	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.90	6.90	< 0.005	< 0.005	6.93

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.39	0.33	3.32	5.66	0.01	0.13	0.06	0.20	0.12	0.01	0.14	—	894	894	0.04	0.01	898
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2024	0.02	0.02	0.15	0.26	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	0.01	—	41.7	41.7	< 0.005	< 0.005	41.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	< 0.005	< 0.005	0.03	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.90	6.90	< 0.005	< 0.005	6.93

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41	0.00	1.41	0.14	0.00	4.95
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41	0.00	1.41	0.14	0.00	4.95
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41	0.00	1.41	0.14	0.00	4.95
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.23	0.02	0.00	0.82

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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

Area	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
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	1.41	0.00	1.41	0.14	0.00	4.95
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41	0.00	1.41	0.14	0.00	4.95
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	1.41	0.00	1.41	0.14	0.00	4.95
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41	0.00	1.41	0.14	0.00	4.95
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	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
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	1.41	0.00	1.41	0.14	0.00	4.95
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41	0.00	1.41	0.14	0.00	4.95
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	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
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.23	0.00	0.23	0.02	0.00	0.82
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.23	0.02	0.00	0.82

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	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
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	1.41	0.00	1.41	0.14	0.00	4.95
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41	0.00	1.41	0.14	0.00	4.95
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	1.41	0.00	1.41	0.14	0.00	4.95
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41	0.00	1.41	0.14	0.00	4.95
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	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
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	1.41	0.00	1.41	0.14	0.00	4.95
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41	0.00	1.41	0.14	0.00	4.95

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	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
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.23	0.00	0.23	0.02	0.00	0.82
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.23	0.02	0.00	0.82

3. Construction Emissions Details

3.1. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.36	0.30	3.29	5.34	0.01	0.13	—	0.13	0.12	—	0.12	—	826	826	0.03	0.01	829
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.02	0.01	0.15	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	38.5	38.5	< 0.005	< 0.005	38.6
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.37	6.37	< 0.005	< 0.005	6.39
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.32	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	68.5	68.5	< 0.005	< 0.005	69.4
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.22	3.22	< 0.005	< 0.005	3.27
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.53	0.53	< 0.005	< 0.005	0.54
Vendor	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
Hauling	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

3.2. Grading (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.36	0.30	3.29	5.34	0.01	0.13	—	0.13	0.12	—	0.12	—	826	826	0.03	0.01	829
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.15	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	38.5	38.5	< 0.005	< 0.005	38.6
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	0.03	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.37	6.37	< 0.005	< 0.005	6.39
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.32	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	68.5	68.5	< 0.005	< 0.005	69.4
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.22	3.22	< 0.005	< 0.005	3.27
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.53	0.53	< 0.005	< 0.005	0.54
Vendor	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
Hauling	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

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	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
Total	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	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
Total	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	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
Total	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

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	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
Total	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	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
Total	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

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	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
Total	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

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	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
Total	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	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
Total	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	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
Total	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

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	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
Total	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	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
Total	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	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
Total	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

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	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
Total	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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	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
Total	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

4.3.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	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
Total	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consume Products	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	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
Total	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

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00

4.4.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	1.41	0.00	1.41	0.14	0.00	4.95
Total	—	—	—	—	—	—	—	—	—	—	—	1.41	0.00	1.41	0.14	0.00	4.95
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

City Park	—	—	—	—	—	—	—	—	—	—	—	1.41	0.00	1.41	0.14	0.00	4.95
Total	—	—	—	—	—	—	—	—	—	—	—	1.41	0.00	1.41	0.14	0.00	4.95
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	0.23	0.00	0.23	0.02	0.00	0.82
Total	—	—	—	—	—	—	—	—	—	—	—	0.23	0.00	0.23	0.02	0.00	0.82

4.5.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	1.41	0.00	1.41	0.14	0.00	4.95
Total	—	—	—	—	—	—	—	—	—	—	—	1.41	0.00	1.41	0.14	0.00	4.95
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	1.41	0.00	1.41	0.14	0.00	4.95
Total	—	—	—	—	—	—	—	—	—	—	—	1.41	0.00	1.41	0.14	0.00	4.95
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	0.23	0.00	0.23	0.02	0.00	0.82
Total	—	—	—	—	—	—	—	—	—	—	—	0.23	0.00	0.23	0.02	0.00	0.82

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Grading	Grading	1/1/2024	1/23/2024	5.00	17.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Skid Steer Loaders	Diesel	Average	1.00	8.00	71.0	0.37

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Skid Steer Loaders	Diesel	Average	1.00	8.00	71.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Grading	—	—	—	—
Grading	Worker	7.50	12.0	LDA,LDT1,LDT2
Grading	Vendor	—	7.63	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Grading	—	—	—	—
Grading	Worker	7.50	12.0	LDA,LDT1,LDT2
Grading	Vendor	—	7.63	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Grading	0.00	0.00	0.00	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
City Park	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	589	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
—	—	—	—	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
City Park	0.00	540	0.0330	0.0040	0.00

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
City Park	0.00	540	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
City Park	0.00	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
City Park	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
City Park	2.62	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
City Park	2.62	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	18.7	annual days of extreme heat
Extreme Precipitation	4.80	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	30.4	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	0	0	0	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	1	1	1	2
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A

Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	67.0
AQ-PM	37.5
AQ-DPM	11.6
Drinking Water	63.7
Lead Risk Housing	52.3
Pesticides	0.00
Toxic Releases	23.1
Traffic	39.1
Effect Indicators	—
CleanUp Sites	23.5
Groundwater	84.0
Haz Waste Facilities/Generators	57.5
Impaired Water Bodies	94.6
Solid Waste	98.2

Sensitive Population	—
Asthma	38.1
Cardio-vascular	37.6
Low Birth Weights	70.0
Socioeconomic Factor Indicators	—
Education	18.8
Housing	3.76
Linguistic	3.74
Poverty	35.9
Unemployment	23.8

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	87.4117798
Employed	70.02438085
Median HI	74.09213397
Education	—
Bachelor's or higher	60.45168741
High school enrollment	100
Preschool enrollment	75.20852047
Transportation	—
Auto Access	98.98626973
Active commuting	1.039394328
Social	—
2-parent households	29.6419864

Voting	88.05338124
Neighborhood	—
Alcohol availability	65.01988964
Park access	5.671756705
Retail density	10.9842166
Supermarket access	15.20595406
Tree canopy	41.25497241
Housing	—
Homeownership	80.43115617
Housing habitability	88.27152573
Low-inc homeowner severe housing cost burden	87.37328372
Low-inc renter severe housing cost burden	67.17567047
Uncrowded housing	77.4541255
Health Outcomes	—
Insured adults	89.88836135
Arthritis	0.0
Asthma ER Admissions	52.0
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	39.3
Cognitively Disabled	24.2
Physically Disabled	33.4
Heart Attack ER Admissions	43.0

Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	79.0
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	28.7
SLR Inundation Area	0.0
Children	14.1
Elderly	29.9
English Speaking	98.1
Foreign-born	4.2
Outdoor Workers	50.3
Climate Change Adaptive Capacity	—
Impervious Surface Cover	86.8
Traffic Density	45.6
Traffic Access	23.0
Other Indices	—
Hardship	21.9
Other Decision Support	—
2016 Voting	87.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	38.0
Healthy Places Index Score for Project Location (b)	75.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Project Details	Based on input information
Construction: Construction Phases	changed to match inputs
Construction: Off-Road Equipment	Based On inputs
Operations: Vehicle Data	Based on inputs
Operations: Consumer Products	based on inputs
Operations: Water and Waste Water	based on inputs
Operations: Solid Waste	based on inputs
Operations: Refrigerants	based on inputs

Initial Study Appendix B

Biological Resources Technical Report

HELIX Environmental Planning

Sycamore Canyon/Goodan Ranch County Preserve Public Access Plan

Biological Resources Technical Report

July 2023 | 00187.00006.005

Prepared for:

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ACRONYMS AND ABBREVIATIONS

ADA	Americans with Disabilities Act
AMSL	above mean sea level
BGEPA	Bald and Golden Eagle Protection Act
BMO	Biological Mitigation Ordinance
BRCA	Biological Resource Core Area
Cal-IPC	California Invasive Plant Council
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFG Code	California Fish and Game Code
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	County of San Diego
CRPR	California Rare Plant Rank
CTMP	Community Trails Master Plan
CWA	Clean Water Act
DPR	County of San Diego Department of Parks & Recreation
EPA	Environmental Protection Agency
FESA	Federal Endangered Species Act
ft	feet
GIS	Geographic Information System
GPS	Global Positioning System
HCP	Habitat Conservation Plan
HELIX	HELIX Environmental Planning, Inc.
MBTA	Migratory Bird Treaty Act
MCAS	Marine Corps Air Station
MSCP	Multiple Species Conservation Program
NCCP	Natural Communities Conservation Planning
NPPA	Native Plant Protection Act
NRCS	Natural Resource Conservation Service
NWI	National Wetland Inventory
OHWM	Ordinary High Water Mark

ACRONYMS AND ABBREVIATIONS (cont.)

PAMA	Pre-Approved Mitigation Area
PAP	Public Access Plan
PBF	Physical or Biological Feature
Preserve	Sycamore Canyon/Goodan Ranch County Preserve
proposed project	Sycamore Canyon/Goodan Ranch County Preserve Public Access Plan
QCB	Quino checkerspot butterfly
RMP	Resource Management Plan
RPO	Resource Protection Ordinance
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SanGIS	San Diego Geographic Information Source
SDG&E	San Diego Gas & Electric
SR	State Route
SSC	Species of Special Concern
TCT	Trans County Trail
TOB	top-of-bank
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VMP	Vegetation Management Plan
WL	Watch List

SUMMARY

At the request of the County of San Diego (County) Department of Parks and Recreation (DPR), HELIX Environmental Planning, Inc. (HELIX) prepared this Biological Resources Technical Report for the Public Access Plan (PAP) component of the update of the Sycamore Canyon and Goodan Ranch County Preserve 2013 Resources Management Plan (proposed project; RMP), which is proposed in the Lakeside Community Planning Area of the unincorporated San Diego County, California. The project proposes to implement the PAP component of the updated Sycamore Canyon/Goodan Ranch County Preserve RMP, which upon completion, would include 35 trail segments totaling approximately 15 miles of trail segments dedicated to non-motorized multi-use routes for hikers, mountain bikers, e-bikes, and horseback riders. The PAP would also maintain 6.61 miles of existing access roads and 7.24 miles of potential closures of existing trail segments.

In preparing this report, HELIX established a Study Area encompassing the entirety of the Preserve, and a survey area encompassing the existing and proposed trail segments and a buffer around each segment within the Preserve boundary. The purpose of this report is to document the existing biological conditions within the Study Area and survey area and analyze the PAP component of the proposed project's potential impacts to sensitive biological resources with respect to local, state, and federal policy. This report provides the biological resources technical documentation necessary for review under the California Environmental Quality Act (CEQA) by DPR.

There are no impacts from the PAP component of the proposed project outside of the survey area.

HELIX conducted vegetation mapping, species habitat assessment, jurisdictional delineation, rare plant survey, and Hermes copper butterfly (*Lycaena hermes*) survey and habitat assessment within the survey area during the period of January 2019 through July 2022. In total, eight biological surveys were completed in 2019, four were completed in 2020, and five were completed in 2022 in addition to baseline biological surveys of the Preserve conducted in the following years: Sycamore Canyon Preserve in 2008 and 2012, the 2015 Northern Addition and 2015 Southern Addition in 2016, the Southern Parcel Addition in 2019, the San Vicente Connector Parcels Addition in 2019. Baseline surveys have not been conducted for the Southern Gap Parcels Addition. The survey area supports 14 vegetation communities/habitat types, including 12 sensitive vegetation types: scrub oak chaparral, southern riparian forest, southern coast live oak riparian forest, southern riparian woodland, unvegetated channel, dense coast live oak woodland, open coast live oak woodland, Diegan coastal sage scrub, coastal sage – chaparral transition, southern mixed chaparral, chamise chaparral, and non-native grassland. The remaining two vegetation types/habitat types are not considered sensitive: disturbed habitat and urban/developed.

Five special-status plant species were confirmed as occurring within the Study Area during the 2019-2022 surveys: San Diego sunflower (*Bahiopsis laciniata*), variegated dudleya (*Dudleya variegata*), willowy monardella (*Monardella viminea*), golden-rayed pentachaeta (*Pentachaeta aurea* ssp. *aurea*), and ashy spike-moss (*Selaginella cinerascens*). Additionally, 11 other special-status plant species have been documented within or adjacent to the Study Area during previous surveys for the Preserve. The proposed project would impact relatively low numbers of San Diego sunflower and ashy spike-moss. These impacts are considered less than significant because these species occur within similar habitat adjacent to the Study Area and are widespread throughout the South County Multiple Species Conservation Program (MSCP) Subarea. Impacts to San Diego thorn-mint (*Acanthomintha ilicifolia*) are

considered significant and would be mitigated to less than significant levels. No impacts are anticipated to other special-status plant species. Proposed project impacts have been sited and designed to avoid oak trees, and no impacts to oak trees would occur.

A total of four special-status animal species were detected on or within 500 feet of the survey area during the 2019-2022 surveys: Quino checkerspot butterfly (*Euphydryas editha quino*; QCB), San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*), mule deer (*Odocoileus hemionus*), and coastal California gnatcatcher (*Polioptila californica californica*). Additionally, 40 other special-status animal species have been documented within or adjacent to the Study Area during previous surveys for the Preserve. Impacts to QCB, coastal California gnatcatcher, southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), Bell's sage sparrow (*Amphispiza belli belli*), turkey vulture (*Cathartes aura*), northern harrier (*Circus cyaneus*), red-shouldered hawk (*Buteo lineatus*), white-tailed kite (*Elanus leucurus*), and western spadefoot toad (*Spea hammondii*) would be mitigated to less than significant levels. Impacts to the other special-status animal species listed above would be less than significant.

The survey area supports multiple unnamed ephemeral drainage features. These features would qualify as non-wetland waters of the U.S. subject to the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the federal Clean Water Act (CWA); non-wetland waters of the State subject to the regulatory jurisdiction of the Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the CWA; and riparian-vegetated and unvegetated streambed subject to the regulatory jurisdiction of the California Department of Fish and Wildlife (CDFW) pursuant to Sections 1600 et seq. of California Fish and Game Code (CFG Code). Trail segments would not impact jurisdictional features because the at-grade crossings would not grade, develop, or alter the substrate of the features, and would not introduce or use mechanized earth-moving equipment as part of construction. Any loose soil kicked up from walking, riding, or bicycling across the streambeds that cross trail segments would not constitute a discharge of fill material or an impact on jurisdictional non-wetland waters. No impacts would occur to jurisdictional features.

The proposed project site occurs within the boundaries of the adopted South County MSCP Subarea Plan, within the Metro Lakeside-Jamul Segment. Development has been specifically planned to minimize impacts to sensitive habitats and sensitive species by reducing trail segment widths and rerouting trail segments. With the incorporation of the proposed mitigation measures, the proposed project would be consistent with the South County MSCP Subarea Plan and Biological Mitigation Ordinance (BMO). The proposed project is exempt from the BMO as it is a public project determined to be essential by the County that meets the criteria identified in the BMO Section 86.503(a)(8) to qualify it for exemption. The proposed mitigation measures would reduce Project-specific significant effects on biological resources to less than significant and ensure that the proposed project does not make a "cumulatively considerable" contribution to any cumulative impact.

While the 107.8-acre survey area consists of 5.3 acres of sensitive habitat that could potentially be impacted, the survey area is between 20 and 100 feet wide, and the actual trail segments within the survey area would be a maximum of 12 feet wide for existing trails and a maximum of 8 feet wide for proposed trail segments; therefore, the actual permanent impacts within the survey area would be less than 5.3 acres of sensitive habitat.

1.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

At the request of the County of San Diego (County) Department of Parks and Recreation (DPR), HELIX Environmental Planning, Inc. (HELIX) completed this Biological Resources Technical Report for the Public Access Plan (PAP) component of the update of the Sycamore Canyon/Goodan Ranch County Preserve 2013 Resources Management Plan (County 2013; RMP; proposed project). The purpose of this report is to document the existing biological conditions, provide an analysis of potential impacts to sensitive biological resources in relation to the implementation of the PAP component of the proposed project with respect to local, state, and federal policy, and propose measures to avoid, minimize, and/or propose mitigation to offset potential significant impacts of the PAP component of the proposed project on sensitive biological resources. This report provides the biological resource technical documentation necessary for review under the California Environmental Quality Act (CEQA).

1.2 PROJECT LOCATION AND DESCRIPTION

1.2.1 Project Location

The proposed project is located within the 2,847[1]-acre Sycamore Canyon/Goodan Ranch County Preserve (Preserve) that is within the Lakeside Community Planning Area of the unincorporated County, to the northeast of the Marine Corps Air Station (MCAS) Miramar, southeast of the City of Poway, west of State Route (SR-) 67, and approximately two miles north of the City of Santee (Figure 1, *Regional Location*). The Preserve is owned by the County DPR and DPR has added several properties to the Preserve over the last 20 years. These include the Sycamore South and Sycamore North (formerly known as Hagey) properties in 2010-2011; the Southern Parcel in 2013; the 2015 Northern Addition (formerly known as Wu) in 2015, the 2015 Southern Addition (formerly known as Cielo); the San Vicente Connector Parcels, which are east of SR-67, between 2003 and 2018; and the Southern Gap parcels in 2019 and 2020. As new additions to the Preserve, these properties are not currently open to the public, and do not include formalized trails. Based on San Diego Geographic Information Source (SanGIS) parcel data, the total Preserve acreage is approximately 2,994 acres. However, the official Preserve acreage is 2,847, and the size discrepancy is due to the method in which the County reports acreages for conserved lands, using both Assessor and GIS acreages. Assessor's acreage is the formal unit of measurement the County utilizes internally for real estate acquisitions, accounting, and reporting. However, Geographic Information Systems (GIS) acreage is calculated using data provided by SanGIS. Assessor's and GIS acreage totals can differ as records of the legal acreage of parcels are plotted on paper and then converted into GIS. For consistency, SanGIS data is used in this document when calculating acreage for the Preserve, such as land use, habitat, or vegetation areas, within the Preserve.

The Preserve is located in the U.S. Geological Survey (USGS) 7.5-minute San Vicente Reservoir Quadrangle and within Township 14 South, Range 1 West, Sections 14, 15, 16, 21, 22, 23, 25, 26, 27, 28, 33, 34, and 35 and Township 15 South, Range 1 West, Sections 2, 3 and 4 (Figure 2, *USGS Topography*). In preparing this report, HELIX established a Study Area encompassing the entirety of the Preserve, and a survey area encompassing the proposed trail segments and a buffer around each segment within the Preserve boundary. The proposed project survey area includes approximately 3.78 miles of new proposed trails, 0.99 mile of potential future trail connections, 4.76 miles of formalization of trails on existing disturbed areas, 5.56 miles of existing formal trails, totaling 15.09 miles; 6.61 miles of existing

access roads; and 7.24 miles of potential closures of existing trails that traverse the entirety of the Preserve (Figure 3, *Aerial Vicinity*), and includes a survey buffer of a 20 to 100 feet (ft) width that totals approximately 108 acres. The Preserve encompasses the following Assessor's Parcel Numbers: 323-111-04; 324-040-41; 324-040-42; 324-040-46; 324-040-50; 324-041-01; 324-041-02; 324-050-28; 325-020-01; 325-020-03; 325-060-01; 325-060-02; 325-060-03; 325-060-08; 325-060-09; 325-060-14; 325-060-15; 325-060-16; 325-060-25; 326-021-02; 326-050-18; 326- 070-01; 325-060-04; 325-060-05; 325-060-06; 325-060-07; 325-060-10; 325-060-11; 325-060-12; 325-060-17; 325-060-18; 325-060-19; 325-060-20; 325-060-21; 325- 060-22, 325-060-23; 325-060-24; 324-040-25; 324-040-26; 32424-040-27; 324-040-28; 324-040-31; 324-040-32; 324-011-15; 324-070-29; 324-040-07; 324-040-08; 374-030-01; 324-050-05; 324-051-04; 324-051-05; 326-020-23; 326-030-06; and 326-020-07. The Preserve is located approximately 16 miles inland from the Pacific coast and is not located in the Coastal Zone.

The Preserve occurs within the Central Poway/San Vicente Reservoir/North Poway Biological Resource Core Area (BRCA), as identified in the Final Multiple Species Conservation Program (MSCP) Plan (County 1998). The Preserve is located on unincorporated lands within the Metro-Lakeside-Jamul segment of the South County MSCP Subarea Plan (herein referred to as Subarea Plan; Figure 4, *MSCP Designations*) and adjacent to areas designated by the City of San Diego MSCP Subarea Plan as Multi-Habitat Planning Area. Within the Subarea Plan subregion, the Preserve occurs within areas identified as Pre-Approved Mitigation Area (PAMA; Figure 4). Sycamore Canyon Preserve is fully owned and managed by the County DPR. Goodan Ranch Preserve is owned jointly by DPR, California Department of Fish and Wildlife (CDFW), the City of Poway, and the City of Santee. DPR is identified as responsible for the management of the properties in coordination with all parties through a Joint Powers Agreement.

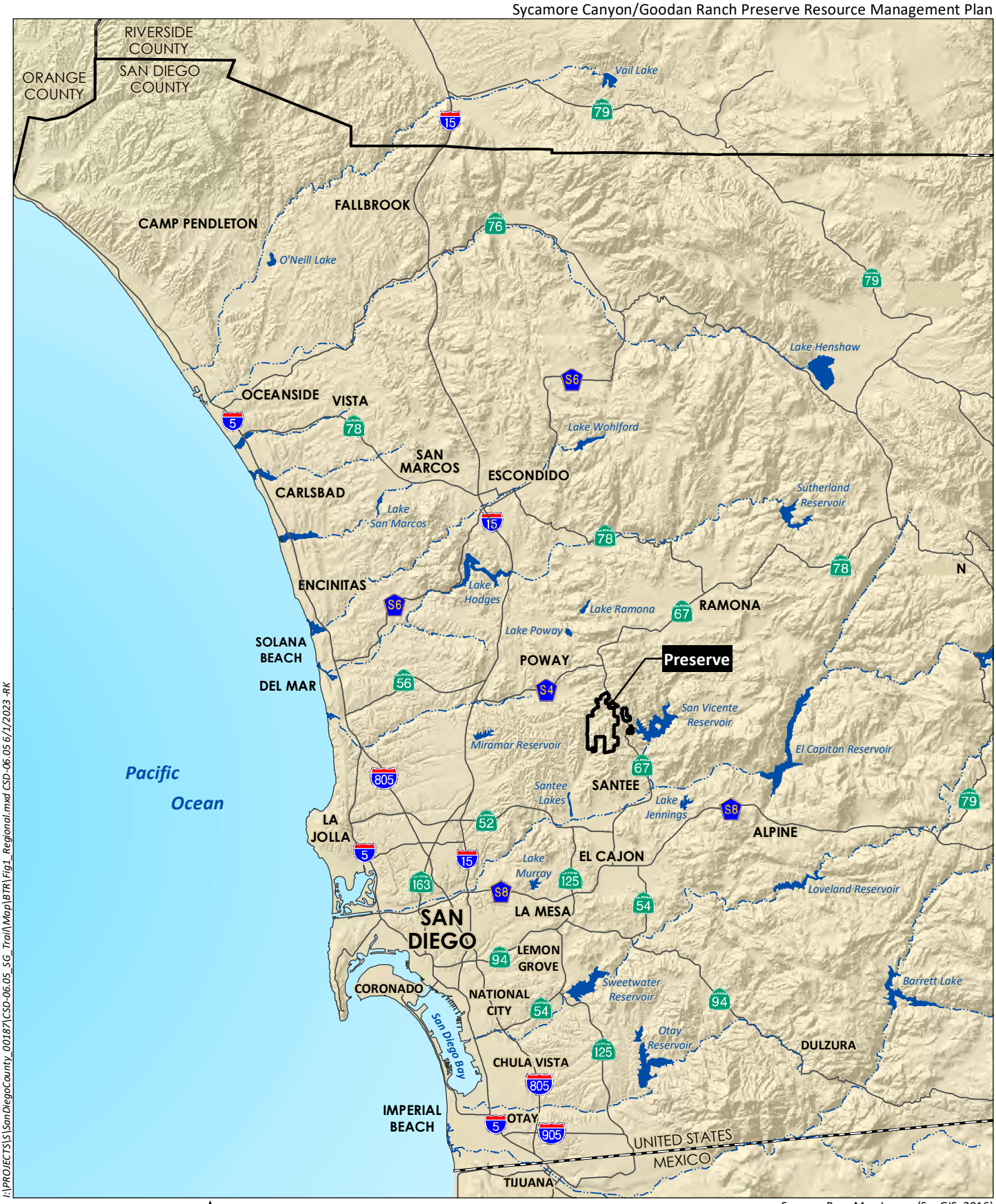
1.2.2 Project Description

This Biological Resources Technical Report is prepared to support the implementation of and analyze impacts associated with the proposed project.

The proposed project involves an update of the County's 2013 RMP (County 2013) for the Preserve. The RMP serves as a guidance document to manage and preserve the biological and cultural resources within the Preserve while balancing public access. The RMP provides Management Directives pursuant to the Subarea Plan, Framework Management Plan, and Implementing Agreement, which specify that the County is responsible for managing lands that it owns or acquires within the MSCP Preserve System.

The proposed project also includes an update of the Preserve's Vegetation Management Plan (VMP) and a PAP in support of the RMP. The RMP is a guidance document to manage and preserve the biological and cultural resources within the Preserve and is supported by the VMP and PAP. The VMP provides recommendations for invasive non-native plant species management, habitat restoration, and fire management. The PAP serves as the planning document for the Preserve's multi-use trail system. Proposed activities under the PAP include the retention of existing trails, rerouting or modifications to existing trails, the formal addition of new trails, and restoration of some informal trails or existing impacted areas that are not part of the formal trail system.

The Preserve currently contains publicly accessible multi-use trails and access roads, a ranger station, the Goodan Ranch Staging Area and Rock and Roll Trailhead Parking (#33), the 67 Staging Area, restrooms, and the Sycamore Canyon/Goodan Ranch Visitors Center (Visitors Center). The Visitors Center is home to demonstration and exhibit rooms.



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Source: Base Map Layers (SanGIS, 2016)

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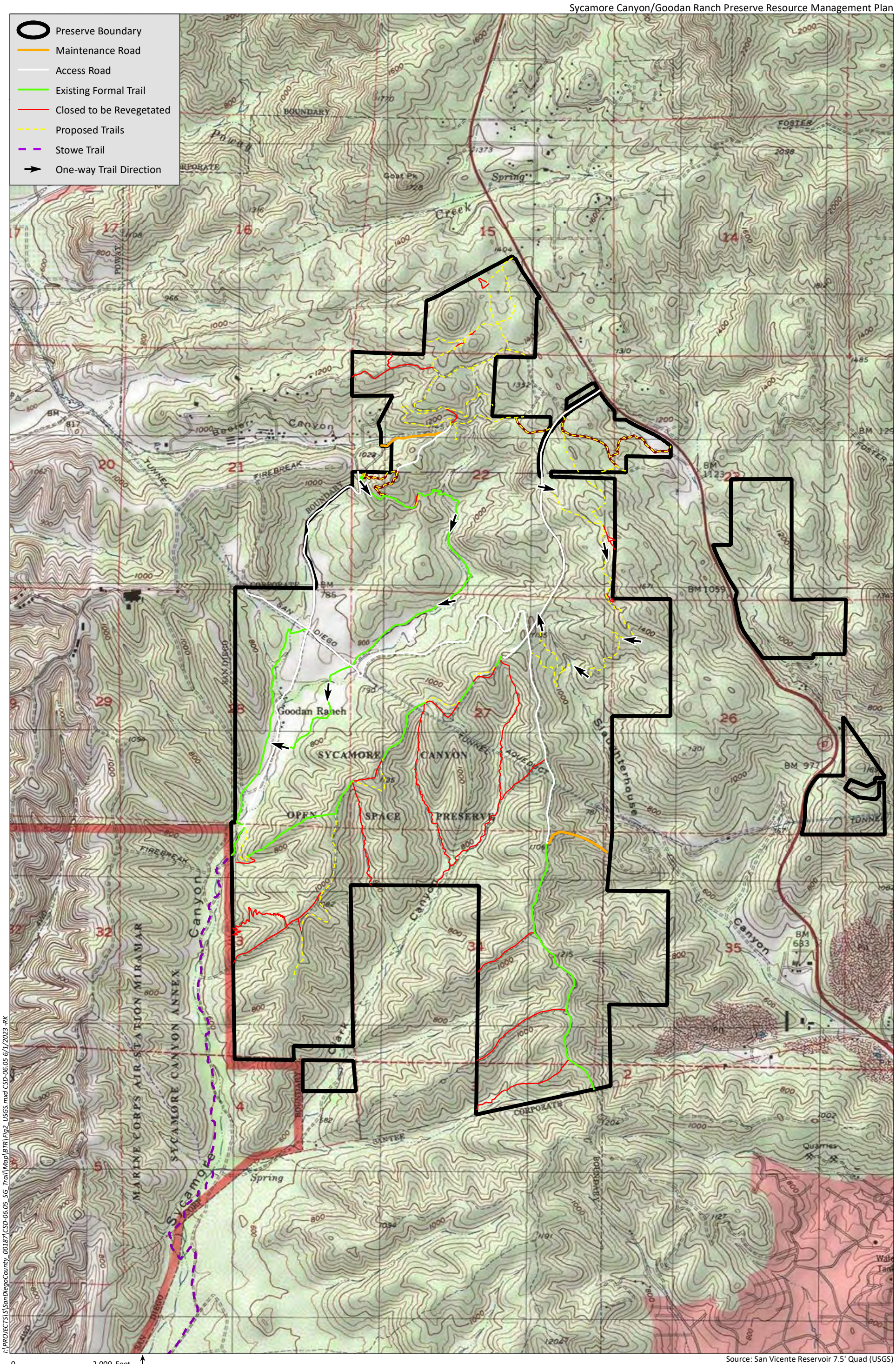
Regional Location

Figure 1



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Source: San Vicente Reservoir 7.5' Quad (USGS)

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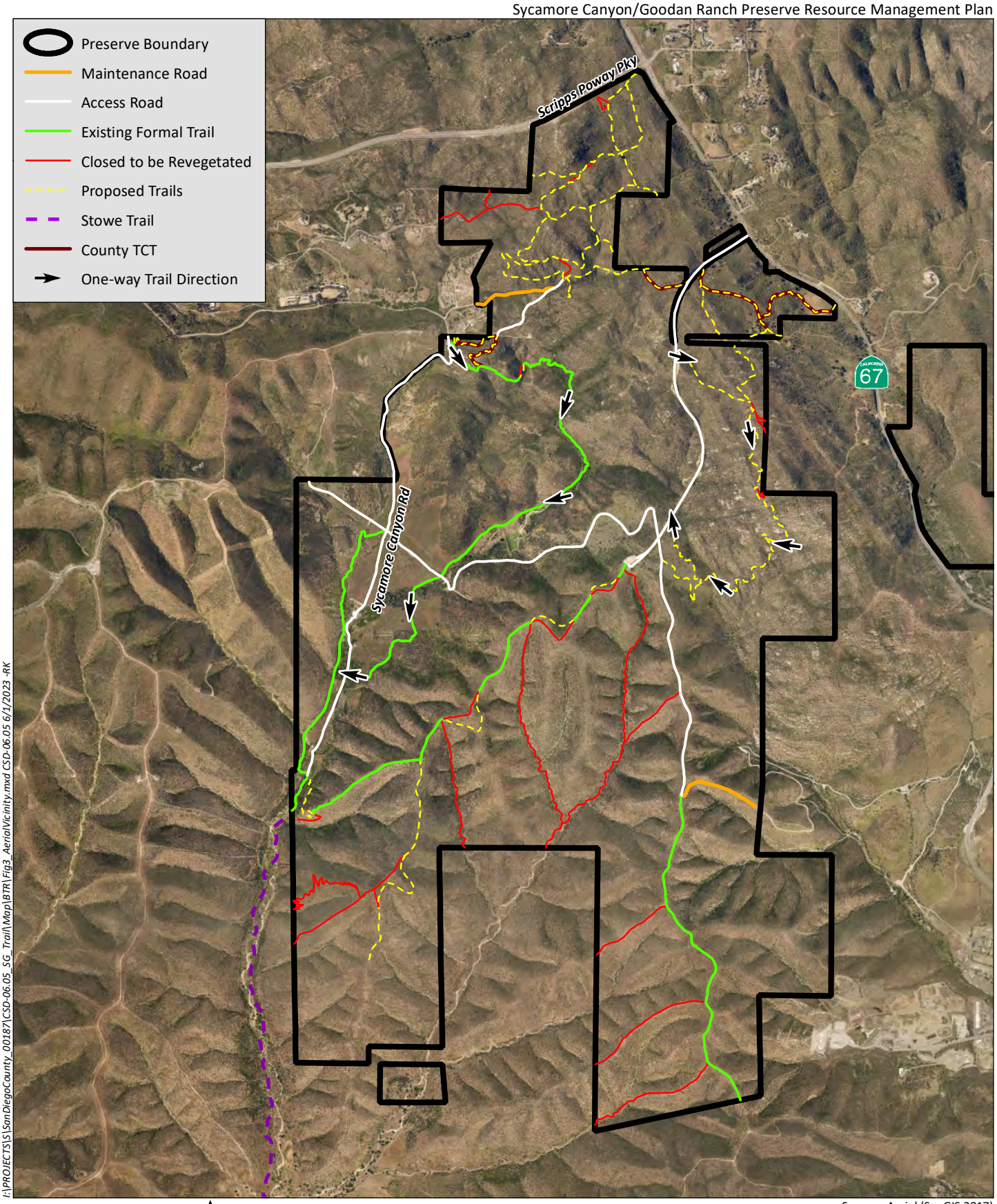
USGS Topography

Figure 2



Source: Aerial (SanGIS 2017)

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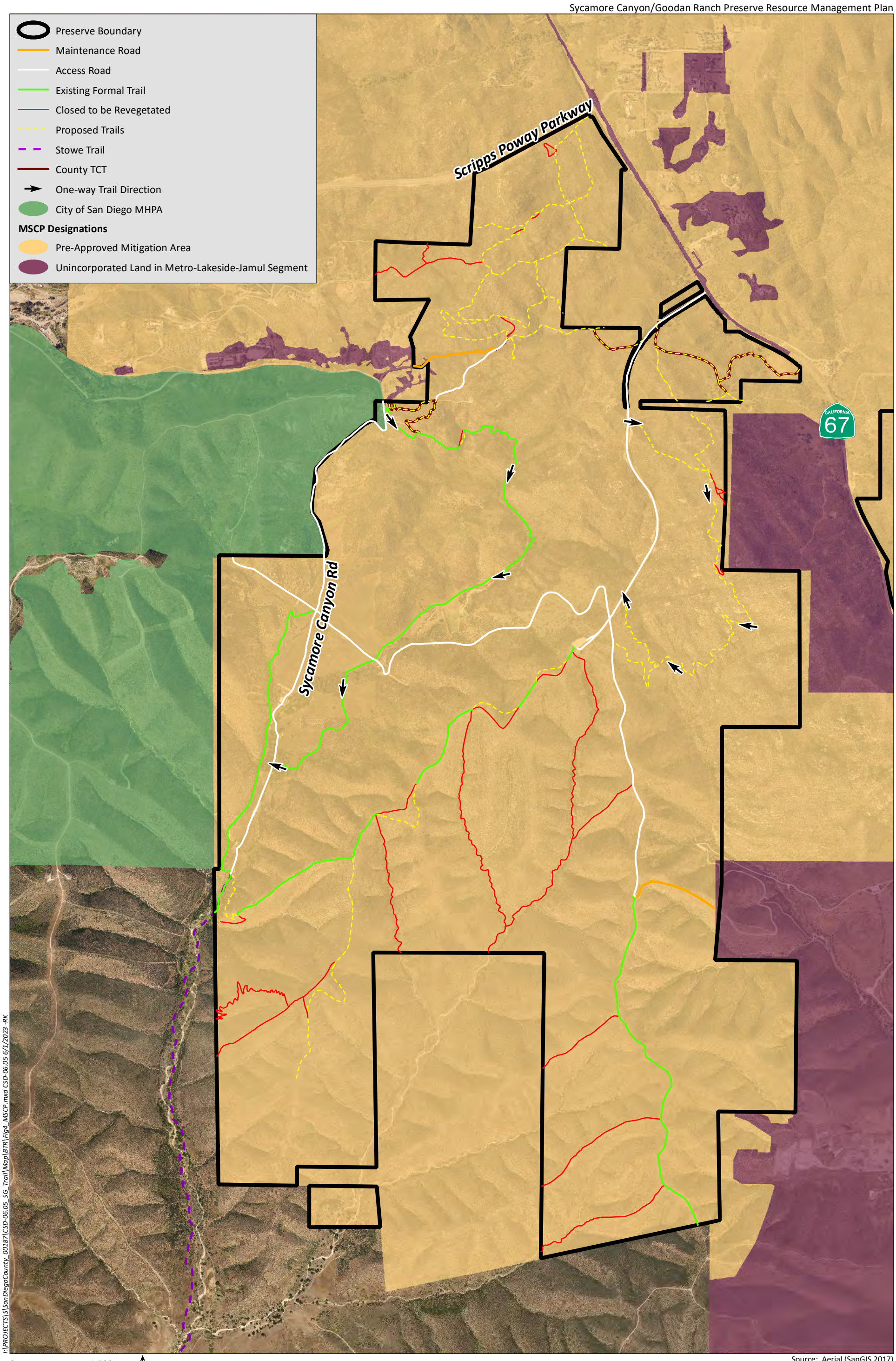
Aerial Vicinity

Figure 3



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0 1,500 Feet

Source: Aerial (SanGIS 2017)

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MSCP Designations

Figure 4

The County DPR has added several properties to the Preserve over the last 20 years. These include the Sycamore South and Sycamore North (formerly known as Hagey) properties in 2010 and 2011; the Southern Parcel in 2013; the 2015 Northern Addition (formerly known as Wu) in 2015, the 2015 Southern Addition (formerly known as Cielo) in 2015; the San Vicente Connector parcels east of SR-67 between 2003 and 2018; and the Southern Gap parcels in 2019 and 2020. As new additions to the Preserve, these properties are not currently open to the public, and do not include formalized trails.

As detailed in the PAP (RICK Engineering Company 2023), a multi-year effort involving technical analysis and stakeholder outreach was conducted by the County to evaluate existing and potential future public access within the Preserve. The PAP evaluates areas both open and not currently open for public access, including an evaluation of potential future opportunities for public access. The PAP supports the goals and policies outlined in the Community Trails Master Plan (CTMP; County 2005), which includes objectives, policies, goals, implementation strategies, and guidelines for the management and expansion of the recreational trail network throughout the County. In addition, the PAP supports the County's Subarea Plan by allowing for passive recreational uses (trails) within areas and in a manner that does not significantly impact natural resources within the Preserve.

The proposed project's full Study Area includes the entire Preserve. To assess the effects of the implementation of the proposed project's PAP trail network, a survey area totaling approximately 108 acres has been identified. This survey area includes a 20- to 100-foot buffer for approximately 29 miles of existing formal trails, existing informal trails, and proposed trails and connections that traverse the entirety of the Preserve. Implementation of the proposed project's PAP component would result in approximately 15 miles of trails (including both existing and new trails) dedicated to multi-use routes for hikers, mountain bikers, e-bikers, and horseback riders. The PAP would also maintain existing access roads within the Preserve. The proposed project would include the retention of existing trails, rerouting or modifications to existing trails, the formal addition of new trails, and restoration of some informal trails or existing impacted areas that are not part of the formal trail system.

Specifically, the PAP would provide approximately 3.78 miles of new proposed trails or trail segments, 0.99 mile of potential future trail connections, 4.76 miles of formalization of trails or trail segments on existing disturbed areas, and 5.56 miles of existing formal trails. The formal trail network would therefore increase to 15.09 miles and provide trails dedicated to multi-use routes for hikers, mountain bikers, e-bikers, and horseback riders. The PAP would also maintain 6.61 miles of existing access roads and would plan to close 7.24 miles of existing trails, including informal trails.

The PAP proposes preferred trail routes within the Preserve based on constraints to trails and access points, opportunity destinations, and scenic experiences and routes. Recommendations for trail closures or trail re-routes throughout the Preserve are also provided in the PAP. Although the proposed project survey area includes a 20- to 100-foot survey buffer to provide a large trail corridor and provide flexibility for trail implementation, new trails or trail segments throughout the Preserve would be no more than eight feet wide. While the maximum width of existing trails is 12 feet, the maximum width of proposed trails or trail segments is eight feet, and surface material would consist of decomposed granite/binding agent or suitable native soil; therefore, impacts explained in this report that are expressed in terms of acreage represent the maximum impact that could occur, as some sections of trail may be narrower than the maximum widths.

The proposed trail segments have been designed to follow the County's Preserve Trail Guidelines (County 2018), to support the goals and policies outlined by the CTMP (County 2005), and to comply

with the Subarea Plan Framework Management Plan (County 2001). The PAP supports the goals and policies outlined by the CTMP, including objectives, policies, goals, implementation strategies, and guidelines for the management and expansion of the recreational trail network throughout the County. The Trans County Trail (TCT), which crosses the northern portion of the Preserve in an east-west direction, was identified in the CTMP as a regional trail, that, once established, will span 110 miles in length and connect Anza-Borrego Desert State Park to Torrey Pines State Natural Reserve. Regional trails have characteristics and conditions that serve a regional function by covering long linear distances, transcending community and/or municipal borders, having State or national significance, or providing important connections to existing parks and open space preserves.

A key objective of the MSCP is to provide public recreation and educational opportunities within the MSCP Preserve System, while providing adequate protection for biological resources. Riding and hiking trails are allowed within appropriate portions of the Preserve to provide passive recreational opportunities for the public. These activities are considered compatible with the biological objectives of the MSCP. In addition, the PAP supports the MSCP by establishing trails and allowing for passive recreational uses (trails) within areas and in a manner that does not significantly impact natural resources within the Preserve. Per Section 1.5.2 of the Subarea Plan, highly sensitive areas would be protected through the use of natural and artificial barriers. Trails, view overlooks, and staging areas are located or proposed within the least sensitive areas of the Preserve. Trails would be clearly demarcated and monitored for degradation as well as off-trail use.

Per Section 1.9.2 *Public Access and Recreation* of the Subarea Plan, appropriate recreational activities shall be accommodated in concurrence with the goals of the MSCP and Subarea Plan. Per the Subarea Plan, public access and passive recreation are permitted uses within specified areas of the Preserve. Passive recreation includes hiking, scientific research, bird watching, and under specified conditions and locations identified in approved Projects and or management plans, mountain biking, and horseback riding. Equestrian, hiking, and bicycles are allowed when in accordance with approved management plans and if consistent with the Subarea Plan. Other forms of public access and recreation are also allowed per the Subarea Plan if determined to be consistent with the protection of the resources currently existing within the Preserve.

Proposed trails or trail segments consist of new trails or trail segments constructed in previously undisturbed areas, as well as trails or trail segments on existing disturbed areas. Existing disturbed areas generally include informal trails or existing ranch roads that would be formalized into the Preserve trail system by implementation of the PAP component of the proposed project. Formalization of the existing trails on disturbed areas would be compatible with the findings of the Subarea Plan, including the findings in Section 1.9.1, which states: “A. Until all the areas of open space have been dedicated through the processing of maps, there may be a continuation of existing uses within areas shown as Preserve. B. Existing uses shall be allowed to continue, including annual clearing, maintenance and replacement of existing facilities, roads, and structures.” The land within the Preserve was privately held at the time of the creation of the Subarea Plan, and ranch roads were present. Based on historical analysis, some of these areas were impacted prior to the adoption of the Subarea Plan in 1998 or prior to when DPR acquired the property, and are considered disturbed.

The proposed trail segments are designed to address maintenance challenges for existing trail segments that are affected by erosion or other issues, as well as to add new trail alignments that would expand the existing trail network. The new trail segments would follow the standards described in the CTMP (County 2005) and have been designed to follow the County’s Preserve Trail Guidelines (County 2018).

In some cases, existing informal trails would be formalized, requiring the realignment of segments to follow the standards for the wider rural trail type. The widened trails or trail segments would facilitate continued vehicular maintenance and emergency response access, as well as consistency with the rest of the trail network. Existing trail segments recommended to be closed primarily consist of segments that are unsustainable or would not add significant value to the trail system. Additionally, existing informal trails would be closed in Clark Canyon due to the presence of sensitive species and habitat in that area. The PAP only includes recommendations for the implementation of additions or modifications to trails and trail segments within the Preserve. However, the PAP does also include recommendations for potential future trail connections that could link trails within the Preserve to future connections outside the Preserve, should those outside connections become publicly accessible in the future. Potential future trail connections are noted as such because they do not currently deliver users to approved trails on adjacent properties or are dependent on future acquisitions or actions by other parties. These segments would only be constructed when necessary authorizations have been obtained.

Other improvements include the Rock and Roll Trailhead Parking (#33), which would be located on an existing disturbed area near the center of the Preserve. Rock and Roll Trailhead Parking (#33) would formalize up to five parking spaces, one of which will be a van-accessible Americans with Disabilities Act (ADA) space on a concrete pad. The rest of the parking area will be on bladed, compact soil or compacted decomposed granite. The PAP would also maintain access and maintenance roads and add barriers such as fencing within the Preserve to limit human access to sensitive habitats, nesting locations, rare plants, and significant cultural resources. Additional barriers would be necessary for the prevention of access to unauthorized trails, temporary closures due to unsafe conditions, and prevention of vehicular access. Signage would be provided to provide direction and orientation to visitors, display rules and regulations posted at staging areas and access points, provide educational information, and mark trails. The PAP also recommends accessible trails for use by the general public with varying levels of abilities, including consideration of trails that could be compliant with the requirements of the ADA.

The PAP recommends an approximately 21.7-mile trail and access road network that will provide approximately 15.09 miles of multi-use routes for hikers, mountain bikers, e-bikes, and horseback riders and 6.61 miles of access roads. The PAP network would include the following access roads (currently existing), maintenance roads (currently existing), proposed trails and trail segments (including trails within existing disturbed areas), potential future trail connections, and trails and trail segments to be closed for revegetation. Please note that some of the proposed trails discussed below connect to off-site areas that do not have currently authorized trails, for example, the Scripps Poway Parkway tunnel. Under the PAP, DPR would allow trails to connect to other legal connections on off-site areas. However, should an access point become unusable for any reason, DPR would close the connection through the use of signage and potentially barriers, as appropriate. Each segment has a designated number and name, as illustrated on Figure 5, *Public Access Plan Trail Segments.*

0a - Sycamore Canyon - Access Road

The Sycamore Canyon Access Road is located in the western portion of the Preserve and connects to the Calle de Rob proposed trail segment (#10). The access road generally travels north to south, paralleling the West Boundary Trail segment (#13) and the northwestern Preserve boundary. The majority of the access road is located within existing disturbed habitat.

0b - Sycamore Park Drive – Access Road

Sycamore Canyon Drive is located in the eastern portion of the Preserve, connecting the Preserve to SR-67. The access road generally travels north to south from SR-67 to the proposed Ridge Trail segment (#14). The majority of the access road is located within existing disturbed habitat.

1 – Paragon Mesa – West – Closed to Revegetate

The Paragon Mesa - West trail segment is located in the northwestern portion of the Preserve. The trail travels east to west and connects to the South Raptor Loop (#3) proposed trail segment. This trail segment is proposed to be closed for revegetation. The majority of the trail segment is composed of disturbed habitat.

2 – Paragon Mesa –– Informal – Closed to Revegetate

The Paragon Mesa informal trail segment is located in the northern portion of the Preserve and connects to the Paragon Mesa – West trail segment (#1), which is proposed to be closed for revegetation. This trail segment is proposed to be closed for revegetation. The majority of the area to be revegetated is composed of chamise chaparral and southern mixed chaparral.

3 – South Raptor Loop – Proposed Trail, Proposed Trail on Existing Disturbed Area, Closed to Revegetate, and Potential Future Trail Connection

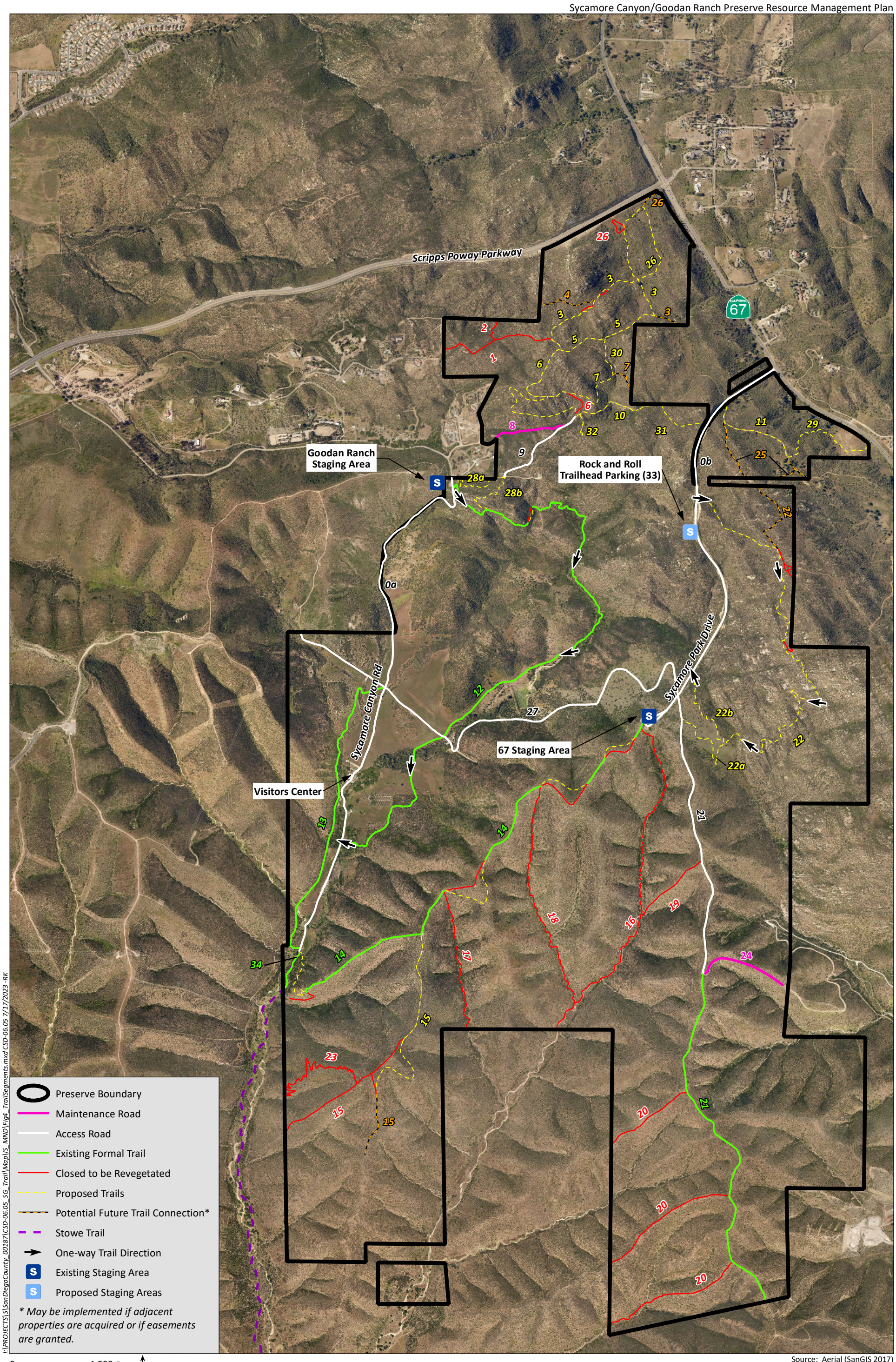
The South Raptor Loop proposed trail segment is located in the northern portion of the Preserve and would travel southwest to northeast. The trail segment is primarily located in the 2015 Northern Addition. The trail segment connects to South Raptor Loop - South (#5) trail segment and Paragon Mesa – South (#6) trail segment on the southwest and the southern point of the North Interior Loop (#26) trail segment on the northeast. Portions of the trail segment are proposed to be closed for revegetation; however, the majority of the trail segment proposed to be formalized occurs on existing disturbed areas. There is a portion of the South Raptor Loop trail segment with a potential future trail connection, which would include improvements on an existing trail.

4 – South Raptor Loop Northwest – Potential Future Trail Connection

The South Raptor Loop Northwest potential future trail connection would be located in the northern portion of the Preserve and travel east and west. The trail segment would be entirely located within the 2015 Northern Addition and connect to the middle of the South Raptor Loop (#3) proposed trail segment. The proposed trail segment would be primarily located within an existing trail with improvements proposed, with the surrounding habitat consisting of Diegan coastal sage scrub and coastal sage scrub–chaparral transitional habitat.

5 – South Raptor Loop South – Proposed Trail on Existing Disturbed Area

The South Raptor Loop South proposed trail segment would be located in the northern portion of the Preserve and would enter the southern portion of the 2015 Northern Addition. The trail segment would generally travel east to west, with the western end at an intersection with the South Raptor Loop (#3) and Paragon Mesa – South (#6) trail segments. At its eastern end, the South Raptor Loop South trail segment would connect to the proposed South Raptor Loop (#3) trail segment and the South Raptor Loop trail segment's potential future connection. The South Raptor Loop South and South Raptor Loop



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Public Access Plan Trail Segments

Figure 5

(#3) trails would connect to form a loop. The majority of the trail is proposed on existing disturbed areas as well as Diegan coastal sage scrub habitat, with improvements proposed.

6 – Paragon Mesa South – Proposed Trail, Proposed Trail on Existing Disturbed Area, and Closed to Revegetate

The Paragon Mesa South proposed trail segment would be located in the northern portion of the Preserve. The trail segment would generally travel north and south, connecting from the intersection of the South Raptor Loop (#3) and South Raptor Loop South (#5) trail segments at the north to the Calle de Rob (#10) proposed trail segments and maintenance road to the south. A small section of the trail segment connecting to Calle de Rob (#10) trail segment would be closed for revegetation. A portion of the trail segment is proposed on existing disturbed areas, with additional portions proposed primarily in Diegan coastal sage scrub. This trail segment is a reroute and extension of the original Paragon Mesa South trail.

7 – Waterfall Trail – Proposed Trail and Potential Future Trail Connection

The Waterfall proposed trail segment and proposed future trail connection would be located in the northern portion of the Preserve, and travels east and west. The Waterfall trail segment would connect to the Paragon Mesa South (#6) trail segment at its eastern end and the Preserve boundary at its western end. The proposed trail segment and potential future trail connection are proposed primarily on existing disturbed habitat, as well as Diegan coastal sage scrub.

8 – Calle de Rob – Maintenance Road

The Calle de Rob Maintenance Road is located in the northwestern portion of the Preserve. The maintenance road travels east and west connecting the Calle de Rob (#9) access road to an existing road outside of the Preserve boundary. The majority of the trail is composed of disturbed habitat.

9 – Calle de Rob – From Access Road to Paragon – Access Road

The Calle de Rob Access Road is located in the northwestern portion of the Preserve. The access road travels northeast and southwest, connecting to the Calle de Rob (#10) proposed trail segment and the proposed section of the TCT (#28a,b) trail. The majority of the trail segment is composed of disturbed habitat.

10 – Calle de Rob – Proposed Trail on Existing Disturbed Area

The Calle de Rob proposed trail segment would be located in the northern portion of the Preserve and enter the northwest corner of the 2015 Southern Addition. The trail would travel east and west, connecting to the Calle de Rob (#9) access road, County TCT (#31) proposed trail, and Paragon Mesa – South (#6) proposed trail segment. The majority of the proposed trail segment is composed of disturbed habitat, with improvements proposed.

11 – Calle de Rob – Eastern Segment; County TCT – Proposed Trail on Existing Disturbed Area

The Calle de Rob – Eastern Segment; County TCT proposed trail segment would be located in the northeastern portion of the Preserve. The trail segment connects to the Sycamore Park Drive (#0b) access road and Connection to Calle de Rob Eastern; County TCT (#11) trail segment. The proposed trail

segment would extend southeast to the Preserve boundary. The majority of the proposed trail segment is composed of disturbed habitat, with improvements proposed.

12 – Martha's Grove – Existing Formal Trail, Proposed Trail, and Closed to Revegetate

Martha's Grove is an existing trail that extends generally south from the northwest Preserve boundary to the Sycamore Canyon (#0a) access road. A small section at the north end of the trail is proposed to be closed and revegetated. The closed section would be replaced by a new proposed trail segment. The proposed trail segment is located entirely within southern mixed chaparral.

13 – West Boundary Trail – Connects to Stowe Trail Connector – Existing Formal Trail

The West Trail is an existing formal trail and is located in the western portion of the Preserve and connects to the Sycamore Canyon(#0a) and Cardiac Hill (#27) access roads. The existing trail generally travels north to south, paralleling the Sycamore Canyon access road along the western Preserve boundary. The majority of the trail segment is located within existing disturbed habitat.

14 – Ridge Trail – Existing Formal Trail, Proposed Trail, and Closed to Revegetate

The Ridge Trail is an existing trail located in the western portion of the Preserve. The trail extends northeast from the western Preserve boundary and eventually joins with the Sycamore Park Drive (#0b) access road. Portions of the trail in four locations would be closed to be revegetated and would be replaced by sections of proposed trail. The proposed trail segments are primarily located within chamise chaparral and coastal sage–chaparral transitional habitat.

15 – South of Ridge Trail – Proposed Trail, Proposed Trail on Existing Disturbed Area, Potential Future Trail Connection, and Closed to Revegetate

The South of Ridge Trail segment is a proposed trail segment located in the western portion of the Preserve. The trail segment would extend south from the existing Ridge Trail segment (#14), with improvements proposed. A portion of the trail would be closed to be revegetated and would be replaced by a section of the proposed trail. The proposed trail segment is primarily located within existing chamise chaparral, Diegan coastal sage scrub, and disturbed habitats.

16 – Canyon Trail – Informal – Closed to Revegetate

The Canyon Trail informal trail segment, located in the center of the Preserve, is proposed to be closed for revegetation. The trail segment extends north to south from the Ridge Trail (#14) segment to the Preserve boundary. The closed to revegetate area is primarily located within Diegan coastal sage scrub habitat.

17 – Clark Canyon to Ridge West – Informal – Closed to Revegetate

The Clark Canyon to Ridge West informal trail segment, located in the center of the Preserve, is proposed to be closed for revegetation. The trail segment extends north to south from the Ridge Trail (#14) segment to the Preserve boundary. The closed to revegetate area is primarily located within chamise chaparral and non-native grassland habitat.

18 – Clark Canyon to Ridge East – Informal – Closed to Revegetate

The Clark Canyon Ridge East informal trail segment, located in the center of the Preserve, is proposed to be closed for revegetation. The trail segment extends north to south from the Ridge Trail (#14) segment to the Preserve boundary. The closed to revegetate area is primarily located within southern mixed chaparral and coastal sage-chaparral transition habitat.

19 – North Slaughterhouse – Informal – Closed to Revegetate

The North Slaughterhouse informal trail segment, located in the center of the Preserve, is proposed to be closed for revegetation. The trail segment extends northeast to southwest from the Slaughterhouse Canyon Trail (#21) access road to the Canyon Trail (#16) segment. The closed to revegetate area is primarily located within southern mixed chaparral habitat.

20 – South Slaughterhouse – Closed to Revegetate

The South Slaughterhouse informal trail segment consists of three informal trails located in the southeastern portion of the Preserve that are proposed to be closed for revegetation. The three trails extend southwest from the Slaughterhouse Canyon Trail (#21) segment to the Preserve boundary. The closed to revegetate area is primarily located within southern mixed chaparral habitat.

21 – Slaughterhouse Canyon Trail – Access Road and Existing Formal Trail

Slaughterhouse Canyon Trail segment is an existing access road and formal trail that extends generally south from Sycamore Park Drive (#0b) access road to the southern Preserve boundary. Slaughterhouse Canyon Trail segment is an access road north of the Slaughterhouse Canyon Trail (#24) maintenance road and an existing formal trail segment south of the maintenance road. The existing access road and formal trail segment are primarily composed of disturbed habitat and chamise chaparral habitat.

22 – Rock and Roll Trail –– Proposed Trail, Proposed Trail on Existing Disturbed Area, and Closed to Revegetate

The proposed Rock and Roll Trail segment is located near the eastern Preserve boundary. The one-way trail segment would generally extend travel from north to south and connect to Sycamore Park Drive (#0b) or Slaughterhouse Canyon Trail (#21) access roads. Several sections of informal trails are proposed to be closed for revegetation. A proposed trail on existing disturbed area would travel north from the main trail to the edge of the Preserve. At the trail's southern end, one of two options, 22a and 22b, would be chosen. The proposed trail segment is composed primarily of disturbed habitat and Diegan coastal sage scrub habitat.

23 – Sidewinder Rogue Trail – Closed to Revegetate

The Sidewinder Rogue Trail informal trail segment, located in the southwestern portion of the Preserve, is proposed to be closed for revegetation. The trail segment extends east to west, from the South of Ridge Trail (#15) segment, which is also proposed to be closed for revegetation, to the Preserve boundary. The closed to revegetate area is primarily located within chamise chaparral habitat.

24 – Slaughterhouse Canyon Trail – Maintenance Road

The Slaughterhouse Canyon Trail Maintenance Road is located along the eastern boundary of the Preserve near the southern end. The maintenance road extends east from the Slaughterhouse Canyon Trail (#21) and connects to an existing dirt road outside of the Preserve at the Preserve boundary. The maintenance road is composed primarily of disturbed habitat.

25 – Connection to Calle de Rob and Rock and Roll Trail – Potential Future Trail Connection

The Connection to Calle de Rob and Rock and Roll Trail potential future trail connection would be located in the northeastern portion of the Preserve. The potential future trail would travel north and south and is located immediately east of the 2015 Southern Addition and would connect to Calle de Rob – Eastern Segment; County TCT (#11) trail segment to the north. The potential future trail connection would be located primarily within southern mixed chaparral habitat.

26 – Northern Interior Loop – Proposed Trail on Existing Disturbed Area, Potential Future Trail Connection, and Closed to Revegetate

The Northern Interior Loop proposed trail segment would be located in the northernmost portion of the Preserve and would be entirely located within the 2015 Northern Addition. The trail would generally travel north and south, forming a loop and connecting to the loop formed by the South Raptor Loop (#3) and South Raptor Loop South (#5) proposed trail segments. The majority of the trail segment is proposed on non-native grassland. There is also a potential future trail connection, which would connect the Northern Interior Loop (#26) trail segment to Scripps Poway Parkway and SR- 67, primarily within Diegan coastal sage scrub. The close to revegetate areas are primarily within non-native grassland habitat.

27 – Cardiac Hill – Access Road

The Access Road – Cardiac Hill is located in the center of the Preserve connecting Sycamore Canyon (#0a) and Sycamore Park Drive (#0b) access roads. The access road connects to an existing dirt road at the western Preserve boundary through the middle of the Preserve. The access road turns into Slaughterhouse Canyon Trail (#21) access road at Sycamore Park Drive access road. The majority of the trail is composed of disturbed habitat.

28 – County TCT; Goodan Staging Area to Access Road and Martha's Grove to Access Road – Proposed Trails

The County TCT; Goodan Staging Area to Access Road and Martha's Grove to Access Road proposed trail segments would be located in the northwestern portion of the Preserve along the western boundary of the Preserve. There would be two trail segment options: 28a and 28b. The 28a option would connect from the Calle de Rob – From Access Road to Paragon (#9) access road to the Goodan Ranch Staging Area. The 28b option would connect Martha's Grove (#12) to the Calle de Rob – From Access Road to Paragon (#9) access road. Only one option would be selected for implementation. The majority of the trail alignment is composed of coastal sage–chaparral transitional habitat within Martha's Grove (#12) and the Goodan Ranch Staging Area.

29 – Connection to Calle de Rob Eastern; County TCT –Proposed Trail on Existing Disturbed Area

The Connection – Calle de Rob Eastern; County TCT proposed trail segment on existing disturbed area would be located in the northeastern portion of the Preserve. The proposed trail segment on existing disturbed area would generally travel east and west, connecting State Route 67 and Calle de Rob – Eastern Segment; County TCT (#11). The majority of the trail is composed of Diegan coastal sage scrub and non-native grassland, with improvements proposed.

30 – Connection to Calle de Rob and South Raptor Loop South - Proposed Trail

The Connection to Calle de Rob and South Raptor Loop South proposed trail segment would be located in the northern portion of the Preserve. The trail would generally travel north and south, connecting to the Waterfall Trail (#7) to the south and South Raptor Loop South Trail (#5) to the north. The majority of the proposed trail is composed of Diegan coastal sage scrub and southern mixed chaparral habitat.

31 – County TCT – Proposed Trail

The County TCT proposed trail segment would be located in the northwestern portion of the Preserve and entirely within the northeast corner of the 2015 Southern Addition. The trail segment would travel east and west, connecting to the Calle de Rob (#10) trail segment and Sycamore Park Drive (#0b) access road. The majority of the trail segment alignment is composed of coastal sage – chaparral transitional habitat.

32 – Overlook – Proposed Trail

The Overlook proposed trail segment would be located in the northern portion of the Preserve. The trail would generally travel north and south, connecting to the Calle de Rob (#10) existing informal trail segment to the north. The majority of the proposed trail segment alignment is composed of southern mixed chaparral.

33 – Rock and Roll Trailhead Parking

The Rock and Roll Trailhead Parking is located in the center of the Preserve near the intersection of the Sycamore Park Drive (#0b) access road and the Rock and Roll Trail (#22) proposed trail segment. The Rock and Roll Staging Area is located entirely within existing disturbed habitat and Diegan coastal sage scrub habitat.

34 – Stowe Trail Connector – Existing Formal Trail

The Stowe Trail Connector is an existing formal trail segment located in the western portion of the Preserve. The trail segment generally travels north and south, connecting to the Sycamore Canyon (#0a) access road to the Preserve boundary. The existing formal trail is primarily composed of southern mixed chaparral habitat.

1.3 METHODS

1.3.1 Literature Review

Prior to conducting biological field surveys, HELIX conducted a search of sensitive species and habitats databases for information regarding sensitive species known to occur within one mile of the proposed project Study Area, including the U.S. Fish and Wildlife Service (USFWS) species records (USFWS 2019), CDFW California Natural Diversity Database (CNDDB; CDFW 2019a), SanBIOS, and California Native Plant Society (CNPS) Rare Plant Inventory (CNPS 2019). Additionally, the existing Sycamore Canyon/Goodan Ranch County Preserve Resource Management Plan (RMP; County 2013) and Baseline Biodiversity Survey Report for the 2015 Northern Addition and 2015 Southern Addition (AECOM 2018) were reviewed for special-status species occurrences. Recent aerial imagery, topographic maps, soils maps (Natural Resource Conservation Service [NRCS] 2019 and Bowman 1973), and other maps of the Preserve and vicinity were acquired and reviewed to obtain updated information on the natural environmental setting.

1.3.2 General Biological Surveys

HELIX biologists conducted a general biological survey of the survey area according to County requirements (2010a) on April 3, 4, and 10, 2019 (Table 1, *Biological Surveys*). An additional rare plant survey was conducted from May 13 through 15, 2019. The rare plant survey extended between Sycamore Park Drive and the eastern edge of the Preserve and included areas where critical habitat for San Diego thorn-mint (*Acanthomintha ilicifolia*) overlapped portions of the proposed Rock and Roll Trail segments. The rare plant survey also included mapping of the larval host plants for the Quino checkerspot butterfly (*Euphydryas editha quino; QCB*) within the survey area for the proposed Rock and Roll Trail segments. The purpose of the 2019 general biological and rare plant surveys was to verify and update biological resources documented within the survey area during previous survey efforts completed for the RMP (County 2013) and previous baseline surveys. Baseline biological surveys of the Preserve were conducted in 2008 (County 2009) and 2012 (Dudek 2013) for Sycamore Canyon Preserve. Baseline biological surveys of the 2015 Northern Addition and 2015 Southern Addition were conducted in 2016 (AECOM 2018). Baseline biological surveys of the Southern Parcel Addition were conducted in 2019 (HELIX 2020). Baseline surveys were conducted in 2019 (ICF 2021) for the San Vicente Connector Parcels Addition. Baseline surveys have not been conducted for the Southern Gap Parcels Addition. Biological resources documented during the baseline biological surveys are assumed present in the general biological survey.

Vegetation mapping (County 2013) within the survey area was verified within the existing informal trail network and undeveloped areas proposed for new trails during the general biological survey. The survey area was surveyed on foot and with the aid of binoculars. Plant and animal species observed or otherwise detected were recorded (Appendices A, *Plant Species Observed at Sycamore Canyon/Goodan Ranch Preserve*, and B, *Animal Species Observed or Detected at Sycamore Canyon/Goodan Ranch Preserve*, respectively). Animal identifications were made in the field by direct, visual observation or indirectly by detection of calls, burrows, tracks, or scat. Plant identifications were made in the field or in the lab through comparison with voucher specimens or photographs. The locations of special-status plant and animal species observed or otherwise detected were mapped. In addition to the general biological surveys, HELIX conducted a formal jurisdictional delineation on January 22 and 23, 2019 (see Section 1.3.4 below).

Additionally, the baseline biodiversity studies documented the additional parcel's existing biological resources, including those that are sensitive and covered under the Subarea Plan. Survey dates and types are detailed in the respective baseline biodiversity study reports. Special-status plant and animal species documented during the additional parcel baseline biodiversity studies have been incorporated into this report as well.

Table 1 provides a summary of biological surveys conducted within the survey area for the proposed project.

Table 1
BIOLOGICAL SURVEYS

Survey Date	Survey Number	Personnel	Conditions
Jurisdictional Delineation Field Survey			
January 22-23, 2019	N/A	Larry Sward, Angelia Bottiani	50-70 °F; wind 0-3 mph; 10% clouds
Vegetation Mapping and Habitat Assessment			
April 3, 4, and 10, 2019	N/A	Benjamin Rosenbaum, Angelia Bottiani	65-73°F; wind 0-5 mph; 0-75% clouds
Rare Plant Focused Surveys			
May 13-15, 2019	N/A	Korey Klutz	67-75°F; wind 0-7 mph; 0-50% clouds
Hermes Copper Butterfly Habitat Assessment and Surveys			
June 16, 17, 19, and 22, 2020	N/A	Benjamin Rosenbaum, Amy Mattson, Garrett Huffman	61-85°F; wind 0-3 mph; 0-100% clouds
June 7, 2022	Habitat Assessment	Benjamin Rosenbaum	70-73°F; wind 0-5 mph; 0% clouds
June 10, 2022	1	Benjamin Rosenbaum	73-89 °F; wind 1-3 mph; 0% clouds
June 20, 2022	2	Benjamin Rosenbaum	73-90 °F; wind 0-1 mph; 0% clouds
June 29, 2022	3	Benjamin Rosenbaum	75-90 °F; wind 0-1 mph; 0% clouds
July 7, 2022	4	Laura Moreton	77-81 °F; wind 1-2 mph; 0% clouds

1.3.3 Focused Species Surveys

The general biological survey was scheduled to occur in the spring, which is the best season for the detection of annual plant species. An additional rare plant survey was conducted in late spring 2019 to capture species that may not have been observed during the general biological survey, specifically San Diego-thorn mint and the larval host plants for the QCB.

In June 2020, an additional flight survey/habitat assessment was conducted for those areas designated by the USFWS as Proposed Hermes copper butterfly (*Lycaena hermes*) Critical Habitat, as it overlaps with portions of the Preserve, areas where Hermes copper butterflies were observed previously, and locations near proposed trails where there could be potential issues. The habitat assessment documented occurrences of spiny redberry (*Rhamnus crocea*), the Hermes copper butterfly larval host

plant, within 15 feet of California buckwheat (*Eriogonum fasciculatum*), the Hermes copper butterfly nectar plant. The Hermes copper butterfly survey/habitat assessment was generally conducted in accordance with the survey guidelines outlined in Attachment B of the County's Report Format and Content Requirements for Biological Resources (County 2010a), although only one flight survey was conducted in 2020 during the peak of the Hermes copper butterfly flight season.

Special-status plant and animal species include those that have been afforded special status and/or recognition by the USFWS, CDFW, and/or the County. Special-status plant and animal species observed or detected during the general biological survey were mapped using a hand-held Global Positioning System (GPS) unit and/or on an aerial photograph. Species known to occur immediately adjacent to the Study Area are assumed to be present, and the proposed project has incorporated appropriate mitigation measures to reduce potential impacts to the species to a level less than significant. Special-status plant and animal species observed within the Preserve during the previous baseline biodiversity surveys and that have the potential to occur within the Study Area are discussed further in Sections 1.4.9 and 1.4.10. Special-status plant species with the potential to occur in the Study Area are detailed in Appendix C, *Special-Status Plant Species with Potential to Occur*. Special-status wildlife species with the potential to occur in the Study Area are detailed in Appendix D, *Special-Status Animal Species with Potential to Occur*. Status codes are defined in Appendix E, *Status Codes*.

1.3.3.1 Protocol Hermes Copper Butterfly Surveys

Protocol surveys for Hermes copper butterfly were conducted from June 7 through July 7, 2022 (Table 1). Surveys were conducted in accordance with the survey guidelines outlined in Attachment B of the County's Report Format and Content Requirements for Biological Resources (County 2010a). Surveys were conducted in approximately 0.41 acre of suitable habitat present within potential impact areas, which consist of Diegan coastal sage scrub, coastal sage-chaparral transition, non-native grassland, and disturbed habitat (i.e., unpaved trails) and contain spiny redberry within 15 feet of California buckwheat. Each survey was conducted by covering no more than 15 acres per hour per surveyor, in accordance with the species' survey protocol. The report of findings for the Hermes copper butterfly survey is included as Appendix F, *2022 Hermes Copper Butterfly Survey Report*, of this report.

1.3.4 Jurisdictional Delineation

HELIX conducted a field-based jurisdictional delineation on January 22 and 23, 2019 (Table 1). Prior to conducting fieldwork, aerial photographs, topographic maps, and National Wetland Inventory (NWI) maps were reviewed to assist in determining the presence or absence of potential jurisdictional areas within the survey area-jurisdictional delineation review area. The jurisdictional delineation review area consisted of a 20-foot wide trail buffer (10 feet on either side of the trail centerline). The purpose of the delineation was to identify and map water and wetland resources potentially subject to U.S. Army Corps of Engineers (USACE) jurisdiction pursuant to Section 404 of the Clean Water Act (CWA; 33 USC 1344), Regional Water Quality Control Board (RWQCB) jurisdiction pursuant to Section 401 of the CWA and State Porter-Cologne Water Quality Control Act, and streambed and riparian habitat potentially subject to CDFW jurisdiction pursuant to Sections 1600 et seq. of the California Fish and Game Code (CFG Code). Areas generally characterized by depressions, drainage features, and riparian and wetland vegetation that intersect or are adjacent to existing trails and planned trails were evaluated. The jurisdictional delineation datasheets and photographs are provided in Appendix G, *Preliminary Jurisdictional Delineation Report*.

Waters of the U.S.

Potential USACE-jurisdictional waters of the U.S. were determined using three criteria (vegetation, hydrology, and soils) established for wetland delineations as described within Wetlands Delineation Manual (Environmental Laboratory 1987) and Arid West Regional Supplement (USACE 2008). Other references included the Clean Water Rule (USACE and Environmental Protection Agency [EPA] 2015). Mapping of drainage features was performed in the field based on the ordinary high-water mark (OHWM) and surface indications of hydrology. Sampling points were inspected for primary and secondary wetland hydrology indicators. Areas were determined to be potential wetland waters of the U.S. if there was a dominance of hydrophytic vegetation, hydric soils, and wetland hydrology indicators. Areas were determined to be non-wetland waters of the U.S. if there was evidence of regular surface flow within an OHWM, but the vegetation and/or soils criterion were not met.

As a result of the Supreme Court's May 25, 2023 decision in *Sackett v. Environmental Protection Agency*, the USACE is now interpreting waters of the U.S. consistent with the Supreme Court's decision, which ruled that the federal Clean Water Act extends to only those "*wetlands with a continuous surface connection to bodies that are 'waters of the United States' in their own right," so that they are "indistinguishable" from those waters*. HELIX's delineation was conducted consistent with this latest ruling.

The Preliminary Jurisdictional Delineation report is included as Appendix G. Fifteen locations were evaluated where existing and proposed trails cross or are adjacent to ephemeral and intermittent streams. Standard USACE wetland delineation data forms were completed in the field for the two sampling points where hydrophytic vegetation was present, and OHWM datasheets were completed at all fifteen locations.

Regional Water Quality Control Board Jurisdictional Waters

Potential RWQCB-jurisdictional waters of the State were delineated in the same manner as potential waters of the U.S. All waters of the U.S. were considered subject to RWQCB jurisdiction pursuant to CWA Section 401. No wetland features were determined to be geographically isolated and subject to RWQCB jurisdiction pursuant to the Porter-Cologne Act.

California Department of Fish and Wildlife Jurisdictional Areas

Potential CDFW-jurisdictional streambed and riparian habitat were determined based on the presence of riparian vegetation or regular surface flow within a measurable bed and bank. Streambeds within CDFW jurisdiction were delineated based on the definition of 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 support riparian vegetation" (Title 14, Section 1.72). Potential CDFW-jurisdictional unvegetated streambed encompasses the top-of-bank to top-of-bank width for the features within the jurisdictional delineation review area. Riparian habitat is not defined in Title 14, but the section refers to vegetation and habitat associated with a stream. The CDFW jurisdictional habitat includes all riparian shrub or tree canopy that may extend beyond the banks of a stream.

1.3.5 Survey Limitations

Noted animal species were identified by direct observation, vocalizations, or the observance of scat, tracks, or other signs. However, the lists of species identified are not necessarily comprehensive accounts of all species that utilize the Preserve, as species that are nocturnal, secretive, or seasonally restricted may not have been observed. Those species that are of special status and have the potential to occur within the Preserve, however, are addressed in this report.

1.3.6 Nomenclature

Nomenclature used in this report generally comes from Holland (1986) and Oberbauer (2008) for vegetation; Jepson eFlora (2019) and Baldwin et al. (2012) for plants; North American Butterfly Association (2023) for butterflies; Society for the Study of Amphibians and Reptiles (2023) for reptiles and amphibians; American Ornithological Society (2023) for birds; and Bradley et al. (2014) for mammals. Plant species status is from the CNPS's Rare Plant Inventory (CNPS 2023), CDFW (2019b), and County (2010b). Animal species status is from the CDFW (2019c) and County (2010b).

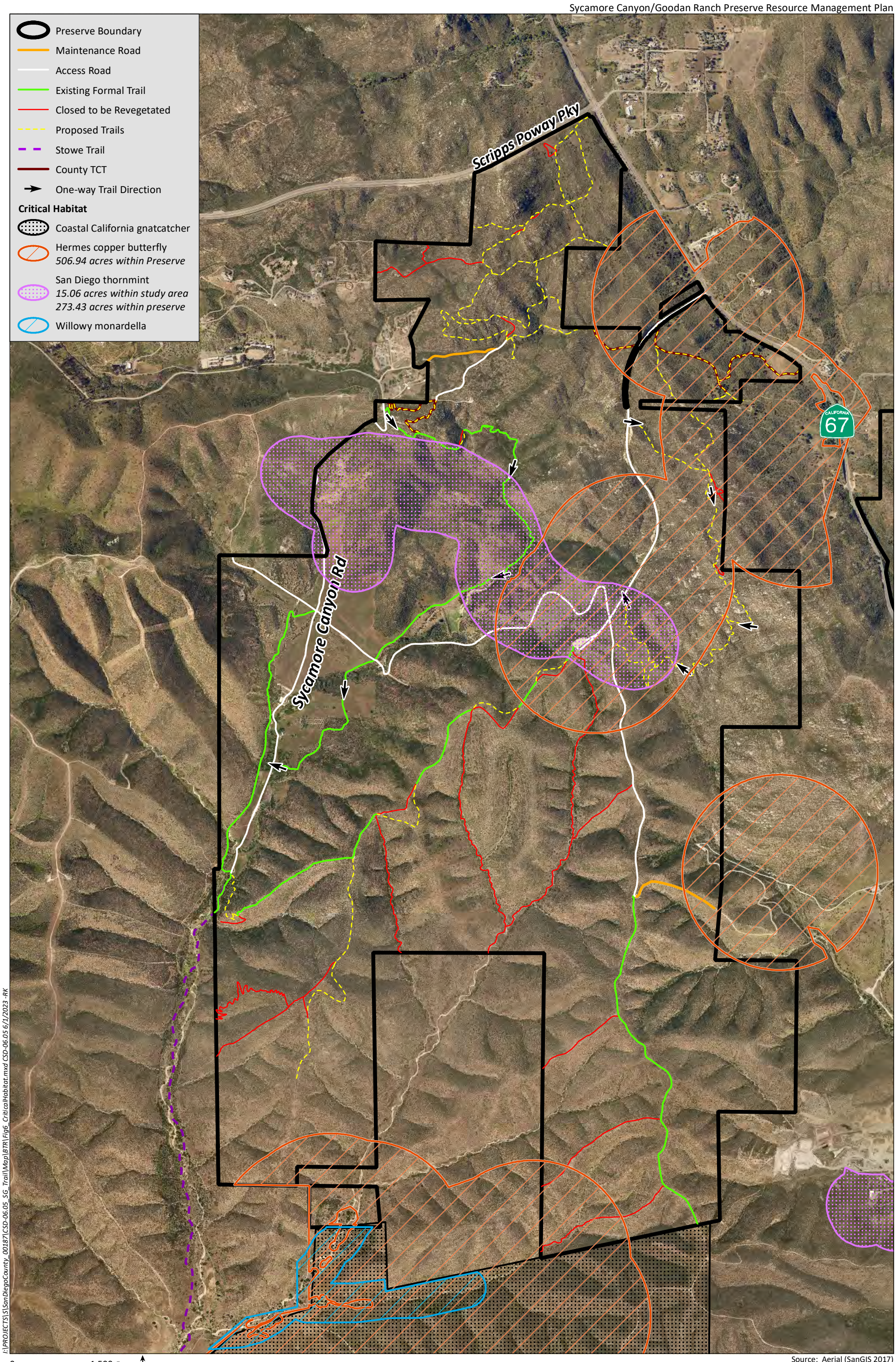
1.4 ENVIRONMENTAL SETTING

1.4.1 Regional Context

The Preserve is generally located within the unincorporated community of Lakeside in San Diego County, northeast of MCAS Miramar, south of Scripps Poway Parkway, southeast of the City of Poway, and west of SR-67, approximately two miles north of the City of Santee. The Preserve is located in the coastal foothills of the Peninsular Ranges of Southern California. Generalized climate in the region is influenced by the Pacific Ocean, with wet winters and dry summers. Seasonal changes are mild and characteristic of Southern California climate. Extreme periods of hot weather, winter storms, or dry, easterly Santa Ana winds occasionally interrupt the climate pattern. Mean annual precipitation is 13.24 inches, and the mean annual temperature is 75 degrees Fahrenheit. The frost-free season is 260 to 300 days.

USFWS-designated critical habitat for San Diego thorn-mint (73.4 acres) is shown on Figure 6, *Critical Habitat*, within the northern portion of the Preserve. Additionally, Critical Habitat for Hermes Copper butterfly (507 acres) is shown on Figure 6 in multiple portions of the Preserve. Critical habitat is identified for coastal California gnatcatcher and willowy monardella directly south of the Preserve (Figure 6). The San Diego thorn-mint critical habitat and Hermes copper butterfly critical habitat mapped within the Preserve are primarily located within open space areas outside of existing trails, staging areas, and access roads, although portions of undeveloped land proposed for the development of new trails to be included in the proposed formal trail network do occur within the USFWS-designated critical habitat for the San Diego thorn-mint and Hermes copper butterfly.

The Preserve occurs within the Metro-Lakeside-Jamul Segment of the adopted South County MSCP Subarea Plan and is designated as PAMA. PAMA areas are important to the success of the regional preserve system and are areas within the MSCP with high conservation values. Additional South County MSCP PAMA lands are located to the east, north, northeast, and south/interior of the Preserve. The majority of the Preserve is mapped as high and very high habitat value on Attachment J (Habitat Evaluation Map) of the Biological Mitigation Ordinance (BMO [County 2010c]), although smaller portions are considered to have moderate or low habitat value. The Preserve is also located within the Central Poway/San Vicente Reservoir/North Poway BRCA. This BRCA is connected to two BRCAs to the south,



HELIX Environmental Planning

Critical Habitat

Figure 6

Mission Trails/Kearny Mesa/East Elliot/Santee and Lake Jennings/Wildcat Canyon-El Cajon Mountain, and the Hodges Reservoir/San Pasqual Valley BRCA to the north. Poway Road to the west and SR-67 to the north contain biological linkages, and the Preserve is an important connection to other large open space preserves, including Iron Mountain, Mission Trails Regional Park, and MCAS Miramar.

1.4.2 General Land Uses

The Preserve provides the public with recreational opportunities and includes a Visitor Center, two staging areas, interpretative programs, and multi-use trails. Adjacent or nearby property uses include the northernmost portion of the San Vicente Reservoir approximately one mile to the east, scattered rural residences to the northwest and northeast in the city of Poway and unincorporated Lakeside community, the City of San Diego's Mission Trails Regional Park – West Sycamore to the west, and private mining operations to the southeast in Slaughterhouse Canyon. Undeveloped land surrounds all other portions of the Preserve, including MCAS Miramar to the southwest, privately owned land to the south within the City of Santee, and privately owned land to the east within unincorporated Lakeside. Sycamore Canyon runs along the western edge of the Preserve, and the Preserve extends east across a ridgeline system to Slaughterhouse Canyon. Clark Canyon originates in the central/southern portion of the Preserve, runs south of the Southern Gap Parcel Additions, and converges with Sycamore Canyon just southwest of the Preserve. MCAS Miramar owns undeveloped property to the southwest of the Preserve. Privately owned undeveloped located west of the Preserve is within the City of San Diego, and to the south is within the City of Santee.

A 100-foot-wide electric transmission easement (consisting of three separate easements) retained by San Diego Gas & Electric (SDG&E) runs east to west within the northeast portion of the Preserve. Sunrise Powerlink is also located within the 100-foot transmission easement, which allows SDG&E ingress/egress rights via access roads. The San Diego County Water Authority retains an easement across the Preserve for water pipelines from San Vicente Reservoir.

1.4.3 Disturbance

The habitat within the Preserve includes areas of very high to medium quality native undeveloped habitat, in addition to areas that have been marginally impacted by human activities. Human activities within the Preserve that cause disturbance include a trail system, ranger station, and two staging areas (Figure 5 and Figures 8a, 8b, and 8c, *Vegetation and Sensitive Resources*). The Preserve contains approximately 5.56 miles of existing formal trails (not including access roads) and 6.61 miles of access and maintenance roads available for trail use. The majority of human disturbance is minimal and constrained to the existing trails, although unauthorized trails have been detected within the Preserve (County 2013). The Preserve contains approximately 4.76 miles of proposed trails on existing disturbed areas. The existing utility easements within the Preserve are also subject to disturbance. At most, the proposed project would include up to 3.78 miles of new proposed trails, 0.99 mile of potential future trail connections, 4.76 miles of formalization of trails on existing disturbed areas, 5.56 miles of existing formal trails, 6.61 miles of existing access roads, and 7.24 miles of potential closures of existing trails. The number of potential closures (7.24 miles of trails) would be greater than the number of proposed trails and potential future trail connections (4.76 miles of trails), and the proposed project would not contribute to additional disturbance of the Preserve.

1.4.4 Topography and Soils

The Preserve is characterized by foothill uplands with narrow ridgelines separated by numerous steep canyons, ravines, and drainages. Elevations range from approximately 600 feet above mean sea level (AMSL) to 1,680 feet AMSL.

Nine soil types have been mapped in the survey area (NRCS 2019; Figure 7, *Soils*) including Arlington coarse sandy loam, Escondido very fine sandy loam, Friant rocky fine sandy loam, Huerhuero loam, Metamorphic rock land, Olivenhain cobbly loam, Stony land, Redding cobbly loam, and Visalia gravelly sandy loam (UDSA 2019).

Arlington soils are characterized as moderately well-drained, moderately deep coarse sandy loams, usually found on alluvial fans. Escondido very fine sandy loam is characterized as moderately deep to deep, well-drained fine sandy loams. Friant rocky sandy loam is characterized as shallow and well-drained, medium to very rapid runoff, moderately rapid permeability, and usually found on mountainous uplands with slopes. Huerhuero loam is characterized as moderately well-drained loam with a clay subsoil. Metamorphic rock land soils are characterized as occurring in excessively drained hilly to mountainous areas with exposed rock outcrops, angular stones, and cobblestones. The Olivenhain cobbly loam is characterized as well-drained, moderately deep to deep, usually found on dissected marine terraces with medium to rapid runoff and high erosion hazard. Stony land is characterized as occurring at the base of cliffs or below steep rocky slopes. Redding cobbly loam is characterized as moderately deep to duripan, well- or moderately well-drained soil formed in alluvium. Visalia gravelly sandy loam is characterized by moderately well-drained, very deep, and usually found on alluvial fans and floodplains.

1.4.5 Vegetation Communities/Land Use Types

Fourteen vegetation communities/land use types occur within the PAP survey area (Table 2, *Existing Vegetation Communities/Land Use Types [Survey Area]*; Figures 8a, 8b, and 8c). The numeric codes in parentheses following each community/land use type name are from the Holland classification system (Holland 1986) as added to by Oberbauer (2008) and as presented in the County's Biological Resources Guidelines (County 2010b). The communities are presented in Table 2 in order by MSCP Tier.

Table 2
EXISTING VEGETATION COMMUNITIES/LAND USE TYPES (SURVEY AREA)

Vegetation Community[1]	Acres[2]
Tier I	
Scrub Oak Chaparral (37900)	0.9
Southern Riparian Forest (61300)	0.41
Southern Coast Live Oak Riparian Forest (61310)	0.04
Southern Riparian Woodland (62500)	0.06
Unvegetated Channel (64200)	0.41
Dense Coast Live Oak Woodland (71162)	0.5
Open Coast Live Oak Woodland (71161)	0.3
Tier II	
Diegan Coastal Sage Scrub (32500)	26.6
Coastal Sage-Chaparral Transition (37G00)	21.0

Table 2 (cont.)
EXISTING VEGETATION COMMUNITIES/LAND USE TYPES (SURVEY AREA)

Vegetation Community[1]	Acres[2]
Tier III	
Southern Mixed Chaparral (37120)	20.1
Chamise Chaparral (37200)	5.0
Non-native Grassland (42200)	11.4
Tier IV	
Disturbed Habitat (11300)	21.0
N/A	
Developed Land (12000)	0.1
TOTAL	**107.82**

[1] Vegetation categories and numerical codes are from Holland (1986) and Oberbauer (2008) and are listed by County Subarea Habitats and Tiers within the South County MSCP.

[2] Upland habitats are rounded to the nearest 0.1 acre, while wetland habitats are rounded to the nearest 0.01; thus, total reflects rounding.

Scrub Oak Chaparral (37900; Tier I)

Scrub oak chaparral is a dense, evergreen chaparral up to 20 feet tall, dominated by scrub oak (*Quercus berberidifolia*) with considerable 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 resprouting capabilities of scrub oak (Holland 1986; Keeley and Keeley 1988). This vegetation community often occurs at slightly higher elevations (to 5,000 feet), and substantial leaf litter accumulates.

Approximately 0.9 acre of scrub oak chaparral occurs within the western portion of the survey area along the Cardiac Hill (#27) and Sycamore Canyon (#0a) access road (Figures 8b and 8c).

Southern Riparian Forest (61300; Tier I)

Southern riparian woodlands and forests are composed of winter-deciduous trees that require water near the soil surface. Willows (*Salix* spp.), cottonwood (*Populus* sp.), and western sycamore (*Platanus racemosa*) form a dense, medium-height woodland or forest in moist canyons and drainage bottoms. Associated understory species include mule fat (*Baccharis salicifolia*), stinging nettle (*Urtica dioica* ssp. *holosericea*), and wild grape (*Vitis girdiana*; Beauchamp 1986). The differences between woodlands and forests are physiognomic rather than compositional. Woodlands have less canopy cover than forests. In forests, the canopies of individual tree species do overlap so that a canopy cover exceeding 100 percent may occur in the upper tree stratum. In woodlands, there may be large canopy gaps within the upper tree stratum.

Approximately 0.41 acre of southern riparian forest occurs within the western portion of the survey area along the Sycamore Canyon (#0a) access road and the Martha's Grove (#12) trail segment (Figure 8b).

Southern Coast Live Oak Riparian Forest (61310; Tier I)

Southern coast live oak riparian forest is an open-to-locally dense, evergreen, sclerophyllous, riparian woodland that is dominated by coast live oak (*Quercus agrifolia*). This community appears to be richer in

herbs and poorer in understory shrubs than other riparian communities. Southern coast live oak riparian forest occurs on fine-grained alluvial soils on the floodplains along large streams in the canyons and valleys of coastal southern California (Holland 1986). Associated species include toyon (*Heteromeles arbutifolia*), Mexican elderberry (*Sambucus mexicana*), spreading snowberry (*Symphoricarpos mollis*), California rose (*Rosa californica*), California blackberry (*Rubus ursinus*), and poison oak (*Toxicodendron diversilobum*).

Approximately 0.04 acre of southern coast live oak riparian forest occurs within the center of the survey area along the Martha's Grove (#12) trail segment (Figure 8b).

Southern Riparian Woodland (62500; Tier I)

As described above, the difference between southern riparian woodland and southern riparian forest is the amount of canopy cover. Areas with large canopy gaps within the upper tree stratum were mapped as southern riparian woodland.

Approximately 0.06 acre of southern riparian woodland occurs along the Sycamore Canyon (#0a) access road segment (Figure 8b).

Unvegetated Channel (64200; Tier I)

Unvegetated channel consists of the sandy, gravelly, or rocky fringe of waterways or flood channels that is unvegetated on a relatively permanent basis. Variable water lines inhibit the growth of vegetation, although some weedy species of grasses may grow along the outer edges of the wash. Vegetation may exist here but is usually less than 10 percent total cover. This land cover type does not apply when sand or alluvium is an artifact of very recent or uncommon flood events in the upper parts of the watershed.

Approximately 0.41 acre of unvegetated channel occurs within the Southern Parcel Addition (Figure 8c).

Dense Coast Live Oak Woodland (711622; Tier I)

Dense coast live oak woodland is an open-to-dense evergreen woodland or forest community, dominated by coast live oak that may reach a height of 35 to 80 feet. The shrub layer consists of toyon, Mexican elderberry, spreading snowberry, fuchsia-flowered gooseberry (*Ribes speciosum*), and poison oak. A dense herbaceous understory is dominated by miner's lettuce (*Claytonia perfoliata* var. *perfoliata*) and chickweed (*Stellaria media*). This community occurs along the coastal foothills of the Peninsular Ranges; typically, on north-facing slopes and shaded ravines (Holland 1986).

Approximately 0.5 acre of dense coast live oak woodland occurs within the center of the survey area along the Martha's Grove (#12) trail segment and along Sycamore Park Drive (#0b) access road (Figures 8a and 8b).

Open Coast Live Oak Woodland (71161; Tier I)

Open coast live oak woodland is generally similar to dense coast live oak woodland, but with a canopy cover of less than 50 percent. While coast live oak is present to a limited extent, other riparian, chaparral, or woodland species may be co-dominant. The more open areas of coast live oak woodland on-site were mapped as open coast live oak woodland.

Preserve Boundary
Maintenance Road
Access Road
Existing Formal Trail
Closed to be Revegetated
Proposed Trails
Stowe Trail
County TCT

Soils

Arlington coarse sandy loam, 2 to 9 percent slopes (AvC)
Cieneba-Fallbrook rocky sandy loams, 9 to 30 percent sl opes, eroded (CnE2)
Escondido very fine sandy loam, 15 to 30 percent slopes , eroded (EsE2)
Escondido very fine sandy loam, 9 to 15 percent slopes, eroded (EsD2)
Escondido very fine sandy loam, deep, 5 to 9 percent sl opes (EvC)
Friant rocky fine sandy loam, 30 to 70 percent slopes (FxG)
Friant rocky fine sandy loam, 9 to 30 percent slopes (FxE)
Huerhuero loam, 2 to 9 percent slopes (HrC)
Huerhuero loam, 9 to 15 percent slopes, eroded (HrD2)
Loamy alluvial land (Lu)
Metamorphic rock land (MrG)
Olivenhain cobbly loam, 9 to 30 percent slopes (OhE)
Placentia sandy loam, 2 to 9 percent slopes (PeC)
Ramona sandy loam, 5 to 9 percent slopes (RaC)
Redding cobbly loam, dissected, 15 to 50 percent slopes (RfF)
Stony land (SvE)
Visalia gravelly sandy loam, 2 to 5 percent slopes (VbB)
Visalia sandy loam, 5 to 9 percent slopes (VaC)
Visalia sandy loam, 9 to 15 percent slopes (VaD)

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0 1,500 Feet

Source: Aerial (SanGIS 2017)

HELIX Environmental Planning

Soils

Figure 7

Preserve Boundary
Survey Boundary

Holland/Oberbauer Classification
- Chamise Chaparral
- Dense Coast Live Oak Woodland
- Coastal Sage-Chaparral Transition
- Diegan Coastal Sage Scrub
- Disturbed Habitat
- Non-native Grassland
- Southern Mixed Chaparral
- Urban/Developed

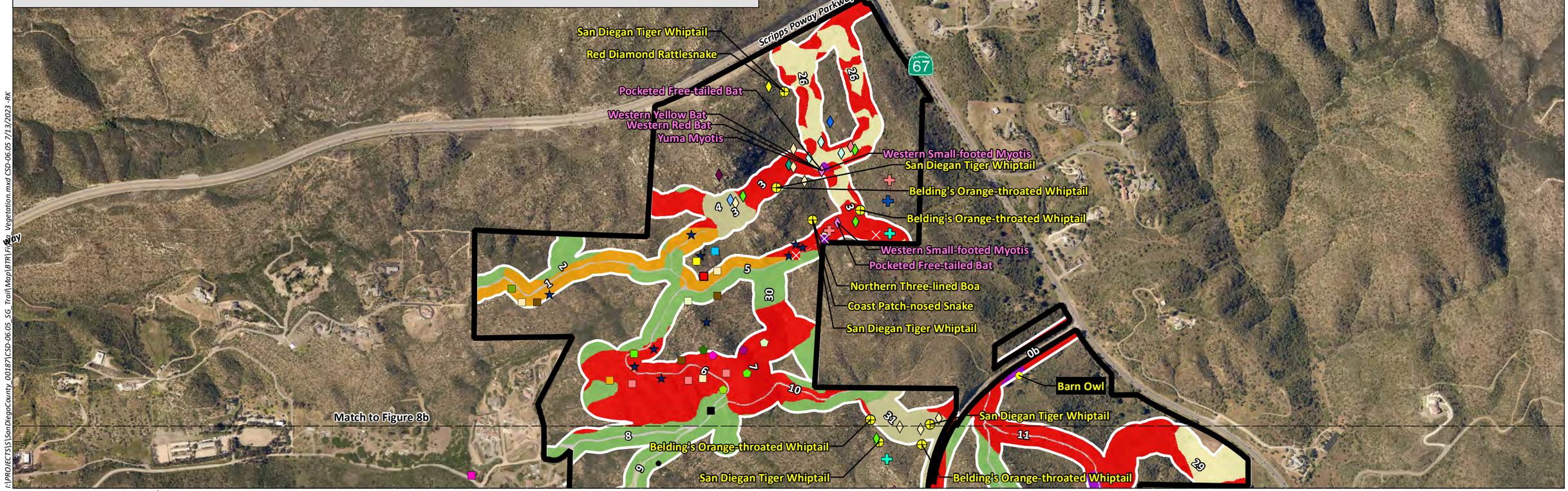
2008 Species Survey
- Red Diamond Rattlesnake
- San Diego Black-tailed Jackrabbit
- Special Status Bird Species Detected During Avian Pt. Count Survey

2012 Species Surveys
- Rush Chaparral-Star
- Coastal Rosy Boa
- Red Diamond Rattlesnake
- Coast Horned Lizard
- Belding's Orange-throated Whiptail
- Southern California Rufous-crowned Sparrow
- Coastal California Gnatcatcher
- Barn Owl
- San Diego Desert Woodrat
- Dulzura Pocket Mouse
- Northwestern San Diego Pocket Mouse
- San Diego Black-tailed Jackrabbit
- Mule Deer
- Pallid Bat
- Pocketed Free-tailed Bat
- Western Red Bat
- Western Small-footed Myotis
- Western Yellow Bat
- Yuma Myotis

2016 Species Surveys
- Engelmann Oak
- Ashy Spike-moss
- Rush Chaparral-Star
- Bats - Multiple Species (see call outs)
- Bald Eagle
- Coastal California Gnatcatcher
- Sharp-Shinned Hawk
- Southern California Rrufous-crowned Sparrow
- Turkey Vulture
- Western Bluebird
- Mule Deer
- Dulzura Pocket Mouse
- Northwestern San Diego Pocket Mouse
- Reptiles & Amphibians Multiple Species (see call outs)

2022 Species Surveys
- Coastal California Gnatcatcher
- San Diegan Tiger Whiptail

Trail Number - Trail Name
- 0b - Sycamore Park Drive Access Road
- 1 - Paragon Mesa - West
- 2 - Paragon Mesa - Informal
- 3 - South Raptor Loop
- 4 - South Raptor Loop Northwest
- 5 - South Raptor Loop South
- 6 - Paragon Mesa - South
- 7 - Waterfall Trail
- 8 - Calle de Rob
- 9 - Calle de Rob - From Access Rd to Paragon
- 10 - Calle de Rob
- 11 - Calle de Rob - Eastern Segment; County TCT
- 25 - Connection to Calle de Rob/Rock and Roll Trail
- 26 - North Interior Loop
- 29 - Connection - Calle de Rob Eastern; County TCT
- 30 - Connection to Calle de Rob and South Raptor Loop South
- 31 - County TCT
- 32 - Overlook



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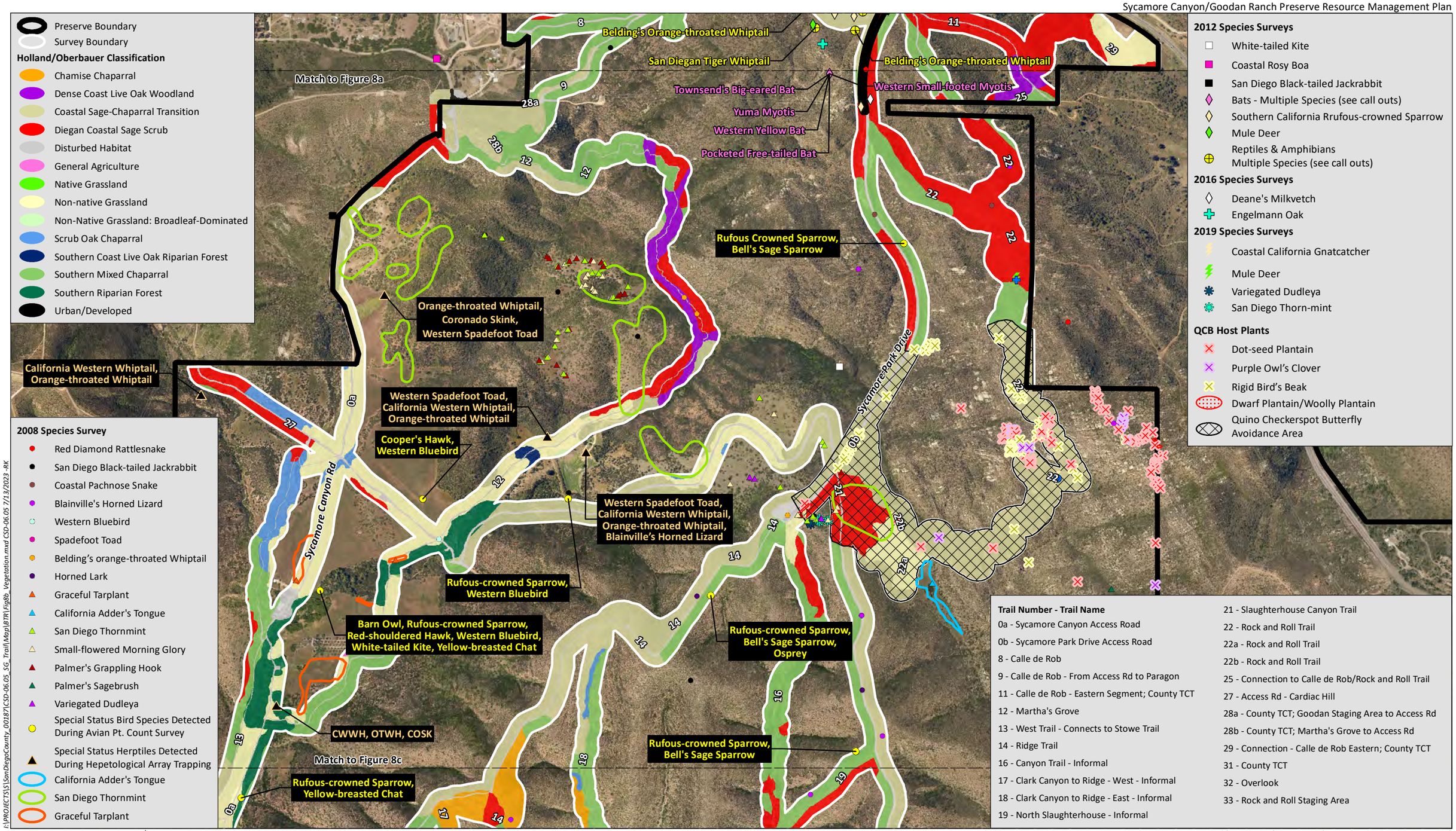
Source: Aerial (SanGIS 2017); Vegetation (Korey Klutz 2019 and AECOM 2018)

HELIX Environmental Planning

Vegetation and Sensitive Resources

Figure 8a



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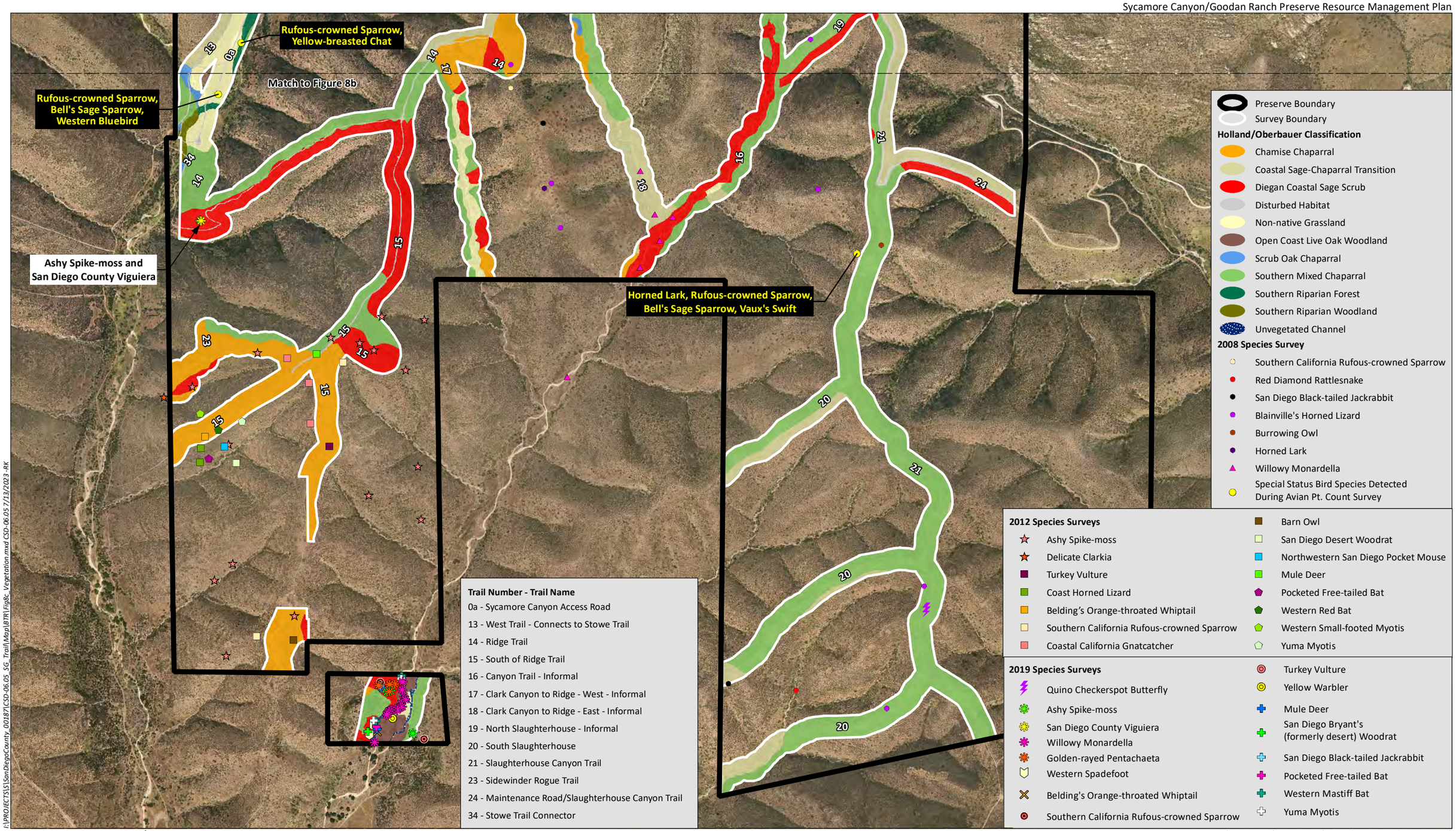
Source: Aerial (SanGIS 2017); Vegetation (Korey Klutz 2019 and AECOM 2018)

HELIX Environmental Planning

Vegetation and Sensitive Resources

Figure 8b



Source: Aerial (SanGIS 2017); Vegetation (Korey Klutz 2019 and AECOM 2018)

HELIX Environmental Planning

Vegetation and Sensitive Resources

Figure 8c

Approximately 0.3 acre of open coast live oak woodland occurs within the Southern Parcel Addition (Figure 8c).

Diegan Coastal Sage Scrub (32500; Tier II)

Coastal sage scrub is one of the two major shrub types that occur in southern California, occupying xeric sites characterized by shallow soils (the other is chaparral). Diegan coastal sage scrub may be dominated by a variety of species depending on soil type, slope, and aspect. Typical species found within Diegan coastal sage scrub include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Malosma laurina*), lemonadeberry (*Rhus integrifolia*), and black sage (*Salvia mellifera*).

Approximately 26.6 acres of Diegan coastal sage scrub occur throughout the majority of the survey area (Figures 8a, 8b, and 8c), including along trail segments in the 2015 Northern and Southern Additions, Martha's Grove (#12), Rock and Roll Trail (#22), Slaughterhouse Canyon Trail (#21), Ridge Trail (#14), and Canyon Trail (#16) trail segments.

Coastal Sage-Chaparral Transition (37G00; Tier II)

Coastal sage-chaparral transition is a mixture of sclerophyllous chaparral shrubs and drought-deciduous sage scrub species regarded as an ecotone (transition) between two vegetation communities. This singular community contains floristic elements of both communities, including California sagebrush, California buckwheat, laurel sumac, chamise (*Adenostoma fasciculatum*), scrub oak, and ceanothus (*Ceanothus* spp.). This community varies in species composition but always contains coastal sage and chaparral species.

Approximately 21.0 acres of coastal sage chaparral transition occur throughout portions of the survey area (Figures 8a, 8b, and 8c), including along trail segments in the 2015 Northern and Southern Additions, Martha's Grove (#12), Rock and Roll trail (#22), Slaughterhouse Canyon Trail (#21), Ridge Trail (#14), and Canyon Trail (#16) trail segments.

Southern Mixed Chaparral (37120; Tier III)

Southern mixed chaparral is composed of broad-leaved, sclerophyllous shrubs that can reach 6 to 10 feet in height and form dense, often nearly impenetrable stands with poorly developed understories. Depending upon relative proximity to the coast, characteristic species may include, for example, chamise, ceanothus (*Ceanothus* spp.), scrub oak, toyon, mission manzanita (*Xylococcus bicolor*), sugar bush, spiny redberry (*Rhamnus crocea*), bushrue (*Cneoridium dumosum*), and San Diego honeysuckle (Holland 1986).

Approximately 20.1 acres of southern mixed chaparral occur throughout the survey area (Figures 8a, 8b, and 8c), including along trail segments in the 2015 Northern and Southern Additions, Martha's Grove (#12), Rock and Roll Trail (#22), Slaughterhouse Canyon Trail (#21), Ridge Trail (#14), Clark Canyon to Ridge – West (#17), Clark Canyon to Ridge East (#18), and Canyon Trail (#16) trail segments.

Chamise Chaparral (37200; Tier III)

Chamise chaparral is a widely distributed chaparral shrub community and is dominated by the species chamise. This vegetation community is found from Baja to northern California in pure or mixed stands.

Chamise chaparral's ubiquitous distribution may be the result of chamise being the only chaparral species that regenerates from fire from both an underground root crown and the production of seeds (Rundel 1986). 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 chaparral intergrades with coastal sage scrub (Rundel 1986). Mission manzanita and black sage are minor plant species associated within this vegetation community.

Approximately 5.0 acres of chamise chaparral occur throughout portions of the survey area (Figures 8a, 8b, and 8c), including along Clark Canyon to Ridge – West (#17), Clark Canyon to Ridge – East (#18), Sidewinder Rogue Trail (#23), South of Ridge Trail (#15), Paragon Mesa – West (#1), and the 2015 Northern and Southern Additions.

Non-native Grassland (42200; Tier III)

Non-native grassland is a mixture of annual grasses and broad-leaved, herbaceous species. Annual species comprise from 50 percent to more than 90 percent of the vegetative cover, and most annuals are non-native species. Non-native grasses typically comprise at least 30 percent of the vegetative cover, although this percentage can be much higher in some years and lower in others, depending on land use and climatic conditions. Usually, the grasses are less than three feet in height and form a continuous or open cover. Emergent shrubs and trees may be present but do not comprise more than 15 percent of the total cover (County 2010a). Most of the non-native grasses originated from the Mediterranean region, an area with a long history of agriculture and a climate similar to California.

Approximately 11.4 acres of non-native grassland occur throughout portions of the survey area (Figures 8a, 8b, and 8c), including along trail segments in the 2015 Northern and Southern Additions, Martha's Grove (#12), Clark Canyon to Ridge – West (#17), Rock and Roll Trail (#22), Slaughterhouse Canyon Trail (#21), Ridge Trail (#14), and Canyon Trail (#16) trail segments and Cardiac Hill (#27) access road.

Disturbed Habitat (11300; Tier IV)

Disturbed habitat includes areas in which the vegetative cover is less than 10 percent of the surface area (disregarding natural rock outcrops) and where there is evidence of soil surface disturbance Disturbed habitat supports a predominance of non-native and/or weedy species that are indicators of such surface disturbance (County 2010a).

Approximately 21.0 acres of disturbed habitat occur along the existing informal network of trails within the survey area (Figures 8a, 8b, and 8c).

Developed Land (12000; Tier N/A)

Developed land includes areas that have been constructed upon or otherwise covered with a permanent, unnatural surface and may include, for example, structures, pavement, irrigated landscaping, or hardscape to the extent that no natural land is evident. These areas no longer support native or naturalized vegetation (County 2010a).

Approximately 0.1 acre of developed land occurs within the survey area along Sycamore Canyon (#0a) access road (Figure 8a).

1.4.6 Flora

A total of 140 plant species were identified within the proposed project survey area during the 2019-2022 biological surveys, of which 117 (84 percent) are native species, and 23 (16 percent) are non-native species (Appendix A).

1.4.7 Fauna

A total of 31 animal species were observed or otherwise detected on the proposed project survey area during the 2019-2022 biological surveys, including 14 invertebrate, two reptile, 13 bird, and two mammal species (Appendix B).

1.4.8 Sensitive Vegetation Communities

Sensitive vegetation communities/habitat types are defined as land that supports unique vegetation communities or the habitats of rare or endangered species or subspecies of animals or plants as defined by Section 15380 of the State CEQA Guidelines. Attachments K and M of the BMO provide the habitat mitigation ratios applicable within the South County MSCP Subarea Plan. The proposed mitigation is provided in order to meet the criteria identified in the BMO Section 86.503(a)(8) to qualify it for exemption from the BMO as an essential public project.

Sensitive vegetation communities/habitat types mapped on the proposed project site include scrub oak chaparral, southern riparian forest, southern coast live oak riparian forest, southern riparian woodland, unvegetated channel, dense coast live oak woodland, open coast live oak woodland, Diegan coastal sage scrub, coastal sage-chaparral transition, southern mixed chaparral, chamise chaparral, and non-native grassland. Impacts to sensitive habitats require mitigation per Attachments K and M of the BMO and are discussed further in Section 2.0.

Disturbed habitat and developed lands do not meet the definition of sensitive habitat under CEQA. Impacts to these vegetation communities do not require mitigation.

Special-Status Plant Species

Special-status plant species have been afforded special status and/or recognition by the USFWS, CDFW, and/or the County and may also be included in the CNPS' Inventory of Rare and Endangered Plants. Their 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 abundant but occur only in very specific habitats. Lastly, a species may be widespread but exist naturally in small populations.

Special-Status Plant Species Observed

Five special-status plant species were observed within the survey area for the PAP during the 2019-2022 biological surveys. Additionally, 11 other special-status plant species have been documented within the Study Area during previous surveys for the Preserve. Surveys and documentation indicated that 16 special-status plant species occur within the Study Area. This includes six County List A species and ten County List D species. Status codes are defined in Appendix E.

San Diego thorn-mint (*Acanthomintha ilicifolia*)
Status (USFWS/CDFW): FT/SE; California Rare Plant Rank (CRPR) 1B.1; County List A; MSCP Covered
San Diego thorn-mint is a small annual herb. It occurs on clay soils near vernal pools and in grassy openings in coastal sage scrub and chaparral. San Diego thorn-mint has been observed at elevations between 100 to 3,150 feet (30 to 960 meters). This species occurs in San Diego County and Baja California.

San Diego thorn-mint has been documented as recently as 2017 (ICF 2018) at numerous locations in the central-eastern portion of the Preserve (Figure 8b) within the area marked as critical habitat for San Diego thorn-mint (Figure 6). The Preserve includes 73.4 acres of critical habitat for this species, of which 15.1 acres overlap the proposed project survey area. There is also potential for this species to occur in areas of suitable clay soils where there are grassy openings in coastal sage scrub and chaparral. Critical habitat for this species overlaps existing trails and access roads (Sycamore Canyon [#0a], Sycamore Park Drive [#0b], and Cardiac Hill [#27] access roads, Martha's Grove [#12], Ridge Trail [#14], Slaughterhouse Canyon Trail [#21], and the Rock and Roll Trail [#22]). Observed locations of this species overlap the existing Sycamore Canyon (#0a), Sycamore Park Drive (#0b), and Cardiac Hill (#27) access roads, and Martha's Grove (#12), Slaughterhouse Canyon Trail (#21), and the Rock and Roll Trail (#22) trail segments. This species was observed in the central-eastern portion of the Preserve, outside of the survey area, during the 2019 rare plant survey (Figure 8b).

Palmer's sagewort (*Artemisia palmeri*)
Status: --/--; CRPR 4.2; County List D
Palmer's sagewort is typically found along creeks and drainages near the coast and within inland chaparral at elevations ranging from 15 to 910 m (50 to 3,000 ft) (CNPS 2012).

Documented occurrences of Palmer's sagewort do not occur within the proposed project survey area, but occur in the Study Area, and this species was not observed within areas of suitable habitat where new trails (e.g., Rock and Roll Trail [#22] segment) are proposed. Palmer's sagewort was found within the northeastern portion of the Preserve and on the San Vicente Connector Parcels during 2019 surveys (ICF 2021).

Deane's milkvetch (*Astragalus deanei*)
Status: --/--; CRPR 1B.1; County List A
Deane's milkvetch is a perennial herb found in chaparral, cismontane woodland, coastal scrub, and riparian forest. Deane's milkvetch has been observed at elevations between 246 to 2,280 feet (75 to 695 meters).

Deane's milkvetch was previously documented at one location adjacent to Sycamore Park Drive (#0b) access road during surveys conducted in 2016 for the 2015 Southern Addition (Figure 8b; AECOM 2018).

San Diego County Viguiera (*Bahiopsis laciniata*)
Status: --/--; CRPR 4.3; County List D
San Diego County Viguiera is a perennial shrub that occurs in chaparral and coastal scrub habitats at elevations between 196 to 2,460 feet (60 to 750 meters) in the southern California region. Although widespread through the southwestern portion of the County, it is less common elsewhere.

Approximately 50 individuals of San Diego County Viguiera were observed during the 2019 general biological survey within the southwestern portion of the survey area scattered within Diegan coastal sage scrub along the Ridge Trail (#14; Figure 8c) segment.

San Diego Goldenstar (*Bloomeria clevelandii*)
Status: --/--; CRPR 1B.1; County List A, MSCP Covered
Palmer's sagewort is typically found along creeks and drainages near the coast and within inland chaparral at elevations ranging from 15 to 910 m (50 to 3,000 ft) (CNPS 2012).

Documented occurrences of San Diego goldenstar do not occur within the proposed project survey area, but occur in the Study Area, and this species was not observed within areas of suitable habitat where new trails (e.g., Rock and Roll Trail [#22] segment) are proposed. San Diego goldenstar was found within the San Vicente Connector Parcels during 2019 surveys (ICF 2021).

Delicate clarkia (*Clarkia delicata*)
Status: --/--; CRPR 1B.2; County List A
Delicate clarkia is an annual herb that occurs in shaded areas or the periphery of oak woodlands and cismontane chaparral. This species occurs at elevations below 3,281 feet (1,000 meters) throughout San Diego County.

Delicate clarkia was previously documented at one location just outside the western boundary of the Preserve during surveys conducted in 2012 (Figure 8c). Suitable oak woodlands and cismontane chaparral are present within portions of the Preserve to support this species, including within or adjacent to Martha's Grove (#12) and Sycamore Canyon (#0a) access road segments of the survey area.

Small-flowered morning glory (*Convolvulus simulans*)
Status: --/--; CRPR 4.2; County List D
Small-flowered morning glory is an annual herb found in chaparral, coastal scrub, and grassland habitats with clay soils or serpentine seeps. This species is found at elevations between 98 to 2,423 feet (30 to 740 meters) throughout southern California.

Small-flowered morning glory has been documented at several locations within critical habitat for San Diego thorn-mint and adjacent to existing Sycamore Park Drive (#0b) access road and Slaughterhouse Canyon Trail (#21) segment in 2008 (Figure 8b).

Variegated Dudleya (*Dudleya variegata*)
Status: --/--; CRPR 1B.2; San Diego County List A; MSCP Covered
Variegated dudleya is a small perennial herb that occurs on clay soils in chaparral, cismontane woodland, coastal scrub, valley and foothill grassland, and vernal pools. Variegated dudleya has been observed at elevations between 10 to 1,902 feet (3 to 580 meters) in southern California.

Documented occurrences of variegated dudleya do not occur within the proposed project survey area, but occur in the Study Area, and this species was not observed within areas of suitable habitat where new trails (e.g., Rock and Roll Trail [#22] segment) are proposed. However, variegated dudleya was observed during the 2019 general biological survey at two locations in the central-western portion of the Preserve outside of the survey where previously documented (Figure 8b).

Palmer's grappling hook (*Harpagonella palmeri*)
Status: --/--; CRPR 4.2; County List D
Palmer's grappling hook is an annual herb that occurs on clay soils in grasslands and coastal sage scrub. This species is found at elevations below 3,281 feet (1,000 meters) in Los Angeles, Riverside, Orange, and San Diego Counties, south to Baja California, and east to Arizona.

Palmer's grappling hook was observed within critical habitat for San Diego thorn-mint in 2008 (Figure 6). This species was also observed adjacent to existing trails: Sycamore Park Drive (#-b) access road, Slaughterhouse Canyon Trail (#21) segment, and Ridge Trail (#14) segment (Figure 8b).

Graceful tarplant (*Holocarpha virgata* ssp. *elongata*)
Status: --/--; CRPR 4.2; County List D
Graceful tarplant is an annual herb that occurs in chaparral, cismontane woodlands, coastal scrub, and valley and foothill grassland. This species is found at elevations between 197 to 3,609 feet (60 to 1100 meters) in Orange, Riverside, and San Diego Counties, and Baja California.

Graceful tarplant was documented in 2008 at two locations within grasslands and southern riparian forest in the western area of the Preserve adjacent to the existing Martha's Grove (#12) trail segment and Sycamore Canyon (#0a) access road (Figure 8b). There is also moderate potential for this species to occur within undeveloped areas proposed for Rock and Roll Trail (#22) and Martha's Grove (#12) trail segments, and in the Southern Parcel.

Willowy monardella (*Monardella viminea*)
Status: FE/SE; CRPR 1B.1; County List A; City MSCP Narrow Endemic
Willowy monardella is a perennial herb that occurs on alluvial ephemeral washes in chaparral, coastal sage scrub, riparian forest, riparian scrub, and riparian woodland. This species is found at elevations between 164 to 738 feet (50 to 225 meters) in San Diego County.

Documented occurrences of willowy monardella do not occur within the proposed project survey area, but occur in the Study Area, and this species was not observed within areas of suitable habitat where new trails (e.g., Rock and Roll Trail [#22]) are proposed. Willowy monardella was documented in 2008 and 2019 at several locations within the Preserve within ephemeral drainages along Clark Canyon east at the southern boundary of the Preserve, and also during the 2019 baseline biodiversity surveys for the Southern Parcel (Figure 8c) and during 2019 baseline biodiversity surveys for the San Vicente Connector Parcels.

California adder's-tongue (*Ophioglossum californicum*)
Status: --/--; CRPR 4.2; County List D
California adder's-tongue is a rhizomatous fern that occurs in grassy, open areas where it is generally associated with short grasses and other herbs. Although often found near vernal pools, it can also occur in relatively dry, stony areas. Elevation range from 196 to 1,722 feet (60 to 525 meters)

California adder's-tongue was documented in 2008 in one area within the Preserve southeast of and adjacent to the proposed Rock and Roll Trail (#22) segment.

Golden-rayed Pentachaeta (*Pentachaeta aurea* ssp. *aurea*)
Status: --/--; CRPR 4.2; County List D
Golden-rayed pentachaeta is an annual herb that is found within San Diego and Riverside counties, and south into Baja California. This small, yellow sunflower typically flowers from March through July. It

occurs in openings of shrublands, woodlands, and forests, and within grasslands (both native and non-native) at elevations between 260 to 6,100 feet (79 to 1,859 meters).

Approximately 50 individuals were mapped in four different locations within the northwestern portion of the Southern Parcel Addition during the 2019 baseline biodiversity surveys (Figure 8c).

Engelmann Oak (*Quercus engelmannii*)
Status: --/--; CRPR 4.2; County List
Engelmann oak is a perennial deciduous tree that grows 16 to 26 feet high in oak woodlands or grassland habitats. Engelmann oak often co-occurs with coast live oak, in savannah-like habitats with annual grasses, or in areas where white sage occurs, at elevations of 50 to 1,300 m (165 to 4,265 ft) (CNPS 2023).

Individual Engelmann oaks were found near the center of the 2015 Southern Addition and in the southeast corner of the 2015 Northern Addition (Figure 8a).

Ashy spike-moss (*Selaginella cinerascens*)
Status: --/--; CRPR 4.1; County List D
Ashy spike-moss is a rhizomatous fern found in chaparral and coastal scrub habitats at elevations below 1,804 feet (550 meters) in the southern California region.

Ashy spike-moss was documented in 2012, 2016, and 2019 throughout the Preserve where suitable habitat is present and was observed within the Study Area along the existing South Raptor Loop South (#5) trail (Figure 8a) and at the southwestern terminus of Sycamore Canyon (#0a) access road where it meets the Ridge Trail (#14) segment within Diegan coastal sage scrub habitat (Figure 8c).

Rush chaparral-star (*Xanthisma junceum*)
Status: --/--; CRPR 4.3; County List D
Rush chaparral-star is a perennial herb found in chaparral and coastal scrub. This species is found at elevations between 787 to 3,280 feet (240 to 1,000 meters) in San Diego County and Baja California.

Rush chaparral-star was observed during surveys conducted in 2012 and 2016 at several locations within the northern portion of the Preserve adjacent to existing Paragon Mesa (#1), South Raptor Loop (#3), and South Raptor Loop south (#5) trail segments (Figure 8a).

Special-Status Plant Species with Potential to Occur

The potential for special-status plant species to occur within the survey area was evaluated based on the elevation, soils, vegetation communities, and level of disturbance of the Preserve, as well as species status, previous occurrences, and distribution in the vicinity of the Preserve. Special-status plant species that were not observed in 2019-2022 surveys or previous years, but may have the potential to occur within the proposed project survey area, are included in Appendix C. One special-status plant species was determined to have a high potential to occur within the survey area: San Diego gumplant (*Grindelia hallii*).

San Diego gumplant (*Grindelia hallii*)
Status: --/--; CRPR 1B.2; County List A
San Diego gumplant is a perennial herb found within meadows in chaparral, valley grassland, and yellow pine forests. This species is found at elevations between 1,445 to 5,480 feet (440 to 1,670 meters) in San Diego County and San Bernardino County.

No additional special-status plant species have a high potential to occur in the survey area, primarily due to the lack of suitable conditions, habitat disturbances from public use of trails, and based on results of general and focused surveys conducted throughout the Preserve in 2008, 2012, 2016, and 2019-2022.

1.4.9 Special-Status Animal Species

Special-status animal species include those that have been afforded special status and/or recognition by the USFWS, CDFW, and/or the County. In general, the principal reason an individual taxon (species or subspecies) is given such recognition 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. As previously mentioned in Section 1.3.3, focused special-status species surveys were completed for Hermes copper butterfly, but additional special-status species are assumed extant where previously documented during past biological surveys within the Preserve.

Special-Status Animal Species Observed or Otherwise Detected

Four special-status animal species were observed within the survey area during the 2019-2022 biological surveys, and 40 other special-status animal species have been documented within the Study Area during previous surveys for the Preserve. The 44 special-status animal species known to occur within the Preserve are listed below, and those with location data are shown on Figures 8a, 8b, and 8c. Status codes are defined in Appendix E.

Invertebrates

Quino Checkerspot Butterfly (*Euphydryas editha quino*)
Status (USFWS/CDFW): FE/--; County Group 1; MSCP narrow endemic
Quino checkerspot butterfly (QCB) is found only in western Riverside County, southern San Diego County, and northern Baja California, Mexico. This species inhabits open and sparsely vegetated areas that contain larval host plant species (principally dot-seed plantain [*Plantago erecta*], woolly plantain [*Plantago patagonica*], Coulter's snapdragon [*Antirrhinum coulterianum*], and rigid bird's beak [*Cordylanthus rigidus*]), as well as nectar sources. Often found on rounded hilltops, ridgelines, and occasionally rocky outcrops, typically below 4,600 feet (1,402 meters) elevation. This species occurs within a wide range of open-canopied habitats, including vernal pools, sage scrub, chaparral, and grassland, as well as open oak and juniper woodland communities.

One individual was observed within the existing Slaughterhouse Canyon Trail (#21) along the southeastern portion of the Preserve during the 2019 general biological survey (Figure 8c). One QCB was documented along the Slaughterhouse Canyon Trail (#21) in 2005, and this species has been recorded historically within the vicinity of the Preserve (County 2013). QCB was also documented in 2019 within the adjacent property located east of the Preserve and proposed Rock and Roll Trail (#22; USFWS 2019). Suitable habitat for this species occurs throughout the Preserve where host plant species are present. Suitable habitat occurs along the portions of the existing Slaughterhouse Canyon Trail (#21) that have

revegetated, and along the revegetated portions of trails leading west from the existing Slaughterhouse Canyon Trail (#21).

Amphibians

Western spadefoot toad (*Spea hammondii*)
Status: --/ Species of Special Concern (SSC); County Group 2
The western spadefoot toad occurs from northern California southward to San Diego County and farther into Baja California to the west of the Sierra Nevada at elevations below 4,500 feet (1,371 meters). This terrestrial species requires temporary pools for breeding. Suitable upland habitats include coastal sage scrub, chaparral, and grasslands but the species is most common in grasslands with vernal pools or mixed grassland-coastal sage scrub areas (Holland and Goodman 1998). The species breeds in temporary pools formed by heavy rains that hold standing water for more than three weeks to allow adequate time for tadpoles to metamorphose but is also found breeding in riparian habitats with suitable water resources (Feaver 1971). The species estivates in burrows within upland habitats adjacent to potential breeding sites (Stebbins and McGinnis 1972).

The western spadefoot toad was observed in the southwestern portion of the Southern Parcel Addition during the 2019 baseline biological surveys (Figure 8c). This species was also detected in the Preserve during the 2008 surveys, near the eastern edge of the Preserve and in the central part of the Preserve near the Martha's Grove (#21) trail segment (Figure 8b).

Reptiles

Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*)
Status: --/ Watch List (WL); County Group 2, MSCP Covered
The Belding's orange-throated whiptail is found in the southwestern portion of California within San Diego, Orange, western Riverside, and southern San Bernardino Counties on the western slopes of the Peninsular Ranges below 3,500 feet (Jennings and Hayes 1994). Suitable habitat for the species includes coastal sage scrub, chaparral, juniper woodland, oak woodland, and grasslands, along with alluvial fan scrub and riparian areas. Occurrence of the species appears to be correlated with the presence of perennial plants (such as California buckwheat, California sagebrush, black sage, or chaparral), which provides a food base for its major food source, termites (Bostic 1966).

This species was observed within the Preserve during the 2008 and 2012 reptile trapping surveys and general wildlife surveys (County 2013) near Paragon Mesa Road, Martha's Grove (#12), Canyon Trail, and south of Ridge Trail (Figures 8a – 8c). Orange-throated whiptails were additionally recorded in the open chaparral and scrub habitat on the 2015 Northern and Southern Additions during surveys in 2016 and a single Belding's orange-throated whiptail was observed within the southwestern portion of the Southern Parcel during 2019 baseline biological surveys (Figure 8c).

San Diegan Tiger Whiptail *(Aspidoscelis tigris stejnegeri*)
Status: --/SSC, County Group 2
The San Diegan tiger whiptail occurs along the coastal region of southern California from San Luis Obispo south to San Diego County. This species inhabits a wide variety of habitats, primarily in hot and dry open areas with sparse vegetation, from sea level to 4,900 feet. Associated habitats for the species include coastal sage scrub, chaparral, riparian areas, woodlands, and rocky areas with sandy or gravel substrates.

This species was observed on several occasions in the chaparral and scrub habitats within the original Preserve in 2008. This species was detected in the open chaparral and scrub habitat on the 2015 Northern and Southern Additions during surveys in 2016, as well as during 2019 surveys of the San Vicente connector parcels. Additionally, this species was incidentally observed on the 2015 Northern and Southern Additions during surveys in 2022 (County 2013) near Martha's Grove Trail, the western terminus of Cardiac Hill, and South Raptor Loop South (Figures 8a and 8b).

Red Diamond Rattlesnake (*Crotalus ruber*)
Status: --/SSC; County Group 2
The red diamond rattlesnake occurs in the southwestern portion of California from San Bernardino County southward to San Diego County, at elevations below 5,000 feet. This species has a wide tolerance for varying environments, including the desert, dense foothill chaparral, warm inland mesas and valleys, and cool coastal zones. Most commonly this species is found near heavy brush with large rocky microhabitats. Chamise and red shank chaparral associations may offer better structural habitat for refuges and food resources for the species.

This species was observed within the Preserve during biological surveys in 2008 and 2012 (County 2013), it was also observed within the Sycamore North property during the 2012 surveys, and in the 2015 Northern and Southern Additions during the 2016 surveys adjacent to Paragon Mesa Road and Rock and Roll Trail (Figures 8a and 8b). Suitable habitat, including chaparral, occurs throughout the Preserve.

Coronado skink (*Plestiodon skiltonianus interparietalis*)
Status: --/WL; County Group 2
The Coronado skink occurs from inland southern San Diego County west to the coast and south into northern Baja California, although they can occur in Riverside County, where it intergrades with Skilton's skink (*Plestiodon skiltonianus skiltonianus*; Tanner 1957). Suitable habitats for this species include grassland, woodlands, pine forests, and chaparral, especially in open sunny areas, such as clearings and edges of creeks or rivers. This species prefers rocky areas near streams with lots of vegetation, but can also be found in areas away from water. They are occasionally seen foraging in leaf litter, but more commonly are found underneath surface objects, such as bark or rocks, where they live in extensive burrows (Stebbins and McGinnis 2012).

This species was captured during the 2008 reptile trapping surveys near Sycamore Canyon Creek (County 2013).

Northern three-lined boa (*Lichanura orcutti*)
Status: --/--; County Group 2
The northern three-lined boa (formerly known as the coastal rosy boa) occurs throughout southern California, south of Los Angeles County from the coast east towards the Mojave and Colorado deserts, and south to San Diego County, although the species is absent from most of Imperial County. This species inhabits arid scrublands, semi-arid shrublands, rocky shrublands, rocky deserts, canyons, and other rocky areas. The species appears to be common in riparian areas, but does not require permanent water.

This species was observed by County Park Rangers on-site in 2008 and on Sycamore Canyon Road leading into the Preserve from the north (County 2013). This species also was observed during 2016 surveys of the 2015 Northern and Southern Additions.

Blainville's Horned Lizard (*Phrynosoma blainvillii*)
Status: --/SSC; County Group 2; MSCP Covered
The Blainville's horned lizard (formerly known as coast horned lizard [Anota coronatum] and San Diego horned lizard [Phrynosoma coronatum blainvillii]) occurs from southern California to northern Baja California. In California, the species predominately occurs from Kern County south to San Diego County and west of the deserts at elevations below 8,000 feet (Brattstrom 1997). The species inhabits a wide variety of vegetation types, including sagebrush scrub, chaparral, grasslands, forests, and woodlands but is restricted to areas with suitable loose, sandy soils with open areas for basking (Jennings and Hayes 1994). The horned lizard is an insectivore primarily feeding on native harvester ants (Pogonmyrmex sp.).

Multiple occurrences have been documented in the Preserve and south of the Preserve during the 2008 surveys within the original Preserve, as well as being recorded during the 2012 survey of Sycamore North and Sycamore South additions. This species was also detected in loose sandy soil along the dirt trails in the 2015 Northern Addition during 2016 surveys, including adjacent to Paragon Mesa Road and an unauthorized trail south of Ridge Trail (Figures 8a and 8c). Suitable habitat occurs within the Preserve, including a majority of the Study Area where there is sagebrush scrub, chaparral, grasslands, forests, and/or woodlands.

Coast Patch-nosed Snake (*Salvadora hexalepis virgultea*)
Status: --/SSC; County Group 2
The coast patch-nosed snake inhabits semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains.

This species was captured during the 2008 reptile trapping surveys (County 2013) near Sycamore Canyon Creek. This species was also observed adjacent to Sycamore Park Drive during the 2008 general wildlife surveys and within undeveloped land proposed for the development of the Rock and Roll Trail in the northeastern portion of the Preserve. Additionally, this species was detected in the open chaparral and scrub habitat during 2016 surveys of the 2015 Northern and Southern Addition (Figure 8b).

Two-striped garter snake (*Thamnophis hammondii*)
Status: --/SSC; County Group 1
The two-striped garter snake is found in California from Monterey County south along the coast to San Diego County and into northern Baja California at elevations below 7,000 feet. This species commonly inhabits perennial and intermittent streams with rocky beds bordered by riparian habitats and dominated by willows and other dense vegetation. The species has also been found in stock ponds and other artificially created aquatic habitats, if bordered by dense vegetation and potential prey are present, such as amphibians and fish.

This species was observed by park rangers during wildlife surveys conducted in 2008 (County 2013). The species was also incidentally observed in an unnamed drainage during 2019 surveys for the San Vicente connector parcels (ICF 2021).

1.4.9.1 Birds

Cooper's Hawk (*Accipiter cooperii*)
Status: --/WL; County Group 1; MSCP Covered
The Cooper's hawk is widespread throughout North America, ranging from southern Canada south to Mexico, and occurring as a year-round resident within the majority of the continental United States. In

California, the species breeds from Siskiyou County south to San Diego County and east to the Owens Valley at elevations below 9,000 feet (Curtis et al. 2006). The species inhabits forests, riparian areas, and more recently, suburban and urban areas, nesting within dense woodlands and forests, as well as isolated trees in open areas (Chiang et al. 2012).

This species was detected within the Preserve during the 2008 wildlife surveys (County 2013), although it was noted that the species was not observed within the Preserve during peak nesting periods in 2008. Additionally, this species was detected during the San Vicente Connector Parcel surveys in 2019 (ICF 2021).

Sharp-shinned Hawk (*Accipiter striatus*)
Status: --/WL; County Group 1
The sharp-shinned hawk primarily winters and migrates throughout California, with breeding records in the northern and central portions of the state, but the species breeding range in California is poorly known. This species may breed within most closed-canopy woodlands and forests, including riparian habitats, from sea level to near alpine elevations, generally nesting in trees near openings. The sharp-shinned hawk's wintering habitat is similar to its breeding habitat, but more expansive to include suburban and agricultural areas.

This species was observed on the 2015 Northern and Southern Additions in 2016 (Figure 8a).

Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)
Status: --/WL; County Group 1; City MSCP Covered
The southern California rufous-crowned sparrow range is restricted to southwestern California, occurring from Santa Barbara south into northern Baja California, at elevations below 5,000 feet (Grinnell and Miller 1944). The species generally inhabits moderate to steep slopes vegetated with grassland, coastal sage scrub, and chaparral. They have been documented predominantly in areas with California sagebrush, but are generally absent from areas with dense stands of coastal sage scrub or chaparral habitats (Collins 1999). The species may occur on steep grassy slopes without shrubs if rock outcrops are present (Zeiner et al. 1990).

Southern California rufous-crowned sparrow was documented during the 2008 and 2012 wildlife surveys in coastal sage scrub and southern mixed chaparral habitats (Figures 8a and 8c; County 2013). This species also was observed during the 2016 surveys of the 2015 Northern and Southern Additions, in the Southern Parcel during the 2019 surveys, and in the San Vicente Connector Parcels during the 2019 surveys.

Bell's Sage Sparrow (*Amphispiza belli belli*)
Status: --/WL; County Group 1
The Bell's sage sparrow is a non-migratory resident on the coastal ranges of California and the western slopes of the central Sierra Nevada mountains. This species occurs year-round in southern California. Breeding habitat includes dry coastal sage scrub and chaparral, desert scrub, and similar other open, scrubby habitats. In foothill chaparral, they tend toward younger, less dense stands that are recovering from recent fires; the species is less common in older, taller stands that have remained unburned.

This species was observed during the 2008 wildlife surveys, including observations of successful breeding within the Preserve (County 2013).

Golden Eagle (*Aquila chrysaetos*)
Status: BCC/WL, FP; County Group 1; MSCP covered
The golden eagle is an uncommon permanent resident and migrant throughout California, except in the center of the Central Valley. It is more common in southern California than in northern regions. The golden eagle inhabits a variety of habitats, nesting in cliffs or trees and rugged terrain. The species forages in plains, grasslands, or low and open shrublands, including chaparral and coastal sage scrub habitats. They are typically absent from heavily forested areas or on the immediate coast, and are almost never detected in urbanized environments.

A first-year golden eagle was observed flying overhead during wildlife surveys conducted in 2008 (County 2013), and one adult bald eagle was observed flying north over the 2015 Northern Addition in 2016.

Burrowing Owl (*Athene cunicularia*)
Status: --/SSC; County Group 1, MSCP Covered
Burrowing owls are found in prairies, grasslands, lowland scrub, agricultural lands, coastal dunes, desert floors, and some artificial open areas (Unitt 2004). This species requires large open expanses of sparsely vegetated areas on gently rolling or level terrain with an abundance of active small mammal burrows. They use rodent or other burrows for roosting and nesting cover and are also known to use pipes, culverts, and nest boxes when burrows are scarce. As with other grassland species, the burrowing owl population in San Diego County is on the decline due to the loss of habitat to development and habitat fragmentation (Unitt 2004).

One burrowing owl was observed along a ridge-top road during the 2008 survey of the original Preserve. The bird was flushed from the road and flew away. The species was not detected in the area again and was probably a migrant (ICF Jones and Stokes 2008).

Red-shouldered Hawk (*Buteo lineatus*)
Status: --/--; County Group 1
Two populations of red-shouldered hawk, an eastern and a western population, occur within North America (Wheeler 2003). The eastern population ranges from southeastern Canada south to Florida and northeastern Mexico, and as far east as central Texas. The western population occurs along the coastal regions of southern Oregon, south to California into northern Baja California. In California, the species occurs west of Sierra Nevada, occupying mature oak and riparian woodlands, eucalyptus groves, and suburban settings near forested areas (Dykstra et al. 2008). Red-shouldered hawks nest in trees, both native and non-native, often located near a water source, such as a stream or a pond (Rottenborn 2000).

This species was documented building a nest near the ranger station in 2008 (County 2013).

Turkey Vulture (*Cathartes aura*)
Status: --/--; County Group 1
The turkey vulture occurs throughout most of North America, documented from southern Canada, south to Mexico, and into Central and South America. In California, the species occurs as a year-round resident along the coastal regions, but breeds throughout the entire state. Preferred habitats include farmland and forests, although the species is also found in pastures and agricultural areas in the west, and has an increased presence in urban areas in the winter (Gaby 1982). The species nests in partly forested to forested areas isolated from humans, with nest sites placed on rock outcrops, fallen trees, and abandoned buildings (Kirk and Mossman 1998). Turkey vultures roost communally, preferring stands of

large trees or hilly areas, usually away from human disturbance (Evans and Sordahl 2009). They are opportunistic feeders of domestic and wild carrion, primarily mammals, but also non-mammals, foraging and locating food through both sight and smell (Stager 1964).

This species was detected during the 2008 wildlife surveys and seen soaring over the Sycamore South property during the 2012 wildlife surveys (Figure 8c; County 2013). This species was also observed on multiple occasions flying over the 2015 Northern and Southern Additions in 2016 and the San Vicente Connector parcels in 2019, and a pair with an active nest with two eggs was found within the western part of the 2015 Northern Addition in 2016. This species was also detected within the Southern Parcel during the 2019 baseline biological surveys (Figure 8c).

Vaux's Swift (*Chaetura vauxi*)
Status: --/SSC
Vaux's swift is a migrant and winter visitor to San Diego County (Unitt 2004). This species can be seen in low numbers flying across any habitat type in the County. Spring migration is typically between April and May, and fall migration is typically between September and October. This species breeds in old-growth forests, and changes in forest structure and fragmentation in its nesting range have led to the species decline (Dudek 2000).

One Vaux's swift was seen during 2008 surveys of the original Preserve (County 2013).

Northern Harrier (*Circus cyaneus*)
Status: --/SSC; County Group 1; MSCP Covered
The northern harrier is a widely distributed species occurring throughout North America from Canada to Mexico, and further south into Central America. In California, the species occurs as a year-round resident, migratory breeder, and wintering individual. Northern harriers inhabit open areas, including wetlands, marshes, marshy meadows, grasslands, riparian woodlands, desert scrub, as well as pastures and agricultural areas. The northern harrier breeds at elevations below 8,000 feet from the northern portion of the state, south through the central coast and valley, and into the southern portion of the state, although northern harriers are largely absent from the southern desert regions. Breeding populations in southern California occur from Ventura County to San Diego County, and are highly fragmented, with many local populations extirpated, mostly likely as a result of habitat loss and degradation (Shuford and Gardali 2008). Northern harriers nest on the ground in wetlands and uplands, within patches of dense, often tall, vegetation in undisturbed areas (Smith et al. 2011).

This species was detected foraging over the Preserve during the 2008 wildlife surveys (County 2013). Suitable nesting habitat (grasslands and riparian woodlands) can be found within the Preserve.

White-tailed Kite (*Elanus leucurus*)
Status: --/FP; County Group 1
The white-tailed kite occurs in small portions of Washington, south to California, and east to Texas and Florida, as well as further south to Mexico and South America. In California, this species is a year-long resident of coasts and valleys west of the Sierra Nevada foothills and southeast deserts, although the species has been documented breeding in arid regions east of the Sierra Nevada and within Imperial County (Small 1994). White-tailed kites inhabit low elevation grasslands, wetlands, oak woodlands, and open woodlands, and are associated with agricultural areas. This species breeds in riparian areas adjacent to open spaces, nesting in isolated trees or relatively large stands of trees (Dunk 1995).

This species was observed perched and foraging near Sycamore Canyon Creek during the 2008 wildlife surveys (County 2013).

California Horned Lark (*Eremophila alpestris actia*)
Status: --/WL; County Group 2
The California horned lark occurs on coastal slopes and lowlands from Sonoma County to northern Baja California, Mexico. This species generally inhabits sandy beaches, agricultural fields, grasslands, and other open areas.

California horned lark have been documented in multiple locations within the Preserve in 2008 (Figures 8b and 8c).

Bald Eagle (*Haliaeetus leucocephalus*)
Status: FE, BCC/SE, FP; County Group 1, MSCP Covered
The bald eagle occurs throughout North America. In San Diego County, this species is rare, but has been documented annually during winter, observed in the foothills and mountains nearby lakes. Bald eagle nesting occurs in close proximity to lakes and other bodies of water.

This species was observed flying over the 2015 Northern Addition in 2016 (Figure 8a; County 2017).

Yellow-breasted Chat (*Icteria virens*)
Status: --/SSC; County Group 1
The yellow-breasted chat occurs throughout North America from Canada, south to Baja California and Mexico. This species breeds from southern British Columbia, south to Baja California, and winters in southern Baja California and south Texas, south to Mexico and Panama. In California, this species occurs as a migrant and summer resident, breeding from the coastal regions in northern California, east of the Cascades, and throughout the central and southern portions of the state. The yellow-breasted chat breeds in early successional riparian habitats, with a well-developed shrub layer, and an open canopy, nesting on the borders of streams, creeks, rivers, and marshes.

This species was detected in riparian habitat near Clark Canyon during wildlife surveys conducted in 2008 (County 2013).

Osprey (*Pandion haliaetus*)
Status: --/WL; County Group 1
Within California, breeding populations of osprey reside in the Cascade and Sierra Mountain ranges, although a small population of the species also breeds within San Diego County. While widely observed on the coast, these birds are rare transients in the interior portions of southern California, as well. Ospreys are restricted to large water bodies, such as rivers, lakes, and reservoirs that support fish and contain suitable nesting habitat, such as rocky pinnacles or large trees and snags. This species builds large nests, often in dead tops of older trees and artificial structures.

Osprey were observed foraging over the Preserve during the 2008 wildlife surveys (County 2013), and this species is also often seen foraging at San Vicente Reservoir, which is southeast of the Preserve; however, breeding has not been documented in the vicinity of the reservoir or the Preserve (Unitt 2004).

Coastal California Gnatcatcher (*Polioptila californica californica*)
Status: FT/SSC; County Group 1; MSCP covered
Coastal California gnatcatcher is a widespread, resident species in San Diego County that inhabits coastal sage scrub, coastal bluff scrub, and coastal sage-chaparral scrub habitats, typically dominated by California sagebrush and flat-top buckwheat.

One individual was observed within the survey area for the proposed Rock and Roll Trail alignment in non-native grassland habitat during the 2019 general biological survey. An additional two individuals were detected during the 2022 Hermes copper butterfly surveys adjacent to South Raptor Loop South Trail (Figures 8a and 8b). This species has been observed throughout the Preserve and Study Area during previous survey efforts (County 2013). A single coastal California gnatcatcher was heard calling during 2016 surveys of the 2015 Northern and Southern Additions, but nesting was not observed. One coastal California gnatcatcher was observed during the 2019 surveys of the Southern Parcel, and during the 2019 surveys for the San Vicente Connector Parcels. Suitable habitat for this species occurs throughout the Preserve, and critical habitat for this species occurs directly south of the Preserve.

Yellow Warbler (*Setophaga petechia*)
Status: BCC/SSC; County Group 2
The yellow warbler is a common to locally abundant species breeding throughout California, excluding most of the Mojave Desert and all of the Colorado Desert, and wintering in northern Mexico (Lowther et al. 1999). The species breeds in riparian areas dominated by willows near rivers, streams, lakes, and wet meadows, as well as in montane shrub and conifer forests in higher-elevation areas (Shuford and Gardali 2008).

The yellow warbler was heard singing within the central portion of the Southern Parcel during the 2019 baseline biological surveys (Figure 8c). Additionally, this species was observed foraging in coastal scrub during 2019 surveys of the San Vicente Connector Parcels.

Western Bluebird (*Sialia mexicana*)
Status: --/--; County Group 2; MSCP Covered
The western bluebird is found throughout the western United States, Mexico, and southwestern Canada. This species is a common year-round resident throughout California, but is absent from the higher mountain regions and eastern deserts (Guinan et al. 2008). Western bluebirds breed in open woodlands, riparian habitats, grasslands, and farmlands. This species nests and roosts in cavities of trees and snags, often in holes previously created by woodpeckers, as well as nest boxes. Bluebirds can be observed in a wider variety of habitats in the winter.

A pair of western bluebirds was observed near Sycamore Canyon Creek during the 2008 wildlife surveys (Figure 8b; County 2013) and was detected on the 2015 Northern Addition during the 2016 surveys.

Barn Owl (*Tyto alba*)
Status: --/--; County Group 2
The barn owl is a wide-ranging species found throughout the continental United States and San Diego County. This species is a common, yearlong resident, observed in open habitats, such as grassland, chaparral, riparian, and wetlands, while avoiding dense forests and open desert habitats (Zeiner et al. 1990). Barn owls can also be observed in urban and suburban areas. Barn owls nest in sheltered areas of cliffs or artificial structures, on ledges, and in crevices, culverts, nest boxes, and cavities in trees. This species roosts in dense vegetation, as well as on cliffs, buildings, and other artificial structures.

Barn owls were recorded on the original Preserve during the 2008 surveys, during the 2012 surveys at both Sycamore South and Sycamore North properties, and during the 2019 surveys for the San Vicente Connector parcels (Figure 8a; County 2013).

1.4.9.2 Mammals

Pallid Bat (*Antrozous pallidus*)
Status: --/SSC; County Group 2
The pallid bat is a locally common species, observed at low elevations in California. This species is associated with arid and open habitats, including grasslands, shrublands, woodlands, and forests, often with open water nearby. Pallid bats prefer rocky outcrops, cliffs, and crevices with access to open habitats for foraging. Day roosts for the species include caves, crevices, mines, and occasionally hollow trees and buildings. Pallid bats appear to be intolerant of most human disturbances, as they are mostly absent from urban and suburban areas.

This species was documented within the Preserve during surveys in 2012 (Figure 8a; County 2013). Individuals were captured in the 2015 Northern Addition, adjacent to an existing informal trail.

Dulzura Pocket Mouse (*Chaetodipus californicus femoralis)*
Status: --/SSC; County Group 2
The Dulzura pocket mouse occurs in a variety of habitats, including coastal scrub, chaparral, and grasslands in San Diego County. The species is associated with grass-chaparral edges.

Suitable grassland habitat for this species occurs within the Preserve. One individual was captured during the 2008 small mammal trapping program, as well as during the 2012 surveys of the Sycamore North addition, during the 2016 surveys of the 2015 Northern and Southern Additions, and during the 2019 surveys of the San Vicente Connector parcels (Figure 8a; County 2013).

Northwestern San Diego Pocket Mouse (*Chaetodipus fallax fallax*)
Status: --/SSC; County Group 2
The northwestern San Diego pocket mouse occurs from western Riverside County throughout southwestern California to northern Baja California at elevations below 6,000 feet (McClenaghan 1983). This species inhabits coastal sage scrub, grasslands, and chaparral communities, and generally exhibits a strong microhabitat affinity for moderately gravelly and rocky substrates (Price and Waser 1984). Northwestern San Diego pocket mice tend to forage for seeds from California sagebrush, California buckwheat, lemonade berry, and grasses under shrub and tree canopies, or around rock crevices (Reichman and Price 1993).

Nine northwestern San Diego pocket mice were captured during the 2012 small mammal trapping program (County 2013) in both the Sycamore South and Sycamore North properties (Figures 8a and 8b). Individuals were captured in the 2015 Northern Addition adjacent to an existing informal trail and in the southwestern portion of the Preserve, adjacent to Sidewinder Rogue Trail. Additionally, this species was captured in the San Vicente Connector parcels in 2019.

Townsend's Big-eared Bat (*Corynorhinus townsendii*)
Status: --/SSC, County Group 2
Townsend's big-eared bat occurs throughout California, but distribution is strongly correlated with the availability of caves and cave-like roosting habitat. This species is found in a variety of habitats that contain caves or cave-like structures, such as buildings. In San Diego County, this species is presumed to

be absent from coastal areas, as they are more commonly observed in historic mining districts and boulder-strewn regions (such as Escondido, Lakeside, Dulzura, and Jacumba).

This species was observed on the 2015 Northern Addition in 2016 (Figure 8b; County 2017) and during the 2019 surveys of the San Vicente Connector parcels (ICF 2021).

Western Mastiff Bat (*Eumops perotis californicus*)
Status: --/SSC; County Group 2
The western mastiff bat has three widely separated populations, with one population occurring in the southwestern United States, from California east toward Texas and south across northern Mexico (Tremor et al. 2017). In California, this species occurs from Monterey County to San Diego County, from the coast eastward to the Colorado Desert (Zeiner et al. 1990). The western mastiff bat is found in open, semi-arid to arid habitats, including coastal and desert scrub, grasslands, woodlands, and palm oases. This species prefers to roost in high situations above the ground, such as on vertical cliffs, rock quarries, outcrops of fractured boulders, and occasionally tall buildings.

This species was documented during the 2008 wildlife surveys in both the Sycamore South and Sycamore North properties (County 2013). This species was observed adjacent to informal trails in the 2015 Northern Addition. This species was also detected during the Southern Parcel 2019 baseline biological surveys adjacent to Clark Canyon Creek (Figure 8c).

Western Red Bat (*Lasiurus blossevillii*)
Status: --/SSC; County Group 2
The western red bat has a broad distribution, ranging from southern British Columbia to the western United States, and further south through Mexico, Central America, and South America. In California, this species is locally common, occurring in Shasta County, south to San Diego County, and west of the Sierra Nevada/Cascade Range and deserts (Zeiner et al. 1990). This species mainly occurs in riparian woodlands populated by willows, cottonwoods, sycamores, and oak trees, but can also be observed in non-native vegetation, such as tamarisk, eucalyptus, and orchards. The western red bat typically forages along river and stream courses, but also feeds along forested meadow edges, as well as suburban and urban parks (Tremor et al. 2017). This species primarily roosts in trees, preferring heavily shaded areas that are open underneath (Zeiner et al. 1990).

This species was documented during the 2008 and 2012 wildlife surveys in both the Sycamore South and Sycamore North properties (Figure 8a). The western red bat was also observed within undeveloped land in the 2015 Northern Addition, adjacent to an area proposed for the development of new trails, as well as adjacent to the South of Ridge Trail (Figure 8c).

Western Yellow Bat (*Lasiurus xanthinus*)
Status: --/SSC
The western yellow bat occurs within wooded areas and desert scrub habitat. This species roosts in foliage, particularly thorny vegetation, palms, and other desert riparian habitats. Western yellow bats range is documented from southern Santa Barbara County and south (on the coastal slope) to the vicinity of San Quintin, Baja California.

This species was observed in 2012 in the Sycamore South property. This species was also detected during the 2016 surveys in the 2015 Southern Addition (Figures 8a and 8b).

San Diego Black-tailed Jackrabbit (*Lepus californicus bennettii*)
Status: --/SSC; County Group 2
The San Diego black-tailed jackrabbit is one of nine subspecies of black-tailed-jackrabbit that occur in the United States (Hall 1951). This species occurs along the coastal regions of southern California, south to northern Baja California (Hall 1951). San Diego black-tailed jackrabbits are found in arid regions, preferring grasslands, agricultural fields, and sparse scrub habitats. They are typically absent from areas with high-grass or dense brush, such as closed-canopy chaparral habitat, primarily occupying short-grass and open scrub habitats.

This species was documented during both the 2008 and 2012 wildlife surveys (County 2013) at the eastern edge of the 2015 Northern Addition, outside of existing informal trails and outside of undeveloped land proposed for the development of new trails (Figures 8a – 8c). This species was also observed in the northwestern portion of the Southern Parcel during the 2019 baseline biological surveys (Figure 8c) and in the southern San Vicente Connector parcel in 2019.

Western Small-footed Myotis (*Myotis ciliolabrum*)
Status: --/--; County Group 2
The western small-footed myotis is documented throughout California, occurring in desert, chaparral, riparian areas, and forest habitats. Presence of riparian areas and water features appear to be important in the distribution of this species. Western small-footed myotis is strongly associated with chaparral and montane habitats in San Diego County. This species roosts solitarily or in small numbers in rocky crevices, caves, mines, snags, buildings, and bridges.

This species was documented during the 2008 and 2012 wildlife surveys in both the Sycamore South and Sycamore North properties, adjacent to the South of Ridge Trail, and within undeveloped land in the 2015 Northern Addition, in an area proposed for the development of new trails (Figures 8a – 8c). This species was also detected during the Southern Parcel 2019 baseline biological surveys adjacent to Clark Canyon Creek (Figure 8c).

Yuma Myotis (*Myotis yumanensis*)
Status: --/--; County Group 2
Yuma myotis occurs in western North America, ranging from British Columbia to Central Mexico, and eastward toward Colorado and Oklahoma (Sims 2000). This species is widespread in California, but uncommon in the Mojave and Colorado Deserts, except in the mountain ranges bordering the Colorado River Valley (Zeiner et al. 1990). Yuma myotis is found in a variety of habitats, including juniper and riparian woodlands, riparian forests, and desert regions where bodies of water (i.e., rivers, streams, ponds, lakes, etc.) are present. This species is closely associated with water, which it uses for foraging and as a source of drinking water. They roost within caves, attics, buildings, mines, and other similar structures, as well as underneath bridges.

This species was documented during the 2008 and 2012 wildlife surveys in both the Sycamore South and Sycamore North properties, adjacent to the South of Ridge Trail, and within undeveloped land in the 2015 Northern Addition, in an area proposed for the development of new trails (Figures 8a – 8c). This species was also detected during the Southern Parcel 2019 baseline biological surveys adjacent to Clark Canyon Creek (Figure 8c) and during the 2019 surveys of the San Vicente Connector parcels.

San Diego Desert Woodrat (*Neotoma lepida intermedia*)
Status: --/SSC; County Group 2
The San Diego desert woodrat occurs along the coastal regions of Central California, south to northern Baja California (Verts and Carrawaay 2002). In California, this species is found as far north as San Luis Obispo County, south to San Diego County, and in the western portions of San Bernardino County and Riverside County. The San Diego desert woodrat occupies a variety of shrub and desert habitats, such as coastal sage scrub, chaparral, pinyon-juniper woodland, and Joshua tree woodland, among others. This species is often associated with rock outcroppings, boulders, cacti patches, and areas with dense understories. San Diego desert woodrats construct dens for shelter, food storage, and nest around rock outcroppings and cacti, utilizing various materials to build their shelters, such as twigs, sticks, and other debris.

Twelve individuals of San Diego desert woodrat were captured during the 2008 trapping program, and seven individuals were captured during the 2012 trapping program (County 2013). The individuals were documented in both the Sycamore South and Sycamore North properties. This species was also detected during the Southern Parcel 2019 baseline biological surveys (Figure 8c) and during the 2019 surveys of the San Vicente Connector parcels. Woodrat middens were not observed within any existing informal trails or in undeveloped areas proposed for the development of trails.

Pocketed Free-tailed Bat (*Nyctinomops femorosaccus*)
Status: --/SSC; County Group 2
The pocketed free-tailed bat inhabits semi-arid habitats, including pinyon-juniper woodland, desert scrub, succulent scrub, desert riparian, desert washes, alkali desert scrub, Joshua tree woodland, and palm oases (Lancaster 2000). This species roosts in caves, mines, tunnels, and rock crevices, but is also known to occasionally roost in buildings and holes in trees. The pocketed free-tailed bat occurs in the southwestern United States and northern Mexico. This species is rare in California, occurring in Riverside, San Diego, and Imperial Counties (Zeiner et al. 1990).

This species was documented within Sycamore North and Sycamore South properties during the 2008 and 2012 wildlife surveys (Figure 8c; County 2013). The observation occurred within Diegan coastal sage scrub habitat, within undeveloped lands in the southern portion of the 2015 Northern Addition. This species was also detected during the Southern Parcel 2019 baseline biological surveys adjacent to Clark Canyon Creek (Figure 8c) and during the 2019 surveys of the San Vicente Connector parcels.

Big Free-tailed Bat (*Nyctinomops macrotis*)
Status: --/SSC; County Group 2
Big free-tailed bats are typically found in the desert and arid grasslands with rocky out- crops, canyons, or cliffs (BCI 2008). This species roosts on cliffs and occasionally in buildings. Isolated populations can be found throughout the southwestern U.S. into Mexico. The regional status and species trends are unclear, but it is likely vulnerable to disturbance, especially at roosts, and perhaps also to threats to the food supply from artificial toxins.

This species was observed foraging within the original Preserve in 2008.

Southern Mule Deer (*Odocoileus hemionus*)
Status: --/--; County Group 1; MSCP covered
Southern mule deer is found in southern Riverside County (Tahquitz Valley), south on the coastal slope to the vicinity of San Quintin, Baja California, Mexico. This species inhabits coastal sage scrub, riparian

and montane forests, chaparral, grasslands, and croplands, as well as open areas, if there is scrub cover present. Crepuscular activity and movements are along routes that provide the greatest amount of protective cover.

One individual was observed within the survey area for the proposed Rock and Roll Trail alignment during the 2019 general biological survey (Figure 8b). Southern mule deer were documented throughout the original Preserve in 2008 and are known to use the wildlife corridors along SR-67 to the east and beneath Scripps Poway Parkway to the north. Mule deer were observed on wildlife cameras installed at both the Sycamore South and Sycamore North properties in 2012, and tracks have been observed throughout both of these properties (County 2013). This species was also detected within the 2015 Northern and Southern Additions during 2016 surveys; however, due to the lack of permanent water within these parcels, mule deer likely forage, seek shelter, and move through them en route to areas with fresh water. This species was also detected during the Southern Parcel 2019 baseline biological surveys adjacent to Clark Canyon Creek, and in the San Vicente Connector parcels in 2019 (Figure 8c). Suitable habitat for this species occurs throughout the Preserve; however, mule deer have not been documented bedding within the survey area during biological surveys.

Mountain lion (*Puma concolor*)
Status: --/SSC; County Group 2; MSCP covered
Mountain lions occur within riparian woodland, forest, scrub, chaparral, grassland, and desert habitats, with rugged terrain being especially important for movements throughout and between territories. This species primarily preys on mule deer, but also consumes bighorn sheep and smaller prey species, including coyotes, skunks, and raccoons.

This species was observed by park rangers on two separate occasions within the Preserve in 2008 (County 2013).

Special-Status Animal Species with Potential to Occur

Special-status animal species present within the Preserve/survey area or with the potential to occur within the Preserve/survey area are included in Appendix D. The species are grouped into invertebrates and vertebrates (fish, amphibians, reptiles, birds, and mammals) and alphabetized by scientific name. Most of the previous sensitive wildlife species data detections were not appropriate for the constraints model used to determine the potential to occur for plants, due to the mobility of the wildlife species and the method of data collection. A single-point location of a wildlife species does not represent the home range that an individual utilizes to fulfill its life history requirements. Depending on the species, this range could cross many acres of habitat. Two additional special-status animal species that were not observed in the survey area but were determined to have a high potential to occur include loggerhead shrike (*Lanius ludovicianus*). These species are further discussed in Appendix D. Refer to Appendix E for an explanation of status codes.

In addition, the Hermes copper butterfly survey/habitat assessment conducted in 2020 and the protocol-focused survey conducted in 2022 were negative, indicating the site is not occupied by the Hermes copper butterfly. This species is a federally listed species and a County Group 1 sensitive species. It occurs in San Diego County, south of Fallbrook to northern Baja California, Mexico, within southern mixed chaparral and coastal sage scrub with mature specimens of its larval host plant, spiny redberry. The results of Hermes copper butterfly habitat mapping are included as Figure 9, *Spiny Redberry with California Buckwheat*. Although not occupied, the proposed project site does support a

limited amount of potential Hermes copper habitat as defined by the County guidelines; however, the potential for the species to colonize the site in the future is considered low. One Hermes copper was recorded within the Preserve before the 2003 Cedar Fire (County 2008); this fire may have extirpated the species from the Preserve. The Preserve is noted in the Hermes Copper Butterfly Special-Status Species Assessment as having core and non-core occurrence areas within the Preserve, but these occurrences are presumed extirpated (USFWS 2021a).

Physical or Biological Features (PBFs) are features that are essential to the conservation of a species and, within areas currently occupied by that species, which may require special management considerations or protection. PBFs that USFWS identified for Hermes copper butterfly also reference spiny redberry and other nectar sources in proximity to buckwheat; therefore, the critical habitat within the Preserve supports the PBFs as identified by USFWS (USFWS 2021b). There is currently no approved recovery plan or Habitat Conservation Plan (HCP) in place for the Hermes copper butterfly; however, the 2022 Hermes Copper Butterfly Recovery Outline (USFWS 2022) refers to the mitigation required by the County guidelines as a conservation action; therefore, the proposed project is relying on the mitigation required by the County guidelines for impacts to Potential Hermes Copper Butterfly Habitat. In addition, the suitable habitat within the proposed project footprint comprises a small fraction of the potentially suitable habitat for this species within the Preserve and is contiguous with habitat throughout the Preserve. The proposed project is not expected to reduce the populations of these species to below a self-sustaining level.

Raptor Foraging

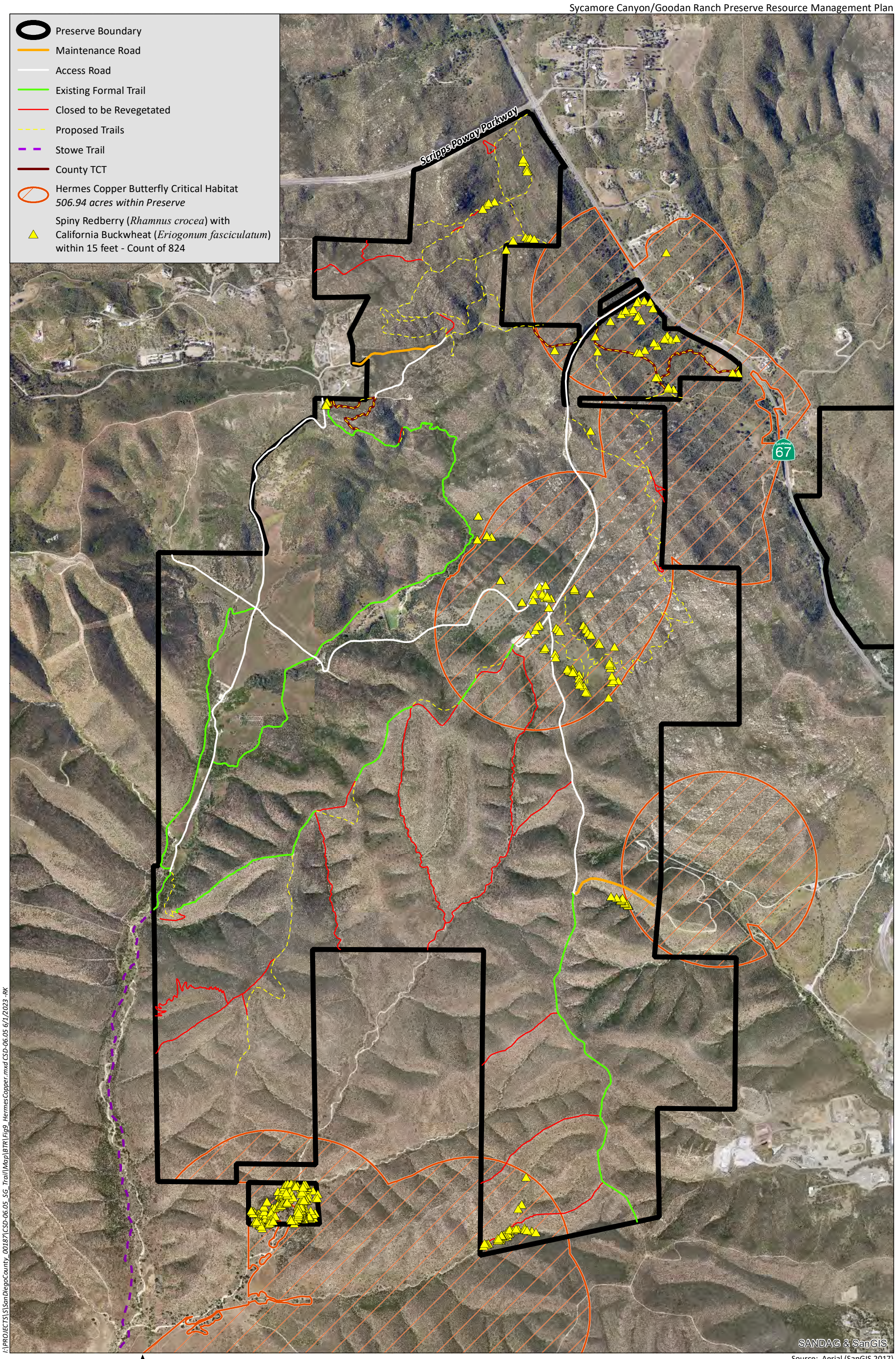
Several species of raptors have been observed flying over the Preserve during previous biological surveys for the Preserve. Raptors observed or documented within the Preserve include Cooper's hawk, turkey vulture, red-tailed hawk, sharp-shinned hawk, barn owl, osprey, red-shouldered hawk, white-tailed kite, northern harrier, turkey vulture, American kestrel, golden eagle, and bald eagle. The County (2010b) defines raptor foraging habitat as, "Land that is a minimum of five acres (not limited to project boundaries) of fallow or open areas with any evidence of foraging potential (i.e., burrows, raptor nests, etc.)." The disturbed habitat within the Preserve, as well as less densely vegetated areas of Diegan coastal sage scrub and chaparral, are considered raptor foraging habitat, and occupy greater than five acres, supporting burrows of common small mammals.

1.4.10 Jurisdictional Waters and Wetlands

Jurisdictional waters and riparian habitat are present within the jurisdictional delineation review area and are further discussed below. Jurisdictional waters and riparian habitat within the Preserve are primarily associated with ephemeral streams in Sycamore Canyon and Clark Canyon, which flow into the intermittent Sycamore Creek that flows south across the northwestern portion of the Preserve. Additionally, jurisdictional waters are also associated with ephemeral streams in the eastern portion of the Preserve that flow southeast through Slaughterhouse Canyon and drain off-site towards San Vincente Creek. Both Sycamore Creek and San Vincente Creek ultimately drain into the San Diego River.

Waters of the U.S.

All fifteen sampling points evaluated were characterized as non-wetland waters of the U.S., as discernable by an OHWM. Two sample pits confirmed the absence of wetland conditions at sites with hydrophytic vegetation; therefore, no wetland waters of the U.S. occur within the jurisdictional



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0 1,500 Feet

Source: Aerial (SanGIS 2017)

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Spiny Redberry (*Rhamnus crocea*) with California Buckwheat (*Eriogonum fasciculatum*)

Figure 9

delineation review area. A total of 0.51 acre of non-wetland waters of the U.S. occur within the jurisdictional delineation review area (Table 3, *Waters of the U.S./State*; Figures 10a-10c, *Waters of the U.S.*). The datasheets and photographs of the sampling points are included in Appendix G.

Table 3
WATERS OF THE U.S./STATE

Waters of the U.S.	Acreage[1]
Wetland Waters	--
Non-wetland Waters/Streambed	0.51
TOTAL	0.51

[1] Acres rounded to the nearest hundredth.

Regional Water Quality Control Board Jurisdiction

The waters of the U.S. delineated within the jurisdictional delineation review area (Table 3; Figures 10a-10c) would also be subject to RWQCB jurisdiction as waters of the State, pursuant to CWA Section 401. No wetland features were determined to be geographically isolated and subject to RWQCB jurisdiction pursuant to the Porter-Cologne Act.

California Department of Fish and Wildlife Jurisdiction

CDFW jurisdictional areas within the jurisdictional delineation review area consist of southern riparian forest, dense coast live oak woodland, and streambed (Table 4, *California Department of Fish and Wildlife Jurisdiction*; Figures 11a-11c, *CDFW Jurisdictional Areas*). The CDFW jurisdiction totals 0.60 acre within the jurisdictional delineation review area.

Table 4
CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE JURISDICTION

Habitat Type	Acreage[1]
Riparian-Vegetated Streambed	
Southern Riparian Forest	0.06
Dense Coast Live Oak Woodland	0.04
Subtotal	***0.10***
Unvegetated Streambed	
Streambed	0.50
Subtotal	***0.50***
TOTAL	**0.60**

[1] Acres rounded to the nearest hundredth.

1.4.11 Habitat Connectivity and Wildlife Corridors

Wildlife corridors connect otherwise isolated pieces of habitat and allow the movement or dispersal of plants and animals. Local wildlife corridors allow wildlife species access to resources, such as food, water, and shelter within the framework of their daily routine. Regional corridors provide these functions over a larger scale and link two or more large habitat areas, allowing the dispersal of organisms and the consequent mixing of genes between populations. A corridor is a specific route that is used for the movement and migration of species and may be different from a linkage in that it represents a smaller or narrower avenue for movement. A linkage is an area of land that supports or

contributes to the long-term movement of animals and genetic exchange by providing live-in habitat that connects to other habitat areas. Many linkages occur as steppingstone linkages that are made up of a fragmented archipelago arrangement of habitat over a linear distance.

The PAMA in the region is based on the core and linkage concept of landscape-level conservation. The configuration of preserve lands includes large, contiguous areas of habitat supporting important species populations or habitat areas and important functional linkages and movement corridors between them. The Preserve occurs entirely within lands identified as PAMA under the South County MSCP Subarea Plan (Figure 4). Additional MSCP PAMA lands are located north, east, and southeast of the Preserve.

With respect to wildlife movement in the region, conservation targets generally include conserving core blocks of coastal sage scrub and chaparral habitat, and other sensitive habitat types, as well as maintaining linkages between critical biological resource areas. The Preserve is within two BRCAs: Central Poway/San Vicente Reservoir/North Poway BRCA overlaps the northern portion of the Preserve, and Mission Trails/Kearny Mesa/East Elliot/Santee BRCA overlaps the southern portion of the Preserve. The Preserve helps facilitate connections to other large open space areas, including Mission Trail Regional Park to the southwest, MCAS Miramar to the west, Mount Woodson and Iron Mountain to the north, as well as San Vicente Highlands Preserve and Boulder Oaks Preserve to the east. Vegetation within the Preserve is composed primarily of chaparral and coastal sage scrub habitats. According to the South County MSCP Habitat Evaluation Model, the majority of habitat within the Preserve is ranked as very high and high based on the potential to support coastal California gnatcatcher habitat, high biological diversity/species richness, target species, and wildlife corridors. Areas that ranked the highest included portions of both Sycamore Canyon and Clark Canyon and are expected to be key components for the movement of wildlife in the region. Large to medium size mammals that are known or are expected to utilize and travel through the Preserve include southern mule deer, coyote (*Canis latrans*), bobcat (*Lynx rufus*), and mountain lion. Birds would be expected to move unobstructed between key habitat blocks of coastal sage scrub and riparian habitat types, providing important breeding, foraging, and dispersal functions.

Additionally, the Preserve contains key blocks of coastal sage scrub habitat occupied by coastal California gnatcatcher. Coastal California gnatcatchers have historically been detected within the Preserve, prior to the 2003 Cedar Fire, and have been more recently detected with the recovery of the coastal sage scrub habitat from the 2003 Cedar Fire. Other species expected to use the Preserve include a variety of small mammals, lizards, snakes, and other birds. Within the Preserve, both Sycamore Canyon and Clark Canyon function to facilitate amphibian, bird, small and large mammal movement in the local area. Due to the lack of permanent water, wildlife likely forage, seek shelter, and move through the Preserve en route to areas with fresh water, such as San Vicente Reservoir to the east or Slaughterhouse Canyon to the south.

There are no barriers to impede wildlife within the Preserve, though larger transportation corridors, such as Scripps Poway Parkway, SR-67, and SR-52, are located to the north, northeast, and southwest of the site, which may constrain wildlife movement. The area facilitates movement between the Poway and Ramona areas to Mission Trails Regional Park in the south and connects these areas to the eastern Cuyamaca and Laguna Mountains.

Preserve Boundary
Maintenance Road
Access Road
Closed to be Revegetated
Proposed Trails
1 Stream Crossing
Non-wetland Waters of the U.S.

Trail Number - Trail Name

0b - Sycamore Park Drive Access Road
1 - Paragon Mesa - West
2 - Paragon Mesa - Informal
3 - South Raptor Loop
4 - South Raptor Loop Northwest
5 - South Raptor Loop South
6 - Paragon Mesa - South
7 - Waterfall Trail
8 - Calle de Rob
9 - Calle de Rob - From Access Rd to Paragon
10 - Calle de Rob
11 - Calle de Rob - Eastern Segment; County TCT
25 - Connection to Calle de Rob/Rock and Roll Trail
26 - North Interior Loop
29 - Connection - Calle de Rob Eastern; County TCT
30 - Connection to Calle de Rob and South Raptor Loop South
31 - County TCT
32 - Overlook

Scripps Poway Parkway
67

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0 900 Feet

Source: Aerial (SanGIS 2017)

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Waters of the U.S.

Figure 10a

Preserve Boundary
Maintenance Road
Access Road
Existing Formal Trail
Closed to be Revegetated
Proposed Trails
One-way Trail Direction
Stream Crossing
Non-wetland Waters of the U.S.

Trail Number - Trail Name

0b - Sycamore Park Drive Access Road
0b - Sycamore Park Drive Access Road
8 - Calle de Rob
9 - Calle de Rob - From Access Rd to Paragon
11 - Calle de Rob - Eastern Segment; County TCT
12 - Martha's Grove
13 - West Trail - Connects to Stowe Trail
14 - Ridge Trail
16 - Canyon Trail - Informal
17 - Clark Canyon to Ridge - West - Informal
18 - Clark Canyon to Ridge - East - Informal
19 - North Slaughterhouse - Informal
21 - Slaughterhouse Canyon Trail
22 - Rock and Roll Trail
22a - Rock and Roll Trail
22b - Rock and Roll Trail
25 - Connection to Calle de Rob/Rock and Roll Trail
27 - Access Rd - Cardiac Hill
28a - County TCT; Goodan Staging Area to Access Rd
28b - County TCT; Martha's Grove to Access Rd
29 - Connection - Calle de Rob Eastern; County TCT
31 - County TCT
32 - Overlook
33 - Rock and Roll Staging Area

Sycamore Park Drive
Sycamore Canyon Rd
67

0 900 Feet

Source: Aerial (SanGIS 2017)

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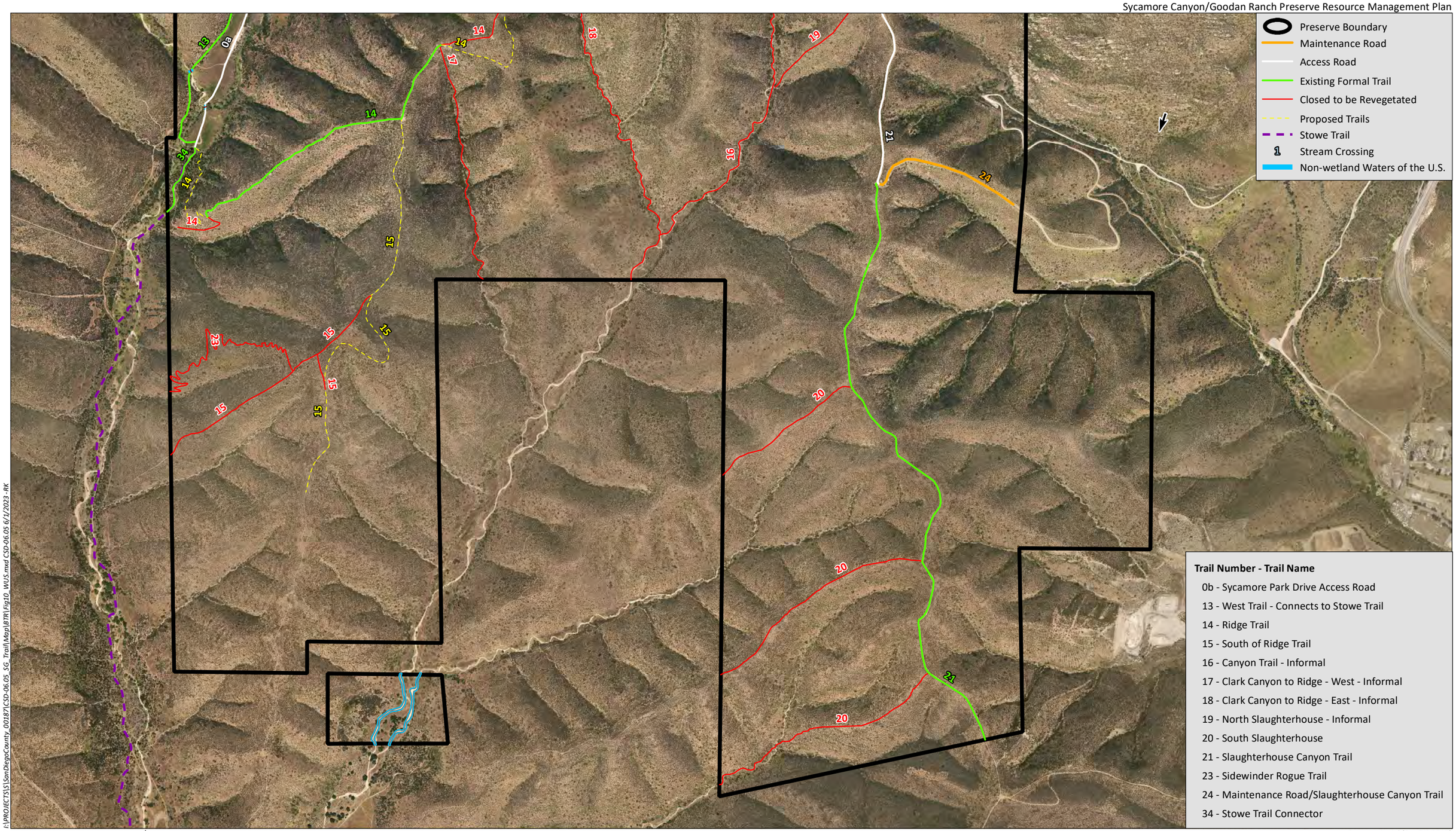
Waters of the U.S.

Figure 10b



Trail Number - Trail Name

- 0b - Sycamore Park Drive Access Road
- 13 - West Trail - Connects to Stowe Trail
- 14 - Ridge Trail
- 15 - South of Ridge Trail
- 16 - Canyon Trail - Informal
- 17 - Clark Canyon to Ridge - West - Informal
- 18 - Clark Canyon to Ridge - East - Informal
- 19 - North Slaughterhouse - Informal
- 20 - South Slaughterhouse
- 21 - Slaughterhouse Canyon Trail
- 23 - Sidewinder Rogue Trail
- 24 - Maintenance Road/Slaughterhouse Canyon Trail
- 34 - Stowe Trail Connector

Source: Aerial (SanGIS 2017)

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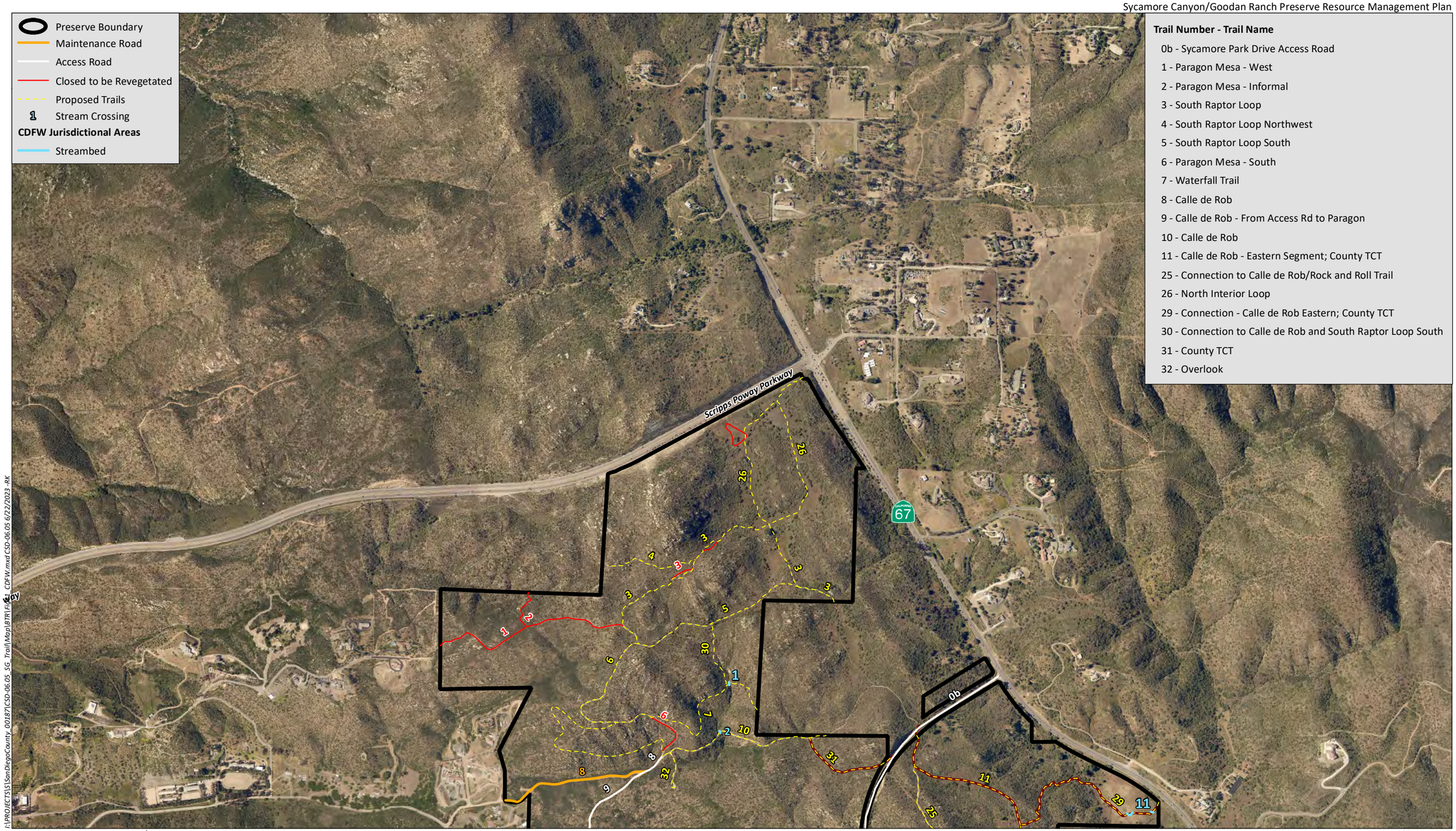
Waters of the U.S.

Figure 10c



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Source: Aerial (SanGIS 2017)

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CDFW Jurisdictional Areas

Figure 11a

Preserve Boundary
Maintenance Road
Access Road
Existing Formal Trail
Closed to be Revegetated
Proposed Trails
One-way Trail Direction
Stream Crossing

CDFW Jurisdictional Areas

Dense Coast Live Oak Woodland
Streambed
Dense Coast Live Oak Woodland
Southern Riparian Forest

Trail Number - Trail Name

0b - Sycamore Park Drive Access Road
0b - Sycamore Park Drive Access Road
8 - Calle de Rob
9 - Calle de Rob - From Access Rd to Paragon
11 - Calle de Rob - Eastern Segment; County TCT
12 - Martha's Grove
13 - West Trail - Connects to Stowe Trail
14 - Ridge Trail
16 - Canyon Trail - Informal
17 - Clark Canyon to Ridge - West - Informal
18 - Clark Canyon to Ridge - East - Informal
19 - North Slaughterhouse - Informal
21 - Slaughterhouse Canyon Trail
22 - Rock and Roll Trail
22a - Rock and Roll Trail
22b - Rock and Roll Trail
25 - Connection to Calle de Rob/Rock and Roll Trail
27 - Access Rd - Cardiac Hill
28a - County TCT; Goodan Staging Area to Access Rd
28b - County TCT; Martha's Grove to Access Rd
29 - Connection - Calle de Rob Eastern; County TCT
31 - County TCT
32 - Overlook
33 - Rock and Roll Staging Area

Sycamore Canyon Rd
Sycamore Park Drive
67

0 900 Feet

Source: Aerial (SanGIS 2017)

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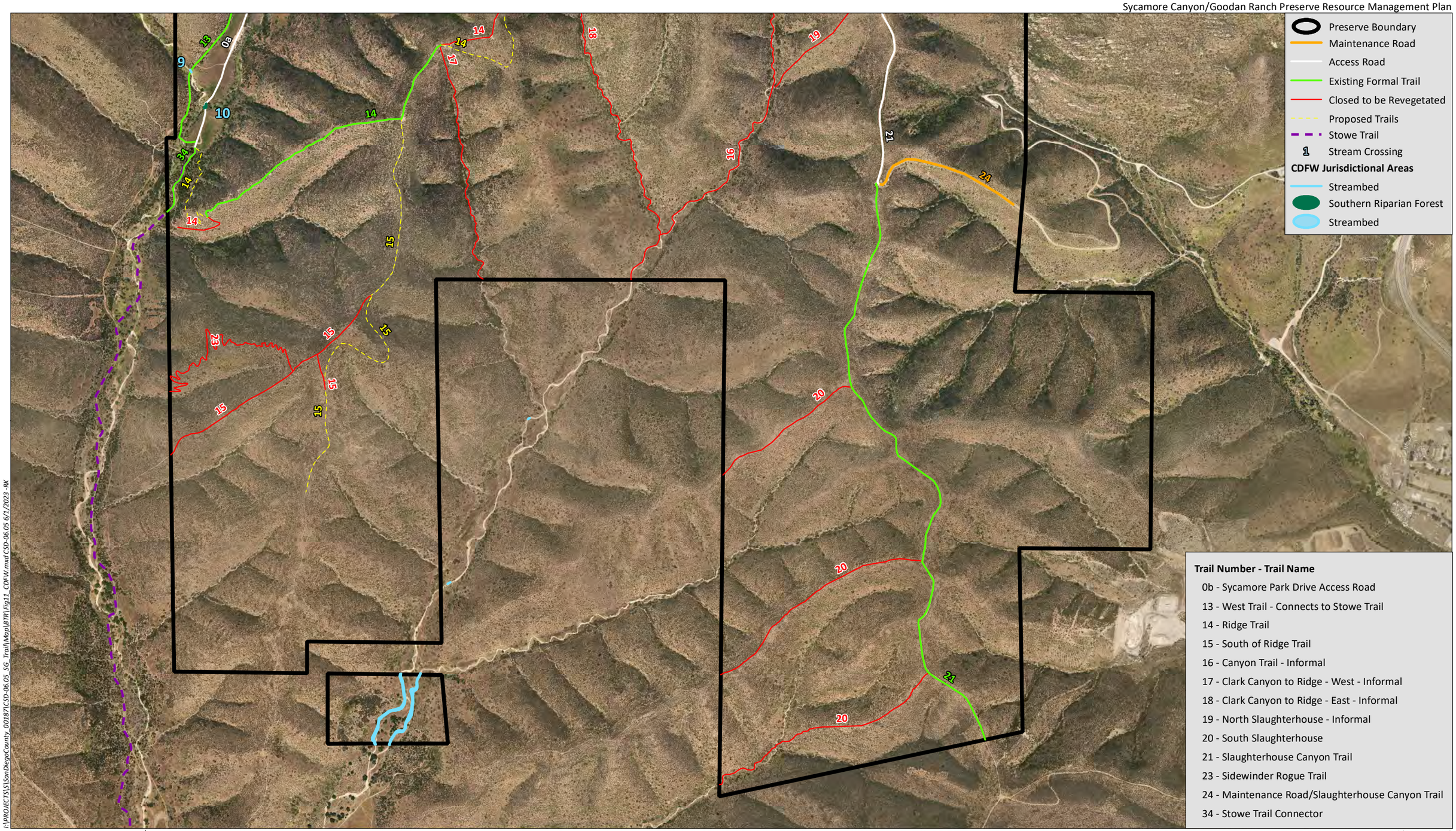
HELIX Environmental Planning

CDFW Jurisdictional Areas

Figure 11b



Source: Aerial (SanGIS 2017)

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CDFW Jurisdictional Areas

Figure 11c

1.5 APPLICABLE REGULATIONS

Biological resources in the proposed project site are subject to regulatory review by federal, state, and local agencies. Under CEQA, impacts associated with a proposed project or program are assessed with regard to significance criteria determined by the CEQA Lead Agency (in this case, the County) pursuant to CEQA Guidelines. Biological resource-related laws and regulations that apply include federal Endangered Species Act (FESA), Migratory Bird Treaty Act (MBTA), CWA, CEQA, California Endangered Species Act (CESA), and CFG Code.

With respect to the proposed project, the USFWS will be responsible for reviewing issues related to migratory birds pursuant to the MBTA and project consistency with the adopted South County MSCP Subarea Plan. The USACE will be responsible for reviewing issues related to waters of the U.S. The RWQCB will be responsible for reviewing issues related to waters of the State pursuant to the CWA. The CDFW will be responsible for reviewing issues related to riparian habitat and streambeds pursuant to CFG Code, nesting birds and raptors pursuant to CFG Code, and project consistency with the adopted South County MSCP Subarea Plan.

The County is the lead agency for the CEQA environmental review process in accordance with state law and local ordinances. During CEQA review, the County will be responsible for reviewing project issues per the Guidelines for Determining Significance for Biological Resources (County 2010b). The County will also be responsible for reviewing the project with respect to consistency with the adopted South County MSCP Subarea Plan.

1.5.1 Federal Government

Federal Endangered Species Act

Administered by the USFWS, the FESA provides the legal framework for the listing and protection of species (and their habitats) that are identified as being endangered or threatened with extinction. Actions that jeopardize endangered or threatened species and the habitats upon which they rely are considered a "take" under the FESA. Section 9(a) of the ESA defines take as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." "Harm" and "harass" are further defined in federal regulations and case law to include actions that adversely impair or disrupt a listed species' behavioral patterns.

The USFWS designates critical habitat for endangered and threatened species. Critical habitat is a term defined and used in the FESA and refers to specific geographic areas that contain features considered necessary for endangered or threatened species to recover. Critical habitat designations can include areas that are not currently occupied by the species, as the ultimate goal is to restore healthy populations of listed species within their native habitats so that they can be removed from the list of threatened or endangered species. Once an area is designated as critical habitat pursuant to the FESA, all federal agencies must consult with the USFWS to ensure that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of the critical habitat. Only activities that involve a federal permit, license, or funding require consultation with the USFWS.

Sections 7 and 10(a) of the FESA regulate actions that could jeopardize endangered or threatened species. Section 7 describes a process of federal interagency consultation for use when federal actions may adversely affect listed species. In this case, take can be authorized via a letter of Biological Opinion

issued by the USFWS for non-marine related listed species issues. A Section 7 consultation (formal or informal) is required when there is a nexus between endangered species' use of a site and if there is an associated federal action for a proposed impact (e.g., the USACE would initiate a Section 7 consultation with the USFWS for impacts proposed to USACE jurisdictional areas that may also affect listed species or their critical habitat). Section 10(a) allows the issuance of permits for incidental take of endangered or threatened species with the preparation of an HCP when there is no federal nexus. The term "incidental" applies if the taking of a listed species is incidental to, and not the purpose of, an otherwise lawful activity. An HCP demonstrating how the taking would be minimized and how steps taken would ensure the species' survival must be submitted for issuance of Section 10(a) permits. The MSCP is a regional HCP that was developed pursuant to Section 10(a) of the ESA.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act has protections for all migratory bird species that are native to the United States or that have territories protected under the federal MBTA, as amended under the Migratory Bird Treaty Reform Act of 2004 (FR Doc. 05-5127). The MBTA is generally protective of migratory birds, but does not actually stipulate the type of protection required. In common practice, the MBTA is used to place restrictions on the disturbance of active bird nests during the nesting season (generally February 1 to September 15; beginning January 15 for raptors). In addition, the USFWS commonly places restrictions on disturbances allowed near active raptor nests.

Clean Water Act and Rivers and Harbors Act

Federal wetland regulation (non-marine issues) is guided by the Rivers and Harbors Act of 1899 and the CWA. The Rivers and Harbors Act deals primarily with discharges into navigable waters, while the purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of all waters of the U.S. Permitting for projects filling waters of the U.S. is overseen by the USACE under Section 404 of the CWA. Most development projects are permitted using Individual Permit or Nationwide Permit instruments.

1.5.2 State of California

California Environmental Quality Act

Primary environmental legislation in California is found in CEQA and its implementing guidelines (State CEQA Guidelines), which require that projects with potential adverse effects (or impacts) on the environment undergo environmental review. Adverse environmental impacts are typically mitigated as a result of the environmental review process, in accordance with existing laws and regulations.

California Endangered Species Act

The CESA established that it is state policy to conserve, protect, restore, and enhance state 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. The CESA authorizes that private entities may "take" plant or wildlife species listed as endangered or threatened under the FESA and CESA, pursuant to a federal Incidental Take Permit, if the CDFW certifies that the incidental take is consistent with CESA (CFG Code Section 2080.1[a]). For state-only listed species, Section 2081 of the CFG Code authorizes the CDFW to issue an Incidental Take Permit for state listed

threatened and endangered species if specific criteria are met. The MSCP is a regional Natural Communities Conservation Plan that was granted take coverage under Section 2081 of the CESA for specific species.

Native Plant Protection Act

Sections 1900 through 1913 of the CFG Code (Native Plant Protection Act; NPPA) direct the CDFW to carry out the state legislature's intent to "…preserve, protect, and enhance endangered or rare native plants of this state." The NPPA 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

The CFG Code provides specific protection and listing for several types of biological resources. Section 1600 of the CFG Code requires a Streambed Alteration Agreement (SAA) 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 an SAA 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.

Pursuant to CFG 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 CFG 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.

Natural Communities Conservation Planning Act

The Natural Communities Conservation Planning (NCCP) program is a cooperative effort to protect habitats and species. It began under the state's NCCP Act of 1991, legislation broader in its orientation and objectives than the CESA or FESA. These laws are designed to identify and protect individual species that have already declined significantly in number. The NCCP Act of 1991 and the associated Southern California Coastal Sage Scrub NCCP Process Guidelines (1993), Southern California Coastal Sage Scrub NCCP Conservation Guidelines (1993), and NCCP General Process Guidelines (1998) have been superseded by the NCCP Act of 2003.

The primary objective of the NCCP program is to conserve natural communities at the ecosystem level, while accommodating compatible land use. The program seeks to anticipate and prevent the controversies and gridlock caused by species' listings by focusing on the long-term stability of wildlife and plant communities, and including key interests in the process.

This voluntary program allows the state to enter into planning agreements with landowners, local governments, and other stakeholders to prepare plans that identify the most important areas for a

threatened or endangered species, and the areas that may be less important. These NCCP plans may become the basis for a state permit to take threatened and endangered species in exchange for conserving their habitat. The CDFW and USFWS worked to combine the NCCP program with the federal HCP process to provide take permits for state and federal listed species. Under the NCCP, local governments, such as the County, can take the lead in developing these NCCP plans and become the recipients of state and federal take permits. The South County MSCP Subarea Plan is an NCCP plan adopted specifically for South County.

1.5.3 County of San Diego

The County regulates natural resources (among other resources) via the MSCP, BMO, and Resource Protection Ordinance (RPO; County 2011), as discussed below.

Multiple Species Conservation Program

The California Natural Communities Conservation Planning (NCCP) Act of 1991 (Section 2835) allows the CDFW to authorize take of species covered by plans in agreement with NCCP guidelines. A Natural Communities Conservation Program initiated by the State of California focuses on conserving coastal sage scrub, and in concert with the USFWS and the federal ESA, is intended to avoid the need for future federal and state listing of coastal sage scrub-dependent species.

The San Diego MSCP Plan for the southwestern portion of San Diego County was approved in August 1998 and covers 85 species (County 1998). The City of San Diego, portions of the unincorporated County, and 10 additional city jurisdictions make up the San Diego MSCP Plan area. It is a comprehensive, long-term habitat conservation plan that addresses the needs of multiple species by identifying key areas for preservation as open space, in order to link core biological areas into a regional wildlife preserve.

South County MSCP Subarea Plan

The South County MSCP Subarea Plan (County 1997) implements the MSCP within some of the unincorporated areas under County jurisdiction. It was adopted by the Board of Supervisors in March 1998. The South County MSCP Subarea Plan is divided into three Segments: Lake Hodges, Metropolitan-Lakeside-Jamul, and South County. The Plan addresses areas authorized for “take” and areas planned for conservation, including portions of the South County Segment that are conserved, subject to agreements with the Wildlife Agencies.

The proposed project site is located within both the South County Segment and the Metro-Lakeside-Jamul Segment of the South County MSCP Subarea Plan (Figure 4). The Preserve is also located within the Central Poway/San Vicente Reservoir/North Poway designated as MSCP Core Area. Sycamore Canyon, Sycamore Canyon North, and Sycamore Canyon South Preserves are fully owned and operated by County DPR. The Goodan Ranch property is owned jointly by DPR, CDFW, City of Poway, and City of Santee. DPR is identified as responsible for the management of the property through a Joint Powers Agreement (November 1995). The preserve boundaries were not designated in this segment of the South County MSCP Subarea Plan under the South County MSCP Subarea Plan; the Preserve is designated as PAMA, which are areas of high conservation value, and are important to the success of the regional preserve system. Additional South County MSCP Subarea Plan PAMA lands are located to the north, east, and northeast of the Preserve.

Biological Mitigation Ordinance

The BMO is the ordinance by which the County implements the South County MSCP Subarea Plan at the project level within portions of the unincorporated areas in order to attain the goals set forth in the South County MSCP Subarea Plan. The BMO contains design criteria and mitigation standards that, when applied to projects requiring discretionary permits, protect habitats and species and ensure that a project does not preclude the viability of the MSCP Preserve System. In this way, the BMO promotes the preservation of lands that contribute to contiguous habitat core areas or linkages. The proposed project is exempt from the BMO because it is a public project determined to be essential by the County that meets the criteria identified in the BMO Section 86.503(a)(8) to qualify it for exemption:

Section 86.503(a)(8): A public facility or public project, determined to be essential by the County, including but not limited to a County Park or County recreational facility, provided that the County decision-making body considering an application for such a project makes the following findings:

(a) The facility or project is consistent with the County General Plan, the MSCP Plan, and Subarea Plan, as approved by the Board of Supervisors;

(b) All feasible mitigation measures have been incorporated into the facility or project, and there are no feasible, less environmentally damaging locations, alignments, or non-structural alternatives that would meet project objectives;

(c) Where the facility or project encroaches into a wetland or floodplain, mitigation measures are required that result in a net gain in wetland and/or riparian habitat;

(d) Where the facility or project encroaches into steep slopes, native vegetation will be used to revegetate and landscape cut and fill areas;

(e) No mature riparian woodland is destroyed or reduced in size due to otherwise allowed encroachments; and

(f) All Critical Populations of Sensitive Plant Species Within the MSCP Subarea, (Attachment C of Document No. 0769999 on file with the Clerk of the Board); Rare, Narrow Endemic Animal Species Within the MSCP Subarea, (Attachment D of Document No. 0769999 on file with the Clerk of the Board); Narrow, Endemic Plant Species Within the MSCP subarea, (Attachment E of Document No. 0769999 on file with the Clerk of the Board); and San Diego County Sensitive Plant Species, as defined herein will be avoided as required by, and consistent with, the terms of the Subarea Plan.

Resource Protection Ordinance

The County regulates sensitive biological resources (among other resources) via the RPO (County 2011). The RPO covers wetlands, wetland buffers, special-status plant and animal species, sensitive vegetation communities/habitat types, and habitats containing special-status animals or plants. Sensitive habitat lands are identified by the RPO as lands that “support unique vegetation communities, or habitats of rare or endangered species or sub-species of animals or plants as defined by Section 15380 of the CEQA Guidelines.” It is the intent of the RPO to increase the preservation and protection of the County’s unique topography, natural beauty, biological diversity, and natural and cultural resources. Pursuant to Section 86.603(a) of the RPO, where any portion of a parcel contains environmentally sensitive lands,

this section would be applicable to the portions of the parcel containing the sensitive lands, and to the remainder of the parcel only to the extent necessary to achieve the purpose and intent of the RPO.

Pursuant to Sections 86.603(a) of the RPO, the proposed project is exempt from the RPO because it does not require one of the listed discretionary approvals. Furthermore, the proposed project also meets the findings to be exempt under Section 86.605(c) of the RPO:

SEC. 86.605. EXEMPTIONS. This Chapter shall not apply to the following:

(c) Any essential public facility or project, or recreational facility which includes public use when the authority considering an application listed at Section 86.603(a) above makes the following findings:

(1) The facility or project is consistent with adopted community or subregional plans;

(2) All possible mitigation measures have been incorporated into the facility or project, and there are no feasible less environmentally damaging location, alignment, or non-structural alternatives that would meet project objectives;

(3) Where the facility or project encroaches into a wetland or floodplain, mitigation measures are required that result in any net gain in the wetland and/or riparian habitat;

(4) Where the facility or project encroaches into steep slopes, native vegetation will be used to revegetate and landscape cut and fill areas; and

(5) No mature riparian woodland is destroyed or reduced in size due to otherwise allowed encroachments.

The project is a public access plan project within a recreational facility that includes public use and meets the above findings for exemption from RPO requirements.

2.0 PROJECT EFFECTS

Direct impacts are immediate impacts that may result from permanent and temporary habitat removal, including impacts from grading, grubbing, clearing, and fuel modification. Direct impacts were quantified by overlaying the limits of the proposed project-related impacts on the biological resources map of the Preserve. Indirect impacts are actions that are not direct removal of habitat, but affect the surrounding biological resources, either as a secondary effect of the direct impacts (e.g., construction noise, runoff, nighttime lighting, fugitive dust, etc.) or as the cause of degradation of a biological resource over time (e.g., edge effects and adjacency issues). Cumulative impacts are those caused by numerous projects in the region and their additive effect of multiple direct and indirect impacts to biological resources over time. It should be noted that although impacts are quantified as a single static number, impacts would actually be implemented over time. Indirect impacts also would occur over the life of the proposed project until the formalized trail network is established and closed trails that are revegetated meet success criteria.

Appendix H*, Summary of Vegetation Communities By Trail* Segments, provides a breakdown of vegetation community acreages within each proposed trail, proposed trail on existing disturbed area, potential future trail connection, and trail segments that would be closed to revegetate. Impacts would

result from the construction of proposed trails, potential future trail connections, and improvements to proposed trails on existing disturbed areas; however, no new impacts are proposed for the existing trails, access roads, and maintenance roads that will remain and become part of the formal trail network. Any maintenance of existing trails, access roads, or maintenance roads would not be considered a new impact. Total proposed impacts total 6.8 acres, including impacts to disturbed habitat and developed land. Additionally, the proposed project has been designed to avoid direct impacts to sensitive habitat to the greatest extent practicable. No impacts to oak trees or jurisdictional resources will occur as a result of this proposed project, as the proposed project design has been sited to avoid impacts to oak trees and jurisdictional resources.

Impacts may also result from efforts to revegetate existing trails proposed to be closed, although the net result in these areas should be beneficial. As detailed in Appendix H, a maximum total of approximately 5.6 acres of existing informal trails would be revegetated (Figure 5), including approximately 0.9 acre of Diegan coastal sage scrub, approximately 0.6 acre of coastal sage-chaparral transition, approximately 0.8 acre of chamise chaparral, approximately 1.9 acres of southern mixed chaparral, approximately 0.3 acre of non-native grassland, and approximately 1.1 acres of disturbed habitat. These revegetation areas are fundamental components of the project's proposal to improve habitat quality and function for wildlife movement through the Preserve.

2.1 SPECIAL-STATUS SPECIES

2.1.1 Special-Status Plant Species

The proposed project would potentially result in impacts to sixteen special-status plant species, including six County List A species (San Diego thorn-mint, willowy monardella, variegated dudleya, Deane's milkvetch, delicate clarkia, and San Diego goldenstar) and ten County List D species (graceful tarplant, small-flowered morning glory, rush chaparral-star, San Diego County viguiera, ashy spike moss, California adder's-tongue, Palmer's grappling hook, golden-rayed pentachaeta, Engelmann oak, and Palmer's sagebrush). The effects of the proposed project on these species are discussed below.

San Diego Thorn-mint

The proposed project would potentially result in significant impacts to San Diego thorn-mint (FT/SE; County List A and CRPR 1B.1) that occurs adjacent to existing trails/access roads (Martha's Grove [#12], Sycamore Canyon [#0a], Cardiac Hill [#27]) and within the survey area for both the proposed trail segment on existing disturbed areas and the proposed re-route of the Rock and Roll Trail (#22) segment. Although critical habitat for this species would not be impacted by the formalization of existing trail segments that cross through the critical habitat, some critical habitat would be impacted by widening portions of the proposed trail segments on existing disturbed areas and/or establishing the proposed Rock and Roll Trail (#22) segments through the critical habitat (Figure 6). San Diego thorn-mint was not observed within the survey area, including the existing and proposed Rock and Roll Trail (#22) alignments, during the 2019 general biological survey and 2019 rare plant survey. No new impacts would result from the formalization of other existing formal trails or access roads (Cardiac Hill [#27], Martha's Grove [#12], and Sycamore Canyon[#0a]) where no improvements are proposed.

Willowy Monardella

Willowy monardella (FE/SE; County List A and CRPR 1B.1) is documented throughout the Southern Parcel and the San Vicente Connector parcels, where no trail segments, or public access are proposed. No impacts to this species are expected.

Variegated Dudleya

Variegated dudleya (County List A and CRPR 1B.2) is documented within the critical habitat for San Diego thorn-mint and was observed within historical locations of this species. While variegata dudleya was observed outside the survey area during the 2019 survey, no variegated dudleya was observed within the survey area or the existing and proposed Rock and Roll Trail (#22) segment alignments. Additionally, the variegated dudleya populations are more than 50 feet from any of the existing or proposed trail segment locations. Therefore, no impacts to this species are expected.

Remaining Sensitive Plant Species

Delicate clarkia (County List A and CRPR 1B.2) occurs west and south of Sidewinder Rogue Trail (#23) segment. The delicate clarkia was mapped immediately west of and more than 50 feet from the Preserve boundary; therefore, no project impacts on this species are proposed. Seven special-status plant species (Deane's milkvetch [County List A and CRPR 1B.1], graceful tarplant [County List D and CRPR 1B.1], small-flowered morning glory [County List D and CRPR 4.2], Palmer's grappling hook [County List D and CRPR 4.2], Engelmann oak [County List D, CRPR 4.2], San Diego goldenstar [County List A, CRPR 1B.1, MSCP Covered], and Palmer's sagebrush [County List D, CRPR 4.2]) occur adjacent to existing trails and access roads where no improvements are proposed, and, thus, project impacts on these species are unlikely. Golden-rayed pentachaeta occurs within the Southern Parcel Addition and San Vicente Connector Parcels of the Preserve, but no trail segments are proposed in this area, and impacts are not expected. Additionally, California adder's-tongue occurs adjacent to the survey area for the portion of Rock and Roll Trail (#22) segment proposed for improvements and is unlikely to be impacted.

Three of the thirteen special-status plant species occur within the survey area adjacent to existing trail segments where no improvements are proposed, but also occur within areas of proposed trail improvements and re-routes: rush chaparral-star [County List D and CRPR 4.3], San Diego County viguiera [County List D and CRPR 4.3], and ashy spike-moss (County List D and CRPR 4.1). Rush chaparral-star occurs within 50 feet of the South Raptor Loop (#3) and Paragon Mesa South (#6) trail segments. San Diego County viguiera occurs within 20 feet of the Ridge Trail (#14). Ashy-spike-moss occurs within 20 feet of the Ridge Trail (#14), South of Ridge Trail (#15), and South Raptor Loop South (#5) trail segments. Ashy spike-moss and rush chaparral-star also occur along trails proposed to be closed and revegetated (Sidewinder Rogue [#23] and Paragon Mesa West [#1], respectively).

2.1.2 Special-Status Animal Species

The proposed project would potentially result in impacts to 44 special-status animal species, including 16 County Group 1 species, 25 County Group 2 species, and two species not on the County lists, but are State species of special concern species. Most proposed project effects on wildlife species would be through a reduction in suitable habitat used by that species, but because of the mobility of wildlife and the amount of habitat available within the Preserve, most impacts would not be significant. Four special-status animal species were observed or detected within the survey area during the 2019 general

biological survey and 2022 Hermes copper butterfly survey: QCB (FE, County Group 1, South County MSCP narrow endemic), San Diegan tiger whiptail (CDFW SSC, County Group 2), coastal California gnatcatcher (FT, CDFW SSC, County Group 1, South County MSCP Covered), and southern mule deer (County Group 2 and South County MSCP Covered).

The 40 other special-status animal species have been documented within the Preserve during previous surveys for the Preserve including: western spadefoot toad (CDFW SSC and County Group 2), Belding's orange-throated whiptail (CDFW WL, County Group 2, and MSCP Covered), red diamond rattlesnake (CDFW SSC and County Group 2), Coronado skink (CDFW WL and County Group 2), northern three-lined boa (County Group 2), Blainville's horned lizard (CDFW SSC, County Group 2, MSCP Covered), coast patch-nosed snake (CDFW SSC, County Group 2), two-striped garter snake (CDFW SSC, County Group 1), Cooper's hawk (CDFW WL, County Group 1, MSCP Covered), sharp-shinned hawk (CDFW WL and County Group 1), southern California rufous-crowned sparrow (CDFW WL, County Group 1, MSCP Covered), Bell's sage sparrow (CDFW WL, County Group 1), golden eagle (Federal WL, State FP, County Group 1, MSCP Covered), red-shouldered hawk (County Group 1), turkey vulture (County Group 1), northern harrier (CDFW SSC, County Group 1, MSCP Covered), white-tailed kite (CDFW FP, County Group 1), California horned lark (CDFW WL, County Group 2), bald eagle (CDFW SSC, County Group 1), yellow-breasted chat (CDFW SSC, County Group 1), Osprey (CDFW WL, County Group 1), yellow warbler (CDFW SSC, County Group 2), western bluebird (County Group 2, MSCP Covered), barn owl (County Group 2), burrowing owl (CDFW SSC, County Group 1, MSCP Covered), Vaux's swift (CDFW SSC), pallid bat (CDFW SSC, County Group 2), Dulzura pocket mouse (CDFW SSC, County Group 2), Northwestern San Diego pocket mouse (CDFW SSC, County Group 2), Townsend's big-eared bat (CDFW SSC, County Group 2), western mastiff bat (CDFW SSC, County Group 2), western red bat (CDFW SSC, County Group 2), western yellow bat (CDFW SSC), San Diego black-tailed jackrabbit (CDFW SSC, County Group 2), western small-footed myotis (County Group 2), Yuma myotis (County Group 2), San Diego desert woodrat (CDFW SSC, County Group 2), pocketed free-tailed bat (CDFW SSC, County Group 2), big free-tailed bat (CDFW SSC, County Group 2), and mountain lion (CDFW SSC, County Group 2, MSCP Covered).

The effects of the proposed project on these species are discussed below.

Quino Checkerspot Butterfly

One QCB was incidentally observed during the 2019 general biological survey within the southern portion of the existing Slaughterhouse Canyon Trail (#21) segment and within the vicinity of where the species was previously documented in 2005. Suitable habitat for this species occurs throughout the Preserve, and the habitat adjacent to the 2019 QCB observation would be considered occupied. Therefore, a portion of the existing Slaughterhouse Canyon Trail (#21), and adjacent ridgeline trails proposed for closure, are considered occupied. No improvements to the existing Slaughterhouse Canyon Trail (#21) segment are proposed. Also, the adjacent trail segments to be closed will be revegetated with passive methods that would avoid impacts to QCB and their larval plants (Figure 8c; USFWS 2019).

QCB host plants were observed along the Rock and Roll Trail (#22) segments (dot-seed plantain [*Plantago erecta*], woolly plantain [*Plantago patagonica*], purple owl's clover [*Castilleja exserta*], and rigid bird's beak [*Cordylanthus rigidus*]). Project construction within on-site breeding habitat for this sensitive species would therefore result in significant impacts.

Coastal California Gnatcatcher

The Diegan coastal sage scrub habitat and other scrub habitats within the Study Area are known to support the federally threatened coastal California gnatcatcher. One coastal California gnatcatcher was observed during the 2019 surveys within the coastal sage-chaparral transition of the proposed Rock and Roll Trail (#22) alignment, and two were observed during 2022 surveys within Diegan coastal sage scrub of the proposed South Raptor Loop South (#5) alignment. Several locations of this species have been documented during previous survey efforts in the Preserve within Diegan coastal sage scrub and chamise chaparral vegetation communities. Gnatcatchers in the region could use other scrub-vegetated portions of the site and immediate vicinity for foraging, dispersal, and migration activities.

The proposed project would impact a total of 3.0 acres of suitable habitat for coastal California gnatcatcher may be impacted by the PAP component of the proposed project, although this includes the entire survey area. The survey area is between 20 and 100 feet wide, while the maximum width of existing trails is 12 feet, and eight feet for proposed trails; therefore, the total acreage impacted should be far less than that which exists in the survey area. Impacts from the PAP component of the proposed project total no more than 2.1 acres of Diegan coastal sage scrub and 0.9 acre of coastal sage-chaparral. The PAP component of the proposed project would not preclude the use of suitable habitat by this species, and occupied habitat would remain contiguous with the suitable habitat throughout the Preserve. The PAP component of the proposed project construction within 500 feet of breeding habitat for this sensitive bird species could result in adverse indirect impacts related to construction noise. Impacts to breeding coastal California gnatcatchers, occupied habitat, and temporary (foraging, migration, and dispersal) habitat would be significant. Impacts to habitat suitable for the coastal California gnatcatcher are detailed by trail segment type in Table 5, *Impacts to Coastal California Gnatcatcher Habitat*, below.

Table 5
IMPACTS TO COASTAL CALIFORNIA GNATCATCHER HABITAT

	Tier II[1,2]	Tier III[1,2]	
Segment Type	**Diegan coastal sage scrub**	**Coastal sage-chaparral transition**	**Total**
Proposed Trails	0.9	0.8	**1.7**
Proposed Trails on Existing Disturbed Areas	1.0	0.1	**1.1**
Potential Future Trail Connection	0.2	<0.1 (0.019)	**0.2**
Total:	**2.1**	**0.9**	**3.0[3]**

1 Upland habitats are rounded to the nearest 0.1 acre.

2 County Subarea Habitats and Tiers within the MSCP.

3 A maximum of 3.0 acres of coastal California gnatcatcher habitat occurs within the survey area, but as the trail alignments are a maximum of 12 feet wide for existing trails and a maximum of 8 feet wide for proposed trails, the actual permanent impacts to coastal California gnatcatcher habitat within the survey area will be less than 3.0 acres.

Hermes Copper Butterfly

A Hermes copper butterfly was recorded within the Preserve before the 2003 Cedar Fire (County of San Diego 2008) but has not been documented in the Preserve since (USFWS 2021a). Although the survey area for the PAP component of the proposed project supports a limited amount of Potential Hermes Copper Butterfly Habitat as defined by the County guidelines (spiny redberry within 15 feet of

buckwheat), Hermes copper butterfly was not observed during the 2019, 2020, and 2022 surveys for the PAP component of the proposed project. The HELIX 2022 surveys included protocol surveys for Hermes copper butterfly, in accordance with the survey guidelines outlined in Attachment B of the County's Report Format and Content Requirements for Biological Resources (County 2010a; HELIX 2022). While small portions of the critical habitat for the Hermes copper butterfly that occurs within the survey area may be impacted by the PAP component of the proposed project, this would not impact the species recovery because the Preserve functions to protect large areas of existing suitable habitat (approximately 507 acres of critical habitat occur on the Preserve). Additionally, established trail segments would function as dispersal corridor connectivity areas among subpopulations if present within the Preserve. While the HELIX 2019, 2020, and 2022 surveys for the PAP component of the proposed project found the survey area to be unoccupied by Hermes copper butterfly, the proposed project would impact 0.05 acre of Potential Hermes Copper Butterfly Habitat and would be a significant impact.

Western Spadefoot Toad

The western spadefoot toad was observed in the southwestern portion of the Southern Parcel during the 2019 baseline biological surveys. This species was also detected in the Preserve during the 2008 surveys near the eastern edge of the Preserve and in the central part of the Preserve near the Martha's Grove (#12) trail. Construction related to the implementation of the proposed project could impact western spadefoot toad and would be a significant impact.

Nesting Birds

The proposed project would impact potential habitat for seven SSC species, including bald eagle, burrowing owl, coastal California gnatcatcher, northern harrier, Vaux's swift, yellow-breasted chat, and yellow warbler. The proposed project would impact potential habitat for 12 special-status species not listed as SSC, including barn owl, Bell's sage sparrow, California horned lark, Cooper's hawk, golden eagle, osprey, red-shouldered hawk, sharp-shinned hawk, southern California rufous-crowned sparrow, turkey vulture, western bluebird, and white-tailed kite. Construction related to the proposed project could impact the nesting success of nesting birds and raptors, which have the potential to nest on and/or within 500 feet of impact areas. Noise from such sources as clearing and grading activities could result in an impact to these species. Noise-related impacts would be considered significant if these sensitive avian species were displaced from their nests and failed to breed.

Remaining Sensitive Animal Species

The proposed project would impact potential habitat for the following 16 Species of Special Concern (SSC) species, including five reptile species (San Diegan tiger whiptail, Blainville's horned lizard, red-diamond rattlesnake, coast patch-nosed snake, and two-striped garter snake) and 11 mammal species (pallid bat, Dulzura pocket mouse, northwestern San Diego pocket mouse, San Diego woodrat, Townsend's big-eared bat, western mastiff bat, western red bat, western yellow bat, San Diego black-tailed jackrabbit, pocketed free tailed bat, and southern mule deer). The proposed project would impact potential habitat for seven special-status species not listed as SSC, including three reptile species (Belding's orange-throated whiptail, Coronado skink, and northern three-lined boa) and four mammal species (western small-footed myotis, Yuma myotis, mule deer, and mountain lion).

Impacts from the PAP component of the proposed project would be less than significant as these are highly mobile animals, any development of trail segments in previously undeveloped areas would occur as thin strips, no woodrat nests were observed within the proposed trail segment alignments, and the proposed project footprint comprises a small fraction of the available habitat within the Preserve for these species.

2.2 RIPARIAN HABITAT AND SENSITIVE NATURAL COMMUNITIES

The majority of existing informal trails are classified as disturbed habitat and developed land, and listing these existing informal trails within the formal trail network would not constitute an impact to riparian habitat or sensitive natural communities. No impacts to riparian habitat are proposed. Impacts to sensitive natural communities may occur if improvements are necessary for the formalization of some of the existing trails, shown as existing trails on previously disturbed areas on Figure 5, and possibly from the development of new trail connections. Appendix H provides a breakdown of impacts by trail segment from proposed trails, proposed trails on existing disturbed areas, and potential future trail connections. The proposed project would potentially result in impacts to a maximum of 5.3 acres of sensitive natural communities (Table 6, *Proposed Project Maximum Impacts to Vegetation Communities/Habitat Types*; Figures 8a-8c), including 0.1 acre of open coast live oak woodland, 2.1 acres of Diegan coastal sage scrub, 0.9 acre of coastal sage-chaparral transition, 0.9 acre of southern mixed chaparral, 0.6 acre of chamise chaparral, and 0.7 acre of non-native grassland. Impacts to sensitive natural communities would require mitigation. The proposed trails, future trail connections, and proposed trails on existing disturbed areas have been sited and designed to avoid oak trees, and no impacts to oak trees would occur.

Table 6
PROPOSED PROJECT MAXIMUM IMPACTS TO VEGETATION COMMUNITIES/HABITAT TYPES[1]

Vegetation Community[2]	Existing[3] (Acres)	Impacts (Acres)[4]
Sensitive Vegetation Communities		
Tier I		
Scrub Oak Chaparral (37900)	0.9	--
Southern Riparian Forest (61300)	0.41	--
Southern Coast Live Oak Riparian Forest (61310)	0.04	--
Southern Riparian Woodland (62500)	0.06	--
Unvegetated Channel (64200)	0.41	--
Dense Coast Live Oak Woodland (71160)	0.6	--
Open Coast Live Oak Woodland (71161)	0.2	0.1[5]
Tier II		
Diegan Coastal Sage Scrub (32500)	26.6	2.1
Coastal Sage-Chaparral Transition (37G00)	21.0	0.9
Tier III		
Southern Mixed Chaparral (37120)	20.1	0.9
Chamise Chaparral (37200)	5.0	0.6
Non-native Grassland (42200)	11.4	0.7
Subtotal Sensitive Communities	*86.8*	*5.3*

Table 6 (cont.)
PROPOSED PROJECT MAXIMUM IMPACTS TO VEGETATION COMMUNITIES/HABITAT TYPES1

Vegetation Community[2]	Existing[3] (Acres)	Impacts (Acres)[4]
Non-Sensitive Vegetation Communities		
Tier IV		
Disturbed Habitat (11300)	21.0	1.5
N/A		
Developed Land (12000)	0.1	--
Subtotal Non-Sensitive Communities	*21.1*	*1.5*
TOTAL	**107.82**	**6.8**

1 Upland habitats are rounded to the nearest 0.1 acre, while wetland habitats are rounded to the nearest 0.01; thus, total reflects rounding.
2 Vegetation categories and numerical codes are from Holland (1986) and Oberbauer (2008). County Subarea Habitats and Tiers within the MSCP.
3 Existing acres within the proposed project survey area.
4 Impacts are calculated from Proposed Trails, Existing Trails on Previously Disturbed Areas, and Potential Future Trail Connections.
5 Although there could be impacts to Open Coast Live Oak Woodland, there would be no impacts to individual oak trees.

2.3 JURISDICTIONAL WETLANDS AND WATERWAYS

Fifteen features within the survey area were identified and mapped for potential state and federal jurisdiction. A total of 0.51 acre (2,121 linear feet) of waters of the U.S. may be subject to USACE and RWQCB regulatory jurisdiction pursuant to Sections 404 and 401 of the CWA. Additionally, 0.60 acre of streambed and riparian resources occur within the jurisdictional delineation review area and would be subject to CDFW jurisdiction pursuant to Sections 1600–1616 of the FGC. The proposed project would not have impacts on jurisdictional features, as detailed below.

Feature 1 was delineated as unvegetated streambed jurisdictional to USACE, RWQCB, and CDFW, with an average OHWM and top-of-bank (TOB) width of 2 feet and 5 feet. In the survey area, the streambed is a non-wetland channel that would be crossed one time at grade (Figures 10a and 11a). The at-grade crossing would not grade, develop, or alter the substrate of Feature 1, and would not introduce or use mechanized earth-moving equipment. Any incidental fallback from walking, riding, or bicycling across the streambed would not constitute a discharge of fill material and would not constitute an impact on jurisdictional non-wetland waters. No impacts would occur on Feature 1.

Feature 2 was delineated as unvegetated streambed jurisdictional to USACE, RWQCB, and CDFW, with an average OHWM and TOB width of 3 feet. In the survey area, the streambed is a non-wetland channel that would be crossed one time at grade (Figures 10a and 11a). The at-grade crossing would not grade, develop, or alter the substrate of Feature 2, and would not introduce or use mechanized earth-moving equipment. Any incidental fallback from walking, riding, or bicycling across the streambed would not constitute a discharge of fill material and would not constitute an impact on jurisdictional non-wetland waters. No impacts would occur on Feature 2.

Feature 3.1 was delineated as non-wetland waters jurisdictional to USACE, RWQCB, and CDFW, with an average OHWM of 9 feet upstream and 15 feet downstream. In the survey area, the jurisdictional area would be crossed one time at grade (Figures 10b and 11b). The at-grade crossing would not grade,

develop, or alter the substrate of Feature 3.1, and would not introduce or use mechanized earth-moving equipment. Any incidental fallback from walking, riding, or bicycling across the streambed would not constitute a discharge of fill material and would not constitute an impact on jurisdictional non-wetland waters. No impacts would occur on Feature 3.1.

Feature 3.2 was delineated as unvegetated streambed jurisdictional to USACE, RWQCB, and CDFW, with an average OHWM and TOB width of 10 feet and 15 feet upstream, and 5 feet and 10 feet downstream. In the survey area, the streambed is a non-wetland channel that would be crossed one time at grade (Figures 10a and 11a). The at-grade crossing would not grade, develop, or alter the substrate of Feature 3.2, and would not introduce or use mechanized earth-moving equipment. Any incidental fallback from walking, riding, or bicycling across the streambed would not constitute a discharge of fill material and would not constitute an impact on jurisdictional non-wetland waters. No impacts would occur on Feature 3.2.

Feature 4.1 was delineated as non-wetland waters jurisdictional to USACE, RWQCB, and CDFW, with an average OHWM and TOB width of 6 feet upstream and 4.5 feet and 8 feet downstream. The CDFW jurisdiction includes the riparian tree canopies that extend beyond the streambed. In the survey area, the streambed, the streambed would be crossed one time at grade (Figures 10b and 11b). The at-grade crossing would not grade, develop, or alter the substrate of Feature 4.1, and would not introduce or use mechanized earth-moving equipment. Any incidental fallback from walking, riding, or bicycling across the streambed would not constitute a discharge of fill material and would not constitute an impact on jurisdictional non-wetland waters. No impacts would occur on Feature 4.1.

Feature 4.2 was delineated as non-wetland waters jurisdictional to USACE, RWQCB, and CDFW, with an average OHWM and TOB width of 4 feet and 6 feet upstream and 6 feet and 8 feet downstream. In the survey area, the streambed would be crossed one time at grade (Figures 10b and 11b). The at-grade crossing would not grade, develop, or alter the substrate of Feature 4.2, and would not introduce or use mechanized earth-moving equipment. Any incidental fallback from walking, riding, or bicycling across the streambed would not constitute a discharge of fill material and would not constitute an impact on jurisdictional non-wetland waters. No impacts would occur on Feature 4.2.

Feature 5 was delineated as non-wetland waters jurisdictional to USACE, RWQCB, and CDFW, with an average OHWM and TOB width of 6 feet. The CDFW jurisdiction includes the riparian tree canopies that extend beyond the streambed. In the survey area, the streambed would be crossed one time at grade (Figures 10b and 11b). The at-grade crossing would not grade, develop, or alter the substrate of Feature 5, and would not introduce or use mechanized earth-moving equipment. Any incidental fallback from walking, riding, or bicycling across the streambed would not constitute a discharge of fill material and would not constitute an impact on jurisdictional non-wetland waters. No impacts would occur on Feature 5.

Feature 6 was delineated as non-wetland waters jurisdictional to USACE, RWQCB, and CDFW, with an average OHWM of 8 feet upstream and 4 feet downstream. The CDFW jurisdiction includes the riparian tree canopies that extend beyond the streambed. In the survey area, the streambed would be crossed one time at grade (Figures 10b and 11b). The at-grade crossing would not grade, develop, or alter the substrate of Feature 6, and would not introduce or use mechanized earth-moving equipment. Any incidental fallback from walking, riding, or bicycling across the streambed would not constitute a discharge of fill material and would not constitute an impact on jurisdictional non-wetland waters. No impacts would occur on Feature 6.

Feature 7 was delineated as unvegetated streambed jurisdictional to USACE, RWQCB, and CDFW, with an average OHWM and TOB width of 5 feet and 5 feet. In the survey area, the streambed is a non-wetland channel that would be crossed one time at grade (Figures 10a and 11a). The at-grade crossing would not grade, develop, or alter the substrate of Feature 7, and would not introduce or use mechanized earth-moving equipment. Any incidental fallback from walking, riding, or bicycling across the streambed would not constitute a discharge of fill material and would not constitute an impact on jurisdictional non-wetland waters. No impacts would occur on Feature 7.

Feature 8 was delineated as unvegetated streambed jurisdictional to USACE, RWQCB, and CDFW, with an average OHWM and TOB width of 8 feet and 5 to 8 feet. In the survey area, the streambed is a non-wetland channel that would be crossed one time at grade (Figures 10a and 11a). The at-grade crossing would not grade, develop, or alter the substrate of Feature 8, and would not introduce or use mechanized earth-moving equipment. Any incidental fallback from walking, riding, or bicycling across the streambed would not constitute a discharge of fill material and would not constitute an impact on jurisdictional non-wetland waters. No impacts would occur on Feature 8.

Feature 9 was delineated as unvegetated streambed jurisdictional to USACE, RWQCB, and CDFW, with an average OHWM and TOB width of 9 feet and 9 feet. In the survey area, the streambed is a non-wetland channel that would be crossed one time at grade (Figures 10a and 11a). The at-grade crossing would not grade, develop, or alter the substrate of Feature 9, and would not introduce or use mechanized earth-moving equipment. Any incidental fallback from walking, riding, or bicycling across the streambed would not constitute a discharge of fill material and would not constitute an impact on jurisdictional non-wetland waters. No impacts would occur on Feature 9.

Feature 10 was delineated as non-wetland waters jurisdictional to USACE, RWQCB, and CDFW, with an average OHWM of 18 feet upstream and 9 feet downstream. The CDFW jurisdiction includes the riparian tree canopies that extend beyond the streambed. In the survey area, the streambed would be crossed one time at grade (Figures 10c and 11c). The at-grade crossing would not grade, develop, or alter the substrate of Feature 10, and would not introduce or use mechanized earth-moving equipment. Any incidental fallback from walking, riding, or bicycling across the streambed would not constitute a discharge of fill material and would not constitute an impact on jurisdictional non-wetland waters. No impacts would occur on Feature 10.

Feature 11 was delineated as unvegetated streambed jurisdictional to USACE, RWQCB, and CDFW, with an average OHWM and TOB width of 2.5 feet and 2.5 feet. In the survey area, the streambed is a non-wetland channel that would be crossed two times at grade (Figures 10b and 9b). The at-grade crossing would not grade, develop, or alter the substrate of Feature 11, and would not introduce or use mechanized earth-moving equipment. Any incidental fallback from walking, riding, or bicycling across the streambed would not constitute a discharge of fill material and would not constitute an impact on jurisdictional non-wetland waters. No impacts would occur on Feature 11.

Feature 12 was delineated as unvegetated streambed jurisdictional to USACE, RWQCB, and CDFW, with an average OHWM and TOB width of 2.5 feet and 2.5 feet upstream, and 2 feet and 2.5 feet downstream. In the survey area, the streambed is a non-wetland channel that would be crossed two times at grade (Figures 10b and 11b). The at-grade crossing would not grade, develop, or alter the substrate of Feature 12, and would not introduce or use mechanized earth-moving equipment. Any incidental fallback from walking, riding, or bicycling across the streambed would not constitute a

discharge of fill material and would not constitute an impact on jurisdictional non-wetland waters. No impacts would occur on Feature 12.

Approximately 0.001 acre of USACE and 0.002 acre of CDFW jurisdictional waters intersect proposed trails on existing disturbed areas or potential future trail connections. Less than 0.001 acre (approximately 0.0003 acre) of non-wetland waters of the U.S./waters of the State and CDFW streambed occur within the proposed Rock and Roll Trail on existing disturbed areas. Less than 0.001 acre (approximately 0.0002 acre) of non-wetland waters of the U.S./waters of the State and CDFW streambed occur within the proposed Waterfall Trail potential future trail connection. Less than 0.001 acre (0.0001 acre) of non-wetland waters of the U.S./waters of the State and CDFW streambed occur within the proposed Calle De Rob trail on existing disturbed areas. Impacts to these jurisdictional wetlands and waters are not proposed during the establishment of the proposed Rock and Roll Trail on existing disturbed areas (Feature 12), the proposed Waterfall Trail potential future trail connection (Feature 1), or the proposed Calle de Rob Trail on existing disturbed areas (Feature 2), as discussed above.

2.4 WILDLIFE MOVEMENT AND NURSERY SITES

The open and relatively undisturbed canyons, ridges, and slopes of the Preserve contain native habitat that provides functional wildlife habitat and movement capability. Wildlife movement functions would be maintained within the Preserve by retaining existing trails rather than the creation of new trails. No improvements are proposed for existing trails to be retained, thus, disruption to wildlife associated with trail construction would be minimal. Wildlife movement functions would be improved by the closure and revegetation of other existing trails, including those leading to and within Clark Canyon.

The development of the proposed project would not have an impact on wildlife corridors. The maximum of 5.3 acres of conversion of native and naturalized habitat to trails would not constrain wildlife movement in the Study Area. Trails would be expected to be used by medium and large mammals for ease of movement through the Study Area. No features would be constructed that would impinge any movement areas, including ridgelines or canyons. Wildlife movement is not expected to be substantially constrained by the construction of new trails as (1) trail construction would not substantially change the topography, (2) the proposed project maintains connectivity to core wildlife habitat along the Sycamore Canyon Creek and Clark Canyon to the surrounding undeveloped areas, (3) the proposed project would not impact existing Waters of the U.S./State at trail crossings, (4) trails would not be so wide or heavily-trafficked as to prevent animals from moving across them, (5) existing lines-of-sight are maintained across trails. The Study Area and surrounding PAMA land provides adequate space and resources for wildlife known to use the site, maintains connectivity to off-site resources, and functions to facilitate bird and mammal movement through the area, including for species targeted for conservation in the region, such as the coastal California gnatcatcher. Therefore, the proposed project would not significantly impact the viability of a core wildlife area, and biological connectivity between the Preserve and adjacent open space areas would be maintained.

Further, the primary species of concern at the Preserve with respect to wildlife corridors are the coastal California gnatcatcher and southern mule deer. The multi-use trails do not preclude the coastal California gnatcatcher and southern mule deer from crossing them, and southern mule deer have been documented by wildlife cameras (County 2013) traversing existing trails within the Preserve. Coyotes are highly mobile and adaptable wildlife species also known to frequent trails. Movement of other medium-sized mammals, such as bobcat, is more likely to follow riparian areas associated with Sycamore Canyon

Creek and other areas with sufficient vegetative cover. Given the maximum width (8 feet) of the proposed trails, and the use of suitable native soils for trail surface material (where feasible), smaller species, such as rodents and lizards, will also be able to cross them safely. No new impacts are proposed for the formalization of the existing trail along Sycamore Canyon Creek, and vegetation impacts associated with the construction of new trails will be minimized.

Given birds' ability to fly, the proposed project construction would not result in a barrier to their movement throughout the Preserve or to adjacent open space lands. As previously noted, the proposed project would avoid the riparian vegetation associated with Sycamore Canyon Creek, thus maintaining foraging areas for many avian species. By avoiding impacts to Sycamore Canyon Creek and other drainages, the proposed development would also not result in a barrier to movement for amphibian species. General wildlife movement routes would be maintained by the proposed project.

2.5 INDIRECT IMPACTS

Potential significant indirect impacts may occur as a result of the proposed project implementation, as described further below.

2.5.1 Noise

Construction-related noise from sources related to clearing, grubbing, and/or grading to establish trails in undeveloped areas would potentially impact wildlife. Construction of trails in undeveloped areas may require the daily use of heavy equipment that would elevate existing noise levels on-site. Breeding birds and mammals may temporarily or permanently leave their territories to avoid disturbances from human activities, which could lead to reduced reproductive success and increased mortality. Potential short-term noise impacts could result from the grading to establish trails in undeveloped areas. Noise effects would be considered potentially significant if grading to establish trails in undeveloped areas were to occur within 500 feet of sensitive nesting bird species, such as coastal California gnatcatcher and raptors. Noise impacts are not expected along trails during the proposed project operation, because all trails will be non-motorized. Noise impacts from the use of vehicles on access roads/maintenance roads and staging areas during project operation would occur from the visitors and rangers working on-site, maintenance equipment used for routine brush clearing and general operational maintenance, and occasional SDG&E equipment to maintain their easement. During the proposed project operation, maintenance-related noise in these areas would be temporary and would only occur for a short time period at any single location. The periodic use of existing access roads/maintenance roads, existing staging areas, and the new Rock and Roll Staging Area for maintenance would be similar to the current use of existing access roads/maintenance roads and staging areas. Noise impacts are not expected along access roads/maintenance roads or staging areas, as noise anticipated to occur for future operations would not involve high-intensity noise sources or increase noise levels during operations.

2.5.2 Lighting

Night lighting that extends from a developed area onto adjacent wildlife habitat can discourage the use of the habitat by nocturnal wildlife, and can also provide nocturnal predators with an unnatural advantage over their prey, resulting in a potentially significant impact. Night lighting is not anticipated for the construction of this proposed project; however, if utilized, the proposed project is required to direct all necessary lighting in a downward direction with appropriate shield and illumination technology

to prevent adverse spillover of light. Night lighting will not result from the proposed project operation, because the Preserve closes at sunset and is not lit at night.

2.5.3 Fugitive Dust

Fugitive dust produced by trail closure activities and general maintenance of formalized trails has the potential to disperse onto preserved vegetation, which 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 the animals dependent on these plants. Fugitive dust also may make plants unsuitable as habitat for insects and birds. Breeding birds and mammals may temporarily or permanently leave their territories to avoid construction and/or extraction operations, which could lead to reduced reproductive success and increased mortality. As part of the proposed project construction, activities with the potential to disperse dust would be watered to minimize dust generation. Fugitive dust generation from the proposed project operation is expected to be minimal because most of the trails included in the proposed project already exist, and dust suppression techniques will be utilized. Although the proposed project would not be subject to the County Grading Ordinance, the proposed project would be consistent with dust control measures to reduce potential fugitive dust emissions during construction. Emissions from the construction phase would be minimal and localized, resulting in emissions below the quantitative emission thresholds established by the San Diego Air Pollution Control District. Implementation of the proposed project would result in a small number of additional trips to the Preserve, but it would not substantially increase long-term air pollutants in the vicinity of the proposed project, and operational emissions are not anticipated to meaningfully exceed existing conditions.

2.5.4 Human Activity

Increases in human activity in the area could result in the degradation of open space habitat and associated indirect impacts on sensitive species through the creation of unauthorized trails, dispersal of weed seeds, horse manure, erosion along trails, litter, collection of flowers and animals, and trampling or removal of vegetation. The proposed project site currently operates as a Preserve with hiking trails and staging areas, which is subject to moderate human activity related to hiking and bicycle use. In general, human disturbance is minimal and constrained to trails, although there are a few unauthorized trails on the Preserve (County 2013). As the site is already subjected to human uses, with most proposed trails following existing informal trails, the proposed project would not represent a significant increase in human activity. Furthermore, formalizing the trail network through the Preserve with signage to direct visitors onto the correct trails and revegetation of closed, unauthorized trails would help dissuade trespassing into closed areas and provide further protections for sensitive habitat areas.

2.5.5 Domestic Predators

Domestic predators (e.g., dogs and cats) have the potential to harm native wildlife species. For example, free-roaming cats are known to injure and/or kill native wildlife, and are of particular threat to small animals, including lizards, birds, and small rodents, while off-leash dogs can be a nuisance to wildlife, resulting in changes in wildlife behavior such as alteration in patterns of habitat utilization, or damage to burrows of ground-dwelling animals. Implementation of the proposed project would not result in increased potential for encounters between domestic predators and native wildlife. Dogs are currently required to be on-leash within the Preserve trail system, and the effects of off-leash dogs on wildlife would be further minimized through the installation of signage along the formal trail system reminding

hikers that off-leash dogs are prohibited. Trails would not be lit and are considered unlikely to be used by people walking dogs during the night, because the Preserve closes at sunset, thus minimizing encounters with nocturnal wildlife. With the implementation of the design features described above, off-leash dogs are not expected to result in a significant adverse effect on wildlife.

2.5.6 Exotic Plant Species

Non-native plants could colonize areas disturbed by construction to establish trails and could potentially spread into adjacent native habitats. Many non-native plants are highly invasive and can displace native vegetation (reducing native species diversity), potentially increase flammability and fire frequency, change ground and surface water levels, and potentially adversely affect native wildlife dependent on native plant species. The proposed project would include weed control during both proposed project operation and during regular maintenance of the trails and undeveloped areas within the Preserve, with a focus on highly invasive species. The occurrence of weeds on-site would be monitored as directed in the RMP (County 2013), and removal would be initiated if the inspection reveals that weeds have become, or are becoming, established. The proposed project includes the restoration and rehabilitation of informal trails that will be closed and revegetated with native riparian and upland habitats.

3.0 SPECIAL-STATUS SPECIES

3.1 GUIDELINES FOR DETERMINING SIGNIFICANCE

Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the USFWS or CDFW (County 2010b)?

Any of the following conditions would be considered significant if:

A. The project would impact one or more individuals of a species listed as federally or state endangered or threatened.

B. The project would impact an on-site population of a County List A or B plant species, or a County Group 1 animal species, or a species listed as a state Species of Special Concern.

C. The project would impact the local long-term survival of a County List C or D plant species or a County Group 2 animal species.

D. The project may impact arroyo toad (*Anaxyrus californicus*) aestivation, foraging, or breeding habitat.

E. The project would impact golden eagle habitat.

F. The project would result in a loss of functional foraging habitat for raptors.

G. The project would impact the viability of a core wildlife area, defined as a large block of habitat (typically 500 acres or more not limited to project boundaries, though smaller areas with particularly valuable resources may also be considered a core wildlife area) that supports a viable population of a sensitive wildlife species or supports multiple wildlife species.

H. The project would cause indirect impacts, particularly at the edge of proposed development adjacent to proposed or existing open space or other natural habitat areas, to levels that would likely harm sensitive species over the long term.

I. The project would impact occupied burrowing owl (*Athene cunicularia*) habitat.

J. The project would impact occupied San Diego cactus wren (*Campylorhynchus brunneicapillus sandiegensis*) habitat, or formerly occupied San Diego cactus wren habitat that has been burned by wildfire.

K. The project would impact occupied Hermes copper butterfly (*Lycaena hermes*) habitat.

L. The project would impact the nesting success of the following sensitive bird species through grading, clearing, fire fuel modification, and/or other noise-generating activities such as construction:

- San Diego cactus wren
- Coastal California gnatcatcher
- Least Bell's vireo (*Vireo bellii pusillus*)
- Southwestern willow flycatcher (*Empidonax traillii extimus*)
- Tree-nesting raptors
- Ground-nesting raptors
- Golden eagle
- Light-footed Ridgway's rail (*Rallus longirostris levipes*)

3.2 ANALYSIS OF PROJECT EFFECTS

3.2.1 Significant Impacts

The proposed project would result in significant impacts under the above guidelines 3.1.A, 3.1.B, 3.1.K, and 3.1.L for the following reasons:

A. The project would impact one or more individuals of a species listed as federally or state endangered or threatened.

San Diego Thorn-mint

The proposed project would result in a potential maximum impact of 0.33 acre of the 73.43 acres (less than one percent) of critical habitat located within the Preserve for this species. Significant impacts are associated with either proposed improvements to the southwestern portion of the existing Rock and Roll Trail (#22) segment (0.18 acre of critical habitat), or by the construction of the proposed re-route of the southwestern portion of this trail (0.15 acre of critical habitat). Both options for the southwestern

portion of the Rock and Roll Trail (#22) segment pass through an area where this species was observed in 2008. The number of individuals within the maximum impact footprint is not known, because the species was not visible during the 2019 general biology survey and 2019 rare plant survey. Mitigation measures **BIO-1, BIO-2,** and **BIO-6** would reduce proposed project impacts to less than significant.

Coastal California Gnatcatcher

A maximum amount of approximately 3.0 acres of suitable habitat for coastal California gnatcatcher may be impacted by the PAP component of the proposed project, although this includes the entire survey area. The survey area is between 20 and 100 feet wide, while the maximum width of existing trails is 12 feet, and eight feet for proposed trails; therefore, the total acreage impacted should be far less than what exists in the survey area. Impacts from the PAP component of the proposed project total no more than 2.1 acres of Diegan coastal sage scrub and 0.9 acre of coastal sage-chaparral. The PAP component of the proposed project would not preclude the use of suitable habitat by this species, and occupied habitat would remain contiguous with the suitable habitat throughout the Preserve. The PAP component of the proposed project construction within 500 feet of breeding habitat for this sensitive bird species could result in adverse indirect impacts related to construction noise. Impacts to breeding coastal California gnatcatchers, occupied habitat, and temporary (foraging, migration, and dispersal) habitat would be significant. However, because impacts to occupied habitat would be small in relation to the total occupied habitat within the Preserve, and through the implementation of mitigation measures **BIO-3**, **BIO-4**, and **BIO-5**, impacts to this species would be reduced to less than significant.

Quino Checkerspot Butterfly

One QCB was incidentally documented during the 2019 general biological survey within the southern portion of the existing Slaughterhouse Canyon Trail (#21) segment and within the vicinity of where the species was previously documented in 2005. Suitable habitat for this species occurs throughout the Preserve, and the habitat adjacent to the 2019 QCB observation would be considered occupied. Therefore, a portion of the existing Slaughterhouse Canyon Trail (#21), and adjacent ridgeline trails proposed for closure, are considered occupied. No improvements to the existing Slaughterhouse Canyon Trail (#21) segment are proposed. Also, the adjacent trail segments to be closed will be revegetated with passive methods that would avoid impacts to QCB and their larval plants.

QCB host plants were observed along the Rock and Roll Trail (#22) segments (dot-seed plantain, woolly plantain, purple owl's clover, and rigid bird's beak). Project construction within on-site breeding habitat for this sensitive species would, therefore, result in significant impacts. These impacts would be mitigated through the implementation of Mitigation Measure **BIO-10**. Therefore, the proposed project impacts to QCB associated with the Rock and Roll Trail (#22) segment would be less than significant following mitigation. The revegetation of adjacent trail segments to be closed (see Mitigation Measure **BIO-6**) would include habitat enhancement (inclusion of host plant species in seed mixes) for the QCB. Therefore, the proposed project impacts to QCB associated with the Slaughterhouse Canyon Trail (#21) segment and adjacent ridgelines as well as Rock and Roll Trail (#22) segments would be less than significant following mitigation. Additionally, project impacts to QCB within the Preserve would be less than significant.

B. The project would impact an on-site population of a County List A or B plant species, or a County Group 1 animal species, or a species listed as a state Species of Special Concern.

The proposed project would result in significant impacts to the County List A San Diego thorn-mint, but through the implementation of mitigation measures **BIO-1** and **BIO-6**, proposed project impacts would be reduced to less than significant. Details of these impacts are provided above in Section 3.2.1.A. The proposed project would not impact additional County List A or B plant species; however, the proposed project would impact an additional six County Group 1 bird species (southern California rufous-crowned sparrow, Bell's sage sparrow, turkey vulture, northern harrier, red-shouldered hawk, and white-tailed kite). Impacts to these species are further discussed below.

County Group 1 Birds and Raptors

The proposed project construction could impact the nesting success of County Group 1 birds and raptors (southern California rufous-crowned sparrow, Bell's sage sparrow, turkey vulture, northern harrier, red-shouldered hawk, and white-tailed kite), all of which have the potential to nest on and/or within 500 feet of impact areas. Noise from such sources as clearing and grading activities could result in an impact to these species. Noise-related impacts would be considered significant if these sensitive avian species were displaced from their nests and failed to breed. Impacts to southern California rufous crowned sparrow, Bell's sage sparrow, turkey vulture, northern harrier, red-shouldered hawk, and white-tailed kite would be reduced to a level below significance through the implementation of mitigation measure **BIO-3**.

Western Spadefoot Toad

The western spadefoot toad was observed in the southwestern portion of the Southern Parcel during the 2019 baseline biological surveys. This species was also detected in the Preserve during the 2008 surveys near the eastern edge of the Preserve and in the central part of the Preserve near the Martha's Grove (#12) trail. Construction related to the implementation of the proposed project could impact western spadefoot toad. These impacts would be mitigated through Mitigation Measures **BIO-10** and **BIO-11**. Therefore, the proposed project impacts to western spadefoot toad would be less than significant.

K. The project could impact occupied Hermes copper butterfly (*Lycaena hermes*) habitat.

Hermes Copper Butterfly

While small portions of the critical habitat for the Hermes copper butterfly that occurs within the survey area may be impacted by the PAP component of the proposed project, this would not impact the species recovery because the Preserve functions to protect large areas of existing suitable habitat (approximately 507 acres of critical habitat occur on the Preserve). Additionally, established trail segments would function as dispersal corridor connectivity areas among subpopulations if present within the Preserve. While the HELIX 2019, 2020, and 2022 surveys for the PAP component of the proposed project found the survey area to be unoccupied by Hermes copper butterfly, the proposed project would impact 0.05 acre of Potential Hermes Copper Butterfly Habitat. This would be a significant impact and would be mitigated through the implementation of mitigation measures **BIO-7** and **BIO-8**. The results of Hermes copper butterfly habitat mapping are included in Figure 9.

L. The project could impact nesting success of coastal California gnatcatchers and tree-nesting raptors through grading, clearing, fire fuel modification, and/or other noise-generating activities such as construction.

Proposed project construction could impact the nesting success of coastal California gnatcatcher and tree-nesting raptors, all of which have the potential to nest on and/or within 500 feet of construction impact areas. Noise from clearing and grading activities could result in an impact to wildlife. Noise-related impacts would be considered significant if sensitive species (such as coastal California gnatcatcher and raptors) were displaced from their nests and failed to breed. Impacts to coastal California gnatcatchers and tree-nesting raptors would be significant, but would be reduced to less than significant through the implementation of mitigation measures **BIO-3**, **BIO-4**, and **BIO-5**.

3.2.2 No Impact or Less than Significant Impacts

The proposed project would result in no impact or less than significant impacts under the above guidelines 3.1.A through 3.1.L for the following reasons:

A. The project would impact one or more individuals of a species listed as federally or state endangered or threatened.

The proposed project would potentially impact the federal and state listed endangered plant species, willowy monardella, and one federally and/or state listed animal species: QCB. Impacts to these species are further discussed below.

Willowy Monardella

Willowy monardella is documented throughout the Southern Parcel and the San Vicente Connector parcels, where no trail segments or public access are proposed. No impacts to this species are expected.

B. The project would impact an on-site population of a County List A or B plant species, or a County Group 1 animal species, or a species listed as a state Species of Special Concern.

Impact analyses for one County List A plant species (willowy monardella) and one County Group 1 animal species (QCB) that are also federally and/or state listed species are provided in the above Section 3.2.2.A. The proposed project would not impact additional County List A or B plant species (variegated dudleya, delicate clarkia, Deane's milkvetch, and San Diego goldenstar); however, the proposed project would impact an additional six County Group 1 animal species (southern California rufous-crowned sparrow, Bell's sage sparrow, turkey vulture, northern harrier, red-shouldered hawk, and white-tailed kite), as discussed in Section 3.2.1.B above. The proposed project would impact 16 state Species of Special Concern. Impacts to these species are further discussed below.

State Animal Species of Special Concern

The proposed project would impact potential habitat for the following 16 Species of Special Concern (SSC) species, including five reptile species (San Diegan tiger whiptail, Blainville's horned lizard, red-diamond rattlesnake, coast patch-nosed snake, and two-striped garter snake) and 11 mammal species (pallid bat, Dulzura pocket mouse, northwestern San Diego pocket mouse, San Diego woodrat, Townsend's big-eared bat, western mastiff bat, western red bat, western yellow bat, San Diego black-tailed jackrabbit, pocketed free tailed bat, and southern mule deer). Impacts to these species would be

less than significant as these are highly mobile animals, any development of trails in previously undeveloped areas would occur as thin strips, no woodrat nests were observed within the proposed trail alignments, and the proposed project footprint comprises a small fraction of the available habitat within the Preserve for these species. Additionally, as a regional conservation program, the MSCP also protects covered and 'non-target' species such as these through habitat acquisition and preservation efforts. Because the Preserve includes extensive habitat occupied by these relatively common species and these species are conserved through the MSCP program, proposed project impacts on these species would not be significant.

C. The project would impact the local long-term survival of a County List C or D plant species or a County Group 2 animal species.

The proposed project would potentially impact three County List D plant species (rush chaparral-star, San Diego County viguiera, and ashy spike-moss). Impacts to rush chaparral-star, San Diego County Viguiera, and ashy spike-moss would be reduced to a level less than significant because the Preserve includes extensive habitat occupied by these relatively common species, and these species are conserved through the MSCP program. Additionally, impacts would be less than significant given that any development of trails in previously undeveloped areas would occur as thin strips and the proposed project footprint comprises a small fraction of the available habitat for these species throughout the Preserve.

Graceful tarplant, small-flowered morning glory, Palmer's grappling hook, Engelmann oak, San Diego goldenstar, and Palmer's sagebrush occur adjacent to existing trail segments and access roads where no improvements are proposed, and, thus, project impacts on these species are unlikely. In addition, proposed project impacts have been sited and designed to avoid oak trees, and no impacts to oak trees would occur. Golden-rayed pentachaeta occurs within the Southern Parcel Addition and San Vicente Connector Parcels of the Preserve, but no trail segments are proposed in these areas, and impacts are not expected. Additionally, California adder's-tongue occurs adjacent to the survey area for the portion of Rock and Roll Trail (#22) segment proposed for improvements and is unlikely to be impacted.

Details of impacts to 16 County Group 2 animal species (spadefoot toad, San Diegan tiger whiptail, red diamond rattlesnake, Blainville's horned lizard, coast patch-nosed snake, San Diego black-tailed jackrabbit, Dulzura pocket mouse, northwestern San Diego pocket mouse, San Diego desert woodrat, mountain lion, big free-tailed bat, pallid bat, Townsend's big-eared bat, western mastiff bat, western red bat, and pocketed free-tailed bat) that are also state Species of Special Concern are provided in the above Section 3.2.2.B. The proposed project would impact potential habitat for seven special-status species not listed as SSC, including three reptile species (Belding's orange-throated whiptail, Coronado skink, and northern three-lined boa) and four mammal species (western small-footed myotis, Yuma myotis, mule deer, and mountain lion). Similar to the impacts described for the state Species of Special Concern, impacts to these animal species would be less than significant as these are highly mobile animals, any development of trails in previously undeveloped areas would occur as thin strips, the proposed project footprint comprises a small fraction of the available habitat within the Preserve for these species, and these relatively common species are conserved through the MSCP program.

In particular, southern mule deer have high mobility, and any individuals potentially present would likely disperse away from the proposed project area during proposed project-related activities. Suitable habitat impacted by the proposed project comprises a small fraction of the available contiguous habitat throughout the Preserve, and mule deer have been documented by wildlife cameras (County 2013)

traversing existing trails within the Preserve. During the biological surveys, the biologists searched for mule deer bedding locations within the survey area and did not observe any bedding locations; therefore, the proposed project will not impact bedding areas for this species. Proposed trails, proposed trails on existing disturbed areas, and proposed future trail connections are not anticipated to impact any areas where mule deer are known to bed. Therefore, the proposed project is not expected to reduce the populations of this species to below a self-sustaining level, and impacts to this species would be less than significant.

D. The project would not impact arroyo toad aestivation, foraging, or breeding habitat.

The proposed project site does not contain suitable breeding, aestivation, and foraging habitat for arroyo toad. Drainages within the survey area do not have sandy banks or support suitable riparian forest habitat. Habitat suitable for aestivation (sandy banks along ephemeral drainages) was also not observed adjacent to drainages in the survey area. No documented occurrences of the species are reported in the Preserve. Additionally, the Preserve is outside the historical range of the species. Given that the species is presumed absent from the site, no impacts to arroyo toad would occur.

E. The project would not impact golden eagle habitat.

The proposed project site does not contain suitable nesting habitat for golden eagle, and the site is not within any known golden eagle territory. Golden eagles are occasional visitors to the Preserve; however, no known active nest sites occur within 4,000 feet of the proposed project site. No impacts would occur to golden eagle or its habitat.

F. The project would not result in a loss of functional foraging habitat for raptors.

The Preserve currently consists of 2,847 acres of open space, including approximately 19.5 acres of existing trails, maintenance, and access roads. At a maximum, approximately 2.9 acres of impact would result from establishing new proposed trails, 0.6 acre of impact from potential future trail connections, and approximately 3.3 acres of impact would result from improvements to existing trails in previously disturbed areas. Total proposed impacts total 6.8 acres, including impacts to disturbed habitat and developed land. Additionally, a total of 5.6 acres of trails will be closed and revegetated. All impacts to habitat within the Preserve would occur as thin strips to either establish trails in previously undeveloped areas, or in previously disturbed areas. The disturbed habitat within the Preserve, as well as less densely vegetated areas of Diegan coastal sage scrub and chaparral, are considered optimal raptor foraging habitat, and would remain so after trail construction because prey animals would move easily across the trails, and raptors could easily forage on them. Thus, the removal of habitat in strips for the establishment of trails would not constitute an effect on raptor foraging habitat since the trails would not affect the Preserve's functionality for raptor foraging. Impacts to raptor foraging habitat would be less than significant.

G. The project would not impact the viability of a core wildlife area, defined as a large block of habitat (typically 500 acres or more not limited to project boundaries, though smaller areas with particularly valuable resources may also be considered a core wildlife area) that supports a viable population of a sensitive wildlife species or supports multiple wildlife species.

The Preserve is part of a core wildlife area of 500 acres of wildlife habitat or more and has been known to support viable populations of coastal California gnatcatcher, in addition to multiple other wildlife species. Proposed project impacts are limited to 6.8 acres (0.2 percent) of the approximately 2,847-acre

Preserve. The Preserve provides adequate space and resources for wildlife known to use the site, maintains connectivity to off-site resources, and functions to facilitate bird and mammal movement through the area, including for species targeted for conservation in the region, such as the coastal California gnatcatcher. Therefore, the proposed project would not significantly impact the viability of a core wildlife area.

H. The project would not cause indirect impacts, particularly at the edge of proposed development adjacent to proposed or existing open space or other natural habitat areas, to levels that would likely harm sensitive species over the long term.

Human access would not increase substantially, because the proposed project site currently operates as a Preserve with hiking trails and staging areas, which is subject to moderate human activity related to hiking and bicycle use. As the site is already subjected to human uses, with most proposed trails following existing informal trails, the proposed project would not represent a significant increase in human activity. Furthermore, formalizing the trail network through the Preserve with signage to direct visitors onto the correct trails and revegetation of closed, unauthorized trails would help dissuade trespassing into closed areas and provide further protections for sensitive habitat areas. Dogs are currently required to be on-leash within the Preserve trail system, and the effects of off-leash dogs on wildlife would be further minimized through the installation of signage along the formal trail system reminding hikers that off-leash dogs are prohibited. Trails would not be lit and are considered unlikely to be used by people walking dogs during the night, because the Preserve closes at sunset, thus minimizing encounters with nocturnal wildlife. Signage would also be installed to encourage responsible behavior by equestrian visitors, thus minimizing the spread of weed seeds, flies, and brown-headed cowbirds (*Molothrus ater*). Trails will be designed and constructed to minimize erosion and runoff. Noise impacts are not expected during the proposed project operation, because all trails will be non-motorized. Night lighting will not result from the proposed project operation because the Preserve closes at sunset and is not lit at night. Therefore, indirect impacts on sensitive species will be less than significant.

I. The project would not impact occupied burrowing owl habitat.

A single burrowing owl was observed along a ridge top road during the 2008 wildlife surveys (County 2013) but flushed and flew away. The species was assumed to be a migrant. Suitable habitat with underground burrows dug by other species were not observed within the survey area. As such, the site does not support suitable burrowing owl habitat, and the proposed project would have no impact on occupied burrowing owl habitat.

J. The project would not impact occupied cactus wren habitat, or formerly occupied coastal cactus wren habitat that has been burned by wildfire.

The proposed project site does not contain suitable habitat for the coastal cactus wren. The proposed project would have no impact on cactus wren.

3.3 CUMULATIVE IMPACT ANALYSIS

The proposed project would not contribute to a significant cumulative impact on San Diego thorn-mint, QCB, Hermes copper butterfly, western spadefoot toad, or coastal California gnatcatcher. The proposed project would potentially impact a maximum of 0.18 acre of critical habitat for the San Diego thorn-mint, a maximum of 0.05 acre of critical habitat for Hermes copper butterfly, and a maximum of 3.0

acres of suitable habitat for the coastal California gnatcatcher. However, the proposed project would implement San Diego thorn-mint, QCB, Hermes copper butterfly, western spadefoot toad, and coastal California gnatcatcher avoidance measures, and compensate for the loss of habitat for species through on or off-site revegetation or purchase of mitigation credits.

Because the proposed project is designed to avoid, minimize, and mitigate impacts in conformance with the Subarea Plan and any other projects proposed in the vicinity would also have to be in conformance with the Subarea Plan, cumulative impacts would be considered fully mitigated.

3.4 MITIGATION MEASURES AND DESIGN CONSIDERATIONS

Impacts to San Diego thorn-mint, coastal California gnatcatcher, nesting birds, Hermes copper butterfly, and QCB would be mitigated through the implementation of the following measures **BIO-1 through BIO-11**:

BIO-1 Focused surveys for San Diego thorn-mint will be completed within areas of critical habitat during the blooming period for this species (April – May) prior to clearing and grubbing of the proposed Rock and Roll Trail (#22) segment improvements or reroutes. San Diego thorn-mint observed in the proposed impact area will be flagged and avoided during trail construction. If impacts to San Diego thorn-mint individuals cannot be avoided, they shall be quantified and limited to no more than 20 percent of the total population in the area, consistent with BMO Section 86.507.a.1, as determined during pre-construction surveys and documented in a letter report submitted by the County-approved biologist to DPR. The mapping of plant populations will extend beyond the impact area into the adjacent area that meets the species' habitat requirements, as determined by the County-approved biologist. DPR will review and approve the letter report and implement the mitigation according to the Mitigation Monitoring and Reporting Program for the project. Impacts shall be mitigated consistent with the BMO Section 86.507.a.1 at a 2:1 ratio if less than 10 percent of the total population is impacted, or a 3:1 ratio if less than 20 percent of the total population is impacted. The proposed project will avoid impacting more than 20 percent of the total population.

Mitigation will consist of on- or off-site preservation, translocation, and/or restoration within a BRCA, with a preference for species salvage and transplantation on-site if feasible. Seed material will be sourced from within five miles of the Preserve, but if seed is not available, due to seasonality or a poor seeding year, seed collected from southeastern San Diego County may be used. Additionally, any trail or trail segment closure within areas of critical habitat for San Diego thorn-mint will include revegetation with species known as common associates to San Diego thorn-mint populations. If species are transplanted for mitigation, these species will be included in a plant salvage and translocation plan according to mitigation measure **BIO-2**.

BIO-2 Prior to vegetation clearing for the proposed Rock and Roll Trail (#22) segment improvements or reroutes, if San Diego thorn-mint is being impacted and translocation is selected as part of the mitigation package according to the letter report prepared under mitigation measure **BIO-1**, a plant salvage and translocation plan shall be prepared for San Diego thorn-mint impacted by the project. The plan shall, at a minimum, evaluate options for plant salvage and relocation, including native plant mulching, selective soil salvaging, and application/relocation of resources within the Study Area. Relocation efforts may include seed collection and/or transplantation to a suitable receptor site and will be based on the most reliable methods of successful relocation.

The program shall contain a recommendation for method of salvage and relocation/application based on the feasibility of implementation and the likelihood of success. The program shall include, at a minimum, an implementation plan, maintenance and monitoring program, success criteria, estimated completion time, and any relevant contingency measures. The resource salvage plan shall be prepared by a County-approved biologist and shall be implemented according to the Mitigation Monitoring and Reporting Program for the project.

BIO-3 Grading or clearing of Diegan coastal sage scrub during the breeding season of the coastal California gnatcatcher (March 1 to August 15) shall be avoided to the extent feasible. If grubbing, clearing, or grading would occur during the breeding season, a pre-construction survey shall be conducted by a qualified biologist no more than three days prior to the commencement of activities to determine if active bird nests are present in the affected areas. If there are no nesting birds (includes nest building or other breeding/nesting behavior) within 500 feet of the survey area, clearing, grubbing, and grading shall be allowed to proceed in that area. If active nests or nesting birds are observed within 500 feet of the survey area, the biologist shall flag a buffer around the active nests, and clearing, grubbing, or grading activities shall not occur within 500 feet of active nests until nesting behavior has ceased, nests have failed, or young have fledged as determined by a qualified biologist. If the qualified biologist determines that the species will not be impacted with a reduced buffer, potentially with the implementation of avoidance measures to reduce noise, as necessary, and/or the qualified biologist monitors the active nest during clearing, grubbing, or grading to ensure no impacts to the species occur, these activities may occur outside the reduced buffer during the breeding season, as long as the species is not impacted.

BIO-4 Grubbing or clearing of vegetation during the general avian breeding season (February 15 – September 15) or raptor breeding season (January 15 – July 15) shall be avoided to the extent feasible. If grubbing, clearing, or grading would occur during the general avian breeding season, a pre-construction survey shall be conducted by a qualified biologist no more than three days prior to the commencement of grubbing or clearing activities to determine if active bird nests are present in the affected areas. If there are no nesting birds (includes nest building or other breeding/nesting behavior) within this area, clearing, grubbing, and grading shall be allowed to proceed. Furthermore, if construction activities are to resume in an area where they have not occurred for a period of seven or more days during the breeding season, an updated survey for avian nesting will be conducted. If active nests or nesting birds are observed within the area, the biologist shall flag the active nests and construction activities shall avoid active nests until nesting behavior has ceased, nests have failed, or young have fledged. If the qualified biologist determines that the species will not be impacted with a reduced buffer, potentially with the implementation of avoidance measures to reduce noise, as necessary, and/or the qualified biologist monitors the active nest during clearing, grubbing, or grading to ensure no impacts to the species occur, these activities may occur outside the reduced buffer during the breeding season, as long as the species is not impacted.

BIO-5 Because the Preserve is a BRCA, mitigation for impacts to 3.0 acres of Diegan coastal sage scrub and coastal sage-chaparral transition, Tier II habitats, shall occur at a 1.5:1 ratio through on-site preservation, revegetation/restoration, or purchase of Tier II mitigation credits from an approved mitigation bank within the South County MSCP Subarea Plan per Attachment M of the BMO. The mitigation site will meet the criteria for a BRCA in order to use a 1.5:1 ratio, as the impacted land meets the criteria for BRCA. Otherwise, the mitigation ratio will be 2:1 if the

mitigation site does not meet the criteria for BRCA. Some or all of the mitigation for impacts to 3.0 acres of Tier II habitat could occur as part of the revegetation of existing trail segments to be closed. Revegetation will be accomplished by a combination of barricade and sign installation, soil decompaction (where needed), and native seed application (see also BIO-6). Seed material will be sourced from within five miles of the Preserve, but if seed is not available, due to seasonality or a poor seeding year, seed collected from southeastern San Diego County may be used. Revegetation efforts will be monitored by a qualified biologist and maintained for a period of three years following implementation. Maintenance will be conducted by a qualified contractor with experience in native habitat restoration and will include control of non-native plant species and remedial measures, such as re-seeding and installation of additional barricades and signage, to help ensure the success of the revegetation efforts. Closed trail segments to be revegetated within occupied QCB habitat will be revegetated with passive methods that would avoid impacts to QCB and their larval host plants.

BIO-6 Trail segments to be closed and revegetated will incorporate native species in seed mixes that will enhance sensitive species documented within the Preserve, including San Diego thorn-mint and habitat that supports QCB. Revegetation of trail segments within areas of critical habitat for San Diego thorn-mint will include seeding with native geophytes (i.e., wild onion [*Allium* spp.] and goldenstar [*Bloomeria crocea*]) known to occur with San Diego thorn-mint on gabbro soils. Revegetation of trail segments within areas of suitable habitat for QCB will include host plant species (i.e., dot-seed plantain) and nectar resources.

BIO-7 Mitigation for permanent impacts to Potential Hermes Copper Butterfly Habitat shall occur at a 1:1 ratio within the South County MSCP area, within a BRCA, or at the ratios identified in the BMO. Permanent impacts to Potential Hermes Copper Butterfly Habitat are expected to be 0.05 acre. Mitigation shall occur through one or a combination of the following: on- and/or off-site preservation, restoration, and/or purchase of mitigation credits at an approved mitigation bank.

BIO-8 The following Hermes Copper Butterfly conservation measures apply along the Hermes Copper Butterfly Avoidance Area on Figure 12, *Mitigation Avoidance Areas*. Additional Hermes Copper Butterfly surveys will be conducted prior to construction, in order to ensure that potential habitat is delineated to the greatest extent feasible. This mitigation would be expanded to any additional area where Hermes Copper Butterfly is identified during pre-construction surveys.

Step 1: Survey

- Prior to initiating work within the Hermes Copper Butterfly Avoidance Area, a qualified biologist shall complete protocol flight season surveys for the Hermes Copper Butterfly in accordance with the survey guidelines outlined in Attachment B of the County's Report Format and Content Requirements for Biological Resources (County 2010a).

- During host plant mapping, host plant patches will be mapped using GPS, so they can be flagged prior to construction.

Step 2: Avoidance and Minimization Measures

- Following flight season surveys and host plant mapping, realign or leave potential impact areas unimproved, as needed, to avoid direct impacts to host plants (Spiny redberry plants that are within 15 feet of buckwheat) as much as possible.

- All construction within mapped Hermes Copper Butterfly habitat, including buckwheat within 15 feet of Spiny redberry, will be prohibited during the flight season (defined as the third full week of May through the first full week of July).

- A qualified biologist will monitor construction within the Hermes Copper Butterfly Avoidance Area to ensure that all flagged and mapped host plant locations planned for avoidance are avoided.

- The qualified biologist will conduct environmental awareness training for all personnel entering the site during the construction of the proposed project.

- Following trail installation, maintenance activities in areas supporting Hermes Copper Butterfly host plants within the Hermes Copper Butterfly Avoidance Area shall either occur outside of the Hermes Copper Butterfly flight season or be monitored, as appropriate, by a qualified biologist.

- Install signs and/or fencing along the avoided host plants stating, “Environmentally sensitive area. Please stay on trail,” or similar language.

Step 3: Compensatory Mitigation

If the flight season surveys conducted in Step 1 are positive, and the proposed project cannot be redesigned to avoid impacts to all Hermes Copper Butterfly host plant patches, then in addition to the surveys and avoidance and minimization measures in Steps 1 and 2 above, the impacts to Occupied Hermes Copper Butterfly host plant patches will be mitigated at a 3:1 ratio through one or a combination of the following: on- and/or off-site preservation, restoration, and/or purchase of mitigation credits at an approved mitigation bank.

BIO-9 The following QCB conservation measures apply along the Rock and Roll Trail (#22) segment, shown as QCB Avoidance Area on Figure 12 of the proposed project’s Biological Resources Technical Report. Additional QCB host plant mapping will be conducted prior to construction when host plants are blooming, in order to ensure host plant patches are delineated to the greatest extent feasible. This mitigation would be expanded to any additional areas where QCB host plants are identified during pre-construction plant mapping.

Step 1: Survey

- Additional QCB host plant mapping will be conducted prior to construction when host plants are blooming, in order to ensure host plant patches are delineated to the greatest extent feasible.

- During host plant mapping, host plant patches will be mapped using GPS, so they can be flagged prior to construction.

Trail Number - Trail Name

0a - Sycamore Canyon Access Road
0b - Sycamore Park Drive Access Road
1 - Paragon Mesa - West
2 - Paragon Mesa - Informal
3 - South Raptor Loop
4 - South Raptor Loop Northwest
5 - South Raptor Loop South
6 - Paragon Mesa - South
7 - Waterfall Trail
8 - Calle de Rob
9 - Calle de Rob - From Access Rd to Paragon
10 - Calle de Rob
11 - Calle de Rob - Eastern Segment; County TCT
12 - Martha's Grove
13 - West Boundary Trail - Connects to Stowe Trail
14 - Ridge Trail
15 - South of Ridge Trail
16 - Canyon Trail - Informal
17 - Clark Canyon to Ridge - West - Informal
18 - Clark Canyon to Ridge - East - Informal
19 - North Slaughterhouse - Informal
20 - South Slaughterhouse
21 - Slaughterhouse Canyon Trail
22 - Rock and Roll Trail
22a - Rock and Roll Trail
22b - Rock and Roll Trail
23 - Sidewinder Rogue Trail
24 - Maintenance Road/Slaughterhouse Canyon Trail
25 - Connection to Calle de Rob/Rock and Roll Trail
26 - North Interior Loop
27 - Access Rd - Cardiac Hill
28a - County TCT; Goodan Staging Area to Access Rd
28b - County TCT; Martha's Grove to Access Rd
29 - Connection - Calle de Rob Eastern; County TCT
30 - Connection to Calle de Rob and South Raptor Loop South
31 - County TCT
32 - Overlook
33 - Rock and Roll Trailhead Parking
34 - Stowe Trail Connector

Scripps Poway Parkway
Goodan Ranch Staging Area
Rock and Roll Trailhead Parking (33)
Sycamore Canyon Rd
Sycamore Park Drive
67 Staging Area
Visitors Center
CALIFORNIA 67

Preserve Boundary
Maintenance Road
Access Road
Existing Formal Trail
Closed to be Revegetated
Proposed Trails
Stowe Trail
County TCT
One-way Trail Direction
Existing Staging Area
Proposed Staging Areas
Spiny Redberry
Hermes Copper Butterfly Avoidance Area

QCB Host Plants

Dot-seed Plantain
Purple Owl's Clover
Rigid Bird's Beak
Dwarf Plantain/Woolly Plantain
Quino Checkerspot Butterfly Avoidance Area

0 1,500 Feet

Source: Aerial (SanGIS 2017)

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HELIX Environmental Planning

Mitigation Avoidance Areas

Figure 12

Step 2: Avoidance and Minimization Measures

- Following host plant mapping, realign or leave potential impact areas unimproved, as needed, to avoid direct impacts to host plants as much as possible.
- All construction within mapped QCB host plant patches will be prohibited during the QCB flight season (defined as the third week of February through the second Saturday in May).
- A qualified biologist will monitor construction within the QCB Avoidance Area to ensure that all flagged and mapped host plant locations planned for avoidance are avoided.
- The qualified biologist will conduct environmental awareness training for all personnel entering the site during the construction of the proposed project.
- Following construction, maintenance activities in areas supporting QCB host plants within the QCB Avoidance Area shall either occur outside of the QCB flight season or be monitored, as appropriate, by a qualified biologist.
- Install signs and/or fencing along the avoided host plants stating, "Environmentally sensitive area. Please stay on trail," or similar language.

Step 3: Compensatory Mitigation

If the proposed project cannot be redesigned to avoid impacts to all QCB host plant patches, then in addition to the surveys and avoidance and minimization measures in Steps 1 and 2 above, consultation with USFWS will be required. Mitigation may consist of one or a combination of on- or off-site planting of host plants, providing long-term maintenance of existing host plants, preserving occupied QCB habitat, or similar measures to the satisfaction of the USFWS.

BIO-10 Focused surveys for western spadefoot toad will be completed by a qualified biologist prior to clearing and grubbing of the proposed trail segment improvements or reroutes. Occupied western spadefoot toad habitat observed in the proposed impact area will be flagged and avoided during trail construction until the qualified biologist determines that western spadefoot toad are no longer using the habitat.

BIO-11 To help ensure errant impacts to sensitive vegetation communities and jurisdictional waters outside of the impact footprint are avoided during construction, environmental exclusionary fencing, where determined necessary by the qualified biologist, would be installed at the edges of the impact limits prior to initiation of grading. All construction staging shall occur within the approved limits of construction. A qualified biologist will monitor the installation of environmental fencing wherever it would abut sensitive vegetation communities. The biologist also will conduct a pre-construction environmental awareness training for construction personnel prior to all phases of construction to inform personnel of the sensitive biological resources on-site and avoidance measures to remain in compliance with project approvals. The biologist will periodically monitor the limits of construction operations to ensure that avoidance areas are delineated with temporary fencing and that fencing remains intact.

3.5 CONCLUSION

Proposed project implementation could result in significant impacts to federally and state listed animal species, state Species of Special Concern animals, County Groups 1 and 2 animals, and raptors with the potential to nest and/or forage over the site and immediate vicinity. Such impacts could result from direct disturbance, loss of habitat, and noise, but the implementation of mitigation measures **BIO-1** through **BIO-11** would reduce impacts to less than significant.

4.0 RIPARIAN HABITAT AND SENSITIVE NATURAL COMMUNITIES

4.1 GUIDELINES FOR DETERMINING SIGNIFICANCE

Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the USFWS or CDFW (County 2010b)?

Any of the following conditions would be considered significant if:

A. Project-related grading, clearing, construction, or other activities would temporarily or permanently remove sensitive native or naturalized habitat (as listed in Attachments K and M of the BMO, excluding those without a mitigation ratio) on or off the Project site.

B. Any of the following will occur to or within jurisdictional wetlands and/or riparian habitats as defined by the USACE, CDFW, and County: vegetation removal; grading; obstruction or diversion of water flow; adverse change in velocity, siltation, volume of flow, or runoff rate; placement of fill; placement of structures; road crossing construction; placement of culverts or other underground piping; any disturbance of the substratum; and/or any activity that may cause an adverse change in native species composition, diversity, and abundance.

C. The project would draw down the groundwater table to the detriment of groundwater-dependent habitat, typically a drop of three feet or more from historical low groundwater levels.

D. The project would cause indirect impacts, particularly at the edge of proposed development adjacent to proposed or existing open space or other natural habitat areas, to levels that would likely harm sensitive habitats over the long term.

E. The project does not include a wetland buffer adequate to protect the functions and values of existing wetlands.

4.2 ANALYSIS OF PROJECT EFFECTS

4.2.1 Significant Impacts

The proposed project would result in significant impacts under the above guideline 4.1.A for the following reasons:

A. Project-related grading, clearing, construction, or other activities would temporarily or permanently remove sensitive native or naturalized habitat (as listed in Attachments K and M of the BMO, BMO excluding those without a mitigation ratio) on or off the Project site.

Implementation of the proposed project would result in maximum direct impacts to approximately 5.3 acres of sensitive vegetation communities in undeveloped areas proposed for the development of formal trails and from improvements (e.g., widening) of some existing trails. The maximum potential direct impacts to improve existing trails and establish trails in previously undeveloped areas include 0.1 acre of open coast live oak woodland (Tier I), 2.1 acres of Diegan coastal sage scrub(Tier II), 0.9 acre of coastal sage-chaparral transition (Tier II), 0.6 acre of chamise chaparral (Tier III), 0.9 acre of southern mixed chaparral (Tier III), and 0.7 acre of non-native grassland (Tier III). Potential direct impacts to sensitive native or naturalized habitat are considered significant and require mitigation. Implementation of Mitigation Measures **BIO-5**, **BIO-12**, and **BIO-13** would reduce impacts to less than significant. Although there would be no impacts to jurisdictional wetlands and riparian habitats, mitigation measure **MM-BIO-11** would provide additional protections for jurisdictional waters and riparian habitats within the Preserve.

4.2.2 No Impact or Less than Significant Impacts

The proposed project would not result in significant impacts under the guidelines 4.1.B, 4.1.C, 4.1.D, and 4.1.E, for the following reasons:

B. The following would occur to or within jurisdictional wetlands and/or riparian habitats as defined by the USACE, CDFW, and County: vegetation removal; grading; diversion of water flow; placement of fill; placement of structures; road crossing construction; placement of culverts; disturbance of the substratum; and activities that may cause an adverse change in native species composition, diversity, and abundance.

No impacts to jurisdictional wetlands and riparian habitats as defined by the USACE and CDFW are proposed. Implementation of Mitigation Measure **BIO-11** would provide additional protections for jurisdictional waters and riparian habitats.

The proposed project is exempt from County RPO requirements, pursuant to Section 86.603(a) of the RPO and as discussed in the above Section 1.5.3. Therefore, the proposed project would be exempt from RPO requirements associated with County RPO wetlands.

C. The project would not draw down the groundwater table to the detriment of groundwater-dependent habitat, typically a drop of three feet or more from historical low groundwater levels.

Excavation below the groundwater level would not occur in undeveloped areas designated for the development of the formal trail network. Therefore, no impacts would occur.

D. The project would not cause indirect impacts, particularly at the edge of proposed development adjacent to proposed or existing open space or other natural habitat areas, to levels that would likely harm sensitive habitats over the long term.

Potentially significant indirect impacts to sensitive habitat resulting from human access, domestic animals, exotic plant species, and lighting would be avoided through the following proposed project design features: (1) signs precluding access to areas outside of established trails shall be posted; (2) off-

leash pets would not be allowed on trails or public areas and signs would be posted along trails notifying pet owners of this regulation; (3) only native, non-invasive plant species would be included in seed/container plant lists for the revegetation of closed trails (species not listed on the California Invasive Plant Inventory prepared by the Cal-IPC [2006]) if closed informal trails are revegetated using passive or active methods; and (4) no project lighting is proposed. No significant impact would occur.

E. The project includes wetland buffers adequate to protect the functions and values of existing wetlands.

The proposed project is not subject to the County's RPO (County 2012) requirements pursuant to Section 86.603(a) of the RPO. Therefore, no wetland buffer is required.

4.3 CUMULATIVE IMPACT ANALYSIS

The proposed project would not contribute to a cumulative impact on riparian habitat and other sensitive natural communities. No impacts to riparian habitat or wetlands are proposed. The maximum proposed impacts to sensitive upland communities, while significant at the project level, are not considered cumulatively significant, as the proposed project would provide mitigation for these impacts in accordance with County guidelines. The County-approved mitigation ratios are standardized and not dependent upon the quality of habitat. Rather, the mitigation ratios recognize the regional importance of the habitat, the overall rarity of the habitat, and the number and variety of species it supports. Mitigation for habitat loss is required to compensate for direct impacts, as well as cumulative loss of habitat. Impacts to sensitive upland communities would be fully mitigated at County-approved ratios through one or a combination of the following: on- and/or off-site establishment, re-establishment, rehabilitation, enhancement, and/or preservation; and/or off-site purchase of mitigation credits at an approved mitigation bank, or other location deemed acceptable by the County; thus, providing long-term conservation value. As the proposed project would be in conformance with County guidelines and mitigation ratios, the proposed project's contribution to cumulative impacts to sensitive vegetation communities is not considerable and would be less than significant.

4.4 MITIGATION MEASURES AND DESIGN CONSIDERATIONS

Mitigation for impacts to sensitive natural communities will be offset by the revegetation of existing trails proposed to be closed.

Impacts to sensitive natural communities would be mitigated through the implementation of the following measures **BIO-12** and **BIO-13**:

BIO-12 Because the Preserve is a BRCA, mitigation for impacts to 0.1 acre of open coast live oak woodland, a Tier I habitat, shall occur at a 2:1 ratio through on-site preservation of open coast live oak woodland, on- or off-site revegetation of open coast live oak woodland, or purchase of Tier I mitigation credits from an approved mitigation bank within the South County MSCP Subarea Plan per Attachment M of the BMO. The mitigation site will meet the criteria for a BRCA in order to use a 2:1 ratio, as the impacted land meets the criteria for BRCA. Otherwise, the mitigation ratio will be 3:1 if the mitigation site does not meet the criteria for BRCA. Some or all of the mitigation for impacts to 0.1 acre of open coast, live oak woodland, could occur as part of the revegetation of 5.6 acres of existing trail segments to be closed. Revegetation will be accomplished by a combination of barricade and sign installation, soil decompaction (where

needed), and native seed application (see also BIO-6). Seed material will be sourced from within five miles of the Preserve, but if seed is not available, due to seasonality or a poor seeding year, seed collected from southeastern San Diego County may be used. Revegetation efforts will be monitored by a qualified biologist and maintained for a period of three years following implementation. Maintenance will be conducted by a qualified contractor with experience in native habitat restoration and will include control of non-native plant species and remedial measures, such as re-seeding and installation of additional barricades and signage, to help ensure the success of the revegetation efforts. Closed trails to be revegetated within occupied QCB habitat will be revegetated with passive methods that would avoid impacts to QCB and their larval host plants.

BIO-13 Because the Preserve is a BRCA, mitigation for impacts to 2.2 acres of southern mixed chaparral, chamise chaparral, and non-native grassland, Tier III habitats, shall occur at a 1:1 ratio through on-site preservation, revegetation/restoration, or purchase of Tier III mitigation credits from an approved mitigation bank within the South County MSCP Subarea Plan per Attachment M of the BMO. The mitigation site will meet the criteria for a BRCA in order to use a 1:1 ratio, as the impacted land meets the criteria for BRCA. Otherwise, the mitigation ratio will be 1.5:1 if the mitigation site does not meet the criteria for BRCA. Some or all of the mitigation for impacts to 2.2 acres of Tier III habitat could occur as part of the revegetation of 5.6 acres of existing trail segments to be closed. Revegetation will be accomplished by a combination barricade and sign installation, soil decompaction (where needed), and native seed application (see also BIO-6). Seed material will be sourced from within five miles of the Preserve, but if seed is not available, due to seasonality or a poor seeding year, seed collected from southeastern San Diego County may be used. Revegetation efforts will be monitored by a qualified biologist and maintained for a period of three years following implementation. Maintenance will be conducted by a qualified contractor with experience in native habitat restoration and will include control of non-native plant species and remedial measures, such as re-seeding and installation of additional barricades and signage, to help ensure the success of the revegetation efforts. Closed trails to be revegetated within occupied QCB habitat will be revegetated with passive methods that would avoid impacts to QCB and their larval host plants.

4.5 CONCLUSION

The proposed project would result in significant impacts to sensitive natural communities; however, with the implementation of mitigation measures **BIO-5**, **BIO-12**, and **BIO-13**, impacts on sensitive natural communities, would be reduced to less than significant.

5.0 JURISDICTIONAL WETLANDS AND WATERWAYS

5.1 GUIDELINES FOR DETERMINING SIGNIFICANCE

Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means (County 2010b)?

The following condition would be considered significant if:

A. The project would impact federally protected wetlands as defined by Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means.

5.2 ANALYSIS OF PROJECT EFFECTS

5.2.1 No Impact or Less than Significant Impacts

The proposed project will not impact wetland Waters of the U.S./State or non-wetland Waters of the U.S./State, as discussed in Section 4.2.1 above.

5.3 CUMULATIVE IMPACT ANALYSIS

The proposed project will not impact wetland Waters of the U.S./State; therefore, the proposed project will not contribute to a cumulative impact to wetland Waters of the U.S./State. The proposed project will not impact wetland Waters of the U.S./State; therefore, no mitigation is required.

5.4 MITIGATION MEASURES AND DESIGN CONSIDERATIONS

The project will not impact wetland Waters of the U.S./State; therefore, no mitigation is required.

5.5 CONCLUSION

The proposed project will not impact wetland Waters of the U.S./State.

6.0 WILDLIFE MOVEMENT AND NURSERY SITES

6.1 GUIDELINES FOR DETERMINING SIGNIFICANCE

Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites (County 2010b)?

Any of the following conditions would be considered significant if:

A. The project would impede wildlife access to foraging habitat, breeding habitat, water sources, or other areas necessary for their reproduction.

B. The project would substantially interfere with connectivity between blocks of habitat or would potentially block or substantially interfere with a local or regional wildlife corridor or linkage.

C. The project would create artificial wildlife corridors that do not follow natural movement patterns.

D. The project would increase noise and/or nighttime lighting in a wildlife corridor or linkage to levels proven to affect the behavior of the animals identified in a site-specific analysis of wildlife movement.

E. The project does not maintain an adequate width for an existing wildlife corridor or linkage and/or would further constrain an already narrow corridor through activities such as (but not limited to) reduction of corridor width, removal of available vegetative cover, placement of incompatible uses adjacent to it, and placement of barriers in the movement path.

F. The project does not maintain adequate visual continuity (i.e., long lines-of-sight) within wildlife corridors or linkage.

6.2 ANALYSIS OF PROJECT EFFECTS

6.2.1 Significant Impacts

D. The project would increase noise and/or nighttime lighting in a wildlife corridor or linkage to levels proven to affect the behavior of the animals identified in a site-specific analysis of wildlife movement.

Project construction could impact the nesting success of coastal California gnatcatcher and tree-nesting raptors, all of which have the potential to nest on and/or within 500 feet of construction impact areas. Noise from clearing and grading activities could result in an impact to wildlife. Noise-related impacts would be considered significant if sensitive species (such as coastal California gnatcatcher and raptors) were displaced from their nests and failed to breed. Impacts to coastal California gnatcatchers and tree-nesting raptors would be significant, but would be reduced to less than significant through the implementation of mitigation measures **BIO-3** and **BIO-4.**

Nighttime lighting is not proposed by this project. No significant impact to wildlife corridors or linkages resulting from lighting would occur.

6.2.2 No Impact or Less than Significant Impacts

The proposed project would not result in significant impacts under the above guidelines for the following reasons:

A. The project would not impede wildlife access to foraging habitat, breeding habitat, water sources, or other areas necessary for their reproduction.

The proposed project would not impede wildlife access to areas necessary for reproduction, as sufficient habitat to support coastal California gnatcatcher and other species occurs throughout the Preserve, and habitat connections to off-site lands also would be maintained. Biological open space extends uninterrupted across the Preserve and includes large expanses of native scrub habitats, as well as riparian areas. Due to the lack of permanent water, wildlife likely forage, seek shelter, and move through the Preserve following routes to areas with fresh water, such as San Vicente Reservoir to the east. These habitats within the Preserve will continue to provide foraging and breeding habitat for a variety of species, including coastal California gnatcatcher. Proposed project construction would not impede access or lessen the area available for terrestrial wildlife movement. Coyotes are frequently

observed throughout the Preserve and do not avoid the existing trails. Southern mule deer and mountain lion are the largest mammal species that could potentially occur on-site and suitable expanses of habitat will be maintained for deer and mountain lion to move through the area. Movement of other medium-sized mammals, such as bobcat, is more likely to follow riparian areas associated with Sycamore Canyon Creek and other areas with sufficient vegetative cover. Small animals could also cross the proposed trails. No new impacts are proposed for the existing trail along Sycamore Canyon Creek, including the West Boundary trail, and vegetation impacts associated with the construction of new trails will be minimized. The proposed project would maintain a continuous connection of undeveloped land and native habitat, including connections to Sycamore Canyon Creek, Clark Canyon, and to adjacent open space areas. Therefore, the proposed project would not impede wildlife access to habitat necessary for reproduction. Impacts would be less than significant.

B. The project would not substantially interfere with connectivity between blocks of habitat and would not potentially block or substantially interfere with a local or regional wildlife corridor or linkage.

As discussed above in Section 1.4.12, formalization of existing trails already in use by the public will not interfere with habitat connectivity. Only 6.8 acres (0.2 percent) of the 2,847-acre Preserve will be impacted by the proposed project for the development of new trails in areas of undeveloped lands or improvements for proposed trails in existing disturbed areas, of which only 5.3 acres are impacts to native habitat or naturalized grassland. The proposed project would maintain a continuous connection of native scrub habitat and the riparian vegetation associated with the Sycamore Canyon Creek, thus maintaining the continuity of open space and wildlife connectivity through the Preserve and adjacent open space areas. Proposed trails are not expected to substantially interfere with the linkage, as lines-of-sight are maintained across the trails and throughout the Preserve. Proposed trails would not substantially interfere with the ability of wildlife species to disperse across the Preserve or to adjacent open space areas, as adequate connectivity is maintained. Impacts would be less than significant.

C. The project would not create artificial wildlife corridors that do not follow natural movement patterns.

The proposed project does not create artificial corridors, and movement functions would continue throughout the Preserve under post-project conditions. To the greatest extent practicable, proposed trails will occur along existing trails already utilized by the public, and large expanses of native habitat would be maintained. Furthermore, the trails proposed for closure will be revegetated, thereby increasing the available native vegetative cover. Potential impediments to movement from the construction of new trails would not substantially interfere with natural movement patterns or access, due to alternate travel routes throughout the Preserve. Adequate space and connectivity of habitat would remain in the local area, and local and regional movement functions would continue throughout the Preserve. In conclusion, the effects would not be substantially adverse and no artificial corridors would be created. Impacts would be less than significant.

D. The project would not increase noise and/or nighttime lighting in a wildlife corridor or linkage to levels proven to affect the behavior of the animals identified in a site-specific analysis of wildlife movement.

Project construction could impact the nesting success of coastal California gnatcatcher and tree-nesting raptors, all of which have the potential to nest on and/or within 500 feet of construction impact areas.

Noise from clearing and grading activities could result in an impact to wildlife. Noise-related impacts would be considered significant if sensitive species (such as coastal California gnatcatcher and raptors) were displaced from their nests and failed to breed. Impacts to coastal California gnatcatchers and tree-nesting raptors would be significant, but would be reduced to less than significant through the implementation of mitigation measures **BIO-3** and **BIO-4.**

Proposed project noise is not anticipated to adversely impact wildlife corridors/linkages as ongoing use by the public and maintenance activities generate noise in portions of the site, including noise from non-native invasive plant treatment and control; thus, some level of noise disturbance already exists on-site. Noise generated from trail construction and revegetation is not anticipated to adversely impact wildlife species and the proposed project design would not result in a significant impact to wildlife corridors or linkages resulting from noise.

Nighttime lighting is not proposed by this project. No significant impact to wildlife corridors or linkages resulting from lighting would occur.

E. The project maintains an adequate width for an existing wildlife corridor or linkage and would not further constrain an already narrow corridor through activities such as (but not limited to) reduction of corridor width, removal of available vegetative cover, placement of incompatible uses adjacent to it, or placement of barriers in the movement path.

As discussed above in Section 1.4.12, the Preserve is within two BRCAs: Central Poway/San Vicente Reservoir/North Poway BRCA overlaps the northern portion of the Preserve, and Mission Trails/Kearny Mesa/East Elliot/Santee BRCA overlaps the southern portion of the Preserve. The Preserve helps facilitate connections to other large open space areas, including Mission Trail Regional Park to the southwest, MCAS Miramar to the west, Mount Woodson and Iron Mountain to the north, and San Vicente Highlands and Boulder Oaks Preserves to the east. The majority of the proposed project involves formalizing existing trails and closing other trails that are already used by the public. The new trail alignments are proposed to provide connections to existing trails that will remain and will help eliminate the public use of trails to be closed or other unauthorized trails. Proposed project development would be concentrated in areas directly adjacent and connected to previously established informal trails, conserving native habitat to the extent feasible. The proposed project maintains adequate widths within the identified linkage for continued wildlife movement and coastal California gnatcatcher breeding and dispersal; thus, no significant impact would occur.

F. The project maintains adequate visual continuity (i.e., long lines-of-sight) within wildlife corridors and linkage.

The proposed project would not impair visual continuity within corridors or linkages. The majority of the proposed project involves formalizing existing trails and closing other trails that are already used by the public. No new structures or features impacting lines-of-sight are part of the proposed project. The new trail alignments are proposed to provide connections to existing trails that will remain and will help eliminate the public use of trails to be closed or other unauthorized trails. The Preserve includes a series of ridgelines and hilltops that provide long lines-of-sight for birds and mammals. Biological connectivity and existing lines-of-sight between the Preserve and adjacent open space areas would be maintained. As such, the proposed project would not impair visual continuity within corridors or linkages in the local area and impacts would be less than significant.

6.3 CUMULATIVE IMPACT ANALYSIS

Wildlife movement in the area has already been impacted by the construction of SR-67 and Scripps Poway Parkway. The proposed project maintains connectivity to the core wildlife habitat along Sycamore Canyon Creek and Clark Canyon to the surrounding undeveloped areas. With the proposed project's location within and adjacent to biological open space, proposed trail closures, incorporation of design features, and implementation of mitigation measures at the specified ratios, the contribution of the proposed project to the cumulative impact on wildlife movement would not be considerable and would be less than significant.

6.4 MITIGATION MEASURES AND DESIGN CONSIDERATIONS

No additional mitigation measures for wildlife movement are required.

6.5 CONCLUSION

With the proposed project's location within and adjacent to biological open space, proposed trail closures, incorporation of design features, and implementation of the measures listed above, impacts would be less than significant, and no additional mitigation measures are required.

7.0 LOCAL POLICIES, ORDINANCES, AND ADOPTED PLANS

7.1 GUIDELINES FOR DETERMINING SIGNIFICANCE

Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? Would the project conflict with the provisions of an adopted HCP, NCCP plan, or other approved local, regional, or state HCP (County 2010b)?

Any of the following conditions would be considered significant if:

A. For lands outside of the MSCP, the project would impact Diegan coastal sage scrub vegetation in excess of the County's five percent habitat loss threshold, as defined by the Southern California Coastal Sage Scrub NCCP Guidelines.

B. The project would preclude or prevent the preparation of the subregional NCCP. For example, the project proposes development within areas that have been identified by the County or resource agencies as critical to future habitat preserves.

C. The project will impact any amount of wetlands or sensitive habitat lands as outlined in the RPO.

D. The project would not minimize and/or mitigate coastal sage scrub habitat loss in accordance with Section 4.3 of the NCCP Guidelines.

E. The project does not conform to goals and requirements outlined in any applicable HCP, Resource Management Plan (RMP), Special Area Management Plan, Watershed Plan, or similar regional planning effort.

F. For lands within the MSCP, the project would not minimize impacts to a Biological Resource Core Area (BRCA), as defined in the Biology Mitigation Ordinance (BMO; County 2010c).

G. The project would preclude connectivity between areas of high habitat values, as defined by the Southern California Coastal Sage Scrub NCCP Guidelines.

H. The project does not maintain existing movement corridors and/or habitat linkages, as defined by the BMO.

I. The project does not avoid impacts to MSCP narrow endemic species and would impact core populations of narrow endemics.

J. The project would reduce the likelihood of survival and recovery of listed species in the wild.

K. The project would result in the killing of migratory birds or the destruction of active migratory bird nests and/or eggs (MBTA).

L. The project would result in the take of eagles, eagle eggs, or any part of an eagle (Bald and Golden Eagle Protection Act; BGEPA).

7.2 ANALYSIS OF PROJECT EFFECTS

7.2.1 Significant Impacts

The proposed project would potentially result in significant impacts under the above guideline 7.1.K.

K. The project could result in the killing of migratory birds or destruction of active migratory bird nests and/or eggs (MBTA).

Implementation of the proposed project could potentially result in the killing of migratory birds or the destruction of active migratory bird nests and/or eggs protected under the MBTA. Proposed project construction could directly impact individuals or cause breeding birds to temporarily or permanently leave their territories, which could lead to reduced reproductive success and increased mortality. These impacts would be significant; however, mitigation measure **BIO-4** would reduce impacts to less than significant.

7.2.2 No Impact or Less than Significant Impacts

The proposed project would not result in significant impacts under the above guidelines 7.1.A, 7.1.B, 7.1.C, 7.1.D, 7.1.E, 7.1.F, 7.1.G, 7.1.H, 7.1.I, 7.1.J, and 7.1.L for the following reasons:

A. The project would not impact Diegan coastal sage scrub vegetation outside of the MSCP in excess of the County's five percent habitat loss threshold, as defined by the Southern California Coastal Sage Scrub NCCP Guidelines.

Proposed project impacts to Diegan coastal sage scrub are all located within the adopted Subarea Plan. No impacts outside of the MSCP would occur.

B. The project would not preclude or prevent the preparation of the subregional NCCP. For example, the project proposes development within areas that have been identified by the County or resource agencies as critical to future habitat preserves.

Implementation of the proposed project would not preclude or prevent the preparation of a subregional NCCP.

C. The project would impact wetlands and sensitive habitat lands outlined in the RPO.

As detailed above in Section 1.5.3, the proposed project is exempt from this guideline pursuant to Section 86.603(a) of the RPO. The proposed project is not a project type requiring a Resource Protection Study. Therefore, the proposed project would be exempt from RPO requirements, and no significant impact would occur.

D. The project would mitigate coastal sage scrub habitat loss in accordance with Section 4.3 of the NCCP Guidelines.

The proposed project is located within the adopted Subarea Plan, and the loss of 2.1 acres of coastal sage scrub habitat would be mitigated in accordance with the Subarea Plan and BMO, although DPR is exempt from the BMO. Therefore, no significant impact would occur.

E. The project conforms to goals and requirements outlined in any applicable HCP, RMP, Special Area Management Plan, Watershed Plan, or similar regional planning effort.

The proposed project occurs within the boundaries of the adopted Subarea Plan and conforms to the goals and requirements of the RMP (County 2013), Subarea Plan, and BMO, although the proposed project is exempt from the BMO. Therefore, no significant impact would occur.

F. For lands within the MSCP, the project would minimize impacts to BRCA, as defined in the BMO.

The proposed project minimizes impacts to BRCA in accordance with the Subarea Plan and BMO (although the proposed project is exempt from the BMO), as detailed in Appendix I, *MSCP Conformance Statement*. Impacts would be less than significant.

G. The project would not preclude connectivity between areas of high habitat values, as defined by the Southern California Coastal Sage Scrub NCCP Guidelines.

The proposed project is located within the adopted Subarea Plan, and connectivity is evaluated according to the MSCP and BMO, although the proposed project is exempt from the BMO. The project would not preclude connectivity between areas of high habitat values. Impacts would be less than significant.

H. The project maintains existing movement corridors and/or habitat linkages, as defined by the BMO.

As detailed in Section 2.4, the open and relatively undisturbed canyons, ridges, and slopes of the

Preserve contain native habitat that provides functional wildlife habitat and movement capability. Wildlife movement functions would be maintained within the Preserve by formalizing the existing trails rather than creating new trails. No improvements are proposed for the existing trails to be retained; thus, disruption to wildlife associated with trail construction would be minimal. Therefore, the proposed project would ultimately conserve and enhance the functions and values of the habitat linkage in accordance with the South County MSCP Subarea Plan and BMO, although DPR is exempt from the BMO. General wildlife movement routes would be maintained by the proposed project. Impacts would be less than significant.

I. The project avoids impacts to MSCP narrow endemic species and would not impact core populations of narrow endemics.

Variegated dudleya and San Diego thorn-mint are the only narrow endemic species previously observed within the Preserve and with high potential to occur in the Study Area. USFWS critical habitat for San Diego thorn-mint occurs within the center portion of the Preserve, and focused surveys for rare plants have been conducted within the proposed project site in 2008, 2012, 2016, and 2019 for portions of the Preserve. While the variegated dudleya has not been documented within the survey area, San Diego thorn-mint has been documented within the survey area as recently as 2008. Additionally, critical habitat for the San Diego thorn-mint overlaps the survey area for existing trails proposed for formalization, existing trails with proposed improvements, and new proposed trails and trail re-routes. No new impacts are proposed by the formalization of existing trails, but impacts to San diego thorn-mint critical habitat would result from improvements to the southwestern portion of the existing Rock and Roll Trail (#22) segment or by the proposed re-route of this trail. If impacts to San Diego thorn-mint individuals cannot be avoided, transplantation and/or seed collection from those individuals would be completed. Additionally, any trail closure within areas of critical habitat for San Diego thorn-mint will include revegetation with species known as common associates to San Diego thorn-mint populations. The proposed project would impact less than one percent of the critical habitat for San Diego thorn-mint within the Preserve by proposed improvements to the existing Rock and Roll Trail (#22) segment and/or by the proposed re-route of the southwestern portion of the Rock and Roll Trail (#22). Impacts to the San Diego thorn-mint population within the Preserve would be reduced to less than significant with the implementation of Mitigation Measures **BIO-1**, **BIO-2**, and **BIO-6.** Therefore, the proposed project impacts to MSCP narrow endemic species would not impact core populations and would be less than significant. Mitigation Measure **BIO-1** requires focused surveys for San Diego thorn-mint within areas of critical habitat during the blooming period for this species (April – May) prior to clearing and grubbing of the proposed Rock and Roll Trail (#22) segment improvements or reroutes. Any San Diego thorn-mint observed will be flagged and avoided during trail construction. If impacts to San Diego thorn-mint individuals cannot be avoided, transplantation and/or seed collection from those individuals would be completed. Additionally, Mitigation Measure **BIO-6** requires trail revegetation to incorporate native species in seed mixes that will enhance sensitive species documented within the Preserve, including San Diego thorn-mint. Revegetation of trails within areas of critical habitat for San Diego thorn-mint will include seeding with native geophytes (i.e., wild onion and goldenstar) known to occur with San Diego thorn-mint on gabbro soils.

J. The project would not reduce the likelihood of survival and recovery of listed species in the wild.

The proposed project proposes a maximum potential impact of 5.3 acres of sensitive habitat suitable to many listed species known to occupy the Preserve, which is less than one percent of the contiguous suitable habitat available throughout the Preserve. Furthermore, the proposed project would mitigate

for impacts to native habitat by revegetating sensitive upland habitat within existing trails to be closed (Mitigation Measures **BIO-5**, **BIO-12**, and **BIO-13**), thereby enhancing breeding, foraging, and dispersal habitat for listed species that have been documented at the Preserve. By formalizing the network of trails within the Preserve, large blocks of suitable habitat for listed species would be preserved, and impacts from those that use the Preserve for hiking or other activities would be dissuaded from these areas. Therefore, the proposed project would not reduce the likelihood of survival or recovery for listed species, and a less than significant impact would occur.

L. The project would not result in the take of eagles, eagle eggs, or any part of an eagle (BGEPA).

The proposed project site contains suitable eagle foraging habitat, but the proposed project site does not contain eagle nesting habitat, and it is not within any known eagle territory. The surrounding habitat fragmentation and the distance from known eagle territories would indicate that the site does not have a high value for eagles. The surrounding area is primarily urbanized, and new nesting in the vicinity is unlikely. Therefore, no impacts would occur to bald or golden eagles or their habitat.

7.3 CUMULATIVE IMPACT ANALYSIS

The proposed project would comply with the requirements of the MBTA, RPO, BGEPA, BMO, and MSCP. All currently proposed and future projects within the cumulative survey area also would be required to comply with these regulations; therefore, no significant cumulative impacts would occur as a result of the proposed project.

7.4 MITIGATION MEASURES AND DESIGN CONSIDERATIONS

Impacts to nesting birds protected under the MBTA would be implemented through mitigation measure **BIO-4**.

Although the proposed project is exempt from RPO requirements, impacts to RPO sensitive habitat lands would be compensated in accordance with mitigation measures **BIO-5**, **BIO-12**, and **BIO-13**.

7.5 CONCLUSION

Implementation of the proposed project would result in potentially significant impacts to breeding migratory birds. Implementation of mitigation measure **BIO-4** would reduce these impacts to below a level of significance. Although the proposed project is exempt from the RPO, as discussed in Sections 1.5.3 and 7.2.1.C, mitigation measures **BIO-5**, **BIO-12**, and **BIO-13** would compensate for habitat loss in these areas.

8.0 SUMMARY OF PROJECT IMPACTS AND MITIGATION

The proposed project has the potential to cause significant impacts to special-status animal species and sensitive natural communities. In each case, however, the identified significant impact can be mitigated to a less than significant level. Table 7 provides a summary of the proposed mitigation measures.

Table 7
SUMMARY OF BIOLOGICAL RESOURCES MITIGATION MEASURES

	Proposed Mitigation	Level of Significance After Mitigation	Guideline Number
BIO-1	Focused surveys for San Diego thorn-mint will be completed within areas of critical habitat during the blooming period for this species (April – May) prior to clearing and grubbing of the proposed Rock and Roll Trail (#22) segment improvements or reroutes. Any San Diego thorn-mint observed will be flagged and avoided during trail construction. If impacts to San Diego thorn-mint individuals cannot be avoided, they shall be quantified and limited to no more than 20 percent of the total population in the area, consistent with the BMO Section 86.507.a.1, as determined during pre-construction surveys and documented in a letter report submitted by the County-approved biologist to DPR. The mapping of plant populations will extend beyond the impact area into the adjacent area that meets the species' habitat requirements, as determined by the County-approved biologist. DPR will review and approve the letter report and implement the mitigation according to the Mitigation Monitoring and Reporting Program for the project. Impacts shall be mitigated consistent with the BMO Section 86.507.a.1 at a 2:1 ratio if less than 10 percent of the total population is impacted, or a 3:1 ratio if less than 20 percent of the total population is impacted. The proposed project will avoid impacting more than 20 percent of the total population. Mitigation will consist of on- or off-site preservation, translocation, and/or restoration within a BRCA, with a preference for species salvage and transplantation on-site if feasible. Seed material will be sourced from within five miles of the Preserve, but if seed is not available, due to seasonality or a poor seeding year, seed collected from southeastern San Diego County may be used. Additionally, any trail or trail segment closure within areas of critical habitat for San Diego thorn-mint will include revegetation with species known as common associates to San Diego thorn-mint populations. If species are transplanted for mitigation, these species will be included in a plant salvage and translocation plan according to mitigation measure **BIO-2**.	Less than significant	3.1 A 7.1 I

Table 7 (cont.)
SUMMARY OF BIOLOGICAL RESOURCES MITIGATION MEASURES

Proposed Mitigation		Level of Significance After Mitigation	Guideline Number
BIO-2	Prior to vegetation clearing for the proposed Rock and Roll Trail (#22) segment improvements or reroutes, if San Diego thorn-mint is being impacted and translocation is selected as part of the mitigation package according to the letter report prepared under mitigation measure **BIO-1**, a plant salvage and translocation plan shall be prepared for San Diego thorn-mint impacted by the project. The plan shall, at a minimum, evaluate options for plant salvage and relocation, including native plant mulching, selective soil salvaging, and application/relocation of resources within the Study Area. Relocation efforts may include seed collection and/or transplantation to a suitable receptor site and will be based on the most reliable methods of successful relocation. The program shall contain a recommendation for methods of salvage and relocation/application based on the feasibility of implementation and the likelihood of success. The program shall include, at a minimum, an implementation plan, maintenance and monitoring program, success criteria, estimated completion time, and any relevant contingency measures. The resource salvage plan shall be prepared by a County-approved biologist and shall be implemented according to the Mitigation Monitoring and Reporting Program for the project.	Less than significant	3.1 A 7.1 I
BIO-3	Grading or clearing of Diegan coastal sage scrub during the breeding season of the coastal California gnatcatcher (March 1 to August 15) shall be avoided to the extent feasible. If grubbing, clearing, or grading would occur during the breeding season, a pre-construction survey shall be conducted by a qualified biologist no more than three days prior to the commencement of activities to determine if active bird nests are present in the affected areas. If there are no nesting birds (includes nest building or other breeding/nesting behavior) within 500 feet of the survey area, clearing, grubbing, and grading shall be allowed to proceed in that area. If active nests or nesting birds are observed within 500 feet of the survey area, the biologist shall flag a buffer around the active nests, and clearing, grubbing, or grading activities shall not occur within 500 feet of active nests until nesting behavior has ceased, nests have failed, or young have fledged as determined by a qualified biologist. If the qualified biologist determines that the species will not be impacted with a reduced buffer, potentially with the implementation of avoidance measures to reduce noise, as necessary, and/or the qualified biologist monitors the active nest during clearing, grubbing, or grading to ensure no impacts to the species occur, these activities may occur outside the reduced buffer during the breeding season, as long as the species is not impacted.	Less than significant	3.1 A 3.1 B 3.1 L 7.1 K

Table 7 (cont.)
SUMMARY OF BIOLOGICAL RESOURCES MITIGATION MEASURES

Proposed Mitigation		Level of Significance After Mitigation	Guideline Number
BIO-4	Grubbing or clearing of vegetation during the general avian breeding season (February 15 – September 15) or raptor breeding season (January 15 – July 15) shall be avoided to the extent feasible. If grubbing, clearing, or grading would occur during the general avian breeding season, a pre-construction survey shall be conducted by a qualified biologist no more than three days prior to the commencement of grubbing or clearing activities to determine if active bird nests are present in the affected areas. If there are no nesting birds (includes nest building or other breeding/nesting behavior) within this area, clearing, grubbing, and grading shall be allowed to proceed. Furthermore, if construction activities are to resume in an area where they have not occurred for a period of seven or more days during the breeding season, an updated survey for avian nesting will be conducted. If active nests or nesting birds are observed within the area, the biologist shall flag the active nests and construction activities shall avoid active nests until nesting behavior has ceased, nests have failed, or young have fledged. If the qualified biologist determines that the species will not be impacted with a reduced buffer, potentially with the implementation of avoidance measures to reduce noise, as necessary, and/or the qualified biologist monitors the active nest during clearing, grubbing, or grading to ensure no impacts to the species occur, these activities may occur outside the reduced buffer during the breeding season, as long as the species is not impacted.	Less than significant	3.1 A 3.1 B 3.1 L 7.1.K
BIO-5	Because the Preserve is a Biological Resource Core Area (BRCA), mitigation for impacts to 3.0 acres of Diegan coastal sage scrub and coastal sage-chaparral transition, both Tier II habitats, shall occur at a 1.5:1 ratio through preservation, revegetation/restoration, or purchase of Tier II mitigation credits from an approved mitigation bank within the South County MSCP Subarea Plan per Attachment M of the BMO. The mitigation site will meet the criteria for a BRCA in order to use a 1.5:1 ratio, as the impacted land meets the criteria for BRCA. Otherwise, the mitigation ratio will be 2:1 if the mitigation site does not meet the criteria for BRCA. Some or all of the mitigation for impacts to 3.0 acres of Tier II habitat could occur as part of the revegetation of existing trail segments to be closed. Revegetation will be accomplished by a combination of barricade and sign installation, soil decompaction (where needed), and native seed application	Less than significant	3.1 A

Table 7 (cont.)
SUMMARY OF BIOLOGICAL RESOURCES MITIGATION MEASURES

	Proposed Mitigation	Level of Significance After Mitigation	Guideline Number
	(see also BIO-6). Seed material will be sourced from within five miles of the Preserve, but if seed is not available, due to seasonality or a poor seeding year, seed collected from southeastern San Diego County may be used. Revegetation efforts will be monitored by a qualified biologist and maintained for a period of three years following implementation. Maintenance will be conducted by a qualified contractor with experience in native habitat restoration and will include control of non-native plant species and remedial measures, such as re-seeding and installation of additional barricades and signage, to help ensure the success of the revegetation efforts. Closed trail segments to be revegetated within occupied QCB habitat will be revegetated with passive methods that would avoid impacts to QCB and their larval host plants.		
BIO-6	Trail segments to be closed and revegetated will incorporate native species in seed mixes that will enhance sensitive species documented within the Preserve, including San Diego thorn-mint and habitat that supports QCB. Revegetation of trail segments within areas of critical habitat for San Diego thorn-mint will include seeding with native geophytes (i.e., wild onion [*Allium* spp.] and goldenstar [*Bloomeria crocea*]) known to occur with San Diego thorn-mint on gabbro soils. Revegetation of trail segments within areas of suitable habitat for QCB will include host plant species (i.e., dot-seed plantain) and nectar resources.	Less than significant	3.1 A 7.1.I
BIO-7	Mitigation for permanent impacts to Potential Hermes Copper Butterfly Habitat within shall occur at a 1:1 ratio within the South County MSCP Subarea, within a BRCA, or at the ratios identified in the BMO. Permanent impacts to Potential Hermes Copper Butterfly Habitat are expected to be 0.05 acre. Mitigation shall occur through one or a combination of the following: on- and/or off-site preservation, restoration, and/or purchase of mitigation credits at an approved mitigation bank.	Less than significant	3.1 K
BIO-8	The following Hermes Copper Butterfly conservation measures apply along the Hermes Copper Butterfly Avoidance Area on Figure 12 of the proposed project's Biological Resources Technical Report. Additional Hermes Copper Butterfly surveys will be conducted prior to construction, in order to ensure that potential habitat is delineated to the greatest extent feasible. This mitigation would be expanded to any additional area where Hermes Copper Butterfly is identified during pre-construction surveys.	Less than significant	3.1 K

Table 7 (cont.)
SUMMARY OF BIOLOGICAL RESOURCES MITIGATION MEASURES

Proposed Mitigation	Level of Significance After Mitigation	Guideline Number
Step 1, Survey • Prior to initiating work within the Hermes Copper Butterfly Avoidance Area, a qualified biologist shall complete protocol flight season surveys for the Hermes Copper Butterfly in accordance with the survey guidelines outlined in Attachment B of the County's Report Format and Content Requirements for Biological Resources (County 2010a). • During host plant mapping, host plant patches will be mapped using GPS, so they can be flagged prior to construction. **Step 2, Avoidance and Minimization Measures:** • Following flight season surveys and host plant mapping, realign or leave potential impact areas unimproved, as needed, to avoid direct impacts to host plants (Spiny redberry plants that are within 15 feet of buckwheat) as much as possible. • All construction within mapped Hermes Copper Butterfly habitat, including buckwheat within 15 feet of Spiny redberry, will be prohibited during the flight season (defined as the third full week of May through the first full week of July). • A qualified biologist will monitor construction within the Hermes Copper Butterfly Avoidance Area to ensure that all flagged and mapped host plant locations planned for avoidance are avoided. • The qualified biologist will conduct environmental awareness training for all personnel entering the site during the construction of the proposed project. • Following trail installation, maintenance activities in areas supporting Hermes Copper Butterfly host plants within the Hermes Copper Butterfly Avoidance Area shall either occur outside of the Hermes Copper Butterfly flight season or be monitored, as appropriate, by a qualified biologist.		

Table 7 (cont.)
SUMMARY OF BIOLOGICAL RESOURCES MITIGATION MEASURES

	Proposed Mitigation	Level of Significance After Mitigation	Guideline Number
	• Install signs and/or fencing along the avoided host plants stating, "Environmentally sensitive area. Please stay on trail," or similar language. **Step 3, Compensatory Mitigation:** If the flight season surveys conducted in Step 1 are positive, and the proposed project cannot be redesigned to avoid impacts to all Hermes Copper Butterfly host plant patches, then in addition to the surveys and avoidance and minimization measures in Steps 1 and 2 above, the impacts to Occupied Hermes Copper Butterfly host plant patches will be mitigated at a 3:1 ratio through one or a combination of the following: on- and/or off-site preservation, restoration, and/or purchase of mitigation credits at an approved mitigation bank.		
BIO-9	The following QCB conservation measures apply along the Rock and Roll Trail (#22) segment, shown as QCB Avoidance Area on Figure 12 of the proposed project's Biological Resources Technical Report. Additional QCB host plant mapping will be conducted prior to construction when host plants are blooming, in order to ensure host plant patches are delineated to the greatest extent feasible. This mitigation would be expanded to any additional area where QCB host plants are identified during pre-construction plant mapping. **Step 1, Survey** • Additional QCB host plant mapping will be conducted prior to construction when host plants are blooming, in order to ensure host plant patches are delineated to the greatest extent feasible. • During host plant mapping, host plant patches will be mapped using GPS, so they can be flagged prior to construction. **Step 2, Avoidance and Minimization Measures:** • Following host plant mapping, realign or leave potential impact areas unimproved, as needed, to avoid direct impacts to host plants as much as possible. • All construction within mapped QCB host plant patches will be prohibited during the QCB flight season (defined as the third week of February through the second Saturday in May).	Less than significant	3.1.A 3.1.B 3.1.L 4.1.A

Table 7 (cont.)
SUMMARY OF BIOLOGICAL RESOURCES MITIGATION MEASURES

	Proposed Mitigation	Level of Significance After Mitigation	Guideline Number
	• A qualified biologist will monitor construction within the QCB Avoidance Area to ensure that all flagged and mapped host plant locations planned for avoidance are avoided. • The qualified biologist will conduct environmental awareness training for all personnel entering the site during the construction of the proposed project. • Following construction, maintenance activities in areas supporting QCB host plants within the QCB Avoidance Area shall either occur outside of the QCB flight season or be monitored, as appropriate, by a qualified biologist. • Install signs and/or fencing along the avoided host plants stating, "Environmentally sensitive area. Please stay on trail," or similar language. **Step 3, Compensatory Mitigation:** If the proposed project cannot be redesigned to avoid impacts to all QCB host plant patches, then in addition to the surveys and avoidance and minimization measures in Steps 1 and 2 above, consultation with USFWS will be required. Mitigation may consist of one or a combination of on- or off-site planting of host plants, providing long-term maintenance of existing host plants, preserving occupied QCB habitat, or similar measures to the satisfaction of the USFWS.		
BIO-10	Focused surveys for western spadefoot toad will be completed by a qualified biologist prior to clearing and grubbing of the proposed trail segment improvements or reroutes. Occupied western spadefoot toad habitat observed in the proposed impact area will be flagged and avoided during trail construction until the qualified biologist determines that western spadefoot toad are no longer using the habitat.	Less than significant	4.1.A 4.1.B

Table 7 (cont.)
SUMMARY OF BIOLOGICAL RESOURCES MITIGATION MEASURES

Proposed Mitigation		Level of Significance After Mitigation	Guideline Number
BIO-11	To help ensure errant impacts to sensitive vegetation communities and jurisdictional waters outside of the impact footprint are avoided during construction, environmental exclusionary fencing, where determined necessary by the qualified biologist, would be installed at the edges of the impact limits prior to initiation of grading. All construction staging shall occur within the approved limits of construction. A qualified biologist will monitor the installation of environmental fencing wherever it would abut sensitive vegetation communities. The biologist also will conduct a pre-construction environmental awareness training for construction personnel prior to all phases of construction to inform personnel of the sensitive biological resources on-site and avoidance measures to remain in compliance with project approvals. The biologist will periodically monitor the limits of construction operations to ensure that avoidance areas are delineated with temporary fencing and that fencing remains intact.	Less than significant	4.1.A 4.1.B
BIO-12	Because the Preserve is a BRCA, mitigation for impacts to 0.1 acre of open coast live oak woodland, a Tier I habitat, shall occur at a 2:1 ratio through on-site preservation of open or dense coast live oak woodland, on- or off-site revegetation of open or dense coast live oak woodland, or purchase of Tier I mitigation credits from an approved mitigation bank within the South County MSCP Subarea Plan per Attachment M of the BMO. The mitigation site will meet the criteria for a BRCA in order to use a 2:1 ratio, as the impacted land meets the criteria for BRCA. Otherwise, the mitigation ratio will be 3:1 if the mitigation site does not meet the criteria for BRCA. Some or all of the mitigation for impacts to 0.1 acre of open coast live oak woodland could occur as part of the revegetation of 5.6 acres of existing trail segments to be closed. Revegetation will be accomplished by a combination of barricade and sign installation, soil decompaction (where needed), and native seed application (see also BIO-6). Seed material will be sourced from within five miles of the Preserve, but if seed is not available, due to seasonality or a poor seeding year, seed collected from southeastern San Diego County may be used.	Less than significant	4.1.A 4.1.B

Table 7 (cont.)
SUMMARY OF BIOLOGICAL RESOURCES MITIGATION MEASURES

	Proposed Mitigation	Level of Significance After Mitigation	Guideline Number
	Revegetation efforts will be monitored by a qualified biologist and maintained for a period of three years following implementation. Maintenance will be conducted by a qualified contractor with experience in native habitat restoration and will include control of non-native plant species and remedial measures, such as re-seeding and installation of additional barricades and signage, to help ensure the success of the revegetation efforts. Closed trail segments to be revegetated within occupied QCB habitat will be revegetated with passive methods that would avoid impacts to QCB and their larval host plants.		
BIO-13	Because the Preserve is a BRCA, mitigation for impacts to 2.2 acres of southern mixed chaparral, chamise chaparral, and non-native grassland, Tier III habitats, shall occur at a 1:1 ratio through on-site preservation, revegetation/restoration, or purchase of Tier III mitigation credits from an approved mitigation bank within the South County MSCP Subarea Plan per Attachment M of the BMO. The mitigation site will meet the criteria for a BRCA in order to use a 1:1 ratio, as the impacted land meets the criteria for BRCA. Otherwise, the mitigation ratio will be 1.5:1 if the mitigation site does not meet the criteria for BRCA. Some or all of the mitigation for impacts to 2.2 acres of Tier III habitat could occur as part of the revegetation of 5.6 acres of existing trail segments to be closed. Revegetation will be accomplished by a combination barricade and sign installation, soil decompaction (where needed), and native seed application (see also BIO-6). Seed material will be sourced from within five miles of the Preserve, but if seed is not available, due to seasonality or a poor seeding year, seed collected from southeastern San Diego County may be used. Revegetation efforts will be monitored by a qualified biologist and maintained for a period of three years following implementation. Maintenance will be conducted by a qualified contractor with experience in native habitat restoration and will include control of non-native plant species and remedial measures, such as re-seeding and installation of additional barricades and signage, to help ensure the success of the revegetation efforts. Closed trail segments to be revegetated within occupied QCB habitat will be revegetated with passive methods that would avoid impacts to QCB and their larval host plants.	Less than significant	4.1.A 4.1.B

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Appendix A

Plant Species Observed

Family	Scientific Name*,†	Common Name
DICOTS		
Anacardiaceae	*Malosma laurina*	laurel sumac
	Rhus integrifolia	lemonade berry
	Rhus ovata	sugar bush
	Toxicodendron diversilobum	poison oak
Apiaceae	*Apiastrum angustifolium*	wild celery
	Daucus pusillus	wild carrot
	Lomatium lucidum	shiny lomatium
	Sanicula crassicaulis	pacific sanicle
Asteraceae	*Artemisia californica*	coastal sage brush
	Baccharis salicifolia ssp. *salicifolia*	mule fat
	Baccharis sarothroides	broom baccharis
	Bahiopsis laciniata †	San Diego county viguiera
	*Carduus pycnocephalus**	Italian thistle
	*Centaurea melitensis**	tocalote
	Chaenactis glabriuscula var. *glabriuscula*	common yellow chaenactis
	Corethrogyne filaginifolia	common sandaster
	Deinandra fasciculata	fascicled tarweed
	Eriophyllum confertiflorum var. *confertiflorum*	golden yarrow
	*Glebionis coronaria**	crown daisy
	Gutierrezia californica	matchweed
	Hazardia squarrosa	saw toothed goldenbush
	Helianthus gracilentus	slender sunflower
	*Hypochaeris glabra**	smooth cats ear
	Isocoma menziesii	white flowered goldenbush
	Lasthenia californica	goldfields
	Logfia filaginoides	California cottonrose
	Pseudognaphalium californicum	ladies' tobacco
	Psilocarphus brevissimus	woolly marbles
	Senecio californicus	California butterweed
	*Sonchus asper**	spiny sowthistle
	*Sonchus oleraceus**	sow thistle
Boraginaceae	*Cryptantha* sp.	forget me not
	Eucrypta chrysanthemifolia	spotted eucrypta
	Pectocarya linearis ssp. *ferocula*	slender comb seed
	Phacelia cicutaria var. *hispida*	caterpillar phacelia
	Phacelia distans	common phacelia
	Phacelia parryi	Parry's phacelia
	Phacelia tanacetifolia	tansy leafed phacelia
Brassicaceae	*Brassica nigra**	black mustard
	Caulanthus heterophyllus	slender pod jewelflower
	*Hirschfeldia incana**	mustard
	Lepidium nitidum	shining pepper grass
	Thysanocarpus curvipes	common fringe pod
Cactaceae	*Opuntia littoralis*	prickly pear
Caprifoliaceae	*Lonicera subspicata*	southern honeysuckle
Caryophyllaceae	*Silene gallica**	common catchfly
Cistaceae	*Helianthemum scoparium*	broom rose

Family	Scientific Name*,†	Common Name
Convolvulaceae	*Calystegia macrostegia*	island morning glory
	Cuscuta californica	California dodder
Crassulaceae	*Crassula connata*	sand pygmy weed
	Dudleya pulverulenta	chalk dudleya
	Dudleya variegata †	variegated dudleya
Cucurbitaceae	*Marah macrocarpa*	chilicothe
Ericaceae	*Arctostaphylos* sp.	manzanita
Ericaceae	*Xylococcus bicolor*	mission manzanita
Euphorbiaceae	*Acalypha californica*	California acalypha
	Euphorbia albomarginata	rattlesnake sandmat
Fabaceae	*Acmispon glaber*	deerweed
	Acmispon strigosus	strigose lotus
	Astragalus gambelianus	loco weed
	Lathyrus vestitus	common pacific pea
	Lupinus bicolor	lupine
	Lupinus hirsutissimus	stinging lupine
Fabaceae	*Lupinus truncatus*	blunt leaved lupine
	*Melilotus indicus**	annual yellow sweetclover
	Trifolium willdenovii	tomcat clover
	*Vicia villosa**	hairy vetch
Fagaceae	*Quercus agrifolia* var. *agrifolia*	coast live oak
	Quercus berberidifolia	inland scrub oak
Gentianales	*Zeltnera venusta*	canchalagua
Geraniaceae	*Erodium botrys**	big heron bill
	*Erodium cicutarium**	coastal heron's bill
	*Erodium moschatum**	whitestem filaree
	Geranium carolinianum	carolina geranium
Grossulariaceae	*Ribes indecorum*	white flowering currant
	Ribes speciosum	fuchsia flowered gooseberry
Juncaceae	*Juncus mexicanus*	mexican rush
Lamiaceae	*Salvia apiana*	white sage
	Salvia columbariae	chia sage
	Salvia mellifera	black sage
Malvaceae	*Malacothamnus fasciculatus*	chaparral bush mallow
	Sidalcea sparsifolia	southern checkerbloom
Montiaceae	*Calandrinia menziesii*	red maids
	Claytonia exigua	little spring beauty
	Claytonia perfoliata ssp. *perfoliata*	claytonia
Myrsinaceae	*Lysimachia arvensis**	scarlet pimpernel
Nyctaginaceae	*Mirabilis laevis*	desert wishbone bush
Onagraceae	*Camissoniopsis cheiranthifolia*	beach evening-primrose
	Clarkia epilobioides	willow herb clarkia
Orobanchaceae	*Castilleja exserta*	owl's clover
Paeoniaceae	*Paeonia californica*	California peony
Papaveraceae	*Eschscholzia californica*	California poppy
Phrymaceae	*Diplacus aurantiacus*	sticky monkeyflower
	Diplacus brevipes	wide throated yellow monkeyflower
Phrymaceae	*Diplacus puniceus*	sticky monkeyflower
Plantaginaceae	*Antirrhinum nuttallianum*	Nuttall's snapdragon

Family	Scientific Name*,†	Common Name
Plantaginaceae	*Keckiella antirrhinoides* var. *antirrhinoides*	chaparral beard tongue
	Plantago erecta	California plantain
Platanus racemosa	*California sycamore*	native
Polemoniaceae	*Gilia* sp.	gilia
	Linanthus dianthiflorus	fringed linanthus
Polygonaceae	*Eriogonum fasciculatum*	California buckwheat
	Pterostegia drymarioides	fairy mist
Pteridaceae	*Pellaea mucronata*	bird's foot fern
Rhamnaceae	*Ceanothus tomentosus*	woolly leaf ceanothus
	Rhamnus crocea	spiny redberry
	Rhamnus ilicifolia	evergreen buckthorn
Rosaceae	*Adenostoma fasciculatum*	chamise
	Cercocarpus betuloides	birch leaf mountain mahogany
	*Poterium sanguisorba**	garden burnet
	Prunus ilicifolia	holly leaf cherry
	Rosa californica	California wild rose
Rubiaceae	*Galium aparine*	cleavers
	Galium porrigens var. *porrigens*	graceful bedstraw
Rutaceae	*Cneoridium dumosum*	bushrue
Salicaceae	*Salix laevigata*	polished willow
	Salix lasiolepis	arroyo willow
Selaginellaceae	*Selaginella cinerascens* †	ashy spikemoss
Solanaceae	*Solanum douglasii*	Douglas' nightshade
	Solanum parishii	Parish's purple nightshade
Violaceae	*Viola purpurea* ssp. *quercetorum*	goosefoot yellow violet
MONOCOTS		
Agavaceae	*Chlorogalum* sp.	soaproot
	Hesperoyucca whipplei	chaparral yucca
Alliaceae	*Allium* sp.	onion
Cyperaceae	*Carex spissa*	San Diego sedge
	Carex triquetra	triangular fruit sedge
Iridaceae	*Sisyrinchium bellum*	blue eyed grass
Poaceae	*Avena barbata**	slim oat
	*Avena fatua**	wild oats
	*Brachypodium distachyon**	purple false brome
	*Bromus diandrus**	ripgut brome
	*Bromus hordeaceus**	soft chess
	*Bromus madritensis**	foxtail chess, foxtail brome
	*Festuca myuros**	rattail sixweeks grass
	Melinis repens ssp. *repens**	natal grass, ruby grass
	Muhlenbergia microsperma	littleseed muhly
	Muhlenbergia rigens	deergrass
	Stipa coronata	crested needle grass
	Stipa pulchra	purple needle grass
Themidaceae	*Dichelostemma capitatum*	blue dicks

† Special Status Species

* Non-native Species

Appendix B

Animal Species Observed or Detected

Taxon[1]		Scientific Name†	Common Name
Order	**Family**		
INVERTEBRATES			
Araneae	Salticidae		jumping spider
Hymenoptera	Apidae	*Apis* sp.	honeybee
Lepidoptera	Hesperiidae	*Burnsius albescens*	white checkered skipper
		Erynnis funeralis	funereal duskywing
		Erynnis tristis	mournful duskywing
	Lycaenidae	*Icaricia acmon*	blue acmon
		Leptotes marina	marine blue
	Nymphalidae	*Euphydryas editha quino*†	Quino checkerspot
		Junonia coenia	common buckeye
		Vanessa cynthia	painted lady
	Pieridae	*Pieria rapae*	cabbage white
		Pontia sisymbrii	spring white
	Riodinidae	*Apodemia virgulti*	Behr's metalmark
Orthoptera	Gryllidae		cricket
VERTEBRATES			
Amphibians and Reptiles			
Squamata	Phrynosomatidae	*Uta stansburiana*	side-blotched lizard
	Viperidae	*Crotalus oreganus helleri*	southern pacific rattlesnake
Birds			
Apodiformes	Trochilidae	*Calypte costae*	Costa's hummingbird
Columbiformes	Columbidae	*Zenaida macroura*	mourning dove
Galliformes	Odontophoridae	*Callipepla californica*	California quail
Passeriformes	Aegithalidae	*Psaltriparus minimus*	bushtit
	Corvidae	*Aphelocoma californica*	California scrub jay
		Corvus corax	common raven
	Fringillidae	*Haemorhous mexicanus*	house finch
		Spinus psaltria	lesser goldfinch
	Mimidae	*Mimus polyglottos*	northern mockingbird
	Passerellidae	*Pipilo maculatus*	spotted towhee
	Polioptilidae	*Polioptila californica californica*†	coastal California gnatcatcher
	Tyrannidae	*Tyrannus vociferans*	Cassin's kingbird
Strigiformes	Strigidae	*Bubo virginianus*	great horned owl
Mammals			
Artiodactyla	Cervidae	*Odocoileus hemionus*†	mule deer
Lagomorpha	Leporidae	*Sylvilagus audubonii*	desert cottontail

[1] Includes species observed during HELIX 2019-2022 biology surveys; does not include additional species observed during previous survey efforts.

† Sensitive.

Appendix C

Sensitive Plant Species with Potential to Occur

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
Acanthomintha ilicifolia	San Diego thorn-mint	FT/SE CRPR 1B.1 County List A MSCP Covered	Small annual herb. Occurs on clay soils near vernal pools and in grassy openings in coastal sage scrub and chaparral. Flowering period: April–June. Elevation: 100–3,150 feet (30–960 meters).	**Present.** This species has been documented on site as recently as 2017 in the central eastern portion of the Preserve. Designated Critical Habitat can be found within the central portion of the Preserve. This species was observed in the central-eastern portion of the Preserve, outside of the survey area, during the 2019 rare plant survey.
Adolphia californica	San Diego adolphia	--/-- CRPR 2B.1 County List B	Perennial shrub. Most often found in sage scrub but occasionally occurs in peripheral chaparral habitats, particularly hillsides near creeks. Flowering period: December–April. Elevation: 20–655 feet (6–200 meters).	**Low.** Suitable habitat is present on portions of the Preserve; however, there are no recent or historical records for this conspicuous shrub within the Preserve and it was not observed during the HELIX biological surveys within the environmental study area. The Preserve lies within the upper elevation limit suitable for this plant species. The nearest observation occurs approximately eight miles to the west.
Ambrosia pumila	San Diego ambrosia	FE/-- CRPR 1B.1 County List A MSCP Covered	Small perennial herb. Occurs primarily on upper terraces of rivers and drainages. Within these areas it is typically found in grassland and within openings in coastal sage scrub, on sandy loam or clay soils. Flowering period: April–October. Elevation: 100–2,001 feet (30–610 meters).	**Low.** Suitable habitat is present on portions of the Preserve; however, there are no recent or historical records for this perennial herb within the Preserve and it was not observed during the HELIX biological surveys within the environmental study area. Historical observations occur approximately eight miles to the southwest within Mission Trails Regional Park.

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
Arctostaphylos glandulosa ssp. *glandulosa*	Del Mar Manzanita	FE/-- CRPR 1B.1 County List A MSCP Covered	Perennial evergreen shrub. Found in sandy soils, in relatively open, coastal chaparral. At occasional inland sites it occurs in denser mixed chaparral vegetation. Flowering period: December - June. Elevation: below 1,198 feet (365 meters).	**Moderate.** Suitable habitat exists within the Preserve. This species was not detected during the HELIX biological surveys within the environmental study area. It was previously documented southwest of the Preserve on MCAS Miramar and at Mission Trails Regional Park (County 2013).
Artemisia palmeri	San Diego sagewort; Palmer's sagebrush	--/-- CRPR Rank 4.2 County List D	Biennial or perennial herb. Typically found along stream courses, often beneath riparian woodland. May occur in coast live oak woodland, coastal sage scrub, and southern mixed chaparral. Flowering period: June - October. Elevation: below 1,969 feet (600 meters).	**Present.** Documented occurrences of Palmer's sagewort do not occur within the proposed project survey area, but occur in the Preserve, and this species was not observed within areas of suitable habitat where new trails (e.g., Rock and Roll Trail [#22] segment) are proposed. Palmer's sagewort was found within the northeastern portion of the Preserve and on the San Vicente Connector Parcels during 2019 surveys (ICF 2021).
Asplenium vespertinum	Western spleenwort	--/-- CRPR 4.2 County List D	Perennial rhizomatous herb. Found in rocky areas in chaparral, cismontane woodland, and coastal scrub communities. Flowering period: February-June. Elevation: 590-3,280 feet (180-1,000 meters).	**Low.** Suitable habitat is present on portions of the Preserve; however, there are no recent or historical records of this perennial herb within the Preserve and it was not observed during HELIX biological surveys within the environmental study area. A historical record from 1935 was recorded to the east of the Preserve at San Vicente Reservoir.

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
Astragalus deanei	Deane's milkvetch	--/-- CRPR 1B.1 County List A	Perennial herb. Found in chaparral, cismontane woodland, coastal scrub, and riparian forest. Flowering period: February-May. Elevation: 246-2,280 feet (75-695 meters).	**Present.** This species was documented at one location adjacent to Sycamore Park Drive (#0b) access road during surveys conducted in 2016 for the 2015 Southern Addition (County 2017).
Baccharis vanessae	Encinitas baccharis	FT/SE CRPR 1B.1 County List A MSCP narrow endemic	Perennial deciduous shrub. Grows on sandstone in maritime chaparral and cismontane woodland. Flowering period: August–November. Elevation: 196-2,362 feet (60-720 meters).	**Low.** Suitable habitat is not present within the Preserve and this perennial shrub species was not observed during the HELIX biological surveys within the environmental study area. The nearest observation occurs 4 miles away on top of Mount Woodson.
Bahiopsis laciniata	San Diego County viguiera	--/-- CRPR 4.3 County List D	Shrub. Occurs in coastal sage scrub and chaparral habitats. Elevation range: 20–1030 meters. Flowering period: Feb.–August.	**Present.** Approximately 50 individuals of San Diego County Viguiera were observed during the 2019 general biological survey within the southwestern portion of the survey area scattered within Diegan coastal sage scrub along the Ridge Trail (#14) segment.
Bloomeria clevelandii	San Diego goldenstar	--/-- CRPR 1B.1 County List A MSCP Covered	Perennial bulbiferous herb. Found on clay soils in chaparral, coastal scrub, valley and foothill grassland, particularly in mima mound topography and around vernal pools. Flowering period: April-May. Elevation: 164-1525 feet (50-465 meters).	**Present.** This plant species was not observed during the HELIX 2019 general biological surveys within the environmental study area. Documented occurrences of San Diego goldenstar do not occur within the proposed project survey area, but occur in the Preserve, and this species was not observed within areas of suitable habitat where new trails (e.g., Rock and Roll Trail [#22] segment) are proposed. San Diego goldenstar was found within the San Vicente Connector Parcels during 2019 surveys (ICF 2021).

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
Brodiaea orcuttii	Orcutt's brodiaea	--/-- CRPR 1B.1 County List A MSCP Covered	Small perennial herb. Occurs only on clay and serpentine soils in vernally moist environments, usually near vernal pools, meadows, and seeps. Flowering period: May–July. Elevation: 330–5,740 feet (100–1,750 meters).	**Low.** This plant species was not observed during the HELIX 2019 general biological surveys within the environmental study area. Suitable vernally moist environments near vernal pools, meadows, or seeps are not found within the Preserve. This species was observed west of the Preserve at UCSD Elliot Chaparral Reserve as recently as 2005.
Camissoniopsis lewisii	Lewis' evening primrose	--/-- CRPR 3 County List C	Annual herb. Occurs in sandy or clay soils within coastal bluff scrub, cismontane woodland, coastal dune, and grassland habitats. Flowering period: March–June. Elevation: below 1,740 feet (530 meters).	**Not Expected.** Suitable grassland habitat is present on portions of the Preserve; however, the site is not located in a coastal area with coastal bluff scrub or coastal dunes. This annual herb has not been previously observed within the Preserve and was not observed during the 2019 HELIX general biological surveys within the environmental study area. The nearest observation occurs 6 miles to the south.
Ceanothus cyaneus	Lakeside ceanothus	--/-- CRPR 1B.2 County List A MSCP Covered	Perennial evergreen shrub. Found in closed-cone coniferous forest and chaparral. Flowering period: April-June. Elevation: 770-2,542 feet (235-755 meters).	**Low.** Suitable habitat is present on portions of the Preserve includes chaparral, but close-cone coniferous forest habitat is not present within the Preserve. There are no recent or historical records of this conspicuous perennial evergreen within the Preserve and it was not observed during the 2019 HELIX general biological surveys within the environmental study area. A historical record from 1940 was recorded to the east within San Vicente Reservoir.

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
Chamaebatia australis	Southern mountain misery	--/-- CRPR 4.2 County List D	Perennial shrub. Occurs on dry slopes in chaparral with gabbro and metavolcanic soils. Flowering period: November – May. Elevation: 984-4,035 feet (300-1,230 meters).	**Not Expected.** Dry slopes in chaparral are present on portions of the Preserve; however, suitable gabbro and or metavolcanic soils are not present. There are no recent or historical records of this perennial shrub within the Preserve and it was not observed during the 2019 HELIX general biological surveys within the environmental study area. The nearest observation occurs 4 miles to the northeast.
Chorizanthe leptotheca	Peninsular spineflower	--/-- CRPR 4.2 County List D	Annual herb. Found on alluvial fan and granitic soils in chaparral, coastal scrub, and lower montane coniferous forest vegetation communities. Flowering period: May to August. Elevation: 984-6,233 feet (300-1,900 meters).	**Low.** Suitable habitat is present on portions of the Preserve; however, there are no recent or historical records of this annual herb within the Preserve and was not observed during the 2019 HELIX general biological surveys within the environmental study area. The nearest observation occurs 4 miles to the northeast.
Clarkia delicata	delicate clarkia	--/-- CRPR 1B.2 County List A	Annual herb. Occurs in shaded areas or the periphery of oak woodlands and cismontane chaparral. Flowering period: April - May. Elevation: below 3,281 feet (1,000 meters).	**Present.** Suitable habitat is present on portions of the Preserve, and this species was observed just outside of the western boundary of the Preserve during surveys conducted in 2012 (County 2013.) This plant species was not observed during the HELIX 2019 general biological surveys within the environmental study area.

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
Clinopodium chandleri	San Miguel savory	--/-- CRPR 1B.2 MSCP covered County List A	Perennial herb. Occurs on gabbro and metavolcanic soils in interior foothills, chaparral, and oak woodland. Flowering period March – July. Elevation: below 3,609 feet (1100 meters).	**Not Expected.** Dry slopes in chaparral are present on portions of the Preserve; however, suitable gabbro and or metavolcanic soils are not present. There are no recent or historical records is this perennial herb within the Preserve and was not observed during the 2019 HELIX general biological surveys within the environmental study area. The nearest observation occurs 4 miles to the northeast.
Comarostaphylis diversifolia ssp. *diversifolia*	summer holly	--/-- CRPR List 1B.1 County List A	Perennial shrub. Occurs in chaparral and cismontane woodland. Flowering period: May –June. Elevation: 328 –1,804 feet (100 – 550 meters).	**Low.** Suitable habitat is present on portions of the Preserve; however, there are no recent or historical records of this conspicuous perennial shrub within the Preserve and it was not observed during the 2019 HELIX general biological surveys within the environmental study area. Historical observations occur 8 miles to the southwest within Mission Trails Regional Park.
Convolvulus simulans	Small-flowered morning glory	--/-- CRPR 4.2 County List D	Annual herb. Occurs on clay soils and in serpentine seeps within chaparral, coastal scrub, and grassland habitats. Flowering period: March–July. Elevation: 30–2,755 feet (10–840 meters).	**Present.** Small-flowered morning glory has been documented at several locations within critical habitat for San Diego thorn-mint and adjacent to existing Sycamore Park Drive (#0b) access road and Slaughterhouse Canyon Trail (#21) segment in 2008. This plant species was not observed during the HELIX 2019 general biological surveys within the environmental study area.

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
Corethrogyne filaginifolia var. *incana*	San Diego sand aster	--/-- CRPR 1B.1 County List A MSCP Covered	Perennial herb. Found in coastal bluff scrub, chaparral, and coastal scrub. Flowering period: June-September. Elevation: 10-377 feet (3-115 meters).	**Not Expected.** Suitable habitat is present on portions of the Preserve; however, the site lies outside of the suitable elevation range, there are no recent or historical records of this annual herb within the Preserve, and it was not observed during the 2019 HELIX general biological survey within the environmental study area. The nearest observation occurs 6 miles to the east.
Dudleya variegata	Variegated dudleya	--/-- CRPR 1B.2 County List A MSCP Covered	Perennial herb. Found on clay soils in chaparral, cismontane woodland, coastal scrub, valley and foothill grassland, and vernal pools. Flowering period: April- June. Elevation: 10-1902 feet (3-580 meters).	**Present.** This species was documented within the preserve during the 2019 HELIX general biological survey within the Preserve. Two individuals were documented in the central western portion of the Preserve outside of the environmental survey area. This species was not observed within the environmental survey area.
Ericameria palmeri var. *palmeri*	Palmer's goldenbush	--/-- CRPR 1B.1 County List B MSCP Covered	Large evergreen shrub. Occurs in coastal drainages, mesic chaparral, and occasionally in coastal sage scrub. Flowering period: July–November. Elevation: 165–1,700 feet (50–520 meters).	**Low.** Suitable habitat such as chaparral and coastal sage scrub is present on portions of the Preserve. There are no recent or historical records of this conspicuous large evergreen shrub within the Preserve and it was not observed during the 2019 HELIX general biological surveys within the environmental study area. The nearest observation occurs 6 miles to the east.

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
Erythranthe diffusa	Palomar monkeyflower	--/-- CRPR 4.3	Annual herb. Found on sandy or gravely soils in chaparral and lower montane coniferous forest habitat. Flowering period: April-June. Elevation: 4,002-6,003 feet (1,220–1,830 meters).	**Not Expected.** Suitable habitat is present on portions of the Preserve; however, the site lies outside of the suitable elevation range, there are no recent or historical records of this annual herb within the Preserve, and it was not observed during the 2019 HELIX general biological surveys within the environmental study area. The nearest observation occurs 15 miles to the east.
Ferocactus viridescens	San Diego barrel cactus	--/-- CRPR 2B.1 MSCP covered County List B	Stem succulent shrub. Grows in sandy to rocky areas within chaparral, valley grassland and coastal sage scrub communities. Flowering period: May – June. Elevation: 33 – 492 feet (10 – 150 meters).	**Not Expected.** The Preserve lies outside of the suitable elevation range, there are no recent or historical records of this stem succulent shrub within the Preserve, and it was not observed during the 2019 HELIX general biological surveys within the environmental study area. The nearest observation occurs 4 miles south of the Preserve.
Githopsis diffusa ssp. *filicaulis*	Mission Canyon bluecup	--/-- CRPR 3.1 County List C	Annual herb. Found in chaparral in mesic and disturbed areas. Flowering period: April-June. Elevation: 1,476-2,296 feet (450-700 meters).	**Low.** Suitable habitat is present on portions of the Preserve; however, the Preserve lies at the lower elevation limit for this species. There are no recent or historical records for this annual herb within the Preserve and was not observed during the 2019 HELIX general biological surveys within the environmental study area. The nearest observation occurs 8 miles east of the Preserve.

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
Grindelia hallii	San Diego gumplant	--/-- CRPR 1B.2 County List A	Perennial herb. Found in chaparral, lower montane coniferous forest, meadows and seeps, and valley and foothill grassland. Flowering period May-October. Elevation: 606-5,725 feet (185-1,745 meters).	**High.** Suitable habitat is present on portions of the Preserve; however, there are no recent records of this perennial herb within the Preserve and it was not observed during the 2019 HELIX general biological surveys within the environmental study area. The nearest observation occurred in 2008 adjacent to the northern boundary of the Preserve.
Harpagonella palmeri	Palmer's grapplinghook	--/-- CRPR 4.2 County List D	Annual herb. Occurs on clay soils in grasslands and coastal sage scrub. Flowering period: March – May. Elevation: below 3,281 feet (1,000 meters).	**Present.** This species was documented in the northwest portion of the Preserve during surveys conducted in 2008. This plant species was not observed during the HELIX 2019 general biological surveys within the environmental survey area.
Holocarpha virgata ssp. *elongata*	graceful tarplant	--/-- CRPR 4.2 County List D	Annual herb. Occurs in chaparral, cismontane woodlands, coastal scrub, and valley and foothill grassland. Flowering period: May – November. Elevation: 197-3,609 feet (60-1100 meters).	**Present.** Suitable habitat is present within the Preserve. This species was observed within grasslands in the southwestern area of the Preserve during the 2008 surveys. This plant species was not observed during the HELIX 2019 general biological surveys within the environmental survey area.
Horkelia truncata	Ramona horkelia	CRPR 1B.3 County List A	Perennial herb. Found on clay and gabbroic soils in chaparral and cismontane woodland. Flowering period: May-June. Elevation: 1,312-4,265 feet (400 – 1,300 meters).	**Moderate.** Suitable habitat is present on portions of the Preserve; however, there are no recent or historical records of this perennial herb within the Preserve and it was not observed during the 2019 HELIX general biological surveys within the environmental study area. The nearest observation occurred in 1996, approximately 6 miles to the northeast.

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
Isocoma menziesii var. *decumbens*	Decumbent goldenbush	--/-- CRPR 1B.2 County List A	Perennial shrub. Found in chaparral and coastal scrub often on sandy, disturbed areas. Flowering period: April-November. Elevation: 32-442 feet (10-135 meters).	**Low.** Suitable habitat is present on portions of the Preserve; however, the site lies outside of the suitable elevation range for this species, there are no recent or historical records for this perennial shrub within the Preserve, and it was not observed during the 2019 HELIX general biological surveys within the environmental study area. A historical record from 1934 was recorded approximately 6 miles to the south.
Iva hayesiana	San Diego marsh-elder	--/-- CRPR 2B.2 County List B	Perennial herb. Found in alkali flats, depressions, and streambanks within wetland communities. Flowering period: March – September. Elevation: below 984 feet (300 meters).	**Low.** Suitable habitat is present on portions of the Preserve; however, there are no recent or historical records for this large perennial herb within the Preserve and was not observed during the 2019 HELIX general biological surveys within the environmental study area. The nearest observation occurs 6 miles to the west.
Lepechinia cardiophylla	heart-leaved pitcher sage	CRPR 1B.2 MSCP narrow endemic County List A	Perennial shrub. Found in closed-cone coniferous forest, chaparral, and cismontane woodland. Flowering period: April-July. Elevation: 1,706-4,494 meters (520–1,370 meters).	**Not Expected.** Suitable chaparral habitat is present on portions of the Preserve; however, the site lies outside of the suitable elevation range, there are no recent of historical records for this perennial shrub within the Preserve, and it was not observed during the 2019 HELIX general biological surveys within the environmental study area. The nearest observation occurred in 2007 6 miles to the northeast.

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	--/-- CRPR 4.3 County List A	Annual herb. Grows in openings in chaparral and sage scrub at the coastal and foothill elevations. Typically observed in relatively dry, exposed locales rather than beneath a shrub canopy. Flowering period: March –June. Elevation: below 9,186 feet (2,800 meters).	**Moderate.** Suitable habitat is present on Preserve site; however, there are no recent or historical records of this annual herb within the Preserve and it was not observed during the 2019 HELIX general biological surveys within the environmental study area. The nearest observation occurred in 2001, 4 miles to the northeast within Poway Creek.
Monardella hypoleuca ssp. *lanata*	felt-leaved monardella	--/-- CRPR 1B.2 MSCP Covered	Perennial rhizomatous herb. Occurs in chaparral and cismontane woodland. Flowering period: June – August. Elevation: 1,540–4,429 feet (470–1,350 meters).	**Low.** Suitable habitat is present on portions of the Preserve; however, the Preserve lies outside of the suitable elevation range, there are no recent or historical records of this perennial rhizomatous herb within the Preserve, and it was not observed during the 2019 HELIX general biological surveys within the environmental study area. The nearest observation occurred in 2009 4 miles to the northeast.

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
Monardella viminea	willowy monardella	FE/SE CRPR 1B.1 County List A MSCP narrow endemic	Perennial herb. Occurs on alluvial ephemeral washes in chaparral, coastal sage scrub, riparian forest, riparian scrub, and riparian woodland. Flowering period June – August. Elevation: 164-738 feet (50-225 meters).	**Present.** Documented occurrences of willowy monardella do not occur within the proposed project survey area, but occur in the Study Area, and this species was not observed within areas of suitable habitat where new trails (e.g., Rock and Roll Trail [#22]) are proposed. Willowy monardella was documented in 2008 and 2019 at several locations within the Preserve within ephemeral drainages along Clark Canyon east at the southern boundary of the Preserve, and also during the 2019 baseline biodiversity surveys for the Southern Parcel and during 2019 baseline biodiversity surveys for the San Vicente Connector Parcels. Designated Critical Habitat for this species can be found adjacent to the southwestern boundary of the Preserve.
Ophioglossum californicum	California adder's-tongue	--/-- CRPR 4.2 County List D	Perennial rhizomatous herb. Found in mesic habitats in chaparral, valley and foothill grassland, and vernal pool margins. Visible period: December-June. Elevation: 196-1,722 feet (60-525 meters).	**Present.** This perennial rhizomatous herb was previously observed within the Preserve during surveys conducted in 2008 in one area within the Preserve southeast of and adjacent to the proposed Airplane Trail, outside of the environmental survey area. This plant species was not observed during the HELIX 2019 general biological surveys within the environmental survey area.

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
Packera ganderi	Gander's ragwort	--/SR CRPR 1B.2 County List A	Perennial herb. Found in chaparral in areas that have burned and in gabbroic outcrops. Flowering period: April-June. Elevation: 1,312-3,937 feet (400-1,200 meters).	**Moderate.** Suitable habitat is present on portions of the Preserve; however, there are no recent or historical records of this perennial herb within the Preserve, and it was not observed during the 2019 HELIX general biological surveys within the environmental study area. The nearest observation occurs 4 miles to the northeast from an unknown date reported in 2008.
Pentachaeta aurea ssp. *aurea*	Golden-rayed pentachaeta	--/-- CRPR 4.2 County List D	Annual herb. Occurs in a variety of habitats, including sage scrub, chaparral, valley grassland, and coastal scrub. Flowering period: March – July. Elevation: 262–6,069 feet (80–1,850 meters).	**Present.** Suitable habitat is present on portions of the Preserve, and approximately 50 individuals were mapped in four different locations within the northwestern portion of the Southern Parcel during the 2019 baseline biodiversity surveys for the Southern Parcel.
Piperia cooperi	Cooper's rein orchid	--/-- CRPR 4.2 County List D	Perennial herb. Occurs in chaparral, cismontane woodland, and grassland habitats. Flowering period: March – June. Elevation: 55–3,540 feet (17–1,080 meters).	**Moderate.** Suitable habitat is present on portions of the Preserve; however, there are no recent or historical records of this perennial herb within the Preserve and it was not observed during the 2019 HELIX general biological surveys within the environmental study area. The nearest observation occurred in 2006 approximately 12 miles east of the Preserve.

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
Quercus cedrosensis	Cedros Island oak	--/-- CRPR 2B.2 County List B	Perennial evergreen tree. Found in closed-cone coniferous forest, chaparral, and coastal scrub. Flowering period: April-May. Elevation: 836-3,149 feet (255-960 meters).	**Low.** This species was recorded within the Preserve in 2004, 0.5 mile south of the staging area on Beeler Canyon Road outside of the environmental study area but was not observed in the 2008 or 2012 surveys of the Preserve. This perennial evergreen tree species was not observed during the 2019 HELIX general biological surveys within the environmental study area.
Quercus dumosa	Nuttall's scrub oak	--/-- CRPR 1B.1 County List A	Perennial evergreen shrub. Found on sandy soils or clay loam in closed-cone coniferous forest, chaparral, and coastal scrub. Flowering period: February-April (sometimes as late as August). Elevation: 49-1,312 feet (15-400 meters).	**Moderate.** This species was not observed during the 2019 HELIX general biological surveys within the environmental study area. The nearest observation occurs 4 miles to the south.
Quercus engelmannii	Engelmann oak	--/-- CRPR 4.2 County List D	Perennial deciduous tree occurring in cismontane foothills in oak woodland, mixed chaparral, and grasslands. Flowering period: March – June. Elevation: 229–4,757 feet (70–1,450 meters).	**Present.** Suitable habitat is present on portions of the Preserve; and individuals were observed planted near the ranger station. Additionally, this species was observed near the center of the 2015 Southern Addition and the southeast corner of the 2015 Northern Addition in the Preserve but outside of the environmental survey area. This recognizable perennial tree was not observed during the 2019 HELIX general biological surveys within the environmental survey area.

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
Selaginella cinerascens	ashy spike-moss	--/-- CRPR 4.1 County List D	Rhizomatous fern. Occurs in chaparral and coastal sage scrub. Elevation: below 1,804 feet (550 meters).	**Present.** This species was documented along the existing South Raptor Loop South Trail within the environmental survey area (Figure 8a) and at the southwestern terminus of Sycamore Canyon Trail within the southwestern portion of the Preserve during the 2019 HELIX general biological surveys within the environmental survey area.
Stipa diegoensis	San Diego needlegrass	--/-- CRPR 4.2 County List D	Perennial grass. Occurs in rocky coastal sage scrub and chaparral and is closely associated with metavolcanic soils. Peaks and upper ridgelines are preferred microhabitat. Flowering period: February – June. Elevation: 98–3,380 feet (30–1,030 meters).	**Low.** Suitable habitat is present on portions of the Preserve; however, there are no recent or historical records of this perennial herb within the Preserve and it was not observed during the 2019 HELIX general biological survey within the environmental study area. Historical observations occur 8 miles to the southwest within Mission Trails Regional Park.
Stemodia durantifolia	purple stemodia	--/-- CRPR 2B.1 County List B	Perennial herb. Grows on wet sand or rocks and drying streambeds within riparian habitats. Flowering period: year-round. Elevation: 1,312 feet (400 meters).	**Low.** Suitable habitat is present on portions of the Preserve; however, suitable habitat is not located within the study area and there are no recent or historical records of this perennial herb within the Preserve. This species was not detected during the 2019 HELIX general biological surveys within the environmental study area. Historical observations occur 8 miles to the southwest.

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
Xanthisma junceum	rush chaparral-star	--/-- CRPR 4.3 County List D	Perennial herb. Found in chaparral and coastal scrub. Flowering period: May to January. Elevation: 787-3,280 feet (240–1,000 meters).	**Present.** Suitable habitat is present on portions of the Preserve. This species was observed during surveys conducted in 2012 in the northern portion of the Preserve adjacent to Paragon Mesa Road (County 2013) within the environmental survey area. This species was also detected on the southeastern portion of the 2015 Northern Addition (County 2017). This plant species was not observed during the HELIX 2019 general biological surveys within the environmental survey area.

1 Listing is as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; R = Rare; CRPR = 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 needed; 4–watch list for species of limited distribution. Extension codes: .1–seriously endangered; .2–moderately endangered; .3–not very endangered; County of San Diego Sensitive Plant Lists: A–rare, threatened, or endangered in California and elsewhere; B–rare, threatened, or endangered in California but more common elsewhere; C–may be quite rare but need more information; D–limited distribution and may be uncommon, but not presently endangered.

2 **Not Likely to Occur**–There are no present or historical records of the species occurring on or in the immediate vicinity, (within 3 miles) of the Project Site and the diagnostic habitats strongly associated with the species do not occur on or in the immediate vicinity of the Site.

Low Potential to Occur–There is a historical record of the species in the vicinity of the Project Site and potentially suitable habitat on Site, but existing conditions, such as density of cover, prevalence of non-native species, evidence of disturbance, limited habitat area, isolation, substantially reduce the possibility that the species may occur. The Site is above or below the recognized elevation limits for this species.

Moderate Potential to Occur–The diagnostic habitats associated with the species occur on or in the immediate vicinity of the Project Site, but there is not a recorded occurrence of the species within the immediate vicinity (within three miles). Some species that contain extremely limited distributions may be considered moderate, even if there is a recorded occurrence in the immediate vicinity.

High Potential to Occur–There is both suitable habitat associated with the species and a historical record of the species on or in the immediate vicinity of the Project Site (within three miles).

Species Present–The species was observed on the Project Site at the time of the survey or during a previous biological survey.

Appendix D

Sensitive Animal Species with Potential to Occur

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
INVERTEBRATES				
Insects				
Bombus crotchii	Crotch bumble bee	--/SCE	Found throughout southwestern California from the Central Valley south to the U.S./Mexico border. Inhabits open grasslands and scrub habitats. Primarily nests underground and forages on a wide variety of flowers, but a short tongue renders it best suited to open flowers with short corollas. Most commonly observed on flowering species in the Fabaceae, Asteraceae, and Lamiaceae families. Occurrence has also been linked to habitats containing *Asclepias, Chaenactis, Lupinus, Medicago, Phacelia,* and *Salvia* genera.	**Moderate**. This species was not observed during the 2019-2022 HELIX surveys, but the Water Authority has been conducting surveys on nearby private property and identified this species in 2023. While some suitable open grassland and scrub habitat occurs within the Preserve, these areas occur outside the proposed trails and trail improvements. No suitable burrows were observed within the impact area.
Branchinecta sandiegonensis	San Diego fairy shrimp	FE/-- County Group 1 MSCP NE MSCP Covered	Restricted to vernal pools and other ephemeral basin in southern California from coastal Orange County to San Diego County. Found in 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.	**Low.** This species was not detected during the HELIX biological surveys. Vernal pools were not documented during the 2019 HELIX general biological surveys, and ephemeral ponds have not been reported within the preserve. Potentially suitable habitat may occur along trails in road ruts or basins that hold ponding water. No documented occurrences of the species are reported in the Preserve.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Danaus plexippus	Monarch	--/-- County Group 2	The population west of the Rocky Mountains migrates to, and overwinters, along the coast of central and southern California. Inhabits a wide variety of open habitats including fields, meadows, marshes, and roadsides and roosting on wind-protected tree groves (such as eucalyptus [*Eucalyptus* spp.], Monterey pine [*Pinus radiata*], cypress [*Hesperocyparis* sp.]), with nectar and water sources nearby. Breeds in areas that have a suitable abundance of their host plant, milkweed (*Asclepias* sp.).	**Moderate.** This species was not observed during the 2019-2022 HELIX surveys, but the species has high potential to pass through the site and utilize nectar resources. Additionally, a patch of narrow-leaved milkweed (*Asclepias fasciculata*) was observed adjacent to Northwest Interior Loop Trail (#26) during 2022 surveys.
Euphydryas editha quino	Quino checkerspot butterfly	FE/-- County Group 1 MSCP NE	Occurs in California from western Riverside County southwards to southern San Diego County. Inhabits open and sparsely vegetated areas that contain larval host plant species (principally dot-seed plantain [*Plantago erecta*], woolly plantain [*Plantago patagonia*] but also Coulter's snapdragon [*Antirrhinum coulterianum*], and rigid bird's beak [*Cordylanthus rigidus*]) and nectar sources. Often found on rounded hilltops, ridgelines, and occasionally rocky outcrops. Occurs within a wide range of open-canopied habitats including vernal pools, sage scrub, chaparral, grassland, and open oak and juniper woodland communities.	**Present.** During the 2019 HELIX general biological survey, one Quino checkerspot butterfly and one unidentified checkerspot butterfly were documented within the Preserve at Slaughterhouse Canyon Trail (#21) approximately 1,500 feet from the southern boundary of the Preserve. Quino checkerspot butterfly was previously recorded within the Preserve in approximately the same location in 2005.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Euphyes vestris harbisoni	Harbison's dun skipper	--/-- County Group 1 MSCP Narrow Endemic	Riparian habitats and chaparral with narrow canyons or drainages, where perennial sources of water provide adequate habitat for the larval foodplant, San Diego sedge (*Carex spissa*).	**Moderate.** This species was not detected during the HELIX biological surveys but was documented during 2001 wildlife surveys within habitat associated with the creek north and east of the ranger station. San Diego sedge was not observed within the environmental survey area.
Lycaena hermes	Hermes copper butterfly	FC/-- County Group 1	Southern mixed chaparral and coastal sage scrub. Requires host plant spiny redberry (*Rhamnus crocea*) in close proximity to California buckwheat (*Eriogonum fasciculatum*), its preferred nectar source.	**Moderate.** This species was not detected during the 2019 HELIX general biological surveys, 2020 Hermes copper habitat assessment/survey, or 2022 protocol Hermes copper survey. Suitable host plants (spiny redberry) are present within the study area, and some are within close proximity to California buckwheat (this species' primary nectar source). One Hermes copper was recorded within the Preserve before the 2003 Cedar Fire (County of San Diego 2008), which may have extirpated this species from the Preserve. The vast majority of occurrences for this species are from southwestern San Diego County (Marschalek and Klein 2010).

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
VERTEBRATES				
Amphibians				
Anaxyrus californicus	arroyo toad	FE/SSC County Group 1 Draft NC MSCP Covered	Requires rivers with sandy banks, willows, cottonwoods, and sycamores. Breeds in areas with shallow, slowly moving streams, but burrows in adjacent uplands during dry months.	**Low.** This species was not detected during the HELIX biological surveys. No suitable breeding habitat occurs within the study area. Drainages within the study area did not have sandy banks or support suitable riparian forest habitat. Areas adjacent to drainages within the study area also lack suitable habitat for aestivation (sandy banks along ephemeral drainages). No documented occurrences of the species are reported in the Preserve.
Spea hammondii	western spadefoot	--/SSC County Group 2	Occurs from northern California southward to San Diego County, and to the west of the Sierra Nevada at elevations below 4,500 feet. Terrestrial species requiring temporary pools for breeding. Suitable upland habitats include coastal sage scrub, chaparral, and grasslands. Most common in grasslands with vernal pools or mixed grassland-coastal sage scrub areas. Breeds in temporary pools formed by heavy rains, but also found in riparian habitats with suitable water resources. Breeding pools must lack exotic predators such as fish, bullfrogs, and crayfish for the species to successfully reproduce. Estivates in burrows within upland habitats adjacent to potential breeding sites.	**Present.** This species was observed in the southwestern portion of the Southern Parcel during 2019 baseline biological surveys (HELIX 2020). Vernal pools or temporary pools of water were not documented during the HELIX biological surveys. Additionally, this species was detected in the Preserve during 2008 surveys, near the eastern edge of the Preserve and in the central part of the Preserve near Martha's Grove Trail (#12). Previous occurrences of the species occur reported east of Camp Elliott naval reservation approximately 3,000 feet south of the Preserve.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Reptiles				
Anniella stebbinsi	Southern California legless lizard	--/SSC County Group 2	Occurs in sparsely vegetated areas with moist warm, loose soil with plant cover; moisture is essential. Common in several habitats but especially in beach dunes, coastal scrub, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Found primarily in areas with sandy or loose organic soils or where there is plenty of leaf litter. Sometimes found in suburban gardens in southern California.	**Low.** This species was not detected during the HELIX biological surveys. The study area lacks suitable sandy habitats with sparse vegetative cover and moist soils. No documented occurrences of the species are reported in the Preserve.
Aspidoscelis hyperythra beldingi	Belding's orange-throated whiptail	--/WL County Group 2 MSCP Covered	Found within the southwestern portion of California in southern San Bernardino, western Riverside, Orange, and San Diego Counties on the western slopes of the Peninsular ranges below 3,500 feet. Suitable habitat includes coastal sage scrub, chaparral, juniper woodland, oak woodland, and grasslands along with alluvial fan scrub and riparian areas. Occurrence of the species correlated with the presence perennial plants (such as California buckwheat, California sagebrush, black sage, or chaparral) to provide a food base for its major food source, termites.	**Present.** This species was observed in the southwestern portion of the Southern Parcel during 2019 baseline biological surveys. Additionally, this species was captured during reptile trapping surveys conducted in 2008 and 2012 (County of San Diego 2013). This species was also observed on the 2015 Northern and Southern Additions (County 2017) in 2016.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Aspidoscelis tigris stejnegeri	San Diegan tiger whiptail	--/SSC County Group 2	Coastal Southern California, mostly west of the Peninsular Ranges and south of the Transverse Ranges, and north into Ventura County. Ranges south into Baja California in ranges. Found at elevations below 7,000 feet. Suitable habitat includes dry open areas with sparse foliage, including chaparral, woodland, and riparian areas.	**Present.** This species was detected during 2022 surveys adjacent to South Raptor Loop South Trail (#5). Documented occurrences of the species are reported around the perimeter of the Preserve. This species was captured during reptile trapping surveys conducted within the Preserve in 2008 (County 2013). This species was also observed on the 2015 Northern and Sothern Additions (County 2017) in 2016 and incidentally observed on the 2015 Northern and Southern Additions during surveys in 2022.
Clemmys marmorata pallida	southwestern pond turtle	--/SSC	Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches with abundant vegetation and either rocky or muddy bottoms. In streams, prefers pools to shallower areas. Areas for basking are required, such as logs, rocks, cattails mats, and exposed banks. Range throughout coastal central to southern California, south to Baja California.	**Not Expected.** This species was not detected during the HELIX biological surveys. No documented occurrences of the species are reported in the Preserve as the Preserve lacks suitable habitat. This species has been observed east of the Preserve along Cedar Creek in the Cuyamaca Mountains in 2006 and south of the Preserve at Santee Lakes in 2006.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Coleonyx variegatus abbotti	San Diego banded gecko	--/-- County Group 1	Chaparral and coastal sage scrub in areas with rock outcrops.	**Low.** This species was not detected during the HELIX biological surveys. No documented occurrences of the species are reported in the Preserve. This species was observed most recently in 2006 approximately 2 miles east of the Preserve at San Vicente Reservoir.
Crotalus ruber	red diamond rattlesnake	--/SSC County Group 2	Occurs in the southwestern portion of California from San Bernardino County southward to San Diego County at elevations below 5,000 feet. Has a wide tolerance for varying environments including the desert, dense foothill chaparral, warm inland mesas and valleys, and cool coastal zones. Most commonly found near heavy brush with large rocky microhabitats. Chamise and red shank chaparral associations may offer better structural habitat for refuges and food resources.	**Present.** This species was not detected during the HELIX biological surveys but was observed within the Preserve during biological surveys conducted in 2008 and 2012 (County 2013). Multiple occurrences have been documented within the northwest portion of the Preserve and south of the Preserve boundary. This species was also observed on the 2015 Northern and Southern Additions (County 2017) in 2016.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Diadophis punctatus similis	San Diego ringed-neck snake	--/-- County Group 2	Found mainly in San Diego County along the coast to the west of the mountain and desert regions, and in extreme southwestern Riverside County. Prefers moist habitats and often found near intermittent streams. Suitable habitat includes wet meadows, rocky hillsides, farmland, grassland, chaparral, mixed coniferous forests, and woodlands. Secretive with individuals usually found under the cover of rocks, wood, boards and other surface debris, but occasionally seen moving on the surface on cloudy days, dusk, or at night.	**Moderate.** This species was not detected during the HELIX biological surveys. No documented occurrences of the species are reported in the Preserve, however suitable habitat occurs within the study area. One individual was observed approximately 3 miles east of the Preserve in 2008 in Lakeside.
Plestiodon skiltonianus interparietalis	Coronado skink	--/SSC County Group 2	Occurs in grasslands, coastal sage scrub, and open chaparral where there is abundant leaf litter or low herbaceous growth.	**Present.** This species was not detected during the HELIX biological surveys but was captured during reptile trapping surveys conducted in 2008 (County of San Diego 2013) near Sycamore Canyon Creek. This species was not observed during the 2012 trapping event.
Lichanura orcutti	northern three-lined boa (formerly coastal rosy boa)	--/-- County Group 2	Occurs among rocky outcrops in coastal sage scrub, chaparral, and desert scrub. Range is Baja California border in San Diego County north into the Mojave Desert and east into the Sonoran Desert of California, but absent from the Imperial Valley.	**Present.** This species was not detected during the HELIX biological surveys but was observed by County Park Rangers in 2008 (County 2013). This species was also observed on the 2015 Northern and Southern Additions (County 2017) in 2016.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Phrynosoma blainvillii	Blainville's horned lizard	--/SSC County Group 2 MSCP Covered	Occurs from southern California to northern Baja California. In California, the species predominately occurs from Kern County south to San Diego County west of the desert at elevations below 8,000 feet. Inhabits a wide variety of vegetation types including sagebrush scrub, chaparral, grasslands, forests, and woodlands but is restricted to areas with suitable sandy, loose soils with open areas for basking. Diet primarily composed of native harvester ants (*Pogonmyrmex* sp.) and are generally excluded from areas invaded by Argentine ants (*Linepithema humile*).	**Present.** This species was not detected during the HELIX biological surveys but was observed during surveys conducted in 2008 and captured during reptile trapping events conducted in 2012 (County of San Diego 2013). This species was also observed on the 2015 Northern and Southern Additions (County 2017) in 2016. Additionally, multiple occurrences have been documented within the Preserve and south of the Preserve boundary.
Salvadora hexalepis virgultea	coast patch-nosed snake	--/SSC County Group 2	Inhabits semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains.	**Present.** This species was not detected during the HELIX biological surveys but was captured during reptile trapping surveys conducted in 2008 (County of San Diego 2013) near Sycamore Canyon Creek. This species was not observed during the 2012 trapping event. This species was also observed on the 2015 Northern and Southern Additions (County 2017).

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Thamnophis hammondii	two-striped garter snake	--/SSC County Group 1	Found in California from Monterey County south along the coast to San Diego County and into northern Baja California at elevations below 7,000 feet. Commonly inhabits perennial and intermittent streams with rocky beds bordered by riparian habitats dominated by willows and other dense vegetation. The species has also been found in stock ponds and other artificially created aquatic habitats if bordered by dense vegetation and potential prey, such as amphibians and fish, are present.	**Present**. This species was not detected during the HELIX biological surveys but was observed by park rangers during wildlife surveys conducted in 2008 (County 2013). The species was also incidentally observed in an unnamed drainage during 2019 surveys for the San Vicente connector parcels (ICF 2021). Multiple occurrences have been documented directly south of the Preserve within Fanita Ranch in 1997.
Birds				
Accipiter cooperii	Cooper's hawk	--/WL County Group 1 MSCP Covered	In California, the species breeds from Siskiyou County south to San Diego County and east to the Owens Valley at elevations below 9,000 feet. Inhabits forests, riparian areas, and more recently suburban and urban areas nesting within dense woodlands and forests and isolated trees in open areas.	**Present.** This species was not detected during the HELIX biological surveys but was detected within the Preserve during wildlife surveys conducted in 2008 (County 2013), although it was noted that the species was not observed within the Preserve during peak nesting periods during 2008. Additionally, this species was detected during the San Vicente Connector Parcel surveys in 2019 (ICF 2021). Multiple occurrences have been documented south of the Preserve boundary.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Accipiter striatus	sharp-shinned hawk	--/WL County Group 1	Primarily winters and migrates throughout California with breeding records in the northern and central portions of the State, but the species breeding range in California is poorly known. Breeds within most closed-canopy woodlands and forests, including riparian habitats, from sea level to near alpine elevations, generally nesting in trees near openings. Wintering habitat similar to breeding habitat but more expansive to include suburban and agricultural areas.	**Present.** This species was not detected during the HELIX biological surveys. This species was observed on the 2015 Northern and Southern Additions (County 2017) in 2016.
Agelaius tricolor	tricolored blackbird	BCC/SCE, SSC County Group 1 MSCP Covered	Highly colonial, nomadic species occurring as a year-round resident of California from Sonoma County to San Diego. Common locally in the Central Valley and sporadically throughout the State. Breeds in dense colonies. Breeding habitat typically characterized by emergent freshwater marsh dominated by tall, dense cattails (*Typha* spp.) and bulrush (*Schoenoplectus* spp.), though the species also utilizes willows (*Salix* spp.), blackberries (*Rubus* spp.), thistles (*Cirsium* and *Centaurea* spp.), nettles (*Urtica* sp.), and agricultural crops. Forages in grasslands and cropland habitats adjacent to breeding areas.	**Low**. This species was not detected during the HELIX biological surveys. No documented occurrences of the species are reported in the Preserve, but documented occurrences exist south of the Preserve boundary. Limited suitable marsh habitat occurs within the Preserve, but does not occur within the environmental survey area.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Aimophila ruficeps canescens	southern California rufous crowned sparrow	--/WL County Group 1 MSCP Covered	Restricted to southwestern California occurring from Santa Barbara County southwards to San Diego County at elevations below 5,000 feet. Generally found on moderate to steep slopes vegetated with grassland, coastal sage scrub, and chaparral. Prefer areas with California sagebrush but area also generally absent from areas with dense stands of coastal sage scrub or chaparral. May occur on steep grassy slopes without shrubs if rock outcrops are present.	**Present**. This species was detected singing the Southern Parcel during 2019 baseline biological surveys (HELIX 2020). Additionally, this species was documented during wildlife surveys conducted in 2008 and 2012 within coastal sage scrub or southern mixed chaparral habitats (County 2013). This species was also observed on the 2015 Northern and Southern Additions (County 2017) in 2016, in the Southern Parcel during the 2019 surveys, and in the San Vicente Connector Parcels during the 2019 surveys. Additionally, documented occurrences have been recorded south and west of the Preserve boundary.
Ammodramus savannarum	grasshopper sparrow	--/SSC County Group 1 Draft NC MSCP Covered	Typical habitat is dense grasslands that have little or no shrub cover	**Moderate**. This species was not detected during the HELIX biological surveys. This species has been documented within the Preserve prior to the 2003 Cedar Fire but has not been documented within the Preserve since. Additionally, one documented occurrence exists south of the Preserve boundary.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Amphispiza belli belli	Bell's sage sparrow	--/WL County Group 1	Primarily breeds in coastal sagebrush, chaparral, and other open, scrubby habitats.	**Present.** This species was not detected during the HELIX biological surveys but was observed during wildlife surveys conducted in 2008, including observations of successful breeding within the Preserve (County 2013).
Aquila chrysaetos	golden eagle	BCC/WL, FP County Group 1 MSCP Covered	Uncommon permanent resident and migrant throughout California, except the center of the Central Valley. More common in southern California than in northern regions. Inhabits a variety of habitats, nesting in cliffs or trees and rugged terrain and foraging over plains, grasslands, or low and open shrublands including chaparral and coastal sage scrub. Typically absent from heavily forested areas or on the immediate coast and are almost never detected in urbanized environments.	**Present.** This species was not detected during the HELIX biological surveys. A first-year golden eagle was observed flying overhead during wildlife surveys conducted in 2008 (County 2013) and one adult bald eagle was observed flying north over the 2015 Northern Addition in 2016. The Preserve is situated adjacent to heavily urbanized areas and lacks suitable remote habitat and cliffs suitable for nesting. This species likely only occurs as a migrant or foraging visitor but would not breed in the area.
Asio otus	long-eared owl	--/SSC County Group 1	In San Diego County this species is a rare resident in shady oak woodlands and broad riparian forests. Ideal habitat includes a closed canopy near open habitats for foraging and a supply of abandoned raptor or corvid nests or debris platforms for nesting (Unitt 2004).	**Moderate.** This species was not detected during the HELIX biological surveys. This species was historically documented within the Preserve but has not been observed within the Preserve since the 2003 Cedar Fire (County 2013).

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Athene cunicularia hypugaea	western burrowing owl	BCC/SSC County Group 1 MSCP NE MSCP Covered	Found from central California east to the Mojave Desert and south to coastal San Diego County. Primarily a grassland species that prefers areas with level to gentle topography and well-drained soils. Species can also occupy agricultural areas, vacant lots, and pastures. Requires underground burrows for nesting and roosting that are typically dug by other species such as California ground squirrel (*Spermophilus beecheyi*). Species will also utilize natural rock cavities, debris piles, culverts, and pipes for nesting and roosting.	**Present.** This species was not detected during the HELIX biological surveys but was observed along a ridge top road during wildlife surveys conducted in 2008 (County 2013), however, the individual flushed and flew away. The individual was assumed to be a migrant. Suitable habitat with underground burrows dug by fossorial species were not observed within the environmental survey area.
Buteo lineatus	red-shouldered hawk	--/-- County Group 1	In California, the species occurs to the west of Sierra Nevada occupying mature oak and riparian woodlands, eucalyptus groves, and suburban areas near forested areas. Nests in trees, both native and non-native, often located near a water source such as stream or pond.	**Present.** This species was not detected during the HELIX biological surveys, but a pair of red-shouldered hawks were documented building a nest near the ranger station in 2008 (County 2013).
Campylorhynchus brunneicapillus sandiegensis	coastal (San Diego) cactus wren	BCC/SSC County Group 1 MSCP NE MSCP Covered	One of seven subspecies occurring in southern California from southern Orange County south to San Diego County. Occupies native scrub vegetation with thickets of mature cacti consisting of cholla (*Cylindropuntia* spp.) or prickly-pear cactus (*Opuntia littoralis*). Cacti must be tall enough to support and protect the bird's nest (typically 3 feet or more in height). Surrounding vegetation usually consists of coastal sage scrub habitat with shrubs normally below the level of nest placement.	**Not Expected.** This species was not detected during the HELIX biological surveys. Though cactus is present in the Preserve, patches of mature cacti required by the species for nesting are absent from the survey area. Closest documented location is over 2 miles east of the Preserve boundary.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Cathartes aura	turkey vulture	--/-- County Group 1	In California, the species occurs as a year-round resident along the coastal regions but breeds throughout the entire state. Preferred habitat includes farmland and forests but is also found at pastures and agricultural areas in the west and has an increased presence in urban areas during the winter. Nests in partially forested to forested areas isolated from humans on rock outcrops, fallen trees, and abandoned buildings. Roosts communally, preferring stands of large trees or hilly areas, usually away from human disturbance. Opportunistic feeders of domestic and wild carrion, primarily mammals but also non-mammals, foraging and locating food through both sight and smell.	**Present.** This species was detected within the Southern Parcel during the 2019 baseline biological surveys (HELIX 2020). Additionally, this species was detected during wildlife surveys conducted in 2008 and was observed soaring over the Sycamore South property during wildlife surveys conducted in 2012 (County 2013). This species was also observed on multiple occasions flying over the 2015 Northern and Southern Additions in 2016 and the San Vicente Connector parcels in 2019, and a pair with an active nest with two eggs was found within the western part of the 2015 Northern Addition in 2016. This species was also detected within the Southern Parcel during the 2019 baseline biological surveys
Chaetura vauxi	Vaux's swift	--/SSC	Nests in coniferous or mixed forest, and forages in forest openings, especially above water. Only occurs in southern California during migration.	**Present.** This species was not detected during the HELIX biological surveys. One individual was detected flying overhead during wildlife surveys conducted in 2008 (County 2013); however, the environmental survey area lacks suitable nesting habitat and the observed individual did not stop to forage.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Charadrius alexandrinus nivosus	western snowy plover	FT, BCC/SSC County Group 1 MSCP Covered	Breeds primarily on coastal beaches from southern Washington to southern Baja California. Nesting habitat includes sand spits, dune-backed beaches, beaches at creek and river mouths, and salt pans at lagoons and estuaries. Usually prefer sand, silt or dry mud with even surface, avoiding rocky or broken ground. Exhibits high breeding site fidelity. In winter, found on many of the beaches used for nesting, as well as others where they do not nest. Also occur in man-made salt ponds and on estuarine sand and mud flats.	**Not Expected.** This species was not detected during the HELIX biological surveys. The Preserve is situated inland from the coast and lacks suitable breeding habitat. There are no reported occurrences of this species located in the Preserve. Nearest documented location is to the west in the Torrey Pines State Reserve.
Circus cyaneus	northern harrier	--/SSC County Group 1 MSCP Covered	Occurs as a year-round resident in California. Inhabits open areas including wetlands, marshes, marshy meadows, grasslands, riparian woodlands, desert scrub, and pastures and agricultural areas. Breeding populations in southern California from Ventura County to San Diego County are highly fragmented with many local populations extirpated mostly likely as a result of habitat loss and degradation. Nests on the ground in wetlands and uplands within patches of dense, often tall, vegetation in undisturbed areas.	**Present**. This species was not detected during the HELIX biological surveys but was detected foraging over the Preserve during wildlife surveys conducted in 2008 (County 2013). Suitable nesting habitat (grasslands, riparian woodlands) can be found within the Preserve.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Elanus leucurus	white-tailed kite	--/FP County Group 1	Year-long resident of California residing along the coasts and valleys west of the Sierra Nevada foothills and southeast deserts, though the species has also been documented breeding in arid regions east of the Sierra Nevada and within Imperial County. Inhabits low elevation grasslands, wetlands, oak woodlands, open woodlands, and is associated with agricultural areas. Breeds in riparian areas adjacent to open spaces nesting in isolate trees or relatively large stands.	**Present.** This species was not detected during the HELIX biological surveys but was observed perched and foraging near Sycamore Canyon Creek during wildlife surveys conducted in 2008 (County 2013).
Empidonax traillii extimus	southwestern willow flycatcher	FE/SE County Group 1 MSCP NE MSCP Covered	Breeds in southern California, Arizona, New Mexico, southwestern Colorado, and extreme southern portions of Nevada and Utah. Riparian obligates that breed in relatively dense riparian habitats along rivers, streams, or other wetlands where surface water is present, or soils are very saturated. Breeding habitat can consist of monotypic stands of willows (*Salix* ssp.), a mixture of native broadleaf trees and shrubs, monotypic stands of exotics such as tamarisk (*Tamarix* spp.) or Russian olive (*Elaeagnus angustifolia*), or mixture of native broadleaf trees and shrubs with exotics. Restricted in San Diego County to two modest colonies at San Luis Rey River and Santa Margarita River, with a few scattered pairs.	**Not Expected.** This species was not detected during the HELIX biological surveys. Suitable riparian habitat is not present within the survey area. The nearest documented location is northeast of the Preserve boundary at the north end of El Capitan Reservoir.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Eremophila alpestris actia	California horned lark	--/WL County Group 2	One of 21 recognized subspecies occurring in the coastal ranges of California from San Joaquin Valley to northern Baja California. Inhabits a wide variety of open habitats with low, sparse vegetation where trees and large shrubs are generally absent. Suitable habitats include grasslands along the coast, deserts within the inland regions, shrub habitat at higher elevations, and agricultural areas.	**Present.** This species was not detected during the HELIX biological surveys but was detected during wildlife surveys conducted in 2008 (County 2013). Suitable habitat within the survey area is limited for this species. This species has been documented southwest of the Preserve boundary in Quail Canyon.
Falco columbarius	merlin	--/WL	Uncommon winter migrant in California occurring from September to May at elevations below 5,000 feet. Often found in open woodland, grasslands, cultivated fields, marshes, estuaries and sea coasts and are rarely found in heavily wooded areas or over open deserts.	**Moderate.** This species was not detected during the HELIX biological surveys. This species is a rare winter migrant that feeds on small birds where small birds flock. This species was detected within the Preserve in 2007 but was not documented during wildlife surveys conducted in 2008 and 2012 (County 2013).
Falco mexicanus	prairie falcon	BCC/WL County Group 1	In California, the species is an uncommon permanent resident and migrant that ranges from southeastern deserts northwest along the inner coastal mountains and Sierra Nevada but is absent from northern coastal fog belt. Primary habitats include grasslands, savannahs, alpine meadows, some agricultural fields during the winter season, and desert scrub areas where suitable cliffs or bluffs are present for nest sites. Requires sheltered cliff ledges for cover and nesting which may range in height from low rock outcrops of thirty feet to cliffs up to and higher than 400 feet.	**Moderate.** This species was not detected during the HELIX biological surveys. Suitable foraging habitat is present within the Preserve, but suitable nesting habitat is absent. Steep slopes within the Preserve are not near vertical cliffs with rocky ledges suitable for nest placement. If present, this species likely only occurs as a migrant or foraging visitor, but would not breed in the Preserve. There are no reported occurrences located in the Preserve.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Haliaeetus leucocephalus	bald eagle	FE, BCC/SE, FP County Group 1 MSCP covered	Occurs throughout North America. In San Diego County, this species is rare but observed annual during winter near lakes in foothills and mountains. Nesting occurs in close proximity to lakes or other bodies of water.	**Present.** This species was not detected during the HELIX biological surveys, but this species was observed on the 2015 Northern and Southern Additions in 2016 (County 2017). The species likely only disperses through or forages over the study area as the Preserve lacks suitable nesting habitat in close proximity to lakes or other bodies of water.
Icteria virens	yellow-breasted chat	--/SSC County Group 1	Occurs throughout North America from Canada south to Baja California and Mexico. Breeds from southern British Columbia south to Baja California and winters in southern Baja California and south Texas south to Mexico and Panama. In California, the species occurs as a migrant and summer resident breeding from the coastal regions in northern California, east of the Cascades, and throughout the central and southern portions of the State. Breeds in early successional riparian habitats with well-developed shrub layer and an open canopy nesting on the borders of streams, creeks, rivers, and marshes.	**Present.** This species was not detected during the HELIX biological surveys. Although it was detected during wildlife surveys conducted in 2008 (County 2013) in riparian habitat near Clark Canyon, the environmental survey area lacks suitable habitat for this species.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Lanius ludovicianus	loggerhead shrike	BCC/SSC County Group 1	In California, found year-round throughout the foothills and lowlands with winter migrants found coastally north of Mendocino County. Inhabits a variety of habitats seen foraging over open ground within areas of short vegetation, pastures with fence rows, old orchards, mowed roadsides, cemeteries, golf courses, riparian areas, open woodland, agricultural fields, desert washes, desert scrub, grassland, broken chaparral and beach with scattered shrubs. Individuals forage by perching to search for prey (such as large insects, small mammals, amphibians, reptiles, and fish) and using impaling as a means of handling prey.	**High.** This species was not detected during the HELIX biological surveys. There are no reported occurrences located within the Preserve, but there is high potential for this species to forage and nest within suitable habitat found in the Preserve in areas of open ground within areas of low lying vegetation or chaparral.
Pandion haliaetus	osprey	--/WL County Group 1	Within California, breeding populations reside in the Cascade and Sierra mountain ranges, though small numbers of the species also breed within San Diego County. Although widely seen on the coast, these birds are rare transients in the interior portions of southern California. Restricted to large water bodies such as rivers, lakes, and reservoirs supporting fish with suitable nesting habitat such as rocky pinnacles or large trees and snags. Build their large nests, often in dead tops of older trees and man-made structures.	**Present.** This species was not detected during the HELIX biological surveys but was observed soaring over the Preserve during wildlife surveys conducted in 2008 (County 2013) and this species is also often seen foraging at San Vicente Reservoir, which is southeast of the Preserve; however, breeding has not been documented in the vicinity of the reservoir or the Preserve (Unitt 2004).

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Passerculus sandwichensis beldingi	Belding's savannah sparrow	--/SE County Group 1 MSCP NE MSCP Covered	Year-round resident of coastal salt marshes within southern California from Santa Barbara County south to San Diego County. Particularly associated with salt marsh habitat dominated by dense pickleweed (*Salicornia* sp.) within which most nests are found.	**Not Expected**. This species was not detected during the HELIX biological surveys. The Preserve lacks suitable coastal salt marsh habitat, and there are no reported occurrences located in the Preserve.
Phalacrocorax auritus	double-crested cormorant	--/WL County Group 2	Year-round resident along the entire coast also occupying fresh and saltwater estuaries, and inland lakes. Occurs east of the coast within the Central Valley, lower Colorado River, and Salton Sea. Habitat requirements include suitable places for feeding, resting, loafing, and nighttime roosts. Diet mostly consists of fish but may include other aquatic animals, and at times terrestrial animals based on opportunity. Breeds in colonies at TRVRPs safe from predators and adjacent to feeding areas such as rocky or sandy islands, bridges, docks, nesting towers, trees, emergent marsh vegetation, and on the ground.	**Not Expected.** This species was not detected during the HELIX biological surveys. The Preserve lacks suitable fresh and saltwater estuary habitat. There are no reported occurrences located in the Preserve.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Plegadis chihi	white-faced ibis	--/WL MSCP Covered County Group 1	Uncommon summer resident in sections of southern California and a rare visitor in the Central Valley. Local wintering visitor along coast. Prefers to feed in fresh emergent wetlands, shallow lacustrine waters, muddy ground of wet meadows, and irrigated or flooded pastures and croplands. Nests in dense, fresh emergent wetland. In San Diego County, two nesting colonies documented at Guajome Lake and at a pond along the San Luis Rey located near Keys Canyon (southwest of the I-15 and SR-76 intersection).	**Not Expected.** This species was not detected during the HELIX biological surveys. This species is not expected to breed in the Preserve as no known nesting colonies occur in the region and the Preserve lacks suitable nesting habitat. There are no reported occurrences located in the Preserve.
Polioptila californica californica	coastal California gnatcatcher	FT/SSC County Group 1 MSCP Covered	Year-round resident of California occurring from Ventura County south to San Diego County, and east to the western portions of San Bernardino and Riverside Counties. Typically occur in arid, open sage scrub habitats on gently slopes hillsides to relatively flat areas at elevations below 3,000 feet. The composition of sage scrub in which gnatcatchers are found varies; however, California sagebrush is at least present as dominant or co-dominant species. The species is mostly absent from areas dominated by black sage, white sage, or lemonadeberry, though the species may occur more regularly in inland regions dominated by black sage.	**Present.** This species was detected during HELIX surveys in 2019 and 2022 adjacent to South Raptor Loop South Trail (#5). Additionally, this species was documented within the Preserve historically and during wildlife surveys conducted in 2012 (County 2013), although nesting was not observed. This species was also observed on the 2015 Northern and Southern Additions (County 2017) in 2016. Additionally, one coastal California gnatcatcher was observed during the 2019 surveys of the Southern Parcel, and during the 2019 surveys for the San Vicente Connector Parcels. Designated Critical Habitat for this species occurs adjacent to the southern boundary of the Preserve.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Rallus obsoletus levipes	light-footed Ridgway's rail	FE/SE, FP County Group 1 MSCP NE MSCP Covered	One of six recognized subspecies occurring as a resident in coastal salt marshes and lagoons from Santa Barbara County south to Baja California. The species is found primarily in tall, dense cordgrass (*Spartina foliosa*) and occasionally pickleweed (*Salicornia pacifica*) in the low marsh zone. Also found in freshwater marshes in winter.	**Not Expected.** This species was not detected during the HELIX biological surveys. The Preserve lacks suitable coastal salt marshes, lagoons, or freshwater marshes. There are no reported occurrences located in the Preserve.
Setophaga petechia	yellow warbler	BCC/SSC County Group 2	Common to locally abundant species breeding throughout California at elevations below 8,500 feet, excluding most of the Mojave Desert, and all of the Colorado Desert. Breeds in riparian areas dominated by willows (*Salix* spp.) and cottonwoods (*Populus* spp.), near rivers, streams, lakes, and wet meadows. Also breeds in montane shrub and conifer forests in higher elevation areas.	**Present.** This species was detected within the central portion of the Southern Parcel during the 2019 baseline biological surveys (HELIX 2020). Additionally, this species was observed foraging in coastal scrub during 2019 surveys of the San Vicente Connector Parcels. There are no additional reported occurrences located in the Preserve.
Sialia mexicana	western bluebird	--/-- County Group 2 MSCP Covered	Common year-round resident throughout California, but absent from the higher mountains and eastern deserts. Breeds in open woodlands, riparian habitats, grasslands, and farmlands. Nests and roosts in cavities of trees and snags, often in holes previously created by woodpeckers, and nest boxes. Winters in a wider variety of habitats.	**Present.** This species was not detected during the HELIX biological surveys, but a pair was observed near Sycamore Canyon Creek during wildlife surveys conducted in 2008 (County 2013) and was detected on the 2015 Northern Addition during 2016 surveys

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Sterna antillarum browni	California least tern	FE/SE, FP County Group 1 MSCP NE MSCP Covered	Occurs locally along California coastal regions breeding in colonies from San Francisco Bay south to San Diego County. Wintering areas in unknown areas of South America. Nests on relatively bare or sparsely vegetation beaches and mudflats near water. Forage in the bays and estuaries near their colonies, on the ocean near shore, and at inland lakes in the coastal lowland.	**Not Expected.** The Preserve is situated inland and lacks suitable coastal nesting habitats where the species is most commonly found. The closest known breeding colony occurs southwest of the Preserve in the Tijuana Slough National Wildlife Refuge and Border Field State Park at the mouth of the Tijuana River. There are no reported occurrences located in the Preserve.
Tyto alba	barn owl	--/-- County Group 2	Common, yearlong resident of California found in open habitats such as grassland, chaparral, riparian, and wetlands avoiding dense forests and open desert habitats. Also found in urban and suburban areas. Nest in sheltered areas of cliffs or man-made structures, on ledges, in crevices, culverts, nest boxes, and in cavities in trees. Roosts in dense vegetation, cliffs, and buildings and other man-made structures.	**Present.** This species was not detected during the HELIX biological surveys but was detected during avian point count surveys conducted in 2008 and 2012 (County 2013), during 2012 surveys at both Sycamore South and Sycamore North properties, and during 2019 surveys for the San Vicente Connector parcels.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Vireo bellii pusillus	least Bell's vireo	FE/SE County Group 1 MSCP NE MSCP Covered	Breeds within California and northern Baja California, wintering in southern Baja California. In California, breeds along the coast and western edge of the Mojave Desert from Santa Barbara County south to San Diego County, and east to Inyo County, San Bernardino, and Riverside Counties. Breeding habitat consists of early to mid-successional riparian habitat, often where flowing water is present, but also found in dry watercourses within the desert. A structurally diverse canopy and dense shrub cover is required for nesting and foraging. Dominant species within breeding habitat includes cottonwood and willows with mule fat, oaks, and sycamore, and mesquite (*Prosopis glandulosa*) and arrowweed (*Pluchea sericea*) within desert habitats. The species can be tolerant of the presence of non-native species such as tamarisk.	**Low.** This species was not detected during the HELIX biological surveys. This species has been documented in Sycamore Canyon, south of the Preserve boundary within the Santee Lakes Recreation Preserve near the western entrance to Sycamore Canyon. The environmental study area lacks suitable breeding habitat for this species.
Mammals				
Antrozous pallidus	pallid bat	--/SSC County Group 2	Locally common and found at low elevations in California. Associated with arid and open habitats including grasslands, shrublands, woodlands, and forests, often with open water nearby. Prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging. Day roosts in caves, crevices, mines, and occasionally hollow trees and buildings. Appears to be intolerant of most human disturbances, being mostly absent from urban and suburban areas.	**Present.** This species was not detected during the HELIX biological surveys but was documented within the Preserve during surveys conducted in 2012 (County 2013). Individuals were captured in the 2015 Northern Addition.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Chaetodipus californicus femoralis	Dulzura pocket mouse	--/SSC County Group 2	Variety of habitats including coastal scrub, chaparral, and grasslands in San Diego County. Associated with grass-chaparral edges	**Present.** Suitable grassland habitat is present onsite, but no sign of this species was observed during the HELIX biological surveys. One individual was captured during the small mammal trapping program conducted in 2008 (County 2013) as well as during the 2012 surveys of the Sycamore North addition, during the 2016 surveys of the 2015 Northern and Southern Additions, and during the 2019 surveys of the San Vicente Connector parcels.
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	--/SSC County Group 2	Occurs throughout southwestern California from western Riverside County to northern Baja California at elevations below 6,000 feet. Inhabits coastal sage scrub, grasslands, and chaparral communities, and generally exhibits a strong microhabitat affinity for moderately gravelly and rocky substrates. Forage for seeds from California sagebrush, California buckwheat, lemonade berry, and grasses under shrub and tree canopies, or around rock crevices.	**Present.** This species was not detected during the HELIX biological surveys, but nine individuals were captured during the small mammal trapping program conducted in 2012 (County 2013) in both the Sycamore South and Sycamore North properties. Individuals were captured in the 2015 Northern Addition adjacent to South Raptor Loop Trail (#3), South Raptor Loop South Trail (#5), and in the southwest of the Preserve adjacent to South of Ridge Trail (#14). Additionally, two individuals were caught in 1992 in upper Sycamore Canyon about 0.5 mile north of Goodan Ranch.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Corynorhinus townsendii	Townsend's big-eared bat	--/SSC County Group 2	Occurs throughout California but distribution is strongly correlated with the availability of caves and cave-like roosting habitat. Found in a variety of habitats with presence of caves or cave-like structures (such as buildings). In San Diego County, presumed absent from coastal areas being found more commonly in historic mining districts and boulder-strewn regions (i.e., Escondido, Lakeside, Dulzura, Jacumba, etc.).	**Present.** This species was observed on the 2015 Northern Addition in 2016 (County 2017) and during the 2019 surveys of the San Vicente Connector parcels (ICF 2021). One adult male was collected approximately 2 miles northwest of the Preserve at Sycamore Canyon Road, 1.5 miles west of Goat Peak.
Dipodomys stephensi	Stephens' kangaroo rat	FE/ST County Group 1 Draft NC MSCP Covered	Found in sparsely vegetated annual grassland and sage scrub communities with loose, friable, well-drained soil.	**Not Expected.** This species was not detected during the HELIX biological surveys. Annual grassland and sage scrub were present within the study area, but soils were not loose and well-drained. There are no reported occurrences located in the Preserve. Individuals have been documented approximately 6 miles north of the Preserve in the Ramona Grasslands Preserve.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Eumops perotis californicus	western mastiff bat	--/SSC County Group 2	In California, the species occurs from Monterey County to San Diego County from the coast eastward to the Colorado Desert. Found in open, semi-arid to arid habitats including coastal and desert scrub, grasslands, woodlands, and palm oases. Prefers to roost in high situations above the ground on vertical cliffs, rock quarries, outcrops of fractured boulders, and occasionally tall buildings.	**Present.** This species was detected within the Southern Parcel during the 2019 baseline biological surveys (HELIX 2020). Additionally, this species has been documented during wildlife surveys conducted in 2008 in both the Sycamore South and Sycamore North properties (County 2013) and the 2015 Northern Addition. Individuals have also been documented approximately 4 miles north of the Preserve in Dos Picos County Park.
Lasiurus blossevillii	western red bat	--/SSC County Group 2	In California, the species is locally common occurring from Shasta County south to San Diego County and west of the Sierra Nevada/Cascade Range and deserts. Mainly occurs in riparian woodlands populated by willows, cottonwoods, sycamores, and oak trees but can be found in non-native vegetation such as tamarisk, eucalyptus, and orchards. Primarily roosts in trees preferring heavily shaded areas which are open underneath.	**Present.** This species was not detected during the HELIX biological surveys but was documented during wildlife surveys conducted in 2008 and 2012 in both the Sycamore South and Sycamore North properties. This species was also observed on the 2015 Northern and Southern Additions (County 2017) in 2016. This species was observed within undeveloped land in the 2015 Northern Addition adjacent to an area proposed for development of new trails.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Lasiurus xanthinus	western yellow bat	--/SSC	Occurs within wooded areas and desert scrub. Roosts in foliage, particularly thorny vegetation, palms, and other desert riparian habitats. Ranges from southern Santa Barbara County south (on the coastal slope) to the vicinity of San Quintin, Baja California.	**Present.** This species was not detected during the HELIX biological surveys but were documented during wildlife surveys conducted in 2008 and 2012 in both the Sycamore South and Sycamore North properties. This species was also observed on the 2015 Northern and Southern Additions (County 2017) in 2016. This species was observed adjacent to the South of Ridge Trail (#15) and within undeveloped land in the 2015 Northern Addition in an area proposed for development of new trails.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	--/SSC County Group 2	Occurs along the coastal regions of southern California south to northern Baja California. Found in arid regions preferring grasslands, agricultural fields, and sparse scrub. Typically absent from areas with high-grass or dense brush, such as closed-canopy chaparral, primarily occupying short-grass and open scrub habitats.	**Present.** This species was detected within the northwestern portion of Southern Parcel during the 2019 baseline biological surveys (HELIX 2020). Additionally, this species has been documented during wildlife surveys conducted in 2008 and 2012 (County 2013), at the eastern edge of the 2015 Northern Addition, and in the southern San Vicente Connector parcel in 2019. Individuals have been also been documented south of the Preserve in Fanita Ranch and west of the Preserve in Beeler Canyon.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Macrotus californicus	California leaf-nosed bat	--/SSC County Group 2	Prefers rocky, rugged terrain; roosts by day in caves, abandoned mines, and tunnels. Forages over nearby flats and washes.	**Low.** This species was not detected during the HELIX biological surveys. Although the Preserve contains suitable foraging habitat, suitable roosting habitat does not occur onsite. There are no reported occurrences located within the Preserve.
Myotis ciliolabrum	western small-footed myotis	--/-- County Group 2	Found throughout California occurring in desert, chaparral, riparian areas, and forests. Presence of riparian areas and waters appears to be important in distribution. Strongly associated with chaparral and montane habitats in San Diego County. Roosts solitarily or in small numbers in rocky crevices, caves, mines, snags, buildings, and bridges.	**Present.** This species detected within the Southern Parcel adjacent to Clark Canyon Creek during the 2019 baseline biological surveys (HELIX 2020). Additionally, this species has been documented during wildlife surveys conducted in 2008 and 2012 in the northern and southern portions of the Preserve. This species was also observed on the 2015 Northern and Southern Additions (County 2017) in 2016. This species was observed adjacent to the South of Ridge Trail (15) and adjacent to South Raptor Loop Trail (#3).

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Myotis yumanensis	Yuma myotis	--/-- County Group 2	Widespread in California but uncommon in the Mojave and Colorado Deserts, except in the mountain ranges bordering Colorado River Valley. Found in a variety of habitats including juniper and riparian woodlands, riparian forests, and desert regions where bodies of water (i.e., rivers, streams, ponds, lakes, etc.) are present. Closely associated with water which it uses for foraging and sources of drinking water. Roosts in caves, attics, buildings, mines, underneath bridges, and other similar structures.	**Present.** This species was detected within the Southern Parcel adjacent to Clark Canyon Creek during the 2019 baseline biological surveys (HELIX 2020). Additionally, this species has been documented during wildlife surveys conducted in 2008 and 2012 in the northern and southern portions of the Preserve. This species was also observed on the 2015 Northern and Southern Additions (County 2017) in 2016. This species was observed adjacent to the South of Ridge Trail (15), and adjacent to South Raptor Loop Trail (#3).

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Neotoma lepida intermedia	San Diego desert woodrat	--/SSC County Group 2	Occurs along the coastal regions of California being found as far north as San Luis Obispo County, south to San Diego County, and in the western portions of San Bernardino and Riverside Counties. Inhabits a variety of shrub and desert habitats such as coastal sagebrush scrub, chaparral, pinyon-juniper woodland, and Joshua tree woodland among others. Often associated with rock outcroppings, boulders, cacti patches, and areas with dense understories. Construct dens used for shelter, food storage, and nesting around rock outcroppings and cacti using various materials such as twigs, sticks, and other debris.	**Present.** This species detected within the Southern Parcel during the 2019 baseline biological surveys (HELIX 2020). Additionally, 12 individuals were captured during the small mammal trapping program conducted in 2008, and 7 individuals were captured during the small mammal trapping program conducted in 2012 (County 2013). The individuals were documented in the northern and southern portions of the Preserve. This species was also observed on the 2015 Northern and Southern Additions (County 2017) in 2016 and during the 2019 surveys of the San Vicente Connector parcels. Woodrat middens were not observed within any existing informal trails or in undeveloped areas proposed for development of trails. Previous recorded occurrences in the Preserve along Slaughterhouse Canyon and south of the Preserve in Fanita Ranch.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Nyctinomops femorosaccus	pocketed free-tailed bat	--/SSC County Group 2	Rare in California occurring from Los Angeles County eastwards to San Bernardino County, and southwards to San Diego County. Closely associated with their preferred roosting habitats consisting of vertical cliffs, quarries, and rocky outcrops. Sometimes roosts under tiled roofs and observed utilizing bat boxes. Habitat generalists foraging in grasslands, shrublands, riparian areas, oak woodlands, forests, meadows, and ponds favoring larger water bodes for drinking.	**Present.** This species was detected within the Southern Parcel during the 2019 baseline biological surveys (HELIX 2020). Additionally, this species has been documented within the northern and southern portions of the Preserve during wildlife surveys conducted in 2008 and 2012 (County 2013). This species was also observed on the 2015 Northern and Southern Additions (County 2017) in 2016 and during the 2019 surveys of the San Vicente Connector parcels. The observation occurred within Diegan coastal sage scrub habitat within undeveloped lands in the south of the 2015 Northern Addition. Additionally, individuals have been documented approximately four miles west of the Preserve in Poway.
Nyctinomops macrotis	big free-tailed bat	--/SSC County Group 2	Rare in California with species found in urban areas of San Diego County. Closely associated with their preferred roosting habitats consisting of vertical cliffs, quarries, and rocky outcrops. Also roosts in buildings and occasionally holes in trees. Associated with coastal and desert scrub, forests, riparian zones, and montane woodlands. Probably does not breed in California.	**Not Expected.** This species was not detected during the HELIX biological surveys. There are no reported occurrences located in the Preserve. Individuals have been documented approximately 4 miles south of the Preserve in Lakeside.

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Odocoileus hemionus	southern mule deer	--/-- County Group 2 MSCP Covered	Found throughout California with the species lacking from only completely urbanized areas and the desert floor. Distribution determined by vegetation type, water availability, and quality and quantity of foraging habitat. Inhabits a wide array of habitats from grasslands, meadows, coastal sage scrub, chaparral, riparian and montane forests. Crepuscular activity and movements are along routes that provide the greatest amount of protective cover.	**Present**. Southern mule deer were documented throughout the original Preserve in 2008 and are known to use the wildlife corridors along SR-67 to the east and beneath Scripps Poway Parkway to the north. Mule deer were observed on wildlife cameras installed at both the Sycamore South and Sycamore North properties in 2012, and tracks have been observed throughout both of these properties (County 2013). This species was also detected within the 2015 Northern and Southern Additions during 2016 surveys; however, due to the lack of permanent water within these parcels, mule deer likely forage, seek shelter, and move through them en route to areas with fresh water. This species was also detected during the Southern Parcel 2019 baseline biological surveys adjacent to Clark Canyon Creek, and in the San Vicente Connector parcels in 2019. Suitable habitat for this species occurs throughout the Preserve; however, mule deer have not been documented bedding within the survey area during biological surveys

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Perognathus longimembris pacificus	Pacific pocket mouse	FE/SSC County Group 1	Historically occurred in coastal southern California from Los Angeles County south to San Diego County. Current distribution is within 1 mile of the coast with three known populations still present: Dana Point Headlands (Orange County, San Mateo Creek (northern San Diego County), and Camp Pendleton (southern San Diego County). Occurs on fine-grained, sandy or gravelly substrates in coastal strand, coastal dunes, river alluvium, and coastal sage scrub growing on marine terraces.	**Not Expected.** This species was not detected during the HELIX biological surveys. While the species historically occurred throughout southern California, it is now believed to be extirpated based on lack of positive findings during survey efforts in the mid-1990's (Tremor 2017). There are no reported occurrences located in the Preserve.
Puma concolor	Mountain lion	--/SSC County Group 2 MSCP Covered	Riparian woodland, forest, scrub, chaparral, grassland, and desert, with rugged terrain being especially important for movements throughout and between territories. Primarily preys on mule deer, but also consumes bighorn sheep and smaller prey including coyotes, skunks, and raccoons.	**Present.** This species was not detected during the HELIX biological surveys, but park rangers have previously reported observations of this species within the Preserve in 2008 (County 2013).

Species Name	Common Name	Status	Habitat Associations	Potential to Occur
Taxidea taxus	American badger	--/SSC	Open plains and prairies, farmland, and sometimes edges of woods. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows. Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	**Not Expected.** This species was not detected during the HELIX biological surveys. There are no reported occurrences located in the Preserve.

[1] Listing codes are as follows: FE = Federally Endangered; FT = Federally Threatened; FC= Federal Candidate species; BCC = Birds of Conservation Concern; SE = State of California Endangered; FP = State of California Fully Protected; WL = State of California Wait-Listed; SSC = State of California Species of Special Concern.

[2] County of San Diego Sensitive Animal List: Group 1 = Animals that have a very high level of sensitivity, either because they are listed as threatened or endangered or because they have very specific natural history requirements that must be met; Group 2 = Animals that are becoming less common, but are not yet so rare that extirpation or extinction is imminent without immediate action; these species tend to be prolific within their suitable habitat types.

Not Expected - There are no present or historical records of the species occurring on or in the immediate vicinity, (within three miles) of the Project Site and the diagnostic habitats strongly associated with the species do not occur on or in the immediate vicinity of the Site.

Low Potential to Occur - There is a historical record of the species in the vicinity of the Project Site and potentially suitable habitat on Site, but existing conditions, such as density of cover, prevalence of non-native species, evidence of disturbance, limited habitat area, isolation, substantially reduce the possibility that the species may occur. The Site is above or below the recognized elevation limits for this species.

Moderate Potential to Occur - The diagnostic habitats associated with the species occur on or in the immediate vicinity of the Project Site, but there is not a recorded occurrence of the species within the immediate vicinity (within three miles). Some species that contain extremely limited distributions may be considered moderate, even if there is a recorded occurrence in the immediate vicinity.

High Potential to Occur - There is both suitable habitat associated with the species and a historical record of the species on or in the immediate vicinity of the Project Site (within three miles).

Present - The species was observed on the Project Site at the time of the survey or during a previous biological survey.

Appendix E

Explanation of Status Codes for Plant and Animal Species

FEDERAL AND STATE CODES

U.S. Fish and Wildlife Service (USFWS)

BCC Bird of Conservation Concern
FE Federally listed endangered
FT Federally listed threatened

USFWS Birds of Conservation Concern (BCC)

The primary legal authority for Birds of Conservation Concern (2008) is the Fish and Wildlife Conservation Act of 1980 (FWCA), as amended. Other authorities include the Endangered Species Act, Fish and Wildlife Act (1956) and 16 USC §701. A FWCA 1988 amendment (Public Law 100-653, Title VIII) requires the Secretary of the Interior through the USFWS to "identify species, subspecies, and populations of all migratory non-game birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act of 1973." The 2008 BCC report is the most recent effort by the USFWS to carry out this proactive conservation mandate.

The BCC report aims to identify accurately the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent the USFWS' highest conservation priorities and draw attention to species in need of conservation action. The USFWS hopes that by focusing attention on these highest priority species, the report will promote greater study and protection of the habitats and ecological communities upon which these species depend, thereby ensuring the future of healthy avian populations and communities. Birds of Conservation Concern 2008 lists are available online at https://www.fws.gov/birds/management/managed-species/birds-of-

California Department of Fish and Wildlife (CDFW)

SCE State candidate for listing as endangered
SCT State candidate for listing as threatened
SE State listed endangered
SR State listed rare
ST State listed threatened
SSC State species of special concern
WL Watch List
FP Fully Protected species refers to all vertebrate and invertebrate taxa of concern to the 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.
Special Animal Refers to all vertebrate and invertebrate taxa of concern to the Natural Diversity Database regardless of legal or protection status.

California Environmental Quality Act (CEQA)

For plants with no current federal or state legal standing, "CEQA" refers to the fact that under the Act, impacts to species may be found significant under certain circumstances (e.g., the species are regionally sensitive and/or are protected by a local policy, ordinance, or habitat conservation plan; or the impact involves interference with certain movements or migrations, with wildlife corridors or with nursery sites).

OTHER CODES AND ABBREVIATIONS

California Native Plant Society California Rare Plant Rank (CRPR) Codes

Lists

1A = Presumed extirpated in California and either rare or extinct elsewhere. Eligible for state listing.

1B = Rare, threatened, or endangered in California and elsewhere. Eligible for state listing.

2A = Presumed extirpated in California but common elsewhere. Eligible for state listing.

2B = Rare, threatened, or endangered in California but more common elsewhere. Eligible for state listing.

3 = Review List: Plants about which more information is needed. Some eligible for state listing.

4 = Watch List: Plants of limited distribution. Needs monitoring for changes in population status. Few (if any) eligible for state listing.

List/Threat Code Extensions

.1 = Seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)

.2 = Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

.3 = Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

A "CA Endemic" entry corresponds to those taxa that only occur in California.

All List 1A (presumed extinct in California) and some List 3 (need more information; a review list) plants lacking threat information receive no extension. Threat Code guidelines represent only a starting point in threat level assessment. Other factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Code.

Appendix F

2022 Hermes Copper Butterfly Survey Report

HELIX Environmental Planning, Inc.
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August 4, 2022 000187.00006.005

Ms. Stacey Love
U.S. Fish and Wildlife Service
2177 Salk Ave., Suite 250
Carlsbad, CA 92008

Subject: 2022 Hermes Copper Butterfly (*Lycaena hermes*) Survey Report for the County of San Diego Sycamore Canyon/Goodan Ranch Preserve Public Access Plan and CEQA Project

Dear Ms. Love:

This letter presents the results of a County of San Diego (County) protocol presence/absence survey for the federally listed as threatened Hermes copper butterfly (*Lycaena hermes*; Hermes) conducted by HELIX Environmental Planning, Inc. (HELIX) for the proposed Sycamore Canyon/Goodan Ranch Preserve Public Access Plan (PAP) and CEQA Project (project). This report describes the methods used to perform the survey and the results.

PROJECT LOCATION

The proposed project is a PAP for a non-motorized multi-use trail system in the 2,711-acre County-owned Sycamore Canyon/Goodan Ranch Preserve (Preserve). Implementation of the PAP would provide approximately 22 miles of trails along 35 segments for non-motorized multi-use routes for hikers, mountain bikers, and horseback riders. The Preserve is located within the Lakeside Community Planning Area of the unincorporated County, to the northeast of the Marine Corps Air Station Miramar, southeast of the City of Poway, west of State Route 67, and approximately two miles north of the City of Santee (Figure 1, *Regional Location*). The Preserve is located within Township 14 South, Range 1 West, Sections 21, 22, 23, 26, 27, 28, 33, 34, and 35, and Township 15 South, Range 1 West, Sections 2, 3, and 4 of the United States Geological Survey (USGS) 7.5-minute San Vicente Reservoir Quadrangle (Figure 2, *USGS Topography*). The project study area includes approximately 29 miles of existing and proposed trails that traverse the entirety of the Preserve (Figure 3, *Aerial Vicinity*). A portion of the Preserve, approximately 506 acres along the eastern and southern boundary, occurs within U.S. Fish and Wildlife Service (USFWS)-designated critical habitat for the Hermes (Figure 3). The survey was conducted on the approximately 0.41 acre of suitable habitat present within potential impact areas, herein referred to as the survey area.

METHODS

As specified in the December 21, 2021 USFWS Federal Register (Vol. 86, No. 242 Rule and Regulations), this survey was conducted in accordance with the survey guidelines outlined in Attachment B of the County's Report Format and Content Requirements for Biological Resources (County 2010), with the exception that surveys were not initiated until the first week of June and once Hermes were observed flying (Anna Prowant, email correspondence to HELIX, June 6, 2022). Surveys continued every eight to fourteen days until the first full week of July.

A habitat assessment to map potential Hermes habitat was completed in June 2020 and June 2022 prior to focused surveys. Surveys were conducted in potential impact areas identified as suitable for Hermes, which is defined as any woody (mature) spiny redberry shrub (*Rhamnus crocea*) with California buckwheat (*Eriogonum fasciculatum*) within 15 feet. To help visualize the survey area, each spiny redberry within 15 feet of California buckwheat was mapped using a hand-held Global Positioning System (GPS) unit (Figure 4, *2022 Spiny Redberry [Rhamnus crocea] with California Buckwheat [Eriogonum fasciculatum]*). A 15-foot buffer was electronically drawn around these points as an approximation of potential Hermes copper habitat. In total, the project's Hermes survey area encompassed 0.41 acre of potential Hermes habitat comprising Diegan coastal sage scrub, coastal sage-chaparral transition, non-native grassland, and disturbed habitat (i.e., unpaved trails).

Surveys were conducted when temperatures were between 70 and 95 degrees Fahrenheit (F), outside of adverse weather conditions, such as fog, drizzle, rain, cloud cover greater than 25 percent, or sustained winds greater than 15 miles per hour measured four to six feet above ground level. Surveys were conducted at an average walking rate no greater than 10 to 15 acres per hour. The flight season survey was not conducted concurrently with surveys for other species and was conducted by qualified biologists. HELIX Biologists Benjamin Rosenbaum and Laura Moreton have experience conducting butterfly surveys and are authorized to conduct surveys for the Quino checkerspot on HELIX's Threatened and Endangered Species Permit TE-778195-14 and have been conducting protocol Hermes surveys since 2014.

Surveys were conducted by walking through potential habitat and identifying all butterflies observed by sight and with the aid of binoculars. Hermes habitat was mapped with the aid of a hand-held GPS unit and mapped on an aerial photograph.

Identification of butterflies was based on personal knowledge, museum specimens, online resources such as Butterflies of America (https://www.butterfliesofamerica.com/index.html), and field guides by Shiraiwa (2009) and Glassberg (2001). Other nomenclature for this report follows Holland (1986) and Oberbauer (2008) for vegetation communities; Baldwin et al. (2012) and the Jepson eFlora (Jepson Flora Project 2022) for plants; and Pelham (2020) and Davenport (2018) for butterflies.

If Hermes were observed during the survey, formal habitat mapping of occupied Hermes habitat and potential Hermes copper habitat would be required within the vicinity of the Hermes sighting. Additional data for the number of individual spiny redberry or California buckwheat, native and non-native plant species diversity and cover, and the acreage of occupied and potential Hermes habitat would also be required.

RESULTS

Dates, times, and weather conditions at the beginning and end of each of the surveys are presented in Attachment A, *Survey Information*. Copies of field forms are provided as Attachment B, *Survey Forms*. Field forms include host plants, nectar resources, and counts of butterfly species observed. A list of total butterflies observed during the 2022 Hermes surveys is included as Attachment C*, Butterfly Checklist*.

The project's Hermes survey area encompassed 0.41 acre of potential Hermes habitat, including 26 spiny redberry within 15 feet of California buckwheat. Four potential nectar resources were noted within the survey area: California buckwheat, chamise (*Adenostoma fasciculatum*), slender sunflower (*Helianthus gracilis*), and short-pod mustard (*Hirschfeldia incana*). Nectar resources within the survey area were relatively abundant during the survey effort.

A total of 169 butterflies representing at least nine species were recorded within the survey area during the surveys (Attachment C). The most common butterflies observed were Behr's metalmark (*Apodemia virgulti*) and Acmon blue (*Icaricia acmon*).

No Hermes were observed during the 2022 surveys within the survey area. Thus, there was no occupied Hermes habitat on-site, and additional habitat mapping and data collection were not required. The species was presumed to be extirpated from the Preserve following the 2003 Cedar Fire (USFWS 2021). Since Hermes has been historically documented within one mile of the survey area, this negative survey report will be valid for one year (County 2010).

CERTIFICATION

We certify that the information in this survey report and enclosed exhibit fully and accurately represents our work. Please contact Benjamin Rosenbaum or Shelby Howard at (619) 462-1515 should you have any questions.

Sincerely,

Benjamin Rosenbaum
Biology Project Manager

Laura Moreton
Senior Scientist

Attachments:

Attachment A:	Survey Information
Attachment B:	Survey Forms
Attachment C:	Butterfly Checklist
Figure 1:	Regional Location
Figure 2:	USGS Topography
Figure 3:	Aerial Vicinity
Figure 4:	2022 Spiny Redberry (*Rhamnus croce*a) with California Buckwheat (*Eriogonum fasciculatum*)

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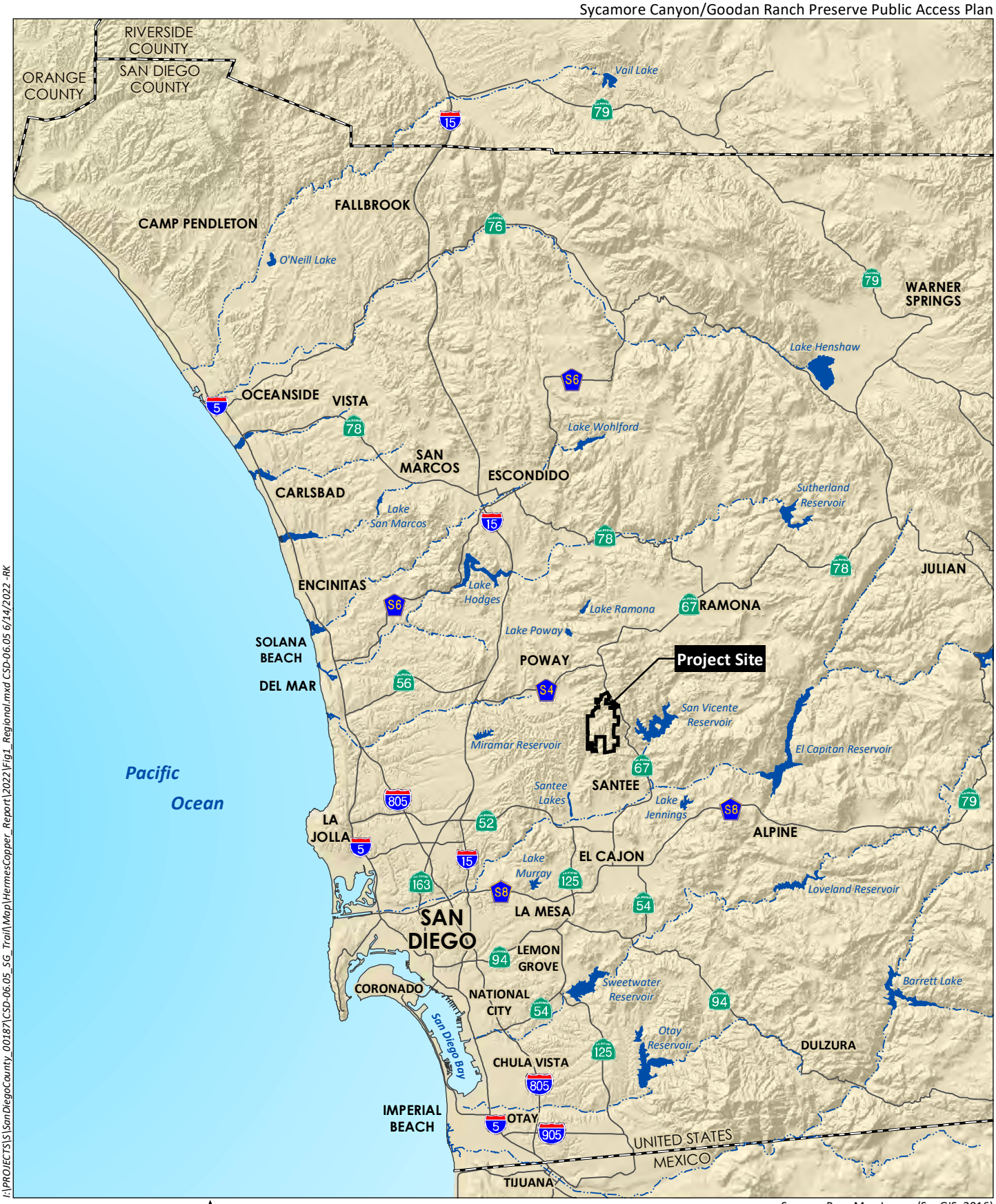
Figures



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0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

Figure 1

Preserve Boundary

Proposed and Existing Trails

Source: San Vicente Reservoir 7.5' Quad (USGS)

0 2,000 Feet

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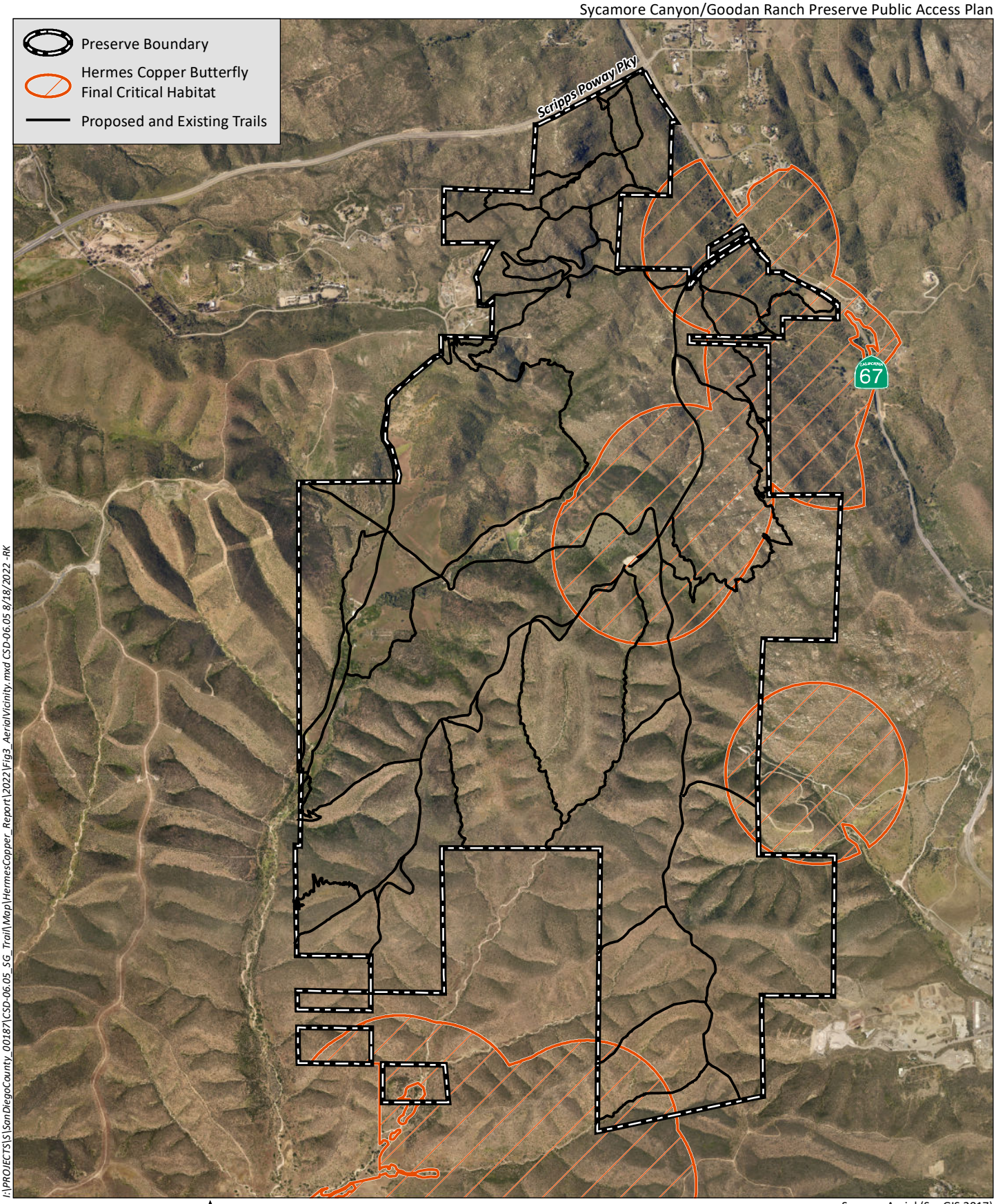
HELIX Environmental Planning

USGS Topography

Figure 2

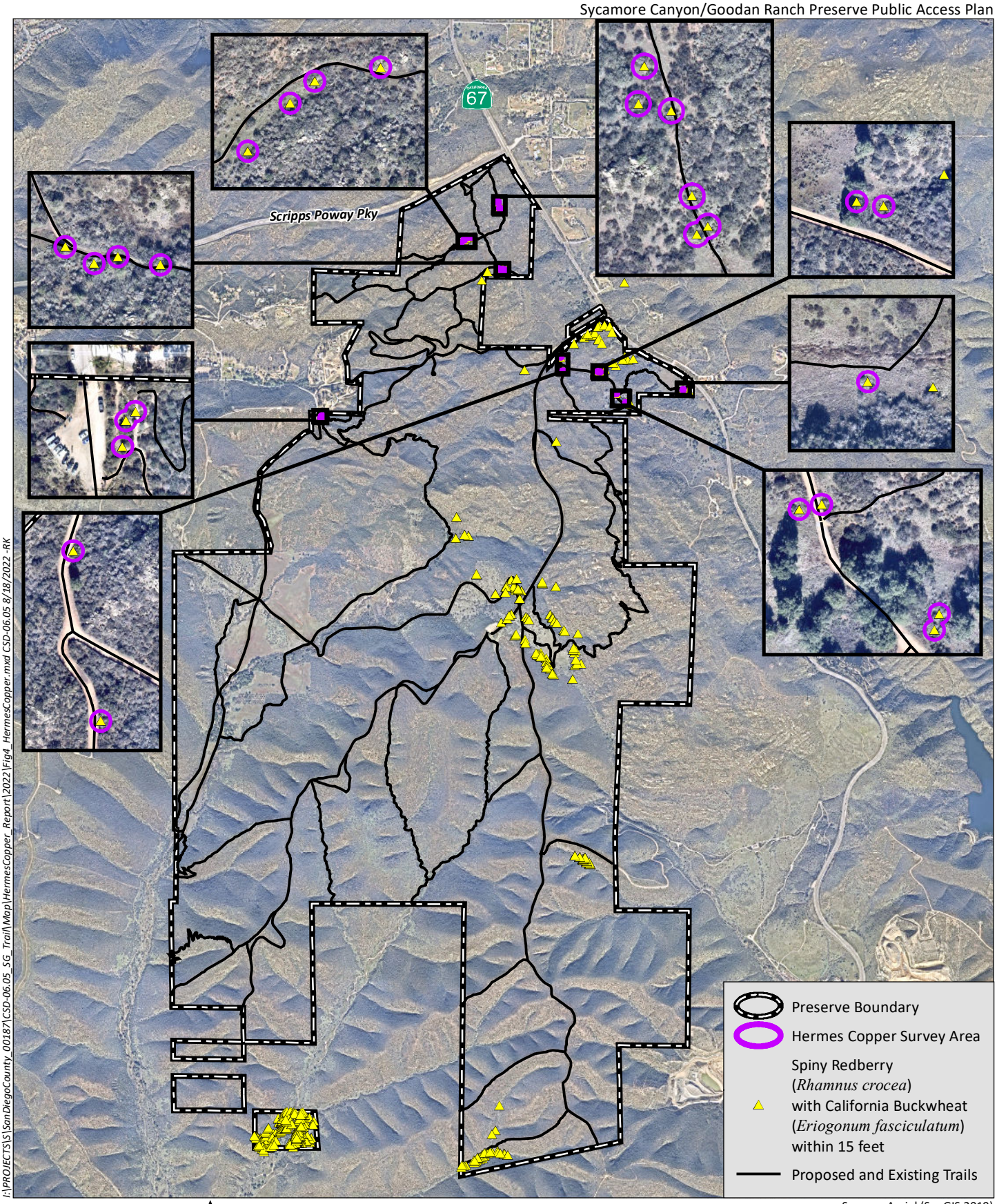


Source: Aerial (SanGIS 2017)

HELIX Environmental Planning

Aerial Vicinity

Figure 3



0 2,500 Feet

Source: Aerial (SanGIS 2019)

HELIX Environmental Planning

2022 Spiny Redberry (*Rhamnus crocea*) with California Buckwheat (*Eriogonum fasciculatum*)

Figure 4

Attachment A

Survey Information

Site Visit	Date	Biologist(s)	Acres	Acres/ Hour	Time (Start/Stop)	Weather Conditions		Results†
						Start	End	
Habitat Assessment	6/16/20	Benjamin Rosenbaum Amy Mattson Garrett Huffman	N/A	N/A	N/A	N/A	N/A	N/A
Habitat Assessment	6/17/20	Benjamin Rosenbaum Amy Mattson Garrett Huffman	N/A	N/A	N/A	N/A	N/A	N/A
Habitat Assessment	6/19/20	Benjamin Rosenbaum Amy Mattson Garrett Huffman	N/A	N/A	N/A	N/A	N/A	N/A
Habitat Assessment	6/22/20	Benjamin Rosenbaum	N/A	N/A	N/A	N/A	N/A	N/A
Habitat Assessment	6/7/22	Benjamin Rosenbaum	N/A	N/A	N/A	N/A	N/A	N/A
1	6/10/22	Benjamin Rosenbaum	0.41	0.1	0910/1320	73°F, wind 1-2 mph, 0% clouds	89°F, wind 1-3 mph, 0% clouds	No Hermes Observed
2	6/20/22	Benjamin Rosenbaum	0.41	0.1	0830/1300	73°F, wind 0-1 mph, 0% clouds	90°F, wind 0-1 mph, 0% clouds	No Hermes Observed
3	6/29/22	Benjamin Rosenbaum	0.41	0.1	0830/1245	75°F, wind 0-1 mph, 0% clouds	90°F, wind 0-1 mph, 0% clouds	No Hermes Observed
4	7/7/22	Laura Moreton	0.41	0.1	1030/1430	77°F, wind 1-2 mph, 0% clouds	81°F, wind 1-2 mph, 0% clouds	No Hermes Observed

***** Total Survey Time = 13 hours; Survey Rate = 0.1 acres per hour.

† Hermes = Hermes copper butterfly (*Lycaena hermes*).

Attachment B

Survey Forms

2022 Hermes Copper Butterfly Survey Form

Surveyor(s):	Benjamin Rosenbaum			**Date:**	June 10, 2022		
Site Name:	Sycamore Canyon/Goodan Ranch Preserve			**Site Visit No:**	1		
Area(s) Surveyed	N/A	**Acres Surveyed**	0.41	**Survey Time:**	3.2	**Acres per Hour:**	0.1
Other Surveyors Present:	N/A						

Field Conditions				
	Time (24 hr)	**Temperature (˚F)**	**Wind Speed (mph)**	**Cloud Cover (%)**
Start	0850	73	1-2	0
End	0910	76	1-2	0
Start	0950	76	1-3	0
End	1120	81	1-3	0
Start	1200	88	1-3	0
End	1240	88	1-3	0
Start	1250	88	1-3	0
End	1320	89	1-3	0

Vegetation Communities Surveyed (inc. dominant spp.)

Diegan coastal sage scrub, coastal sage-chaparral scrub, granitic southern mixed chaparral, non-native grassland, disturbed habitat

Host Plants	**Obs.**	**Nectar Plants**	**Obs.**
Spiny redberry (*Rhamnus crocea*) with buckwheat (*Eriogonum fasciculatum*) within 15 feet	X	buckwheat	X
Spiny redberry (*Rhamnus crocea*) without buckwheat (*Eriogonum fasciculatum*) within 15 feet	X	chamise (*Adenostoma fasciculatum*)	X
		bush sunflower (*Encelia californica*)	
		slender sunflower (*Helianthus gracilentus*)	X
		poison oak (*Toxicodendron diversilobum*)	
		short-pod mustard (*Hirschfeldia incana*)	X
Host Plant Mapping Updated (*circle*) (Yes) No		**New Area or Existing Area** (*circle*) New Existing (Both)	
Species updated (list)			

Butterfly Species	**No.**	**Butterfly Species**	**No.**
Family Papilionoidea (Parnassians and Swallowtails)		**Family Nymphalidae (Brushfooted Butterflies)**	
Pale Swallowtail (*Papilio eurymedon*)		***Subfamily Nymphalinae (True Brushfoots)***	
Western Tiger Swallowtail (*P. rutulus rutulus*)		Leanira Checkerspot (*Chlosyne leanira*)	
Anise Swallowtail (*P. zelicaon*)		California Patch (*C. californica*)	
Family Pieridae (Whites and Sulphurs)		Gabb's Checkerspot (*C. gabbii gabbii*)	
Sleepy Orange (*Abaeis nicippe*)		Chalcedon Checkerspot (*Euphydryas chalcedona*)	
Desert Orangetip (*Anthocharis cethura*)		Quino Checkerspot (*E. editha quino*)	
Pacific Sara Orangetip (*A. sara sara*)		Common Buckeye (*Junonia coenia grisea*)	
Orange Sulphur (*Colias eurytheme*)		Mourning Cloak (*Nymphalis antiopa antiopa)*	
Cloudless Sulphur (*Phoebis sennae*)		California Tortoiseshell (*N. californica californica*)	
Cabbage White (*Pieris rapae*)		Mylitta Crescent (*Phyciodes mylitta*)	
Becker's White (*Pontia beckerii*)		West Coast Lady (*Vanessa annabella*)	
Checkered (Common) White (*P. protodice*)		Red Admiral (*V. atalanta rubria*)	
Spring White (*P. sisymbrii*)		Painted Lady (*V. cardui*)	
unidentified white	4	American (Virginia) Lady (*V. virginiensis*)	
unidentified sulphur		unidentified lady (*Vanessa* sp.)	
Family Lycaenidae (Gossamer-wing Butterflies)		***Subfamily Limenitidinae (Admirals and Relatives)***	
Subfamily Theclinae (Hairstreaks)		California Sister (*Adelpha californica*)	
Great Purple Hairstreak (*Atlides halesus corcorani*)		Lorquin's Admiral (*Limenitis lorquini*)	
Western Brown Elfin (*Callophrys augustinus iroides*)		***Subfamily Satyrinae (Satyrs)***	
Bramble (Perplexing) Hairstreak (C. *dumetorum perplexa*)		California Common Ringlet (*Coenonympha tullia california*)	
Gray Hairstreak (*Strymon melinus pudica*)		***Subfamily Danainae (Monarchs)***	
Subfamily Polyommatinae (Blues)		Monarch (*Danaus plexippus plexippus*)	
Western Pygmy-Blue (*Brephidium exilis*)		Queen (*Danaus gil2ippus thersippus*)	
Western Tailed Blue (*Cupido amyntula amyntula*)		**Family Hesperiidae (Skippers)**	
Bernardino Blue (*Euphilotes bernardino*)		Funereal Duskywing (*Erynnis funeralis*)	2
Southern California Silvery Blue (*Glaucopsyche lygdamus australis*)		Mournful Duskywing (*E. tristis tristis*)	1
Ceraunus (Edward's) Blue (*Hemiargus ceraunus gyas*)		Fiery Skipper (*Hylephila phyleus*)	
Acmon Blue (*Icaricia acmon*)	27	White Checkered-Skipper (*Pyrgus albescens*)	
Marine Blue (*Leptotes marina*)		unidentified skipper	
unidentified blue		**Other**	
Family Riodinidae (Metalmarks)		unidentified butterfly	
Behr's Metalmark (*Apodemia virgulti*)	19		
Wright's Metalmark (*Calephelis wrighti*)			
Column Subtotal	**50**	**Column Subtotal**	**3**
		Total	**53**

2022 Hermes Copper Butterfly Survey Form

Surveyor(s): Benjamin Rosenbaum **Date:** June 20, 2022
Site Name: Sycamore Canyon/Goodan Ranch Preserve **Site Visit No:** 2
Area(s) Surveyed N/A **Acres Surveyed** 0.41 **Survey Time:** 2.8 **Acres per Hour:** 0.1
Other Surveyors Present: N/A

Field Conditions				
	Time (24 hr)	**Temperature (˚F)**	**Wind Speed (mph)**	**Cloud Cover (%)**
Start	0830	73	0-1	0
End	0850	73	0-1	0
Start	0930	75	0-1	0
End	1100	84	0-1	0
Start	1145	90	0-1	0
End	1215	90	0-1	0
Start	1230	90	0-1	0
End	1300	90	0-1	0

Vegetation Communities Surveyed (inc. dominant spp.)
Diegan coastal sage scrub, coastal sage-chaparral scrub, granitic southern mixed chaparral, non-native grassland, disturbed habitat

Host Plants	**Obs.**	**Nectar Plants**	**Obs.**
Spiny redberry (*Rhamnus crocea*) with buckwheat (*Eriogonum fasciculatum*) within 15 feet	X	buckwheat	X
Spiny redberry (*Rhamnus crocea*) without buckwheat (*Eriogonum fasciculatum*) within 15 feet	X	chamise (*Adenostoma fasciculatum*)	X
		bush sunflower (*Encelia californica*)	
		slender sunflower (*Helianthus gracilentus*)	
		poison oak (*Toxicodendron diversilobum*)	
		short-pod mustard (*Hirschfeldia incana*)	X
Host Plant Mapping Updated (*circle*) (Yes) No		**New Area or Existing Area** (*circle*) New (Existing) Both	
Species updated (list)			

Butterfly Species	**No.**	**Butterfly Species**	**No.**
Family Papilionoidea (Parnassians and Swallowtails)		**Family Nymphalidae (Brushfooted Butterflies)**	
Pale Swallowtail (*Papilio eurymedon*)		***Subfamily Nymphalinae (True Brushfoots)***	
Western Tiger Swallowtail (*P. rutulus rutulus*)		Leanira Checkerspot (*Chlosyne leanira*)	
Anise Swallowtail (*P. zelicaon*)		California Patch (*C. californica*)	
Family Pieridae (Whites and Sulphurs)		Gabb's Checkerspot (*C. gabbii gabbii*)	
Sleepy Orange (*Abaeis nicippe*)		Chalcedon Checkerspot (*Euphydryas chalcedona*)	
Desert Orangetip (*Anthocharis cethura*)		Quino Checkerspot (*E. editha quino*)	
Pacific Sara Orangetip (*A. sara sara*)		Common Buckeye (*Junonia coenia grisea*)	
Orange Sulphur (*Colias eurytheme*)		Mourning Cloak (*Nymphalis antiopa antiopa)*	
Cloudless Sulphur (*Phoebis sennae*)		California Tortoiseshell (*N. californica californica*)	
Cabbage White (*Pieris rapae*)		Mylitta Crescent (*Phyciodes mylitta*)	
Becker's White (*Pontia beckerii*)		West Coast Lady (*Vanessa annabella*)	
Checkered (Common) White (*P. protodice*)		Red Admiral (*V. atalanta rubria*)	
Spring White (*P. sisymbrii*)		Painted Lady (*V. cardui*)	
unidentified white	10	American (Virginia) Lady (*V. virginiensis*)	
unidentified sulphur		unidentified lady (*Vanessa* sp.)	
Family Lycaenidae (Gossamer-wing Butterflies)		***Subfamily Limenitidinae (Admirals and Relatives)***	
Subfamily Theclinae (Hairstreaks)		California Sister (*Adelpha californica*)	
Great Purple Hairstreak (*Atlides halesus corcorani*)		Lorquin's Admiral (*Limenitis lorquini*)	
Western Brown Elfin (*Callophrys augustinus iroides*)		***Subfamily Satyrinae (Satyrs)***	
Bramble (Perplexing) Hairstreak (C. *dumetorum perplexa*)		California Common Ringlet (*Coenonympha tullia california*)	
Gray Hairstreak (*Strymon melinus pudica*)		***Subfamily Danainae (Monarchs)***	
Subfamily Polyommatinae (Blues)		Monarch (*Danaus plexippus plexippus*)	
Western Pygmy-Blue (*Brephidium exilis*)		Queen (*Danaus gil2ippus thersippus*)	
Western Tailed Blue (*Cupido amyntula amyntula*)		**Family Hesperiidae (Skippers)**	
Bernardino Blue (*Euphilotes bernardino*)		Funereal Duskywing (*Erynnis funeralis*)	2
Southern California Silvery Blue (*Glaucopsyche lygdamus australis*)		Mournful Duskywing (*E. tristis tristis*)	
Ceraunus (Edward's) Blue (*Hemiargus ceraunus gyas*)		Fiery Skipper (*Hylephila phyleus*)	
Acmon Blue (*Icaricia acmon*)	15	White Checkered-Skipper (*Pyrgus albescens*)	
Marine Blue (*Leptotes marina*)		unidentified skipper	
unidentified blue		**Other**	
Family Riodinidae (Metalmarks)		unidentified butterfly	
Behr's Metalmark (*Apodemia virgulti*)	25		
Wright's Metalmark (*Calephelis wrighti*)			
Column Subtotal	**50**	**Column Subtotal**	**2**
		Total	**52**

2022 Hermes Copper Butterfly Survey Form

Surveyor(s): Benjamin Rosenbaum **Date:** June 29, 2022
Site Name: Sycamore Canyon/Goodan Ranch Preserve **Site Visit No:** 3
Area(s) Surveyed N/A **Acres Surveyed** 0.41 **Survey Time:** 3 **Acres per Hour:** 0.1
Other Surveyors Present: N/A

Field Conditions				
	Time (24 hr)	**Temperature (˚F)**	**Wind Speed (mph)**	**Cloud Cover (%)**
Start	0830	75	0-1	0
End	0900	76	0-1	0
Start	0920	80	0-1	0
End	1050	86	0-1	0
Start	1130	89	0-1	0
End	1200	90	0-1	0
Start	1215	90	0-1	0
End	1245	90	0-1	0

Vegetation Communities Surveyed (inc. dominant spp.)
Diegan coastal sage scrub, coastal sage-chaparral scrub, granitic southern mixed chaparral, non-native grassland, disturbed habitat

Host Plants	**Obs.**	**Nectar Plants**	**Obs.**
Spiny redberry (*Rhamnus crocea*) with buckwheat (*Eriogonum fasciculatum*) within 15 feet	X	buckwheat	X
Spiny redberry (*Rhamnus crocea*) without buckwheat (*Eriogonum fasciculatum*) within 15 feet	X	chamise (*Adenostoma fasciculatum*)	
		bush sunflower (*Encelia californica*)	
		slender sunflower (*Helianthus gracilentus*)	
		poison oak (*Toxicodendron diversilobum*)	
		short-pod mustard (*Hirschfeldia incana*)	
Host Plant Mapping Updated (*circle*) Yes (No)		**New Area or Existing Area** (*circle*) New (Existing) Both	
Species updated (list)			

Butterfly Species	**No.**	**Butterfly Species**	**No.**
Family Papilionoidea (Parnassians and Swallowtails)		**Family Nymphalidae (Brushfooted Butterflies)**	
Pale Swallowtail (*Papilio eurymedon*)		***Subfamily Nymphalinae (True Brushfoots)***	
Western Tiger Swallowtail (*P. rutulus rutulus*)		Leanira Checkerspot (*Chlosyne leanira*)	
Anise Swallowtail (*P. zelicaon*)		California Patch (*C. californica*)	
Family Pieridae (Whites and Sulphurs)		Gabb's Checkerspot (*C. gabbii gabbii*)	
Sleepy Orange (*Abaeis nicippe*)		Chalcedon Checkerspot (*Euphydryas chalcedona*)	
Desert Orangetip (*Anthocharis cethura*)		Quino Checkerspot (*E. editha quino*)	
Pacific Sara Orangetip (*A. sara sara*)		Common Buckeye (*Junonia coenia grisea*)	
Orange Sulphur (*Colias eurytheme*)		Mourning Cloak (*Nymphalis antiopa antiopa)*	
Cloudless Sulphur (*Phoebis sennae*)		California Tortoiseshell (*N. californica californica*)	
Cabbage White (*Pieris rapae*)		Mylitta Crescent (*Phyciodes mylitta*)	
Becker's White (*Pontia beckerii*)		West Coast Lady (*Vanessa annabella*)	
Checkered (Common) White (*P. protodice*)		Red Admiral (*V. atalanta rubria*)	
Spring White (*P. sisymbrii*)		Painted Lady (*V. cardui*)	
unidentified white	5	American (Virginia) Lady (*V. virginiensis*)	
unidentified sulphur		unidentified lady (*Vanessa* sp.)	
Family Lycaenidae (Gossamer-wing Butterflies)		***Subfamily Limenitidinae (Admirals and Relatives)***	
Subfamily Theclinae (Hairstreaks)		California Sister (*Adelpha californica*)	
Great Purple Hairstreak (*Atlides halesus corcorani*)		Lorquin's Admiral (*Limenitis lorquini*)	
Western Brown Elfin (*Callophrys augustinus iroides*)		***Subfamily Satyrinae (Satyrs)***	
Bramble (Perplexing) Hairstreak (C. *dumetorum perplexa*)		California Common Ringlet (*Coenonympha tullia california*)	
Gray Hairstreak (*Strymon melinus pudica*)		***Subfamily Danainae (Monarchs)***	
Subfamily Polyommatinae (Blues)		Monarch (*Danaus plexippus plexippus*)	
Western Pygmy-Blue (*Brephidium exilis*)		Queen (*Danaus gil2ippus thersippus*)	
Western Tailed Blue (*Cupido amyntula amyntula*)		**Family Hesperiidae (Skippers)**	
Bernardino Blue (*Euphilotes bernardino*)		Funereal Duskywing (*Erynnis funeralis*)	2
Southern California Silvery Blue (*Glaucopsyche lygdamus australis*)		Mournful Duskywing (*E. tristis tristis*)	
Ceraunus (Edward's) Blue (*Hemiargus ceraunus gyas*)		Fiery Skipper (*Hylephila phyleus*)	
Acmon Blue (*Icaricia acmon*)	2	White Checkered-Skipper (*Pyrgus albescens*)	
Marine Blue (*Leptotes marina*)		unidentified skipper	
unidentified blue		**Other**	
Family Riodinidae (Metalmarks)		unidentified butterfly	
Behr's Metalmark (*Apodemia virgulti*)	15		
Wright's Metalmark (*Calephelis wrighti*)			
Column Subtotal	**22**	**Column Subtotal**	**2**
		Total	**24**

2022 Hermes Copper Butterfly Survey Form

Surveyor(s): Laura Moreton **Date:** July 7, 2022
Site Name: Sycamore Canyon/Goodan Ranch Preserve **Site Visit No:** 4
Area(s) Surveyed N/A **Acres Surveyed** 0.41 **Survey Time:** 4 **Acres per Hour:** 0.1
Other Surveyors Present: N/A

Field Conditions				
	Time (24 hr)	**Temperature (˚F)**	**Wind Speed (mph)**	**Cloud Cover (%)**
Start	1030	77	1-2	0
End	1430	81	1-2	0

Vegetation Communities Surveyed (inc. dominant spp.)
Diegan coastal sage scrub, coastal sage-chaparral scrub, granitic southern mixed chaparral, non-native grassland, disturbed habitat

Host Plants	**Obs.**	**Nectar Plants**	**Obs.**
Spiny redberry (*Rhamnus crocea*) with buckwheat (*Eriogonum fasciculatum*) within 15 feet	X	buckwheat	X
Spiny redberry (*Rhamnus crocea*) without buckwheat (*Eriogonum fasciculatum*) within 15 feet	X	chamise (*Adenostoma fasciculatum*)	
		bush sunflower (*Encelia californica*)	
		slender sunflower (*Helianthus gracilentus*)	
		poison oak (*Toxicodendron diversilobum*)	
		short-pod mustard (*Hirschfeldia incana*)	
Host Plant Mapping Updated (*circle*) Yes (No)		**New Area or Existing Area** (*circle*) New (Existing) Both	
Species updated (list)			

Butterfly Species	**No.**	**Butterfly Species**	**No.**
Family Papilionoidea (Parnassians and Swallowtails)		**Family Nymphalidae (Brushfooted Butterflies)**	
Pale Swallowtail (*Papilio eurymedon*)		***Subfamily Nymphalinae (True Brushfoots)***	
Western Tiger Swallowtail (*P. rutulus rutulus*)		Leanira Checkerspot (*Chlosyne leanira*)	
Anise Swallowtail (*P. zelicaon*)		California Patch (*C. californica*)	
Family Pieridae (Whites and Sulphurs)		Gabb's Checkerspot (*C. gabbii gabbii*)	
Sleepy Orange (*Abaeis nicippe*)		Chalcedon Checkerspot (*Euphydryas chalcedona*)	
Desert Orangetip (*Anthocharis cethura*)		Quino Checkerspot (*E. editha quino*)	
Pacific Sara Orangetip (*A. sara sara*)		Common Buckeye (*Junonia coenia grisea*)	
Orange Sulphur (*Colias eurytheme*)		Mourning Cloak (*Nymphalis antiopa antiopa)*	
Cloudless Sulphur (*Phoebis sennae*)		California Tortoiseshell (*N. californica californica*)	
Cabbage White (*Pieris rapae*)		Mylitta Crescent (*Phyciodes mylitta*)	
Becker's White (*Pontia beckerii*)		West Coast Lady (*Vanessa annabella*)	
Checkered (Common) White (*P. protodice*)		Red Admiral (*V. atalanta rubria*)	
Spring White (*P. sisymbrii*)	1	Painted Lady (*V. cardui*)	
unidentified white		American (Virginia) Lady (*V. virginiensis*)	
unidentified sulphur		unidentified lady (*Vanessa* sp.)	
Family Lycaenidae (Gossamer-wing Butterflies)		***Subfamily Limenitidinae (Admirals and Relatives)***	
Subfamily Theclinae (Hairstreaks)		California Sister (*Adelpha californica*)	
Great Purple Hairstreak (*Atlides halesus corcorani*)		Lorquin's Admiral (*Limenitis lorquini*)	
Western Brown Elfin (*Callophrys augustinus iroides*)		***Subfamily Satyrinae (Satyrs)***	
Bramble (Perplexing) Hairstreak (C. *dumetorum perplexa*)		California Common Ringlet (*Coenonympha tullia california*)	
Gray Hairstreak (*Strymon melinus pudica*)		***Subfamily Danainae (Monarchs)***	
Subfamily Polyommatinae (Blues)		Monarch (*Danaus plexippus plexippus*)	
Western Pygmy-Blue (*Brephidium exilis*)		Queen (*Danaus gil2ippus thersippus*)	
Western Tailed Blue (*Cupido amyntula amyntula*)		**Family Hesperiidae (Skippers)**	
Bernardino Blue (*Euphilotes bernardino*)		Funereal Duskywing (*Erynnis funeralis*)	
Southern California Silvery Blue (*Glaucopsyche lygdamus australis*)		Mournful Duskywing (*E. tristis tristis*)	
Ceraunus (Edward's) Blue (*Hemiargus ceraunus gyas*)		Fiery Skipper (*Hylephila phyleus*)	
Acmon Blue (*Icaricia acmon*)		White Checkered-Skipper (*Pyrgus albescens*)	1
Marine Blue (*Leptotes marina*)	1	unidentified skipper	
unidentified blue	1	**Other**	
Family Riodinidae (Metalmarks)		unidentified butterfly	
Behr's Metalmark (*Apodemia virgulti*)	36		
Wright's Metalmark (*Calephelis wrighti*)			
Column Subtotal	**39**	**Column Subtotal**	**1**
		Total	**40**

Attachment C

Butterfly Checklist

Survey Information
Site Name: Sycamore Canyon/Goodan Ranch Preserve
Dates: June 10 to July 7, 2022
Survey Numbers: 1 to 4
Surveyors: Benjamin Rosenbaum[1], Laura Moreton[1]
[1] HELIX Biologist (USFWS Permit TE-778195-14)

Butterfly Species	No.	Butterfly Species	No.
Family Papilionoidea (Parnassians and Swallowtails)		**Family Nymphalidae (Brushfooted Butterflies)**	
Pale Swallowtail (*Papilio eurymedon*)		***Subfamily Nymphalinae (True Brushfoots)***	
Western Tiger Swallowtail (*P. rutulus rutulus*)		Leanira Checkerspot (*Chlosyne leanira*)	
Anise Swallowtail (*P. zelicaon*)		California Patch (*C. californica*)	
Family Pieridae (Whites and Sulpurs)		Gabb's Checkerspot (*C. gabbii gabbii*)	
Sleepy Orange (*Abaeis nicippe*)		Chalcedon Checkerspot (*Euphydryas chalcedona*)	
Desert Orangetip (*Anthocharis cethura*)		Quino Checkerspot (*E. editha quino*)	
Pacific Sara Orangetip (*A. sara sara*)		Common Buckeye (*Junonia coenia grisea*)	
Orange Sulphur (*Colias eurytheme*)		Mourning Cloak (*Nymphalis antiopa antiopa)*	
Harford's Sulphur (*Colias harfordii*)		California Tortoiseshell (*N. californica californica*)	
Dainty Sulphur (*Nathalis iole*)		Mylitta Crescent (*Phyciodes mylitta mylitta*)	
Cloudless Sulphur (*Phoebis sennae*)		West Coast Lady (*Vanessa annabella*)	
Cabbage White (*Pieris rapae*)		Red Admiral (*V. atalanta rubria*)	
Becker's White (*Pontia beckerii*)		Painted Lady (*V. cardui*)	
Checkered (Common) White (*P. protodice*)		American (Virginia) Lady (*V. virginiensis*)	
Spring White (*P. sisymbrii*)	1	unidentified lady (*Vanessa* sp.)	
Southern Dogface (*Zerene cesonia cesonia*)		***Subfamily Limenitidinae (Admirals and Relatives)***	
unidentified white	19	California Sister (*Adelpha californica*)	
unidentified sulphur		Lorquin's Admiral (*Limenitis lorquini*)	
Family Lycaenidae (Gossamer-wing Butterflies)		***Subfamily Satyrinae (Satyrs)***	
Subfamily Theclinae (Hairstreaks)		California Ringlet (*Coenonympha tullia california*)	
Great Purple Hairstreak (*Atlides halesus corcorani*)		***Subfamily Danainae (Monarchs)***	
Western Brown Elfin (*Callophrys augustinus iroides*)		Monarch (*Danaus plexippus plexippus*)	
Bramble Hairstreak (C. *dumetorum perplexa*)		Queen (*Danaus gilippus thersippus*)	
Gray Hairstreak (*Strymon melinus pudica*)		***Subfamily Heliconiinae (Heliconians and Fritillaries)***	
Subfamily Polyommatinae (Blues)		Gulf Fritillary (*Agraulis vanillae incarnata*)	
Western Pygmy-Blue (*Brephidium exilis*)		Comstock's Fritillary (*Speyeria callippe comstocki*)	
Echo Azure (*Celastrina echo echo*)		Semiramis Fritillary *(Speyeria coronis semiramis*)	
Western Tailed Blue (*Cupido amyntula amyntula*)		**Family Hesperiidae (Skippers)**	
Bernardino Blue (*Euphilotes bernardino*)		***Subfamily Pyrginae (Spread-wing Skippers)***	
Southern California Silvery Blue (*Glaucopsyche lygdamus australis*)		Funereal Duskywing (*Erynnis funeralis*)	6
Ceraunus (Edward's) Blue (*Hemiargus ceraunus gyas*)		Propertius Duskywing (*E. propertius*)	
Marine Blue (*Leptotes marina*)	1	Mournful Duskywing (*E. tristis tristis*)	1
Acmon Blue (*Icaricia acmon*)	44	Northern White-Skipper (*Heliopetes ericetorum*)	
Clemence's Blue (*Icaricia monticola*)		White Checkered-Skipper (*Pyrgus albescens*)	1
Sonoran Blue (*Philotes sonorensis*)		***Subfamily Herperiinae (Grass Skippers)***	
unidentified blue	1	Orange Skipperling (*Copaeodes aurantiaca*)	
Family Riodinidae (Metalmarks)		Fiery Skipper (*Hylephila phyleus*)	
Behr's Metalmark (*Apodemia virgulti*)	95	**Other**	
Wright's Metalmark (*Calephelis wrighti*)		Unidentified butterfly	
Column Subtotal	**161**	**Column Subtotal**	**8**
		Total Butterflies Observed	**169**

Appendix G

Preliminary Jurisdictional Delineation Report

Memorandum

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942
619.462.1515 **tel**
619.462.0552 **fax**
www.**helixepi**.com

HELIX Environmental Planning

Date: February 6, 2019

To: Ms. Melanie Tylke, County Department of Parks and Recreation (DPR)

cc: Mr. Matt Stewart, County DPR

From: Ms. Angelia Bottiani, HELIX Environmental Planning, Inc. (HELIX)
Ms. Jasmine Bakker, HELIX

Subject: Sycamore Canyon Goodan Ranch Public Access Plan Project Jurisdictional Determination

HELIX Project: CSD-06.05 (County Task Order 5)

Message:

HELIX Environmental Planning, Inc. (HELIX) has prepared this memorandum in support of a Preliminary Jurisdictional Determination (PJD) request to the U.S. Army Corps of Engineers (USACE) for the Sycamore Canyon Goodan Ranch Preserve Public Access Plan project, herein referred to as the Project Area, located in the unincorporated community of Lakeside, , San Diego County, California. The information provided herein fulfills the USACE's Minimum Standards for Acceptance of Aquatic Resources Delineation Reports dated March 16, 2017. Information is numbered 1 through 20 to correspond to numbered items 1 through 20 in the Minimum Standards.

1. Attached please find the Request for Corps Jurisdictional Determination (JD) (Attachment 1) and the Preliminary Jurisdictional Determination Form (Attachment 2).

2. Contact information is provided as follows:

    a. Applicant: Crystal Benham
    County of San Diego Department of Parks and Recreation
    Resource Management Division
    5500 Overland Ave., Suite 410 (MS029)
    San Diego, CA 92123
    858-966-1370

b. Owner: County of San Diego, Department of Parks and Recreation
5500 Overland Ave., Suite 410
San Diego, CA 92123

c. Agent: Crystal Benham
County of San Diego Department of Parks and Recreation
Resource Management Division
5500 Overland Ave., Suite 410 (MS029)
San Diego, CA 92123
858-966-1370

3. Please contact Crystal Benham prior to entering the property.

4. The Project Area is located at 16281 Sycamore Canyon Rd., southeast of the City of Poway in San Diego County (32.941222, -116.974689). It is bordered to the east by State Route (SR-) 67, to the southwest by Marine Corps Air Station (MCAS) Miramar, and to the west by Mission Trails Regional Park - West Sycamore. The site is accessible from the north via Sycamore Canyon Road (32.946619, -116.995513) and from the east via Sycamore Park Drive (32.946691, -116.963455). The Sycamore Canyon Goodan Ranch Public Access Plan Project is a trails improvement and development project; therefore, the PJD review area was restricted to where existing trails and planned trails intersect or are adjacent to potential waters of the U.S.

5. The delineation was conducted in accordance with the 1987 Corps of Engineers Wetland Delineation Manual and the 2008 USACE Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). Ordinary High Water Mark (OHWM) was identified according to "A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States" (August 2008 and updated July 2010).

6. The aquatic resources mapped across the 2,272-acre Preserve were restricted to valley bottoms and drainages where existing and proposed trails cross or are adjacent to ephemeral and intermittent streams at 15 locations (Attachment 3). Attachments 3a-3l provide detailed maps of the aquatic resources evaluated at each of the 15 locations. Two sample pits confirmed the absence of wetland conditions at sites with hydrophytic vegetation (see Wetland Determination Data Forms for Sites 6 and 10 provided in Attachment 4; Attachments 3f and 3h). Although all 15 sites lacked wetland waters of the U.S., non-wetland waters of the U.S. were described and mapped at all 15 sites. All sites evaluated were characterized as non-wetland waters of the U.S., as discernable by an OHWM. Photos of each site are provided as Attachment 5.

   Sites 6 and 10 are located where an existing trail occurs along the primary and intermittent Sycamore Creek channel that connects to the Stowe Trail on MCAS Miramar property to the south (Attachments 3f and 3h). These sites along the southern section of Sycamore Canyon were considered as potential wetland waters of the U.S., but were mapped as non-wetland waters of the U.S. because they lacked sufficient hydrology and soils indicators (See Attachment 4).

Sites 7-9 are located along ephemeral streams that flow into the intermittent Sycamore Creek (Attachments 3g, 3i, and 3h). These ephemeral features were typified by a cobble streambed with minimal vegetative growth below the OHWM. Their banks were generally diffuse making it hard to distinguish the low-flow channel from the active floodplain. The low terrace was often dominated by coastal sage scrub that formed a partial canopy over the active floodplain.

Sites 1, 2, 3.2, and 12 had characteristics similar to those observed in western Sycamore Canyon (Sites 7-9), but were in small, steep canyons and mapped as non-wetland waters of the U.S. (Attachments 3a, 3b, 3c, and 3k). Headcuts were common within the streambed and the existing trail crossings were often modified to minimize erosion. For example, Site 2 had an engineered culvert to divert water below the trail and Site 3.2 had a stone wall to stabilize the trail as it crossed the streambed.

Sites 3.1, 4.1, 4.2, and 5 are located along the Martha's Grove Trail within non-wetland waters of the U.S. that support the Southern Riparian Woodland that runs north to south along the eastern section of the trail (Attachments 3d and 3e). Downed oaks and large boulders were common within the streambed and often caused the low flow channel to meander across the valley floor.

Site 13 is within the Southern parcel located in the southeast portion of Sycamore Canyon (Attachment 3l). The trail at Site 13 occurs north to south between two intermittent channels but does not cross them. A paleo channel is visible crossing the trail from northwest to southeast, but a lack of OHWM indicators and the elevation of the site indicate it is likely a relict feature and therefore not a jurisdictional feature.

Site 11 is located along a proposed trail alignment in the eastern portion of the Project Area near SR-67 that traverses a small ephemeral stream that was mapped as non-wetland waters of the U.S. (Attachment 3j). This ephemeral stream is highly incised, with 2- to 3-foot vertical banks. The low terrace is dominated by a mix of upland habitat composed of non-native annual grasses with patches of coastal sage scrub.

7. The required map of waters of the U.S. within the PJD Review Area is included as Attachment 3. This map depicts the outside survey boundary, total extent of aquatic and non-aquatic features, and the type of features (waters of the U.S., etc.), and includes the total linear feet of stream and acreage for each polygon.

8. Field work for the preliminary jurisdictional delineation occurred on January 22-23, 2019.

9. Please see Attachment 6 for a list of all aquatic resources evaluated in tabular format.

10. The Sycamore Canyon Goodan Ranch Preserve is currently part of the South County Multiple Species Conservation Program. These areas are maintained within conservation easements and were acquired by the County of San Diego Department of Parks and Recreation, the California Department of Fish and Wildlife, and the cities of Poway and Santee. Preservation of natural and cultural resources is a primary management objective of the preserve, but passive recreational activities such as hiking, biking, and horseback riding, is also permitted. In recent history, the Project Area included the small town of Stowe (1889) and various ranches. No dedicated

irrigation system was developed within the area, although wells were developed. The areas surveyed were primarily maintained as ranch lands and have not been highly manipulated.

At present, the closest weather station, MCAS Miramar, has recorded approximately 2.01 inches of precipitation in the month of January 2019. Normal conditions were observed on all sites. Table 1 summarizes monthly and annual precipitation averages from 2000 to 2018.

Table 1
AGACIS WETS TABLE: MONTHLY PRECIPITATION MIRAMAR NAS, SAN DIEGO, CA

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average Annual Precipitation
2000	0.21	0.76	1.04	0.17	T	0.00	0.00	0.07	0.05	0.49	0.12	T	2.91
2001	2.73	1.72	0.66	0.91	0.05	0.00	T	0.00	0.00	0.00	0.85	0.66	7.58
2002	0.58	0.15	0.51	0.49	T	0.00	T	T	0.13	0.05	0.56	1.53	4.00
2003	T	5.22	0.14	0.44	0.12	T	0.01	0.00	0.01	T	0.06	0.79	6.79
2004	0.15	1.43	0.56	0.40	T	T	0.00	0.00	T	1.89	0.50	2.96	7.89
2005	4.81	7.60	2.81	0.59	0.11	T	0.30	T	0.10	0.65	0.09	0.39	17.45
2006	0.95	1.52	1.35	1.44	0.51	T	0.27	0.01	0.00	0.17	0.05	0.62	6.89
2007	0.49	2.62	0.30	0.72	T	0.00	0.01	0.03	0.10	0.22	2.02	1.41	7.92
2008	2.78	1.99	0.12	0.00	0.33	0.02	0.00	T	0.01	0.03	1.40	4.92	11.60
2009	0.10	3.55	0.12	0.19	0.07	0.09	0.00	T	0.02	0.06	0.55	3.32	8.07
2010	4.84	3.31	0.47	1.79	0.02	T	0.01	0.00	0.03	1.60	1.20	6.69	19.96
2011	0.48	3.18	1.90	0.36	0.61	0.03	0.03	0.00	0.11	0.61	3.39	0.78	11.48
2012	0.46	1.54	1.54	1.27	0.07	0.01	T	T	T	0.50	0.37	1.90	7.66
2013	1.29	0.79	1.40	0.09	0.40	T	0.01	0.11	0.38	0.60	0.26	0.37	5.70
2014	0.09	1.59	0.81	0.40	T	0.00	0.02	0.13	0.02	T	0.83	3.36	7.25
2015	0.37	0.64	1.07	0.15	1.69	0.02	2.28	T	1.03	0.53	0.47	1.30	9.55
2016	6.00	0.06	1.21	1.09	0.59	0.00	0.00	0.00	0.36	0.02	1.39	2.60	13.32
2017	1.15	4.16	0.04	T	1.14	0.03	0.00	T	0.02	T	0.00	T	6.54
2018	1.12	0.44	0.10	0.03	0.05	0.00	0.00	0.00	T	0.58	1.57	1.10	4.99
Average Monthly Precipitation	**1.59**	**2.22**	**0.85**	**0.59**	**0.41**	**0.02**	**0.18**	**0.03**	**0.15**	**0.50**	**0.83**	**2.04**	**8.82**

11. Hydrology: The Project Area is located within the San Diego Watershed (277,540 acres). Precipitation is seasonal and usually falls between November and April. Groundwater and surface water are the primary water sources throughout the Preserve. Two intermittent streams flow from north to south across most of the preserve within Sycamore Canyon and Clark Canyon. Ephemeral streams contributing to their flows from the east and west. Sycamore Creek runs through the western portion of the Project Area and is fed by Western Sycamore Creek. An unnamed intermittent stream flows through Clark Canyon in the southeastern portion of the Project Area and then joins Sycamore Creek offsite. Sycamore Creek then flows south to the San Diego River. Two sites within the eastern portion of the Project Area flow eastward and off site toward San Vicente Reservoir and other tributaries of the San Diego River (Site 11 and Site 12).

12. Remote sensing used in the delineation consisted of publicly available USGS topography and aerial photographs viewed through Google Earth and www.historicaerials.com, as well as the

SanGIS aerial photograph and site survey topo lines shown on the map. Aerial photographs were used to determine past conditions and confirm current conditions observed in the field. USGS topography was used to confirm the drainage direction.

13. A soils map is included as Attachment 7, and soils descriptions and photos for Sites 6 and 10 can be found in Attachments 4 and 5, respectively. According to the Web Soil Survey, the most prominent soil components within the Project Area include stony lands, the Visalia series, the Huerhuero series, and the Friant series. The stony lands component is found in valley bottoms, is well drained, and is derived from mixed colluvium. The typical soil profile is unweathered bedrock. The Visalia series is found on the toeslope of alluvial fans and is derived from granitic parent material. A typical soil profile is a gravelly sandy loam or gravelly loam throughout. It is well drained and found on slopes from two to five percent slopes. The Huerhuero loam series is found on concave marine terraces and is derived from calcareous sedimentary alluvium. It is a moderately well drained series with a loam to clay loam texture throughout the upper horizons. The Friant series is derived from metamorphosed sedimentary rocks that weathered in place. It is typically found on the backslope of hills with slopes of 30 percent to 70 percent. A typical profile is a well-drained fine sandy loam to a sandy loam from 0-12 inches with unweathered residuum below. Hydric soils were not observed within the Project Area as all delineated waters were non-wetland waters of the US.

14. A site location map is included as Attachment 8. The Project Area is within the USGS 7.5' San Vicente Reservoir Quadrangle and includes portions of Sections 15, 21, 22, 23, 26, 27, 28, 33, 34, 35 of Township 14 S, Range 1 W.

15. This site has many aquatic features. Please see Attachment 9 for the Bulk Upload Aquatic Resources or Consolidated Excel spreadsheet.

16. The delineation map included as Attachment 3 meets the requirements of the Final Map and Drawing Standards for the South Pacific Regulatory Program.

17. Representative photographs of all 15 sites are included in Attachment 5. Photo locations and directions are shown on Attachment 3.

18. The preliminary jurisdictional determination form is included as Attachment 1. Completed wetland determination data forms for sampling points 6 and 10, and Arid West Ephemeral and Intermittent Streams OHWM datasheets (Sites 1-13) are included in Attachment 4.

19. Prior to beginning fieldwork, recent aerial photographs (1"=200'), topographic maps (1"=100'), soil mapping, National Wetlands Inventory mapping, and USGS topographical maps were reviewed to determine the location of potential jurisdictional areas.

    The delineations were conducted on foot with the aid of 1"=100' scale aerials and topographic maps. Areas where existing and proposed trails crossed or were adjacent to drainages and/or wetland vegetation were evaluated for the presence of waters of the U.S. Wetland waters of the U.S. were not observed but the three criteria (vegetation, hydrology, and soils) approach outlined in the Wetlands Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE

2008) was used to make this assessment. Jurisdictional limits of all sites were defined by the OHWM, which is defined in 33 CFR Section 329.11 as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas." The USACE has issued further guidance on the OHWM (Riley 2005; Lichvar and McColley 2008), which also has been used for this delineation. The OHWM widths were measured to the nearest foot at various locations along mapped tributary. Sample points were mapped using a handheld iPad with GPS unit with sub-meter accuracy.

Plants were identified according to The Jepson Manual, Higher Plants of California. Wetland affiliations of plant species follow the Arid West 2016 Regional Wetland Plant List.

Soil information was taken from the U.S. Department of Agriculture Natural Resources Conservation Service Web Soil Survey and the Natural Resources Conservation Service State Soil Data Access Hydric Soils List. Soil chromas were identified according to the Munsell Soil Color Charts.

20. Shapefiles are included as Attachment 10. The .prj file contains the datum and projection.

REQUEST FOR JURISDICTIONAL DETERMINATION

This form should be used when a jurisdictional determination (JD) is required from the U.S. Army Corps of Engineers, Sacramento District. It is intended to help both the requestor and the Corps in determining which type of JD, if any, is appropriate. Use of the form is optional; however the information and consent is needed to complete a JD. If you are applying for a Department of the Army permit, you do not need to request a JD. A jurisdictional determination is not required to process a permit application. At the time an application is submitted, the Corps will assume the aquatic resources on the parcel/within the review area are waters of the United States for the purpose of making a permit decision. With no JD requested, the permit application may be processed more quickly. The permittee retains the ability to request a JD any time during or after the permit application review process.

I am requesting the U.S. Army Corps of Engineers, Sacramento District, complete a jurisdictional determination for the parcel/review area located at:

Street Address: 16281 Sycamore Canyon Rd City: N/A: unicorporated SD County (Lakeside) County: San Diego
State: CA Zip: 92064 Section: 21 Township: 14S Range: 1W
Latitude (decimal degrees): 32.941239 Longitude (decimal degrees): -116.980581
The approximate size of the review area for the JD is 90.5 acres. **(Please attach location map)**

Choose one:
- [x] I currently own this property.
- [ ] I plan to purchase this property.
- [ ] I am an agent/consultant acting on behalf of the requestor.
- [ ] Other:

Choose one:
- [ ] I am requesting an Approved JD.
- [x] I am requesting a Preliminary JD.
- [ ] I am unclear as to which JD I would like to request and require additional information to inform my decision.

Reason for request: (check all that apply)
- [ ] I intend to construct/develop a project or perform activities on this parcel/review area which would be designed to avoid all aquatic resources.
- [ ] I intend to construct/develop a project or perform activities on this parcel/review area which would be designed to avoid all jurisdictional aquatic resources under Corps authority.
- [x] I intend to construct/develop a project or perform activities on this parcel/review area which may require authorization from the Corps, and the JD would be used to avoid and minimize impacts to jurisdictional aquatic resources and as an initial step in a future permitting process.
- [x] I intend to construct/develop a project or perform activities on this parcel/review area which may require authorization from the Corps; this request is accompanied by my permit application and the JD is to be used in the permitting process.
- [ ] I intend to construct/develop a project or perform activities in a navigable water of the U.S. which is included on the district's list of navigable waters under Section 10 of the Rivers and Harbors Act of 1899 and/or is subject to the ebb and flow of the tide.
- [ ] A JD is required in order to obtain my local/state authorization.
- [ ] I intend to contest jurisdiction over a particular aquatic resource and request the Corps confirm that jurisdiction does/does not exist over the aquatic resource on the parcel/review.
- [ ] I believe that the parcel/review area may be comprised entirely of dry land.

Other:

Attached Information:
- [x] Maps depicting the general location and aquatic resources within the review area consistent with Map and Drawing Standards for the South Pacific Division Regulatory Program (Public Notice February 2016, http://www.spd.usace.army.mil/Missions/Regulatory/Public-Notices-and-References/Article/651327/updated-map-and-drawing-standards/)
- [ ] Aquatic Resources Delineation Report, if available, consistent with the Sacramento District's Minimum Standards for Acceptance (Public Notice January 2016, http://1.usa.gov/1V68IYa)

By signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a person or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the site if needed to perform the JD. Your signature shall be an affirmation that you possess the requisite property rights to request a JD on the subject property.

*Signature: _____ Date: _____
Name: Crystal Benham Company name: County of San Diego, Parks and Recreation
Address: 5500 Overland Drive
San Diego, CA 92123
Telephone: 858-966-1370 Email: Crystal.Benham@sdcounty.ca.gov

***Authorities:** Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for 33 CFR Parts 320-332.
Principal Purpose: The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the project area subject to federal jurisdiction under the regulatory authorities referenced above.
Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in the approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website.
Disclosure: Submission of requested information is voluntary; however, if information is not provided, the request for an AJD cannot be evaluated nor can an AJD be issued.

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

District Office: Los Angeles District | File/ORM #: | PJD Date: 1/22/19 - 1/23/19

State: CA | City/County: unicorporated County of San Diego

Nearest Waterbody: San Diego River

Location: TRS, LatLong or UTM: 32.941222, -116.974689

Name/ Address of Person Requesting PJD:
Crystal Benham
County of San Diego Department of Parks and Recreation
5500 Overland Avenue, Suite 410, (MS029)
San Diego, CA 92123
858-966-1370;Crystal.Benham@sdcounty.ca.gov

Identify (Estimate) Amount of Waters in the Review Area:

Non-Wetland Waters: 2,121 linear ft | 6ft width | 0.51 acres | Stream Flow: Ephemeral

Wetlands: 0 acre(s) | Cowardin Class: Riverine

Name of Any Water Bodies on the Site Identified as Section 10 Waters:
Tidal: None
Non-Tidal: None

☐ Office (Desk) Determination
☐ Field Determination: Date of Field Trip:

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- ☑ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
- ☑ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps
- ☐ Corps navigable waters' study:
- ☑ U.S. Geological Survey Hydrologic Atlas:
  - ☐ USGS NHD data.
  - ☑ USGS 8 and 12 digit HUC maps.
- ☑ U.S. Geological Survey map(s). Cite quad name: San Vicente
- ☑ USDA Natural Resources Conservation Service Soil Survey. Citation: Natural Resources Conservation Service, United
- ☐ National wetlands inventory map(s). Cite name:
- ☐ State/Local wetland inventory map(s):
- ☐ FEMA/FIRM maps:
- ☐ 100-year Floodplain Elevation is:
- ☑ Photographs: ☐ Aerial (Name & Date):
  - ☑ Other (Name & Date): 01/22/19-01/23/19
- ☐ Previous determination(s). File no. and date of response letter:
- ☐ Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature and Date of Regulatory Project Manager (REQUIRED)

Signature and Date of Person Requesting Preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

Appendix A - Sites

District Office: Los Angeles District | File/ORM #: | PJD Date: 1/22/19 - 1/23/19

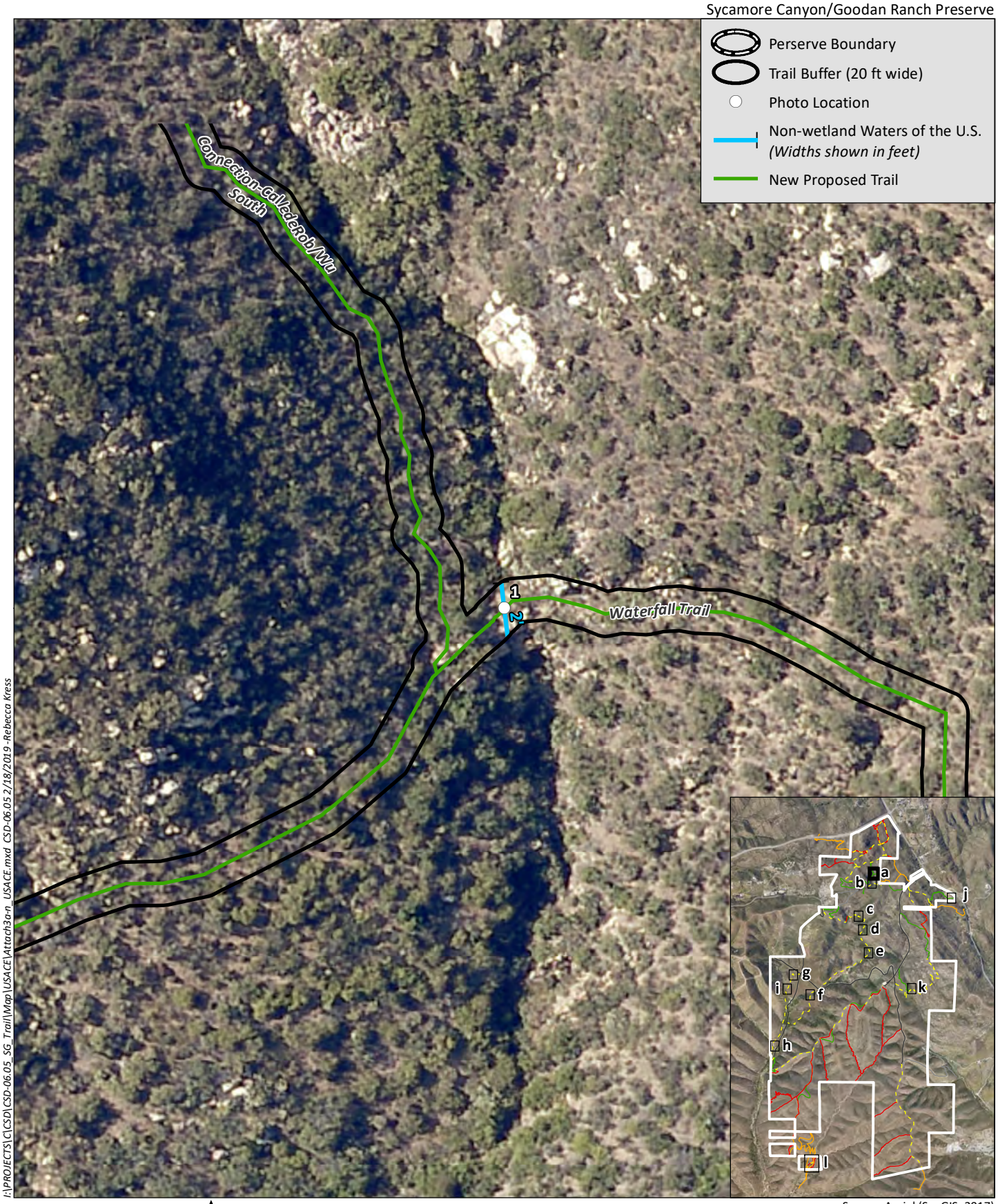
State: CA | City/County: Poway/San Diego | Person Requestinq PJD: Crystal Benham

Site Number	Latitude	Longitude	Cowardin Class	Est. Amount of Aquatic Resource in Review Area	Class of Aquatic Resource
1	32.94607551	-116.9717207	Riverine	0.001	Non-Section 10 non-wetlanc
2	32.944738	-116.972052	Riverine	0.001	Non-Section 10 non-wetlanc
3.1	32.93831213	-116.9733575	Riverine	0.006	Non-Section 10 non-wetlanc
3.2	32.93989346	-116.9743061	Riverine	0.002	Non-Section 10 non-wetlanc
4.1	32.93496016	-116.9723435	Palustrine, forested	0.003	Non-Section 10 non-wetlanc
4.2	32.9374019	-116.9739672	Palustrine, forested	0.002	Non-Section 10 non-wetlanc

Notes:

Please see summary of aquatic resources table for full list of resources present on site (Attachment 6). Aquatic resources within the Review Area total 0.51 acre non-wetland waters with a linear length of 2,121 feet and an average 6-foot width (ranging 2 to 15 feet).

Sycamore Canyon/Goodan Ranch Preserve



I:\PROJECTS\C\CSD\CSD-06.05_SG_Trail\Map\USACE\Attach3a-n_USACE.mxd CSD-06.05 2/18/2019 - Rebecca Kress

0 60 Feet

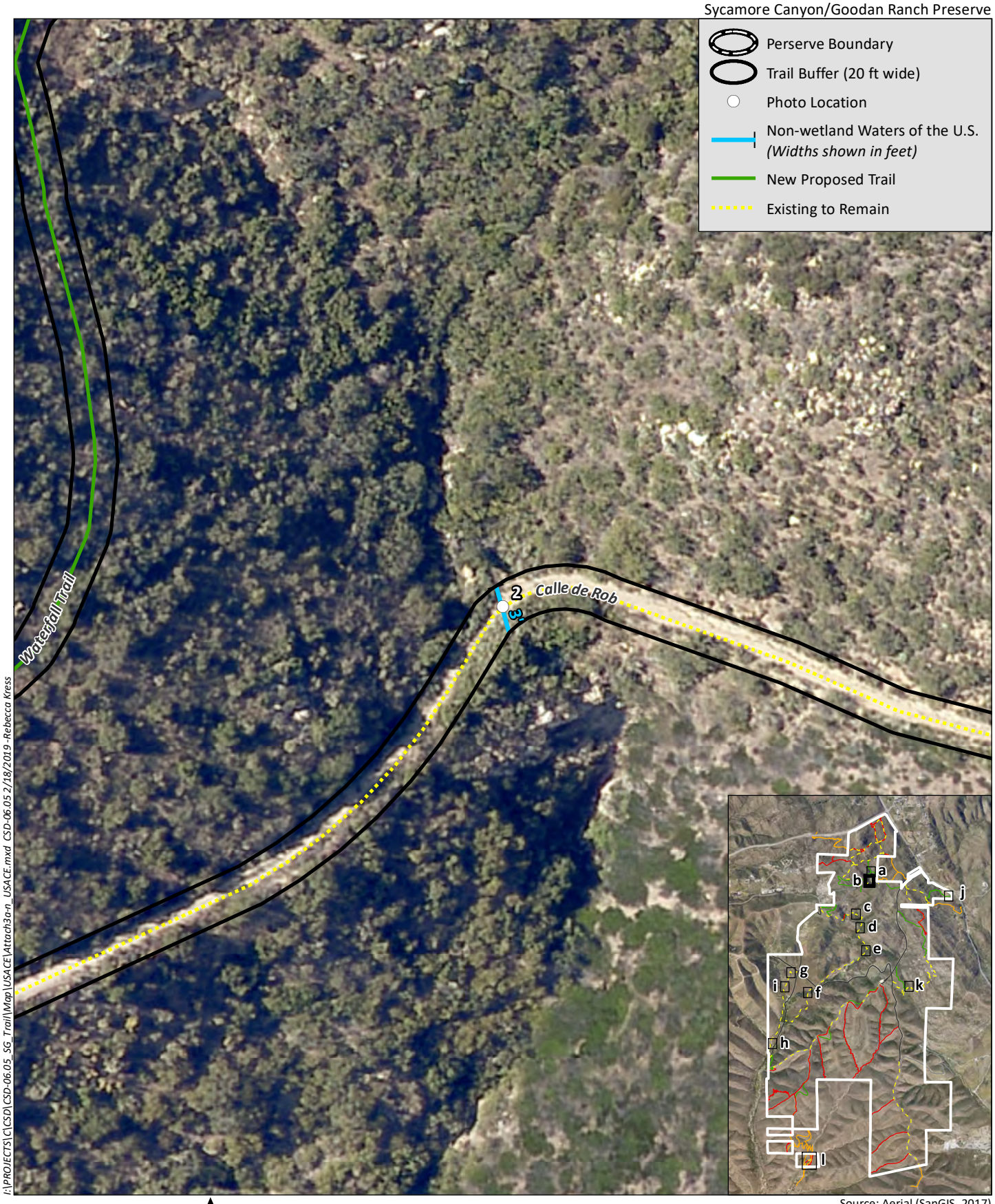
Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

Wetlands and Waters of the U.S. (Stream Crossing 1)

Attachment 3a

Sycamore Canyon/Goodan Ranch Preserve



I:\PROJECTS\C\CSD\CSD-06.05_SG_Trail\Map\USACE\Attach3a-n_USACE.mxd CSD-06.05 2/18/2019 - Rebecca Kress

0 60 Feet

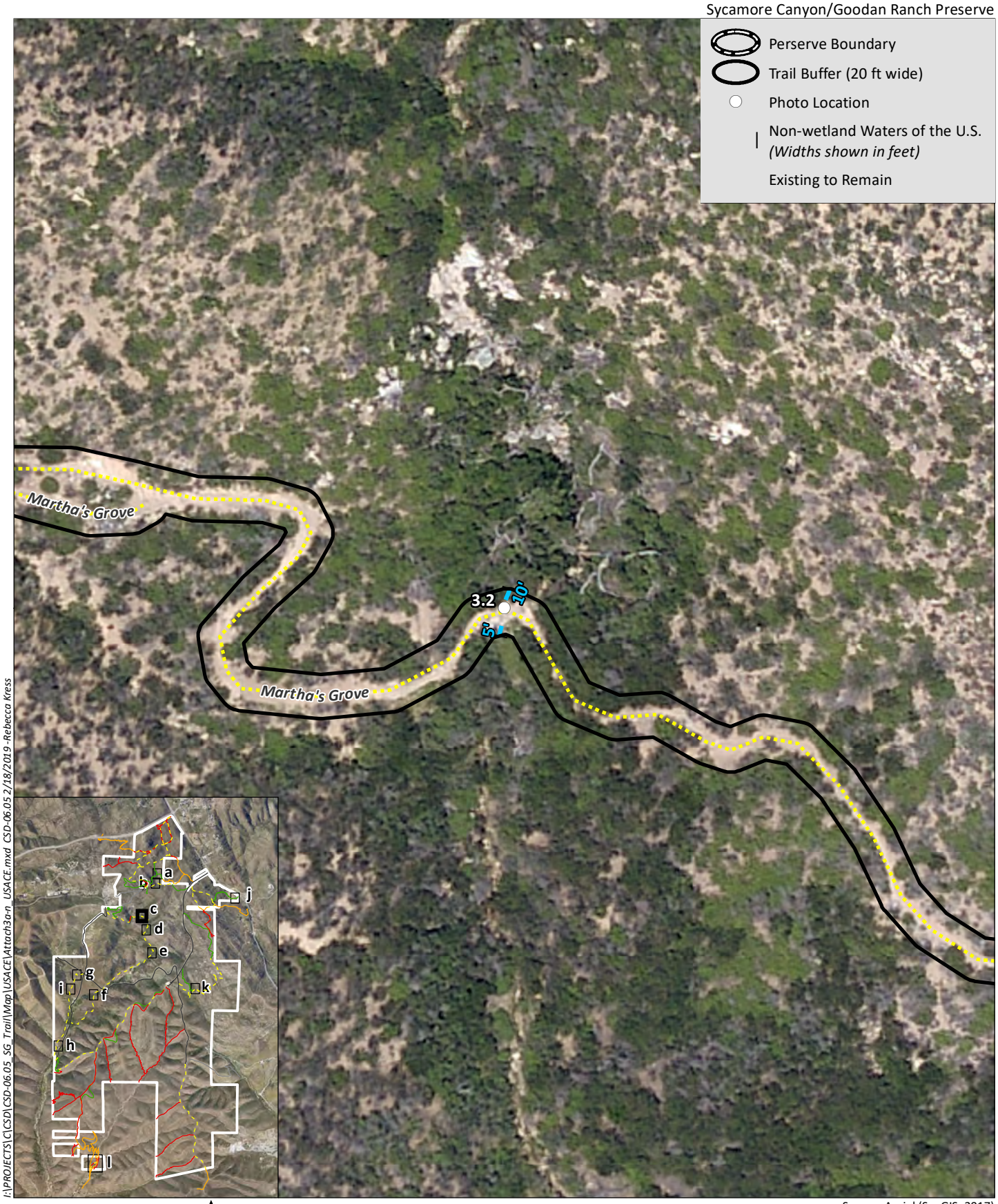
Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

Wetlands and Waters of the U.S. (Stream Crossing 2)

Attachment 3b

Sycamore Canyon/Goodan Ranch Preserve



I:\PROJECTS\C\CSD\CSD-06.05_SG_Trail\Map\USACE\Attach3a-n_USACE.mxd CSD-06.05 2/18/2019 - Rebecca Kress

0 60 Feet

Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

Wetlands and Waters of the U.S. (Stream Crossing 3.2)

Attachment 3c



I:\PROJECTS\C\CSD\CSD-06.05_SG_Trail\Map\USACE\Attach3a-n_USACE.mxd CSD-06.05 2/18/2019 - Rebecca Kress

0 60 Feet

Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

Wetlands and Waters of the U.S. (Stream Crossings 3.1 and 4.2)

Attachment 3d



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0 60 Feet

Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

Wetlands and Waters of the U.S. (Stream Crossings 4.1 and 5)

Attachment 3e



I:\PROJECTS\C\CSD\CSD-06.05_SG_Trail\Map\USACE\Attach3a-n_USACE.mxd CSD-06.05 2/18/2019 - Rebecca Kress

0 60 Feet

Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

Wetlands and Waters of the U.S. (Stream Crossing 6)

Attachment 3f



I:\PROJECTS\C\CSD\CSD-06.05_SG_Trail\Map\USACE\Attach3a-n_USACE.mxd CSD-06.05 2/18/2019 - Rebecca Kress

0 60 Feet

Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

Wetlands and Waters of the U.S. (Stream Crossing 7)

Attachment 3g

Sycamore Canyon/Goodan Ranch Preserve



I:\PROJECTS\C\CSD\CSD-06.05_SG_Trail\Map\USACE\Attach3a-n_USACE.mxd CSD-06.05 2/18/2019 - Rebecca Kress

0 60 Feet

Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

Wetlands and Waters of the U.S. (Stream Crossings 9 and 10)

Attachment 3h



I:\PROJECTS\C\CSD\CSD-06.05_SG_Trail\Map\USACE\Attach3a-n_USACE.mxd CSD-06.05 2/18/2019 - Rebecca Kress

0 60 Feet

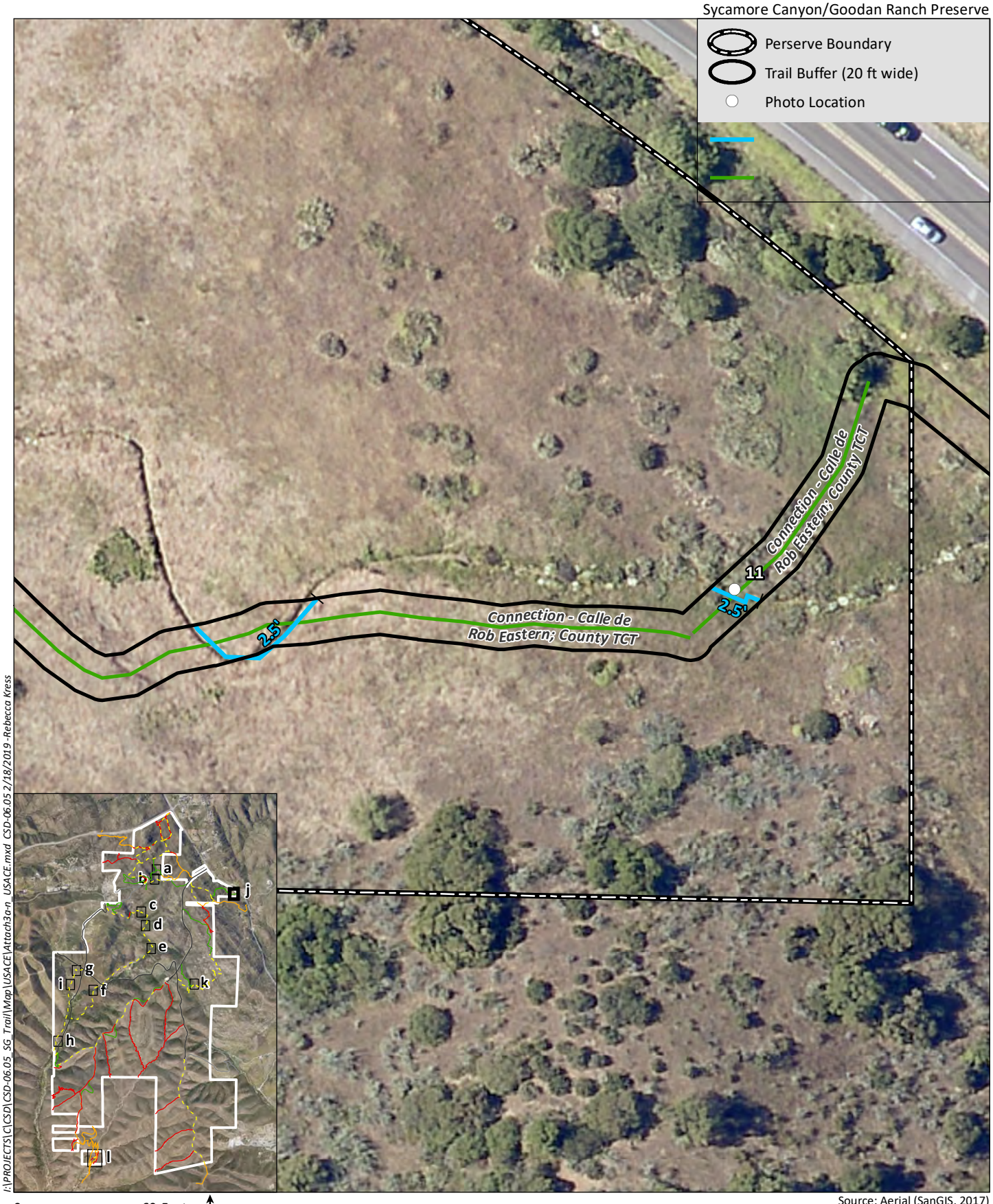
Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

Wetlands and Waters of the U.S. (Stream Crossing 8)

Attachment 3i

Sycamore Canyon/Goodan Ranch Preserve



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0 60 Feet

Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

Wetlands and Waters of the U.S. (Stream Crossing 11)

Attachment 3j

Sycamore Canyon/Goodan Ranch Preserve



I:\PROJECTS\C\CSD\CSD-06.05_SG_Trail\Map\USACE\Attach3a-n_USACE.mxd CSD-06.05 2/18/2019 - Rebecca Kress

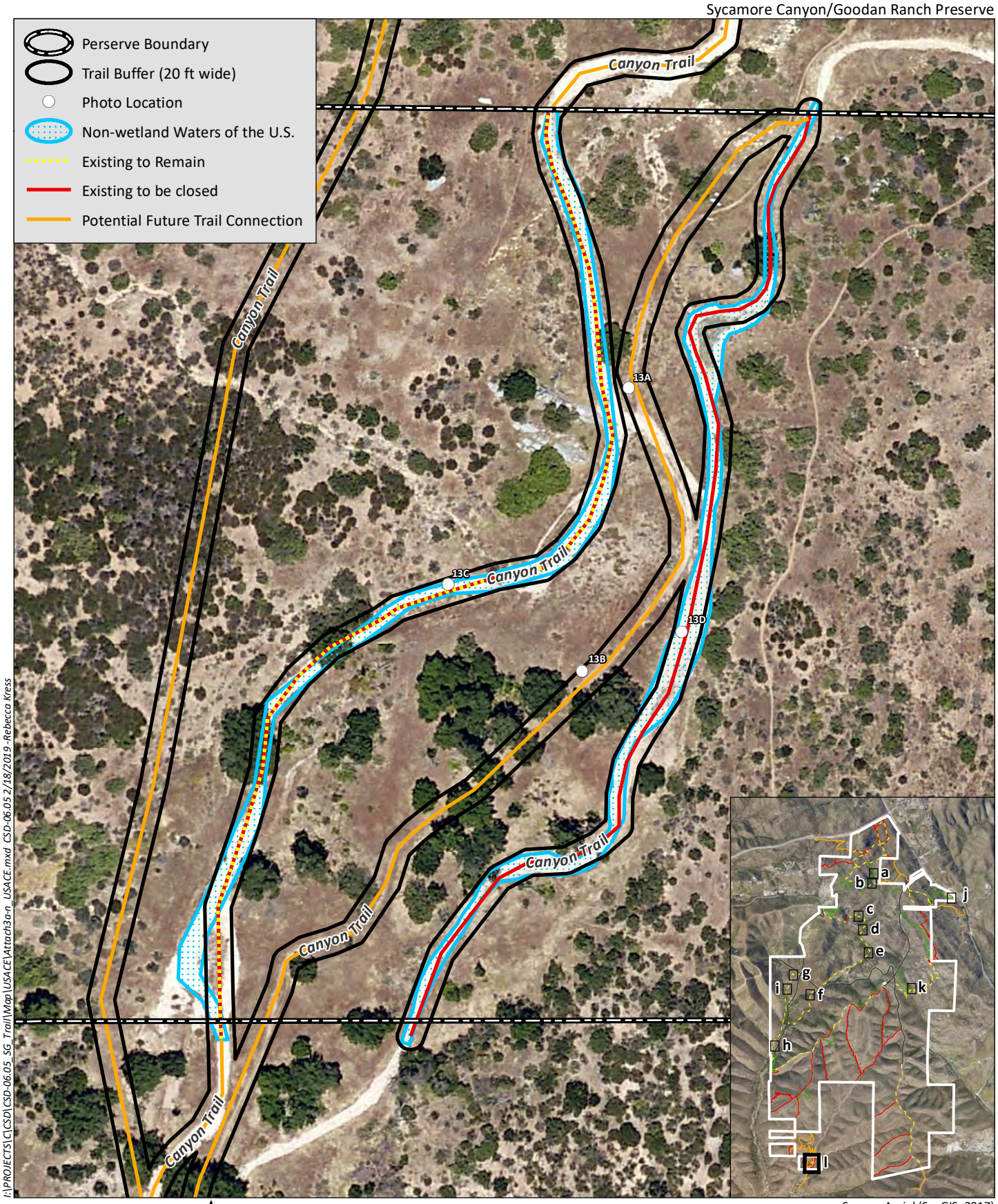
0 60 Feet

Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

Wetlands and Waters of the U.S. (Stream Crossing 12)

Attachment 3k



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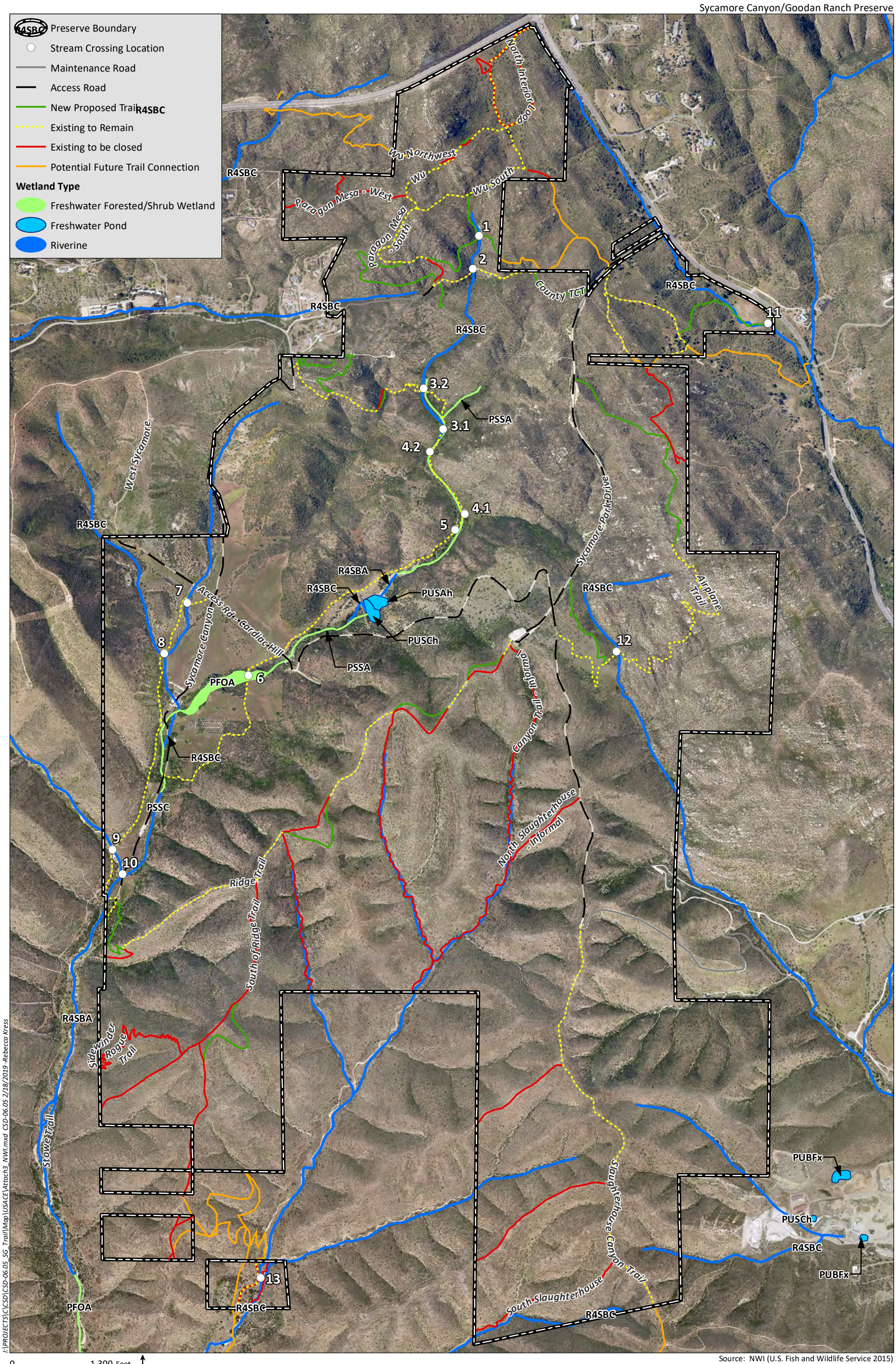
0 60 Feet

Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

Wetlands and Waters of the U.S. (Stream Crossing 13)

Attachment 3l



0 1,300 Feet

Source: NWI (U.S. Fish and Wildlife Service 2015)

I:\PROJECTS\C\CSD\CSD-06.05_SG_Trail\Map\USACE\Attach3_NWI.mxd CSD-06.05 2/18/2019 -Rebecca Kress

HELIX Environmental Planning

National Wetlands Inventory

Attachment 3

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Sycamore Goodan Ranch Public Access
Date: 1/23/19
Time: 10:07 AM
Project Number: CSD 06.05
Town: Poway
State: CA
Stream: Unnamed - Upper tributary of San Diego River
Photo begin file#: 6789
Photo end file#: 6793
Investigator(s): Larry Sward & Angelia Bottiani

Y [x] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [x] Is the site significantly disturbed?

Location Details: Site 1

Projection: LCC **Datum:** NAD83
Coordinates: 32.946075505316, -116.971720747413

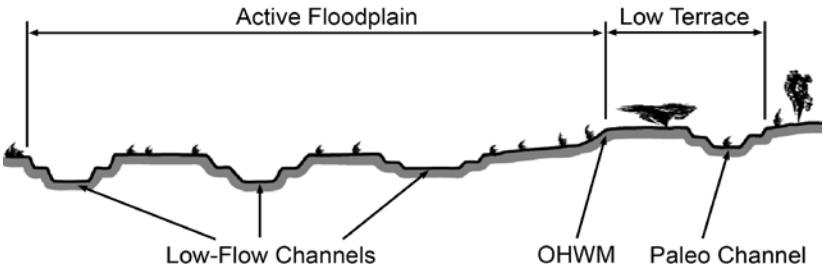
Potential anthropogenic influences on the channel system:
None - new proposed trail crossing location.

Brief site description:
Steep granite boulder/bedrock stream bed above a waterfall.

Checklist of resources (if available):

- [ ] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
  - [ ] History of recent effective discharges
  - [ ] Results of flood frequency analysis
  - [ ] Most recent shift-adjusted rating
  - [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

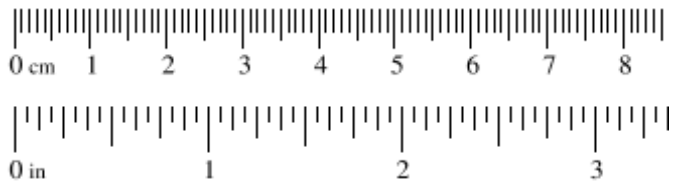


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [x] GPS
   - [ ] Digitized on computer
   - [ ] Other:

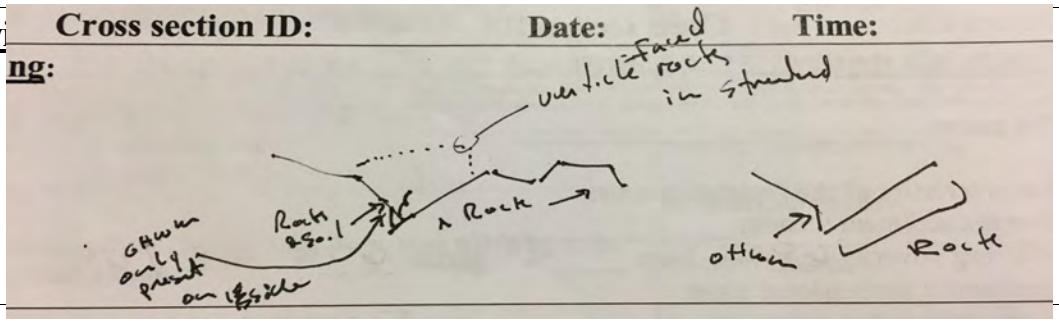
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: CSD 06.05 **Cross section ID:** Site 1 **Date:** 1/23/2019 **Time:** 10:07 AM

Cross section drawing:



OHWM

GPS point: 32.95, -116.97

Indicators:

- [ ] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Channel poorly defined. Width estimated to be 2 ft .

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: 32.95, -116.97

Characteristics of the floodplain unit:

Average sediment texture: Boulders

Total veg cover: 5 % Tree: _____% Shrub: _____% Herb: 5 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Poorly defined channel due to abundance of boulders within streambed.

Project ID: CAD 06.05 **Cross section ID:** Site 1` **Date:** 1/26/2019 **Time:** 10:07

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: 32.95, -116.97

Characteristics of the floodplain unit:

Average sediment texture: Course silt

Total veg cover: 70 % Tree: _____% Shrub: 60 % Herb: 10 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

No indicators

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

East of stream bed rocky outcrop with grasses. West of stream bed mature upland coastal sage scrub.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

REPORT DOCUMENTATION PAGE

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5a. CONTRACT NUMBER

5b. GRANT NUMBER

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6. AUTHOR(S)

Katherine E. Curtis and Robert W. Lichvar

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15. SUBJECT TERMS
Arid West, Floodplains, Ephemeral streams, Intermittent streams, Ordinary High Water Mark

16. SECURITY CLASSIFICATION OF:			**17. LIMITATION OF ABSTRACT**	**18. NUMBER OF PAGES**	**19a. NAME OF RESPONSIBLE PERSON**
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U	U	U	U	20	

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Sycamore Goodan Ranch Public Access
Date: 1/23/2019
Time: 9:40
Project Number: CSD 06.05
Town: Poway
State: CA
Stream: Unnamed - Upper tributary of San Diego River
Photo begin file#:
Photo end file#: 6747 - 6787
Investigator(s): Larry Sward & Angelia Bottiani

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: Site 2

Projection: LCC
Datum: NAD83
Coordinates: 32.944738, -116.972052

Potential anthropogenic influences on the channel system:

Steam runs through culvert and under existing trail.

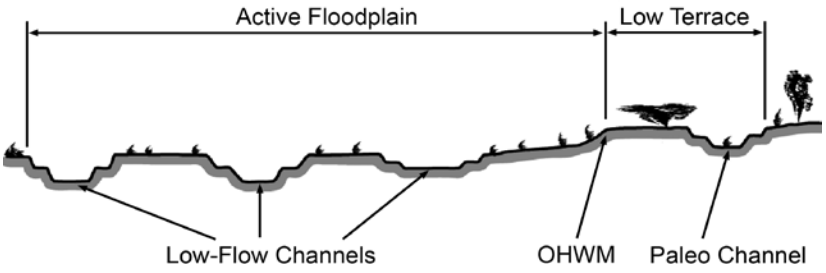
Brief site description:

Ephemeral drainage with large boulders and cobbles common in bed. Headcuts present north of trail.

Checklist of resources (if available):

- [ ] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
  - [ ] History of recent effective discharges
  - [ ] Results of flood frequency analysis
  - [ ] Most recent shift-adjusted rating
  - [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

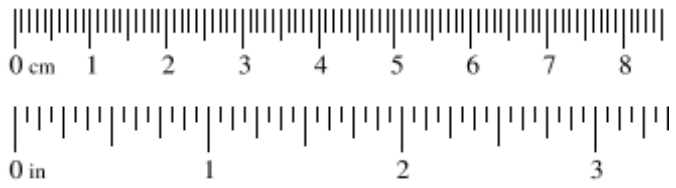


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [X] GPS
   - [ ] Digitized on computer
   - [ ] Other:

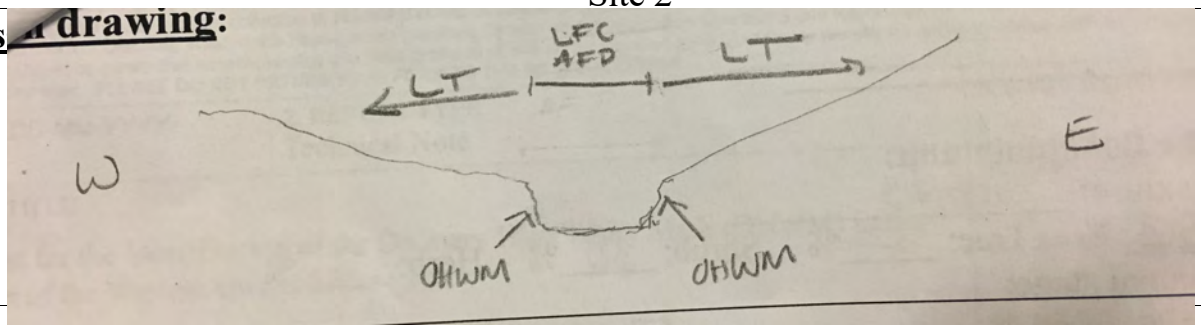
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: CSD 06.05 **Cross section ID:** Site 2 **Date:** 1/23/2019 **Time:** 9:40 Am

Cross drawing:



OHWM

GPS point: 32.944738, -116.972052

Indicators:

- [ ] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Steep constricted Active Floodplain and Low-Flow Channel. Cobbles and boulders common. South side of trail steeper than north side. Channel undefined above headcut. LFC and AFP hard to distinguish from each other.

Floodplain unit:

- [x] Low-Flow Channel
- [x] Active Floodplain
- [ ] Low Terrace

GPS point: 32.944738, -116.972052

Characteristics of the floodplain unit:

Average sediment texture: Cobble

Total veg cover: 32 % Tree: 0 % Shrub: 30% Herb: 2 %

Community successional stage:

- [ ] NA
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Early (herbaceous & seedlings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [ ] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Low-Flow Channel characterized by early successional grasses with a canopy of mature shrubs (not rooted within bed). Channel constricted with incised banks. LFC and AFP hard to distinguish from each other.

Project ID: CSD 06.05 **Cross section ID:** Site 2 **Date:** 1/23/2019 **Time:** 9:40 Am

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _32.944738, -116.972052

Average sediment texture: Sand_____
Total veg cover: __95___ % Tree: __0___% Shrub: ___85__% Herb: 10 _____%
Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Steep slopes and mature shrubs common within Low Terrace.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:
Average sediment texture: _____
Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%
Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
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Comments:

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Katherine E. Curtis and Robert W. Lichvar

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Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Sycamore Goodan Ranch Public Access
Project Number: CSD 06.05
Stream: Unnamed - Upper tributary of San Diego River
Investigator(s): Larry Sward & Angelia Bottiani

Date: 1/22/19 **Time:** 3:25
Town: Poway **State:** CA
Photo begin file#: 6734 **Photo end file#:** 6737

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: Site 3.1

Projection: LCC **Datum:** NAD83
Coordinates: 32.9383121291482,-116.973357517381

Potential anthropogenic influences on the channel system:

Trail crosses stream perpendicular to flow.

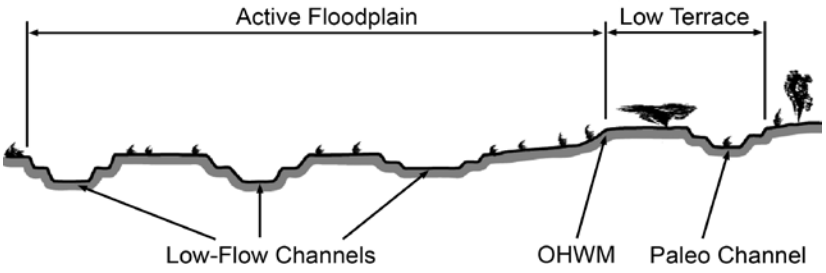
Brief site description:

Intermittent stream with large downed oaks in channel.

Checklist of resources (if available):

- [ ] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
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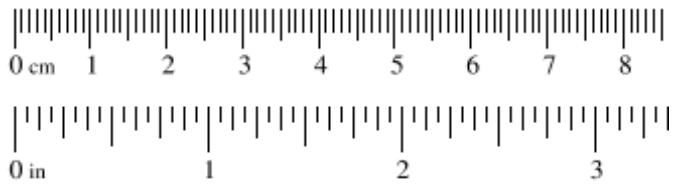
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [X] GPS
   - [ ] Digitized on computer
   - [ ] Other:

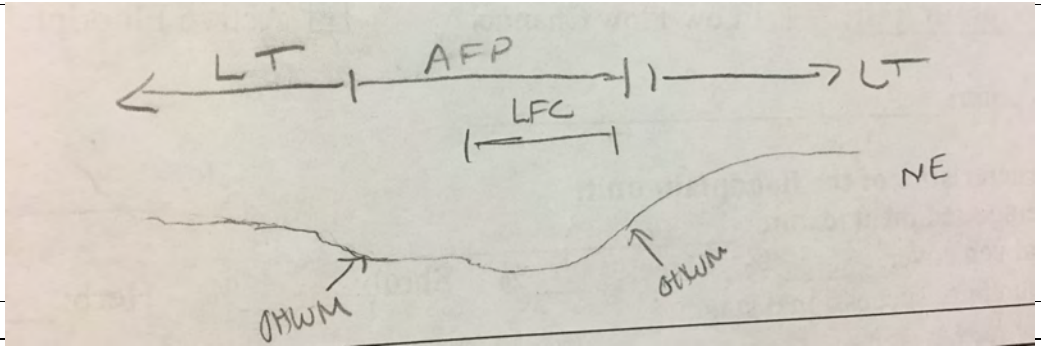
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: CSD-06.05 **Cross section ID:** 3.1 **Date:** 1/22/19 **Time:** 3:25

Cross section drawing:



OHWM

GPS point: 32.9383121291482,-116.973357517381

Indicators:

- [ ] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Gentl rise on southwest bank from Active-Floodplain to Low Terrace. Abrupt change in relief on NE bank.

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: 32.9383121291482,-116.973357517381

Characteristics of the floodplain unit:

Average sediment texture: gravel

Total veg cover: 32 % Tree: 0 % Shrub: 30 % Herb: 2 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [ ] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Low flow channel sculpted by downed trees and large boulders within channel.

Project ID: **Cross section ID:** **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: 32.9383121291482,-116.973357517381

Characteristics of the floodplain unit:

Average sediment texture: Gravel

Total veg cover: 25 % Tree: 10 % Shrub: 5 % Herb: 10 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Active Floodplain poorly defined on south side of channel.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: 32.9383121291482,-116.973357517381

Characteristics of the floodplain unit:

Average sediment texture: Sand

Total veg cover: 155 % Tree: 40 % Shrub: 45 % Herb: 70 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
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- ☐ Other: _____

Comments:

Low Terrace dominated by mature trees with understory of herbs and shrubs.

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Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Sycamore Goodan Ranch Public Access **Date:** 1/28/2019 **Time:** 3:51
Project Number: CSD 06.05 **Town:** Poway **State:** CA
Stream: Unnamed - Upper tributary of San Diego River **Photo begin file#:** **Photo end file#:** 6741-6745
Investigator(s): Larry Sward & Angelia Bottiani

Y [x] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [x] Is the site significantly disturbed?

Location Details: Site 3.2

Projection: LCC **Datum:** NAD83
Coordinates: 32.9398934590006,-116.974306097363

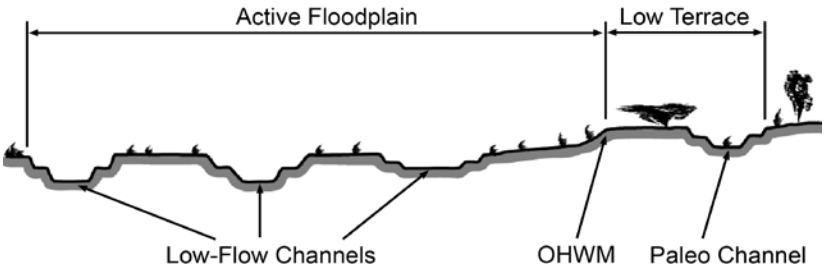
Potential anthropogenic influences on the channel system:
Trail crosses stream. Rock wall on south side of trail.

Brief site description:
Rock wall stabilizing trail on south side. Sediment being dispersed across trail. North side OHWM diffuse. South side channel constricted.

Checklist of resources (if available):

- [ ] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
  - [ ] History of recent effective discharges
  - [ ] Results of flood frequency analysis
  - [ ] Most recent shift-adjusted rating
  - [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

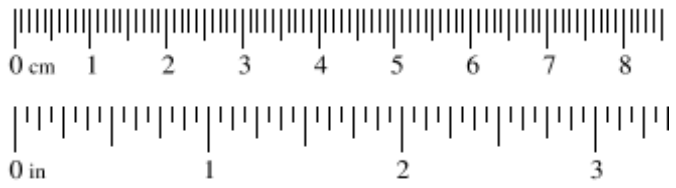


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [x] GPS
   - [ ] Digitized on computer
   - [ ] Other:

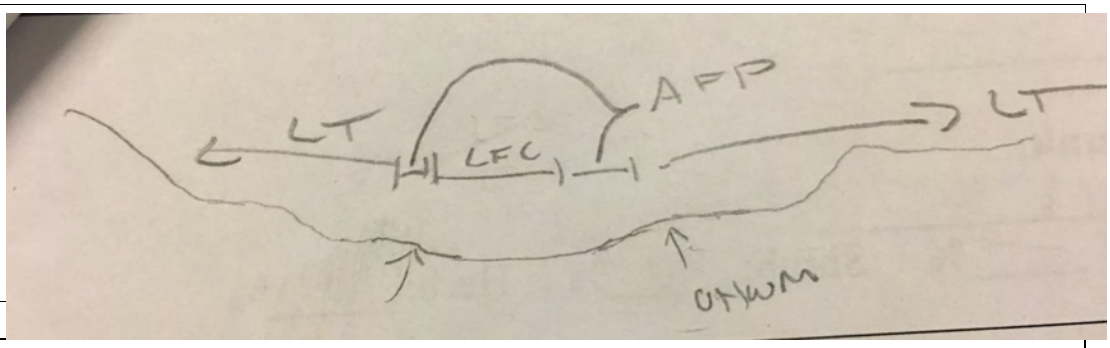
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: CSD 05.06 **Cross section ID:** 3.2 **Date:** 1/22/19 **Time:** 3:51

Cross section drawing:



OHWM

GPS point: 32.9398934590006,-116.974306097363

Indicators:

- [ ] Change in average sediment texture
- [x] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Downed trees and large boulders causing meanders in LFC channel north of trail. OHWM poorly defined N of trail. South of trail log constricts LFC.

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: 32.9398934590006,-116.974306097363

Characteristics of the floodplain unit:

Average sediment texture: gravel

Total veg cover: 92 % Tree: 0 % Shrub: 90 % Herb: 2 %

Community successional stage:

- [ ] NA
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Early (herbaceous & seedlings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank (South of trail)
- [ ] Benches
- [ ] Soil development
- [x] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

North of trail lack of vegetation, cobble bed, and depressional surface indicative of Low-Flow Channel.

Project ID: CSD-06.04 **Cross section ID:** Site 3.2 **Date:** 1/22/19 **Time:** 3:51

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: 32.9398934590006,-116.974306097363

Characteristics of the floodplain unit:

Average sediment texture: gravel

Total veg cover: 100 % Tree: 0 % Shrub: 90 % Herb: 10 %

Community successional stage:

- ☐ NA
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Early (herbaceous & seedlings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Downed logs and cobbles/boulders causing meanders.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: 32.9398934, -116.974306

Characteristics of the floodplain unit:

Average sediment texture: Sand

Total veg cover: 100 % Tree: 0 % Shrub: 95 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Early (herbaceous & seedlings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Low Terrace dominated by Coastal Sage Scrub.

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.**

1. REPORT DATE *(DD-MM-YYYY)*	**2. REPORT TYPE**	**3. DATES COVERED** *(From - To)*
July 2010	Technical Note	

4. TITLE AND SUBTITLE

Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)

Katherine E. Curtis and Robert W. Lichvar

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

U.S. Army Engineer Research and Development Center
Cold Regions Research and Engineering Laboratory
72 Lyme Road
Hanover, NH 03755-1290

8. PERFORMING ORGANIZATION REPORT NUMBER

ERDC/CRREL TN-10-1

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)

Headquarters
U.S. Army Corps of Engineers
Washington, DC 20314-1000

10. SPONSOR/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT

Approved for public release; distribution is unlimited.

13. SUPPLEMENTARY NOTES

14. ABSTRACT

The Ordinary High Water Mark (OHWM) is a method used to identify the lateral limits of non-wetland waters. Lichvar and McColley (2008) developed an OHWM delineation manual for ephemeral and intermittent streams in the Arid West. Their approach identified key hydrologic, geomorphic, and vegetation indicators useful in OHWM delineation. This technical note provides an updated datasheet to the manual. The datasheet has been simplified but still includes the overall field signatures and preliminary methods used to determine the OHWM. The datasheet now focuses on identifying the characteristics of each individual hydrogeomorphic floodplain unit and uses the differences between the floodplain units to identify the OHWM.

15. SUBJECT TERMS
Arid West, Floodplains, Ephemeral streams, Intermittent streams, Ordinary High Water Mark

16. SECURITY CLASSIFICATION OF:			**17. LIMITATION OF ABSTRACT**	**18. NUMBER OF PAGES**	**19a. NAME OF RESPONSIBLE PERSON**
a. REPORT	**b. ABSTRACT**	**c. THIS PAGE**			**19b. TELEPHONE NUMBER** *(include area code)*
U	U	U	U	20	

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Sycamore Goodan Ranch Public Access **Date:** 1/22/19 **Time:** 2:17
Project Number: CSD 06.05 **Town:** Poway **State:** CA
Stream: Unnamed - Upper tributary of San Diego River **Photo begin file#:** **Photo end file#:** 6717-6720
Investigator(s): Larry Sward & Angelia Bottiani

Y [x] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [x] Is the site significantly disturbed?

Location Details: Site 4.1

Projection: LCC **Datum:** NAD83
Coordinates: 32.9349601641604, -116.972343474735

Potential anthropogenic influences on the channel system:

Trail crosses streambed.

Brief site description:

Ephemeral drainage in chaparral and coast live oak woodland.

Checklist of resources (if available):

- [ ] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
  - [ ] History of recent effective discharges
  - [ ] Results of flood frequency analysis
  - [ ] Most recent shift-adjusted rating
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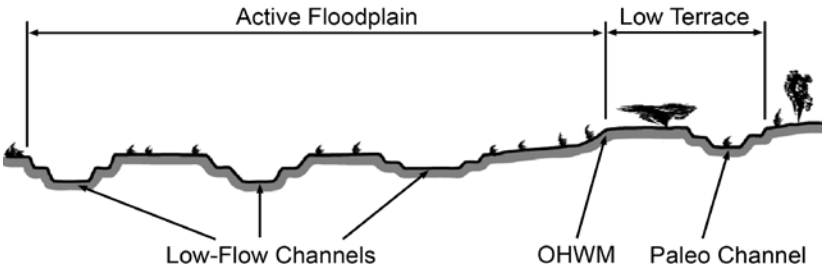
Hydrogeomorphic Floodplain Units

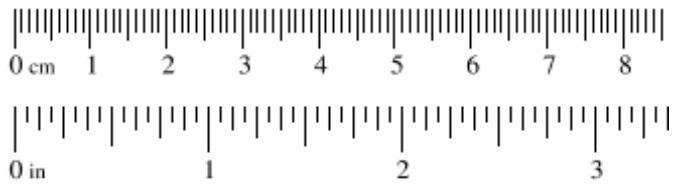


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [x] GPS
   - [ ] Digitized on computer
   - [ ] Other:

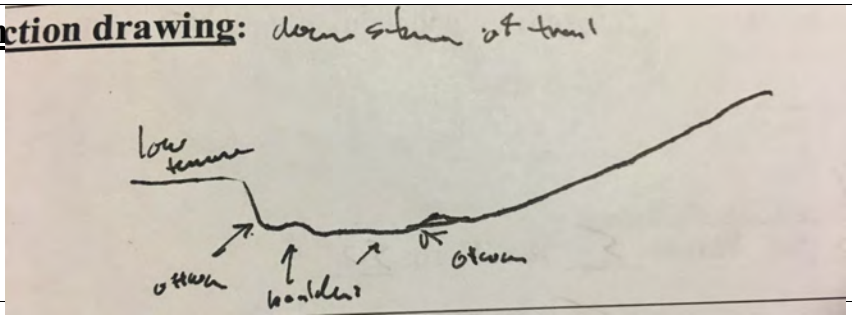
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: CSD-06.05 **Cross section ID:** Site 4.1 **Date:** 1/22/19 **Time:** 2:15

Cross section drawing:



OHWM

GPS point: 32.9349601641604, -116.972343474735

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Break in slope.

Floodplain unit:

☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: 32.9349601641604, -116.972343474735

Characteristics of the floodplain unit:

Average sediment texture: sand to cobbles

Total veg cover: 0 % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Boulders and leaf litter common in streambed.

Project ID: CSD-06.05 **Cross section ID:** Site 4.1 **Date:** 1/22/19 **Time:** 2:15

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: 32.9349601641604, -116.972343474735

Characteristics of the floodplain unit:

Average sediment texture: sand

Total veg cover: 70 % Tree: 20 % Shrub: 5 % Herb: 50 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
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- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

None observed.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
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- ☐ Late (herbaceous, shrubs, mature trees)

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Comments:

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Katherine E. Curtis and Robert W. Lichvar

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Cold Regions Research and Engineering Laboratory
72 Lyme Road
Hanover, NH 03755-1290

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Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Sycamore Goodan Ranch Public Access
Date: 1/22/19 **Time:** 2:40
Project Number: CSD 06.05
Town: Poway **State:** CA
Stream: Unnamed - Upper tributary of San Diego River
Photo begin file#: **Photo end file#:** 6721-6725
Investigator(s): Larry Sward & Angelia Bottiani

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: Site 4.2

Projection: LCC **Datum:** NAD83
Coordinates: 32.9374019, -116.9739672

Potential anthropogenic influences on the channel system:

Trail crosses stream from east to west and remains adjacent to stream.

Brief site description:

Intermittent stream through chaparral, coastal sage scrub and herbaceous wetland.

Checklist of resources (if available):

- [ ] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
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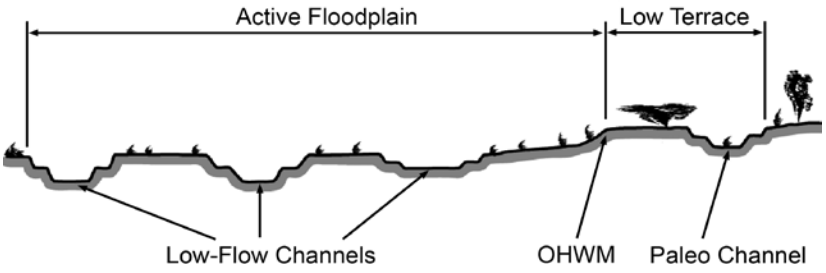
Hydrogeomorphic Floodplain Units



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1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
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Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
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0.039	1.00	Very coarse sand	Sand
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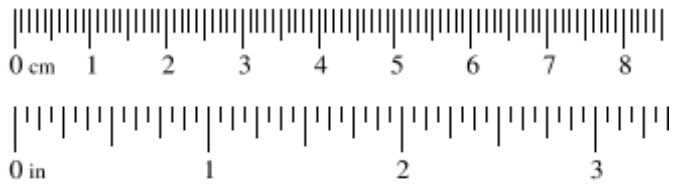
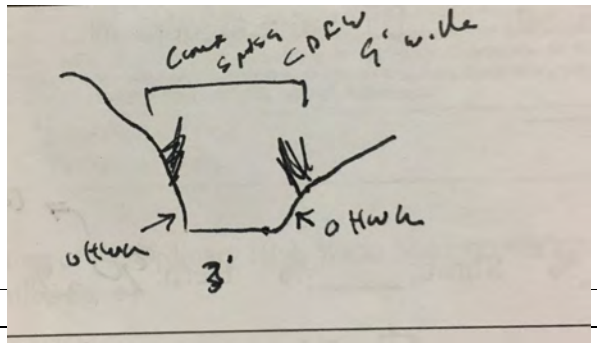
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: CSD-06.05 **Cross section ID:** 4.2 **Date:** 1/22/19 **Time:** 2:40

Cross section drawing:



OHWM

GPS point: 32.9374019, -116.9739672

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

No vegetation in channel.

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: 32.93740, -116.9739672

Characteristics of the floodplain unit:

Average sediment texture: Sand

Total veg cover: 0 % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Unvegetated bands with FAC plants along Low Terrace.

Project ID: CSD-06.05 **Cross section ID:** Site 4.2 **Date:** 1/22/19 **Time:** 2:40

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: 32.9374019, -116.9739672

Characteristics of the floodplain unit:

Average sediment texture: Sand

Total veg cover: 50 % Tree: _____% Shrub: _____% Herb: 50 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No indicators observed. Above OHWM.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

REPORT DOCUMENTATION PAGE

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Katherine E. Curtis and Robert W. Lichvar

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15. SUBJECT TERMS
Arid West, Floodplains, Ephemeral streams, Intermittent streams, Ordinary High Water Mark

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Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Sycamore Goodan Ranch Public Access
Project Number: CSD 06.05
Stream: Unnamed - Upper tributary of San Diego River
Investigator(s): Larry Sward & Angelia Bottiani

Date: 1/22/19 **Time:** 2:01
Town: Poway **State:** CA
Photo begin file#: 6713-6716 **Photo end file#:**

Y [x] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [x] Is the site significantly disturbed?

Location Details: Site 5

Projection: LCC **Datum:** NAD83
Coordinates: 32.934274,-116.972757

Potential anthropogenic influences on the channel system:

Trail crosses stream.

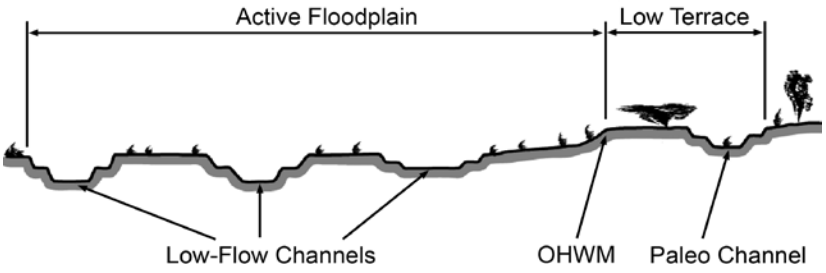
Brief site description:

Ephemeral drainage through coast live oak woodlend.

Checklist of resources (if available):

- [ ] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

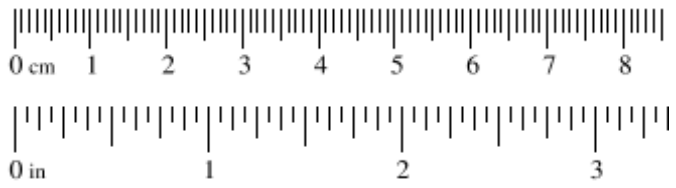


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [x] GPS
   - [ ] Digitized on computer
   - [ ] Other:

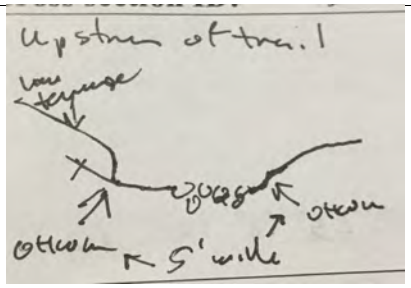
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: CSD 06.05 **Cross section ID:** Site 5 **Date:** 1/23/2019 **Time:** 2:01

Cross section drawing:



OHWM

GPS point: 32.934275,-116.972759

Indicators:

- ☐ Change in average sediment texture
- ☒ Change in vegetation species
- ☐ Change in vegetation cover
- ☐ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

No vegetation rooted in low-flow channel.

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: 32.934274,-116.972757

Characteristics of the floodplain unit:

Average sediment texture: boulders/sand

Total veg cover: 0 % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Low-flow channel unvegetate.

Project ID: CAD-06.50 **Cross section ID:** Site 5 **Date:** 1/22/2019 **Time:** 2:01

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: 32.934274,-116.972757

Characteristics of the floodplain unit:

Average sediment texture: Sand

Total veg cover: 60 % Tree: 50 % Shrub: 25 % Herb: 10 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No indicators observed. Above OWHM.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
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Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Sycamore Goodan Ranch Public Access
Date: 1/22/19 **Time:** 11:55 AM
Project Number: CSD 06.05
Town: Poway **State:** CA
Stream: Unnamed - Upper tributary of San Diego River
Photo begin file#: 6704-6708, **Photo end file#:**
Investigator(s): Larry Sward & Angelia Bottiani

Y [x] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [x] Is the site significantly disturbed?

Location Details: Site 6

Projection: LCC **Datum:** NAD83
Coordinates: 32.928415, -116.982519

Potential anthropogenic influences on the channel system:
Trail through stream.

Brief site description:
Wooded drainage.

Checklist of resources (if available):

- [x] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
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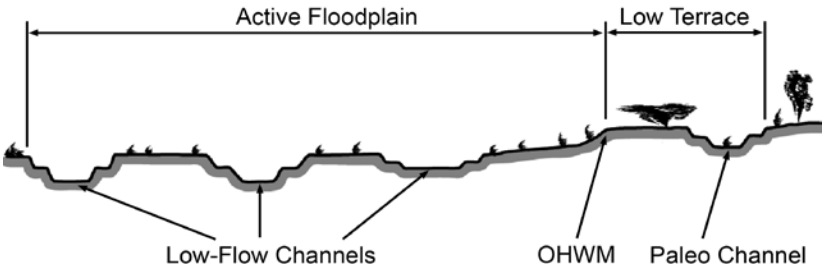
Hydrogeomorphic Floodplain Units



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1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
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   - [ ] Mapping on aerial photograph
   - [ ] GPS
   - [ ] Digitized on computer
   - [x] Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
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1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
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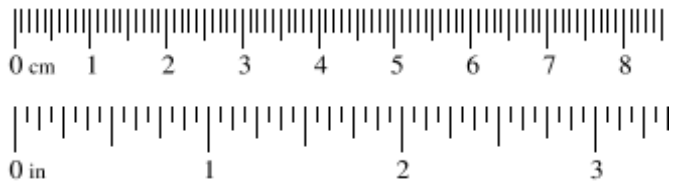
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



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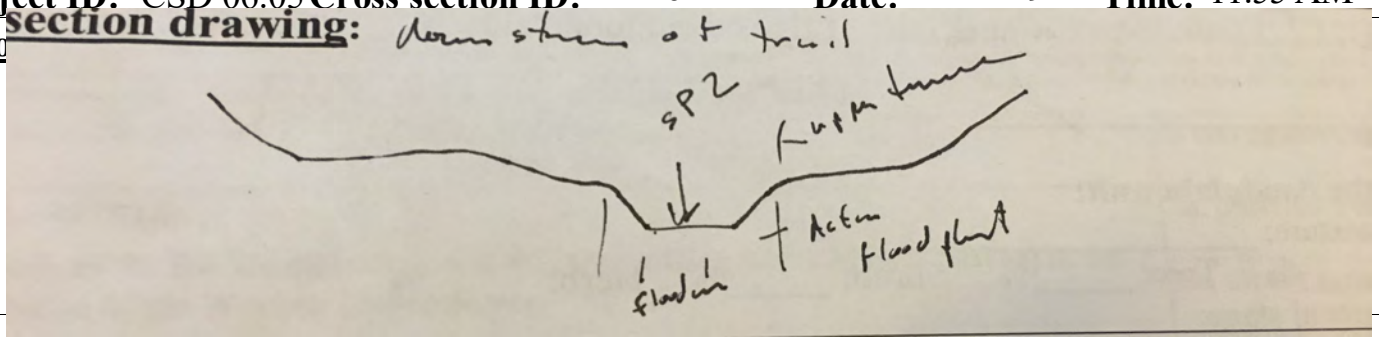
Cross section drawing:



OHWM

GPS point: 32.928415, -116.982519

Indicators:

- [ ] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

No plants rooted in low-flow channel.

Floodplain unit:

- [x] Low-Flow Channel
- [x] Active Floodplain
- [ ] Low Terrace

GPS point: 32.928415, -116.982519

Characteristics of the floodplain unit:

Average sediment texture: Sandy Clay Loam and Cobbles

Total veg cover: 80 % Tree: _____% Shrub: 70 % Herb: 10 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [x] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Herbs rooted active floodplain.

Project ID: CSD06.05 **Cross section ID:** Site 6 **Date:** 1/22/19 **Time:** 11:55 AM

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: 32.928415, -116.982519

Characteristics of the floodplain unit:

Average sediment texture: Sandy Clay Loam

Total veg cover: 50 % Tree: 40 % Shrub: 10 % Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

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- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Above OHWM.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sycamore Goodan Ranch Public Access City/County: Poway/San Diego Sampling Date: 1/22/19

Applicant/Owner: County of San Diego State: CA Sampling Point: Site 6

Investigator(s): Sward, Larry & Bottiani, Angelia Section, Township, Range: Sec 28, T14S, R1W

Landform (hillslope, terrace, etc.): Canyon streambed Local relief (concave, convex, none): Concave Slope (%): 2%

Subregion (LRR): Region C Lat: 32.928415 Long: -116.982519 Datum: NAD 83

Soil Map Unit Name: VbB Visalia gravelly sandy loam, 2 to 5 percent slopes NWI classification: PFOA

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Soil pit is located 10ft south of the trail in the streambed. Although hydrophytic vegetation is present the site lacks hydric soils and adequate hydrology.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: r = 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus agrifolia	20	Y	UPL
2. Platanus racemosa	5	Y	FAC
3.			
4.			
	25 = Total Cover		
Sapling/Shrub Stratum (Plot size: r = 15)			
1. Salix lasiolepis	70	Y	FACW
2. Baccharis salisifolia	5	N	FAC
3.			
4.			
5.			
	75 = Total Cover		
Herb Stratum (Plot size: r = 5)			
1. Carex spissa	5	Y	FAC
2. Eliocharis sp.	5	Y	FAC
3. Juncus mexicanus	<1	N	FACW
4.			
5.			
6.			
7.			
8.			
	10 = Total Cover		
Woody Vine Stratum (Plot size: r = 10)			
1. None.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 4/5 = 80% (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 _____

Remarks:

Although hydrophytic vegetation is present the site lacks hydric soils and adequate hydrology.

SOIL

Sampling Point: Site 6

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR2/3	100	-	-	-	-	SCL	
4-9	10YR2/2	80	-	-	-	-	SCL	
4-9	10YR3/2	20	-	-	-	-	SCL	
9-12	10YR2/2	60	-	-	-	-	CL	
9-12	10YR3/2	40	-	-	-	-	CL	

[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 ✓

Remarks:

No hydric soil indicators observed.

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 ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

Wetland hydrology insufficient. FAC-Neutral 1:1 = Failed

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Sycamore Goodan Ranch Public Access
Date: 1/22/19
Time: 11:00 AN
Project Number: CSD 06.05
Town: Poway
State: CA
Stream: Unnamed - Upper tributary of San Diego River
Photo begin file#: 6700 - 6703
Photo end file#:
Investigator(s): Larry Sward & Angelia Bottiani

Y [x] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [x] Is the site significantly disturbed?

Location Details: Site 7

Projection: LCC **Datum:** NAD83
Coordinates: 32.931291, -116.985453

Potential anthropogenic influences on the channel system:

Trail crosses drainage. Large angular boulder in streambed.

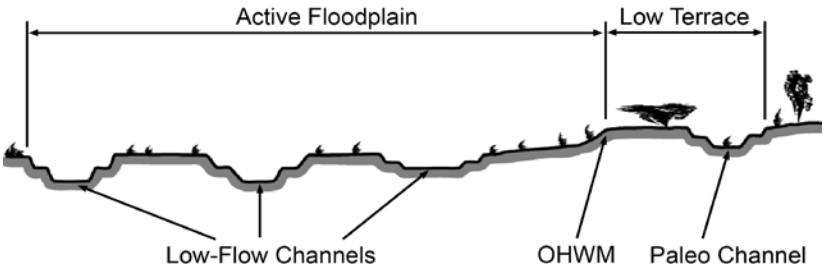
Brief site description:

Ephemeral drainage through chaparral.

Checklist of resources (if available):

- [ ] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

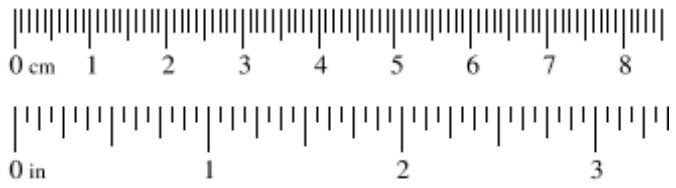


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [ ] Digitized on computer
   - [ ] GPS
   - [x] Other:

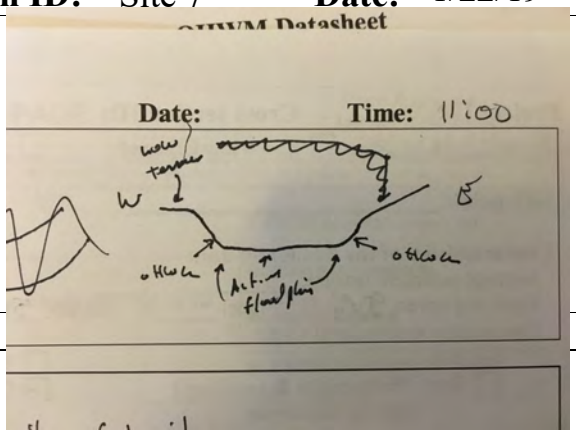
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: CSD06.06 **Cross section ID:** Site 7 **Date:** 1/22/19 **Time:** 11:00 Am

Cross section drawing:



OHWM

GPS point: 32.931291, -116.985453

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [x] Other: No vegetation
- [ ] Other: _____

Comments:

Cross section north of trail.

Floodplain unit:

- [x] Low-Flow Channel
- [x] Active Floodplain
- [ ] Low Terrace

GPS point: 32.931291, -116.985453

Characteristics of the floodplain unit:

Average sediment texture: Coarse silt & cobbles

Total veg cover: 0 % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

LFC 4-5ft wide.

Project ID: CSD06.05 **Cross section ID:** Site 7 **Date:** 1/22/19 **Time:** 11:00 AM

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: 32.931291, -116.985453

Characteristics of the floodplain unit:

Average sediment texture: Coarse silt

Total veg cover: 90 % Tree: _____% Shrub: 50 % Herb: 40 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No indicators observed. No evidence of surface flow at this location.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

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1. REPORT DATE *(DD-MM-YYYY)*	**2. REPORT TYPE**	**3. DATES COVERED** *(From - To)*
July 2010	Technical Note	

4. TITLE AND SUBTITLE

Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)

Katherine E. Curtis and Robert W. Lichvar

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

U.S. Army Engineer Research and Development Center
Cold Regions Research and Engineering Laboratory
72 Lyme Road
Hanover, NH 03755-1290

8. PERFORMING ORGANIZATION REPORT NUMBER

ERDC/CRREL TN-10-1

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)

Headquarters
U.S. Army Corps of Engineers
Washington, DC 20314-1000

10. SPONSOR/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT

Approved for public release; distribution is unlimited.

13. SUPPLEMENTARY NOTES

14. ABSTRACT

The Ordinary High Water Mark (OHWM) is a method used to identify the lateral limits of non-wetland waters. Lichvar and McColley (2008) developed an OHWM delineation manual for ephemeral and intermittent streams in the Arid West. Their approach identified key hydrologic, geomorphic, and vegetation indicators useful in OHWM delineation. This technical note provides an updated datasheet to the manual. The datasheet has been simplified but still includes the overall field signatures and preliminary methods used to determine the OHWM. The datasheet now focuses on identifying the characteristics of each individual hydrogeomorphic floodplain unit and uses the differences between the floodplain units to identify the OHWM.

15. SUBJECT TERMS
Arid West, Floodplains, Ephemeral streams, Intermittent streams, Ordinary High Water Mark

16. SECURITY CLASSIFICATION OF:			**17. LIMITATION OF ABSTRACT**	**18. NUMBER OF PAGES**	**19a. NAME OF RESPONSIBLE PERSON**
a. REPORT	**b. ABSTRACT**	**c. THIS PAGE**			**19b. TELEPHONE NUMBER** *(include area code)*
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Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Sycamore Goodan Ranch Public Access **Date:** 1/22/19 **Time:** 10:37
Project Number: CSD 06.05 **Town:** Poway **State:** CA
Stream: Unnamed - Upper tributary of San Diego River **Photo begin file#:** **Photo end file#:**
Investigator(s): Larry Sward and Angelia Bottiani

Y [x] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [x] Is the site significantly disturbed?

Location Details: Site 8

Projection: LCC **Datum:** NAD 83
Coordinates: 32.9292461, -116.9864506

Potential anthropogenic influences on the channel system:

None, except where trail crosses site.

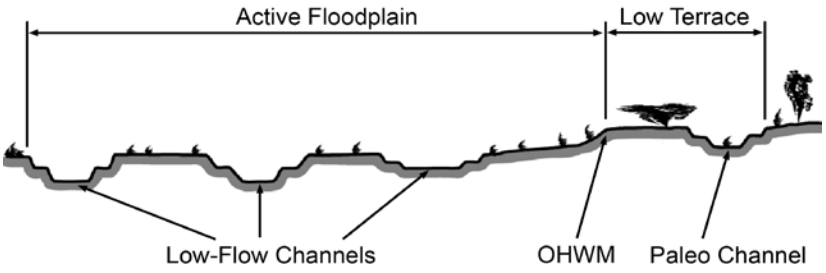
Brief site description:

Ephemeral cobble lined stream.

Checklist of resources (if available):

- [x] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [x] GPS
   - [ ] Digitized on computer
   - [ ] Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
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1/32 0.00061	0.0156	Medium silt	Silt
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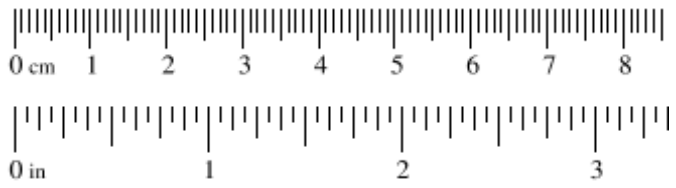
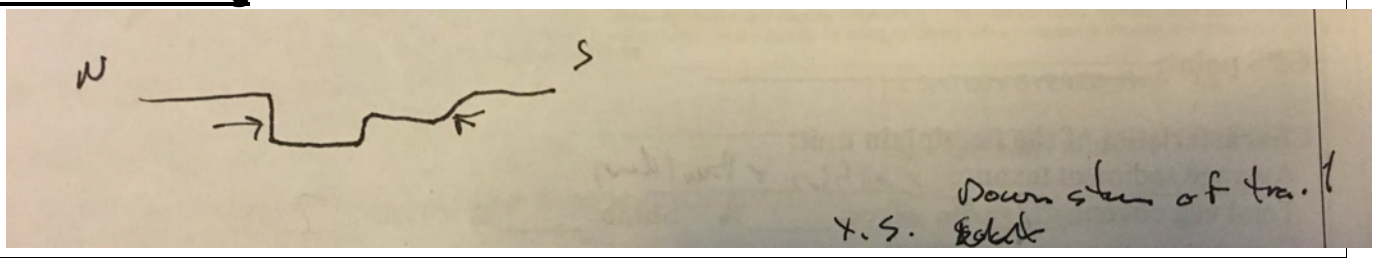
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: CSD 06.05 **Cross section ID:** Site 8 **Date:** 1/22/19 **Time:** 10:48

Cross section drawing:



OHWM

GPS point: 32.9292461, -116.9864506

Indicators:

- [ ] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Some sedimentation in stream from trail erosion.

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: 32.9292461, -116.9864506

Characteristics of the floodplain unit:

Average sediment texture: Cobbles. boulders, sand

Total veg cover: 3 % Tree: _____% Shrub: _____% Herb: 3 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [x] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [ ] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [x] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

LFC 2-3 ft wide.

Project ID: CSD 06.05 **Cross section ID:** Site 8 **Date:** 1/22/19 **Time:** 10:37

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: 32.9292461, -116.9864506

Characteristics of the floodplain unit:

Average sediment texture: cobbles and boulders

Total veg cover: 7 % Tree: _____% Shrub: _____% Herb: 7 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: 32.9292461, -116.9864506

Characteristics of the floodplain unit:

Average sediment texture: sand and cobbles

Total veg cover: 80 % Tree: _____% Shrub: _____% Herb: 80 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No indicators observed.

REPORT DOCUMENTATION PAGE

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July 2010	Technical Note	

4. TITLE AND SUBTITLE

Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)

Katherine E. Curtis and Robert W. Lichvar

5d. PROJECT NUMBER

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5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

U.S. Army Engineer Research and Development Center
Cold Regions Research and Engineering Laboratory
72 Lyme Road
Hanover, NH 03755-1290

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14. ABSTRACT

The Ordinary High Water Mark (OHWM) is a method used to identify the lateral limits of non-wetland waters. Lichvar and McColley (2008) developed an OHWM delineation manual for ephemeral and intermittent streams in the Arid West. Their approach identified key hydrologic, geomorphic, and vegetation indicators useful in OHWM delineation. This technical note provides an updated datasheet to the manual. The datasheet has been simplified but still includes the overall field signatures and preliminary methods used to determine the OHWM. The datasheet now focuses on identifying the characteristics of each individual hydrogeomorphic floodplain unit and uses the differences between the floodplain units to identify the OHWM.

15. SUBJECT TERMS
Arid West, Floodplains, Ephemeral streams, Intermittent streams, Ordinary High Water Mark

16. SECURITY CLASSIFICATION OF:			**17. LIMITATION OF ABSTRACT**	**18. NUMBER OF PAGES**	**19a. NAME OF RESPONSIBLE PERSON**
a. REPORT	**b. ABSTRACT**	**c. THIS PAGE**			**19b. TELEPHONE NUMBER** *(include area code)*
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Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Sycamore Goodan Ranch Public Access
Date: 1/22/19
Time: 10:30 AM
Project Number: CSD 06.05
Town: Poway
State: CA
Stream: Unnamed - Upper tributary of San Diego River
Photo begin file#: 6695
Photo end file#: 6697
Investigator(s): Larry Sward and Angelia Bottiani

Y [x] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [x] Is the site significantly disturbed?

Location Details: Site 9

Projection: LCC
Datum: NAD 83
Coordinates: 32.921405, -116.988911

Potential anthropogenic influences on the channel system:

Trail crosses stream.

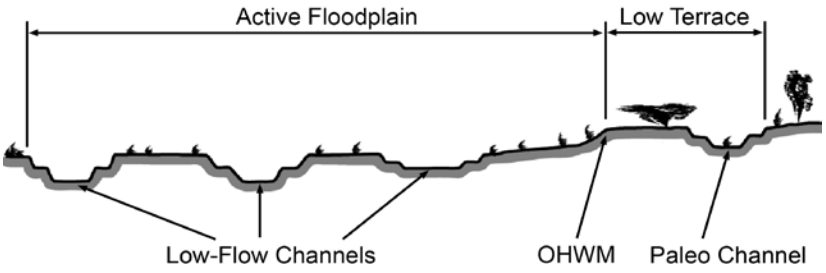
Brief site description:

Ephemeral drainage that crosses trail.

Checklist of resources (if available):

- [x] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



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2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
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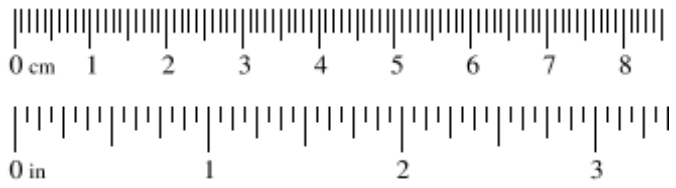
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [x] GPS
   - [ ] Digitized on computer
   - [ ] Other:

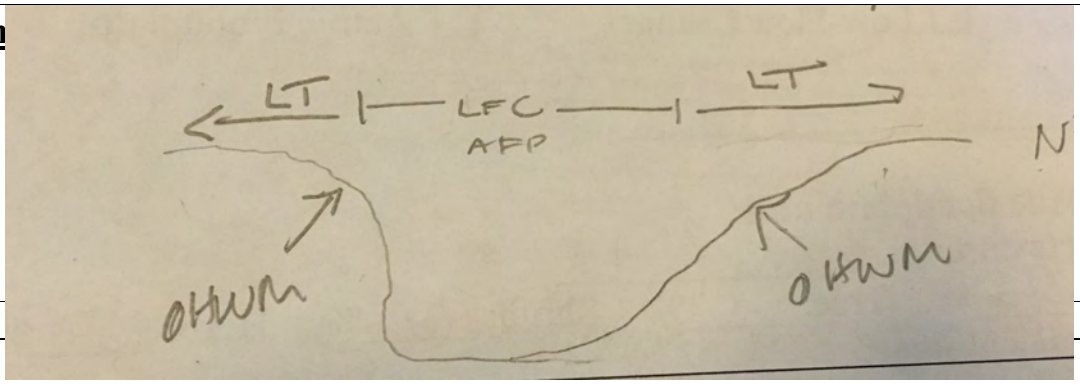
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: CSD 06.05 **Cross section ID:** Site 9 **Date:** 1/22/19 **Time:** 10:30

Cross section drawin



OHWM

GPS point: 32.921405, -116.988911

Indicators:

- [ ] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Ephemeral channel with cobble bed. Active floodplaine and low flow channel hard to distinguish from each other..

Floodplain unit:

- [x] Low-Flow Channel
- [x] Active Floodplain
- [ ] Low Terrace

GPS point: 32.921405, -116.988911

Characteristics of the floodplain unit:

Average sediment texture: cobble

Total veg cover: 7 % Tree: _____% Shrub: 1 % Herb: 6 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [x] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Southwestern bank steeper.

Project ID: CSD 06.05 **Cross section ID:** Site 9 **Date:** 1/22/19 **Time:** 10:20

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: 32.921405, -116.988911

Characteristics of the floodplain unit:

Average sediment texture: coarse silt

Total veg cover: 95 % Tree: _____% Shrub: 10 % Herb: 85 %

Community successional stage:

- ☐ NA
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Early (herbaceous & seedlings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☒ Soil development
- ☐ Ripples
- ☐ Surface relief
- ☐ Drift and/or debris
- ☐ Other: _____
- ☐ Presence of bed and bank
- ☐ Other: _____
- ☐ Benches
- ☐ Other: _____

Comments:

Mature chaparral. No evidence of recent flow.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Early (herbaceous & seedlings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Soil development
- ☐ Ripples
- ☐ Surface relief
- ☐ Drift and/or debris
- ☐ Other: _____
- ☐ Presence of bed and bank
- ☐ Other: _____
- ☐ Benches
- ☐ Other: _____

Comments:

REPORT DOCUMENTATION PAGE

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July 2010	Technical Note	

4. TITLE AND SUBTITLE

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5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)

Katherine E. Curtis and Robert W. Lichvar

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

U.S. Army Engineer Research and Development Center
Cold Regions Research and Engineering Laboratory
72 Lyme Road
Hanover, NH 03755-1290

8. PERFORMING ORGANIZATION REPORT NUMBER

ERDC/CRREL TN-10-1

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)

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U.S. Army Corps of Engineers
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14. ABSTRACT

The Ordinary High Water Mark (OHWM) is a method used to identify the lateral limits of non-wetland waters. Lichvar and McColley (2008) developed an OHWM delineation manual for ephemeral and intermittent streams in the Arid West. Their approach identified key hydrologic, geomorphic, and vegetation indicators useful in OHWM delineation. This technical note provides an updated datasheet to the manual. The datasheet has been simplified but still includes the overall field signatures and preliminary methods used to determine the OHWM. The datasheet now focuses on identifying the characteristics of each individual hydrogeomorphic floodplain unit and uses the differences between the floodplain units to identify the OHWM.

15. SUBJECT TERMS
Arid West, Floodplains, Ephemeral streams, Intermittent streams, Ordinary High Water Mark

16. SECURITY CLASSIFICATION OF:			**17. LIMITATION OF ABSTRACT**	**18. NUMBER OF PAGES**	**19a. NAME OF RESPONSIBLE PERSON**
a. REPORT	**b. ABSTRACT**	**c. THIS PAGE**			**19b. TELEPHONE NUMBER** *(include area code)*
U	U	U	U	20	

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Sycamore Goodan Ranch Public Access
Project Number: CSD 06.05
Stream: Unnamed - upper tributary of San Diego River
Investigator(s): Larry Sward & Angelia Bottiani

Date: 1/22/19
Town: Poway
Photo begin file#: 6668

Time: 9:55
State: CA
Photo end file#: 6694

Y [x] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [x] Is the site significantly disturbed?

Location Details: Site 10

Projection: **Datum:** NAD83
Coordinates: 32.9204055760362, -116.988471848999

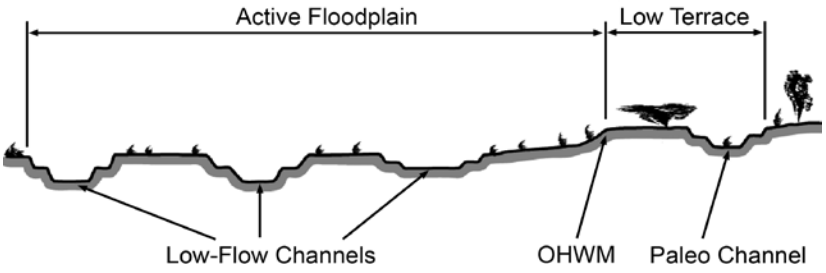
Potential anthropogenic influences on the channel system:
Road crossing stream on southern end of Sycamore Canyon.

Brief site description:
Intermittent stream at near southern end of Sycamore Canyon.

Checklist of resources (if available):

- [x] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
  - [ ] History of recent effective discharges
  - [ ] Results of flood frequency analysis
  - [ ] Most recent shift-adjusted rating
  - [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



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1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
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   - [x] GPS
   - [ ] Digitized on computer
   - [ ] Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
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0.079	2.00	Granule	Gravel
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1/8 0.0025	0.0625	Very fine sand	Sand
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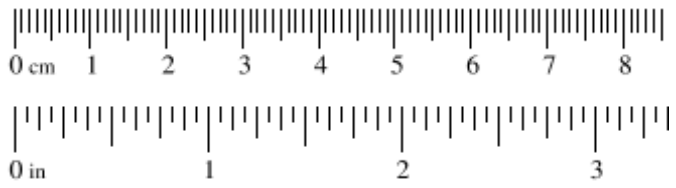
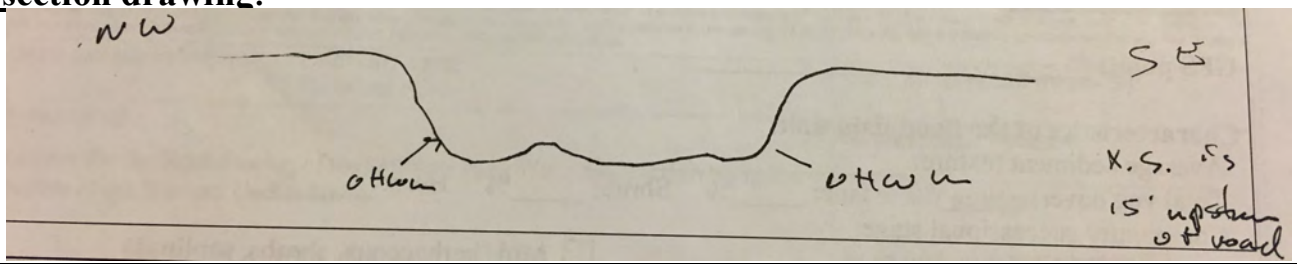
		Clay	Mud



Project ID: CSD 06.05 **Cross section ID:** Site 10 **Date:** 1/22/19 **Time:** 9:55

Cross section drawing:



OHWM

GPS point: 32.92, -116.99

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Steep sided channel.

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: 32.92, -116.99

Characteristics of the floodplain unit:

Average sediment texture: Cobbles and Boulders

Total veg cover: 90 % Tree: 80 % Shrub: 0 % Herb: 10 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Soil absent due to periodic surface flows.

Project ID: CSD 06.05 **Cross section ID:** Site 10 **Date:** 1/22/19 **Time:** 9:55

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: 32.92, -116.99

Characteristics of the floodplain unit:

Average sediment texture: Coarse silt

Total veg cover: 95 % Tree: 60 % Shrub: 25 % Herb: 60 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
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- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No indicators - well established upland plant community present outside the streambed.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

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Comments:

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Katherine E. Curtis and Robert W. Lichvar

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sycamore Goodan Ranch Public Access City/County: Poway/San Diego Sampling Date: 1/22/19

Applicant/Owner: County of San Diego State: CA Sampling Point: Site 10

Investigator(s): Sward, Larry & Bottiani, Angelia Section, Township, Range: Sec 28, T14S, R1W

Landform (hillslope, terrace, etc.): Canyon streambed Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): Region C Lat: 32.9204055760362 Long: -116.988471848999 Datum: NAD83

Soil Map Unit Name: Visalia gravelly sandy loam, 2 to 5 percent slopes NWI classification: R4SBA

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Plot in stream bed. Cobbles and stones common. Point located just south of road.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20 x 5 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus agrifolia	50	Y	UPL
2. Platanus racemosa	15	Y	FAC
3.			
4.			
	65 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10 x 5 ft)			
1. Baccharis salicifolia	30	N	FAC
2. Salix lasiolepis	10	Y	FACW
3.			
4.			
5.			
	40 = Total Cover		
Herb Stratum (Plot size: r = 5 ft)			
1. None observed.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: r = 10)			
1. None observed			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 2/3 = 33% (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 _____

Remarks:

Small patch (2 x 1ft) of Carex spissa on bank outside of plot.

SOIL

Sampling Point: Site 10

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 5	-	-	-	-	-	-	Cobbles	
5 - 15	7.5YR2.5/2	20	-	-	-	-	SC	
5 - 15	-	80%	-	-	-	-	Cobbles	

[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 ✓

Remarks:

No hydric soil indicators observed.

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 ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

None available.

Remarks:

FAC-neutral test = 1/1 = Failed. Site lacks sufficient wetland hydrology.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Sycamore Goodan Ranch Public Access
Date: 1/23/19
Time: 4:36 PM
Project Number: CSD 06.05
Town: Poway
State: CA
Stream: Unnamed - Upper tributary of San Diego River
Photo begin file#: 6802 - 6805
Photo end file#:
Investigator(s): Larry Sward and Angelia Bottiani

Y [x] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [x] Is the site significantly disturbed?

Location Details: Site 11

Projection: LCC
Datum: NAD 83
Coordinates: 32.9426377429327, -116.957969466381

Potential anthropogenic influences on the channel system:

Highway 67 just east of site.

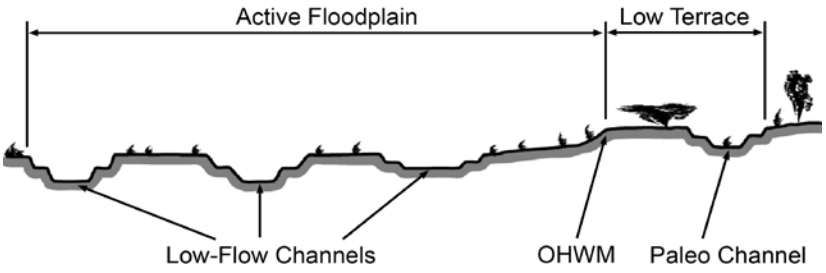
Brief site description:

Incised ephemeral stream in invaded annual grassland.

Checklist of resources (if available):

- [x] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
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   - [x] GPS
   - [ ] Digitized on computer
   - [ ] Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
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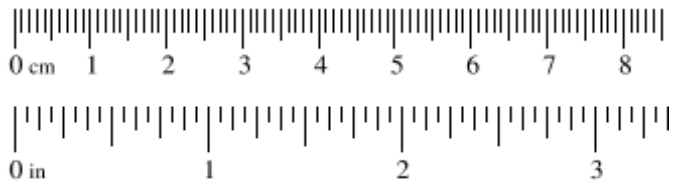
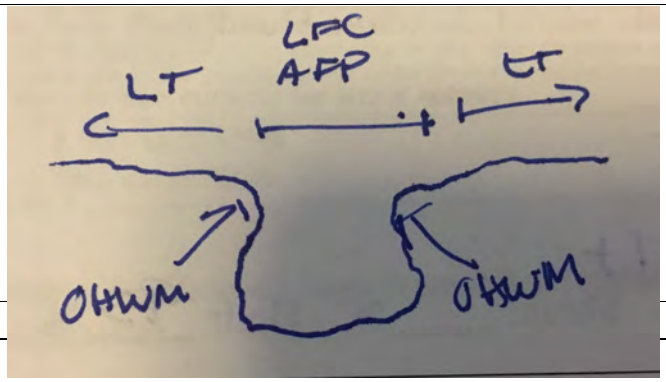
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: CSD 06.05 **Cross section ID:** Site 11 **Date:** 1/23/19 **Time:** 4:36PM

Cross section drawing:



OHWM

GPS point: 32.9426377429327, -116.957969466381

Indicators:

- [ ] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Incised ephemeral channel.

Floodplain unit:

- [x] Low-Flow Channel
- [x] Active Floodplain
- [ ] Low Terrace

GPS point: 32.9426377429327, -116.957969466381

Characteristics of the floodplain unit:

Average sediment texture: Coarse silt

Total veg cover: 15 % Tree: _____% Shrub: _____% Herb: 15 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Incised ephemeral channel with steep banks. Low flow channel hard to distinguish from active floodplain.

Project ID: CSD06.05 **Cross section ID:** Site 11 **Date:** 1/23/19 **Time:** 4:36 PM

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: 32.9426377429327, -116.957969466381

Characteristics of the floodplain unit:

Average sediment texture: Coars silt

Total veg cover: 95 % Tree: _____% Shrub: _____% Herb: 95 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☒ Soil development
- ☐ Surface relief
- ☒ Other: Mature grassland
- ☐ Other: _____
- ☐ Other: _____

Comments:

Mature grassland with no signs of recent flow.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

REPORT DOCUMENTATION PAGE

Form Approved
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1. REPORT DATE *(DD-MM-YYYY)*	**2. REPORT TYPE**	**3. DATES COVERED** *(From - To)*
July 2010	Technical Note	

4. TITLE AND SUBTITLE

Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)

Katherine E. Curtis and Robert W. Lichvar

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

U.S. Army Engineer Research and Development Center
Cold Regions Research and Engineering Laboratory
72 Lyme Road
Hanover, NH 03755-1290

8. PERFORMING ORGANIZATION REPORT NUMBER

ERDC/CRREL TN-10-1

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)

Headquarters
U.S. Army Corps of Engineers
Washington, DC 20314-1000

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11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT

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13. SUPPLEMENTARY NOTES

14. ABSTRACT

The Ordinary High Water Mark (OHWM) is a method used to identify the lateral limits of non-wetland waters. Lichvar and McColley (2008) developed an OHWM delineation manual for ephemeral and intermittent streams in the Arid West. Their approach identified key hydrologic, geomorphic, and vegetation indicators useful in OHWM delineation. This technical note provides an updated datasheet to the manual. The datasheet has been simplified but still includes the overall field signatures and preliminary methods used to determine the OHWM. The datasheet now focuses on identifying the characteristics of each individual hydrogeomorphic floodplain unit and uses the differences between the floodplain units to identify the OHWM.

15. SUBJECT TERMS
Arid West, Floodplains, Ephemeral streams, Intermittent streams, Ordinary High Water Mark

16. SECURITY CLASSIFICATION OF:			**17. LIMITATION OF ABSTRACT**	**18. NUMBER OF PAGES**	**19a. NAME OF RESPONSIBLE PERSON**
a. REPORT	**b. ABSTRACT**	**c. THIS PAGE**			**19b. TELEPHONE NUMBER** *(include area code)*
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Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Goodan Sycamore Canyon Public Access Project **Date:** 1/22/19 **Time:** 1:05 PM
Project Number: CSD 06.05 **Town:** Poway **State:** CA
Stream: Unnamed - Upper tributary of San Diego River **Photo begin file#:** **Photo end file#:**
Investigator(s): Sward, Larry & Bottiani, Angelia 6709 - 6712

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: Site 12

Projection: LCC **Datum:** NAD 83
Coordinates: 32.9294425, -116.9650452

Potential anthropogenic influences on the channel system:

Trail crosses stream.

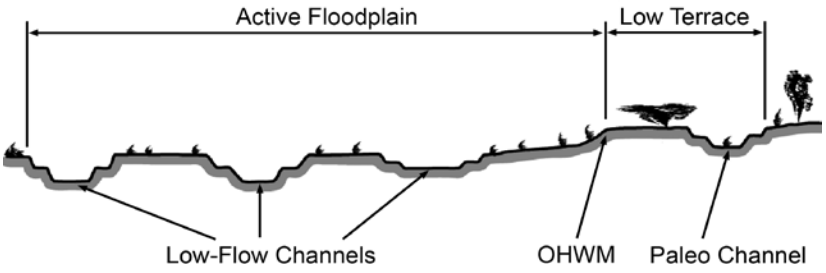
Brief site description:

Small ephemeral channel through coastal California sagescrub.

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
  - [ ] History of recent effective discharges
  - [ ] Results of flood frequency analysis
  - [ ] Most recent shift-adjusted rating
  - [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

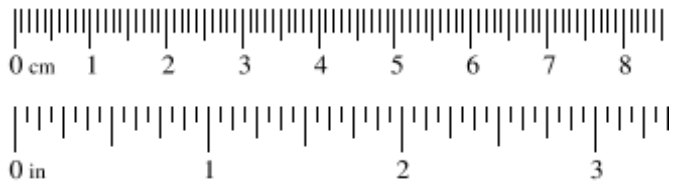


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [X] GPS
   - [ ] Digitized on computer
   - [ ] Other:

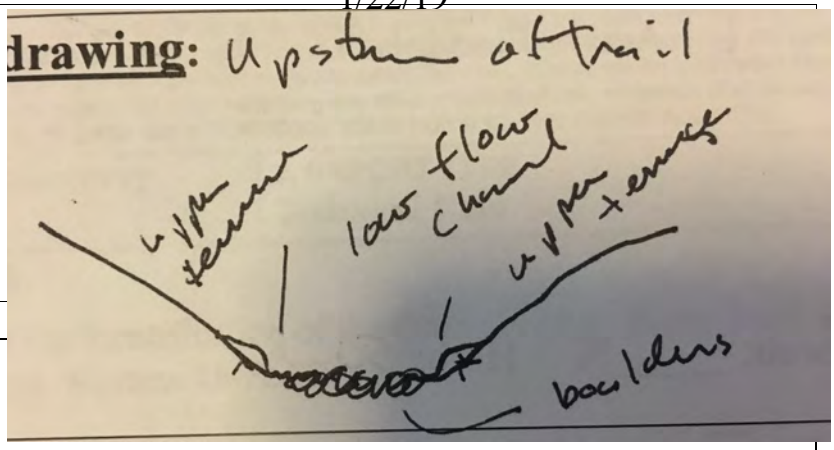
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: CSD 06.05 **Cross section ID:** Site 12 **Date:** 1/22/19 **Time:** 1:05PM

Cross section drawing:



OHWM

GPS point: 32.9294425, -116.9650452

Indicators:

- [ ] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Streambed is uneven due to preponderance of boulders.

Floodplain unit:

- [x] Low-Flow Channel
- [x] Active Floodplain
- [ ] Low Terrace

GPS point: 32.9294425, -116.9650452

Characteristics of the floodplain unit:

Average sediment texture: cobble

Total veg cover: 0 % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [ ] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [x] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: CSD 06.05 **Cross section ID:** Site 12 **Date:** 1/22/19 **Time:** 1:00

Floodplain unit: [x] Low-Flow Channel [x] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 0 % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
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- [ ] Presence of bed and bank
- [ ] Benches
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- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [ ] Low-Flow Channel [ ] Active Floodplain [x] Low Terrace

GPS point: 32.9294425, -116.9650452

Characteristics of the floodplain unit:

Average sediment texture: sand

Total veg cover: 50 % Tree: _____% Shrub: _____% Herb: 50 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [ ] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

NA. Above OHWM.

REPORT DOCUMENTATION PAGE

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Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Goodan Sycamore Canyon Public Access Project **Date:** 1/23/19 **Time:** 2:30
Project Number: CSD 06.05 **Town:** Poway **State:** CA
Stream: Unnamed - Upper tributary of San Diego River **Photo begin file#:** **Photo end file#:**
Investigator(s): Sward, Larry & Bottiani, Angelia 245-248, 253-257, 260-262, 265-268

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: Site 13

Projection: LCC **Datum:** NAD 83
Coordinates: 32.90351, -116.982281

Potential anthropogenic influences on the channel system:

Several trails cosss the area.

Brief site description:

Existing trail is between two streambed features. Several paleo channels also in the area. Trail does not intersect potentially jurisdictional areas at this location. With possible exception of CDFW (Oak woodland on canyon floor could be CDFW).

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
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- [ ] Results of flood frequency analysis
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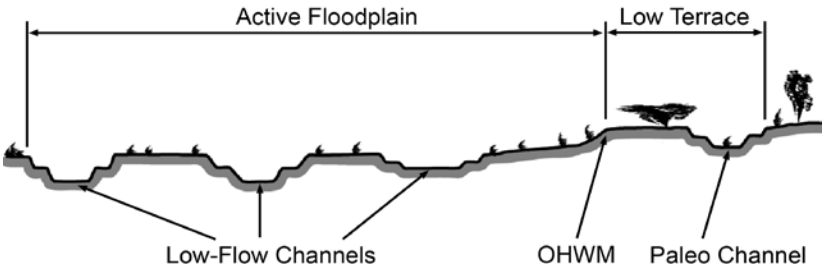
Hydrogeomorphic Floodplain Units



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   - [ ] Digitized on computer
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Inches (in)	Millimeters (mm)	Wentworth size class	
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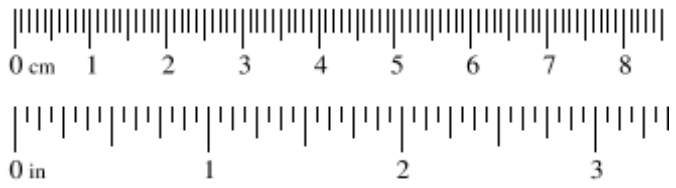

Project ID: CSD 06.05 **Cross section ID:** **Date:** **Time:**

Cross section drawing:

Existing trail is between two streambed features. Several paleo channels also in the area. Trail does not intersect potentially jurisdictional areas at this location.

OHWM

GPS point: _Existing trail is between two streambed features. Several paleo channels also in the area. Trail does not intersect potentially jurisdictional areas at this location.

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☐ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: CSD 06.05 **Cross section ID:** **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

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- ☐ NA
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Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

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Comments:

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July 2010	Technical Note	

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Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States

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Katherine E. Curtis and Robert W. Lichvar

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12. DISTRIBUTION / AVAILABILITY STATEMENT

Approved for public release; distribution is unlimited.

13. SUPPLEMENTARY NOTES

14. ABSTRACT

The Ordinary High Water Mark (OHWM) is a method used to identify the lateral limits of non-wetland waters. Lichvar and McColley (2008) developed an OHWM delineation manual for ephemeral and intermittent streams in the Arid West. Their approach identified key hydrologic, geomorphic, and vegetation indicators useful in OHWM delineation. This technical note provides an updated datasheet to the manual. The datasheet has been simplified but still includes the overall field signatures and preliminary methods used to determine the OHWM. The datasheet now focuses on identifying the characteristics of each individual hydrogeomorphic floodplain unit and uses the differences between the floodplain units to identify the OHWM.

15. SUBJECT TERMS
Arid West, Floodplains, Ephemeral streams, Intermittent streams, Ordinary High Water Mark

16. SECURITY CLASSIFICATION OF:			**17. LIMITATION OF ABSTRACT**	**18. NUMBER OF PAGES**	**19a. NAME OF RESPONSIBLE PERSON**
a. REPORT	**b. ABSTRACT**	**c. THIS PAGE**			**19b. TELEPHONE NUMBER** *(include area code)*
U	U	U	U	20	



Photo Point 1. Looking east.



Photo Point 1. Looking downstream.

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Photo Point 1. Looking upstream.



Photo Point 1. Looking west.

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Photo Point 2. Looking east.



Photo Point 2. Looking downstream.

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Photo Point 2. Looking upstream.



Photo Point 2. Looking west.

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Photo Point 3.1. Looking downstream.



Photo Point 3.1. Looking upstream.

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Photo Point 3.1. Looking north.



Photo Point 3.1. Looking south.

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Photo Point 3.2. Looking downstream.



Photo Point 3.2. Looking upstream.

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Photo Point 3.2. Looking northeast.



Photo Point 3.2. Looking west.

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Photo Point 4.1. Looking downstream.



Photo Point 4.1. Looking upstream.

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Photo Point 4.1. Looking north.



Photo Point 4.1. Looking south.

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Photo Point 4.2. Looking downstream.



Photo Point 4.2. Looking upstream.

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Photo Point 4.2. Looking northeast.



Photo Point 4.2. Looking southeast.

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Photo Point 5. Looking downstream.



Photo Point 5. Looking upstream.

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Photo Point 5. Looking north.



Photo Point 5. Looking south.

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Photo Point 6. Looking east.



Photo Point 6. Looking downstream.

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Photo Point 6. Looking upstream.



Photo Point 6. Soil Pit.

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Photo Point 6. Looking west.



Photo Point 7. Looking east.

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Photo Point 7. Looking downstream.



Photo Point 7. Looking upstream.

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Photo Point 7. Looking west.



Photo Point 8. Looking downstream.

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Photo Point 8. Looking upstream.



Photo Point 9. Looking downstream.

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Photo Point 9. Looking upstream.



Photo Point 9. Looking north.

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Photo Point 10. Looking downstream.



Photo Point 10. Looking upstream.

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Photo Point 10. Looking northwest.



Photo Point 10. Soil Pit.

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Photo Point 10. Looking southwest.



Photo Point 11. Looking downstream.

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Photo Point 11. Looking upstream.



Photo Point 12. Looking east.

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Photo Point 12. Looking downstream.



Photo Point 12. Looking upstream.

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Photo Point 12. Looking west.



Photo Point 13A. Looking downstream.

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Photo Point 13A. Looking downstream.



Photo Point 13A. Looking downstream.

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Photo Point 13A. Looking upstream.



Photo Point 13B. Looking downstream.

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Photo Point 13B. Looking east.



Photo Point 13B. Looking upstream.

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Photo Point 13B. Looking west.



Photo Point 13C. Looking downstream.

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Photo Point 13C. Looking east.



Photo Point 13C. Looking upstream.

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Photo Point 13D. Looking downstream.



Photo Point 13D. Looking east.

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Photo Point 13D. Looking upstream.



Photo Point 13D. Looking west.

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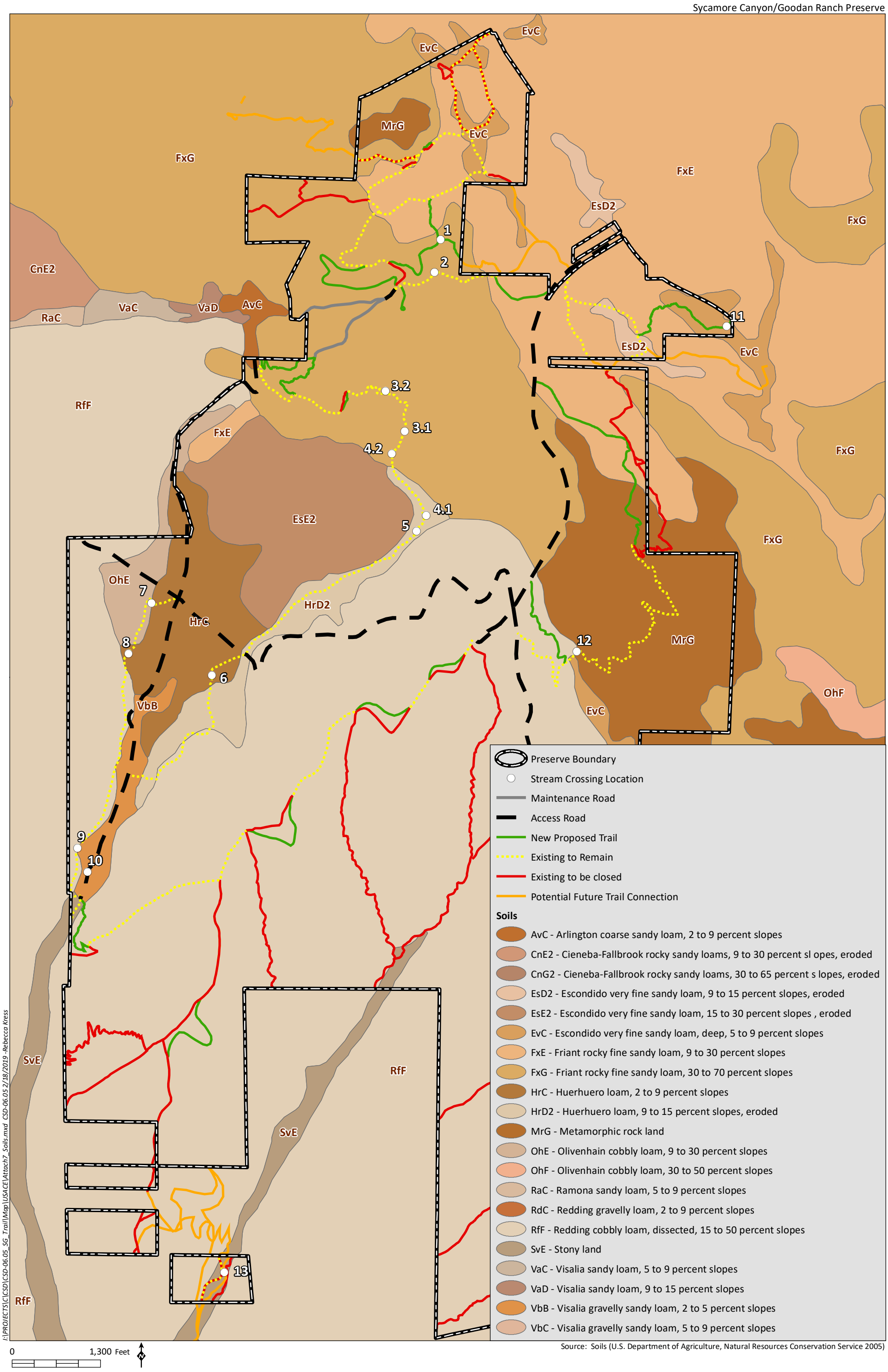
Attachment 6
Table of Aquatic Resources

TABLE OF AQUATIC RESOURCES WITHIN THE SYCAMORE CANYON GOODAN RANCH PRESERVE PUBLIC ACCESS PLAN PROJECT

Name	Latitude	Longitude	Aquatic Resource Type	Cowardin Type	Dominant Vegetation	Acres	Linear Feet	Channel Width (ft) (Upstream/ Downstream)
1	32.94607551	-116.9717207	Non-Wetland Waters of the U.S.	R4SBC	Unvegetated streambed with coastal sage scrub dominant above OHWM.	0.001	25	2
2	32.944738	-116.972052	Non-Wetland Waters of the U.S.	R4SBC	Unvegetated streambed with coastal sage scrub dominant above OHWM.	0.001	22	3
3.1	32.93831213	-116.9733575	Non-Wetland Waters of the U.S.	PFOC	Southern Riparian Forest	0.006	20	9/15
3.2	32.93989346	-116.9743061	Non-Wetland Waters of the U.S.	R4SBC	Unvegetated streambed with coastal sage scrub dominant above OHWM.	0.002	10	10/5
4.1	32.93496016	-116.9723435	Non-Wetland Waters of the U.S.	PFOA	Southern Riparian Forest	0.003	23	6/4.5
4.2	32.9374019	-116.9739672	Non-Wetland Waters of the U.S.	PFOA	Southern Riparian Forest	0.002	19	4/6
5	32.934274	-116.972757	Non-Wetland Waters of the U.S.	PFOA	Southern Riparian Forest	0.006	44	6
6	32.928415	-116.982519	Non-Wetland Waters of the U.S.	PFOA	Southern Riparian Forest	0.003	21	8/4
7	32.931291	-116.985453	Non-Wetland Waters of the U.S.	R4SBC	Unvegetated streambed with coastal sage scrub dominant above OHWM.	0.002	20	5
8	32.9292461	-116.9864506	Non-Wetland Waters of the U.S.	R4SBC	Unvegetated streambed with coastal sage scrub dominant above OHWM.	0.004	21	8
9	32.921405	-116.988911	Non-Wetland Waters of the U.S.	R4SBC	Unvegetated streambed with coastal sage scrub dominant above OHWM.	0.005	25	9
10	32.92040558	-116.9884718	Non-Wetland Waters of the U.S.	R4SBA	Southern Riparian Woodland	0.004	12	18/9
11	32.94263774	-116.9579695	Non-Wetland Waters of the U.S.	R4SBC	Unvegetated streambed with coastal sage scrub dominant above OHWM.	0.006	101	2.5
12	32.9294425	-116.9650452	Non-Wetland Waters of the U.S.	R4SBC	Unvegetated streambed with coastal sage scrub dominant above OHWM.	0.001	28	2.5/2
13	32.90351	-116.982281	Non-Wetland Waters of the U.S.	R4SBC	Patches of southern coast live oak riparian forest and coastal sage scrub on low terrace.	0.462	1730	15

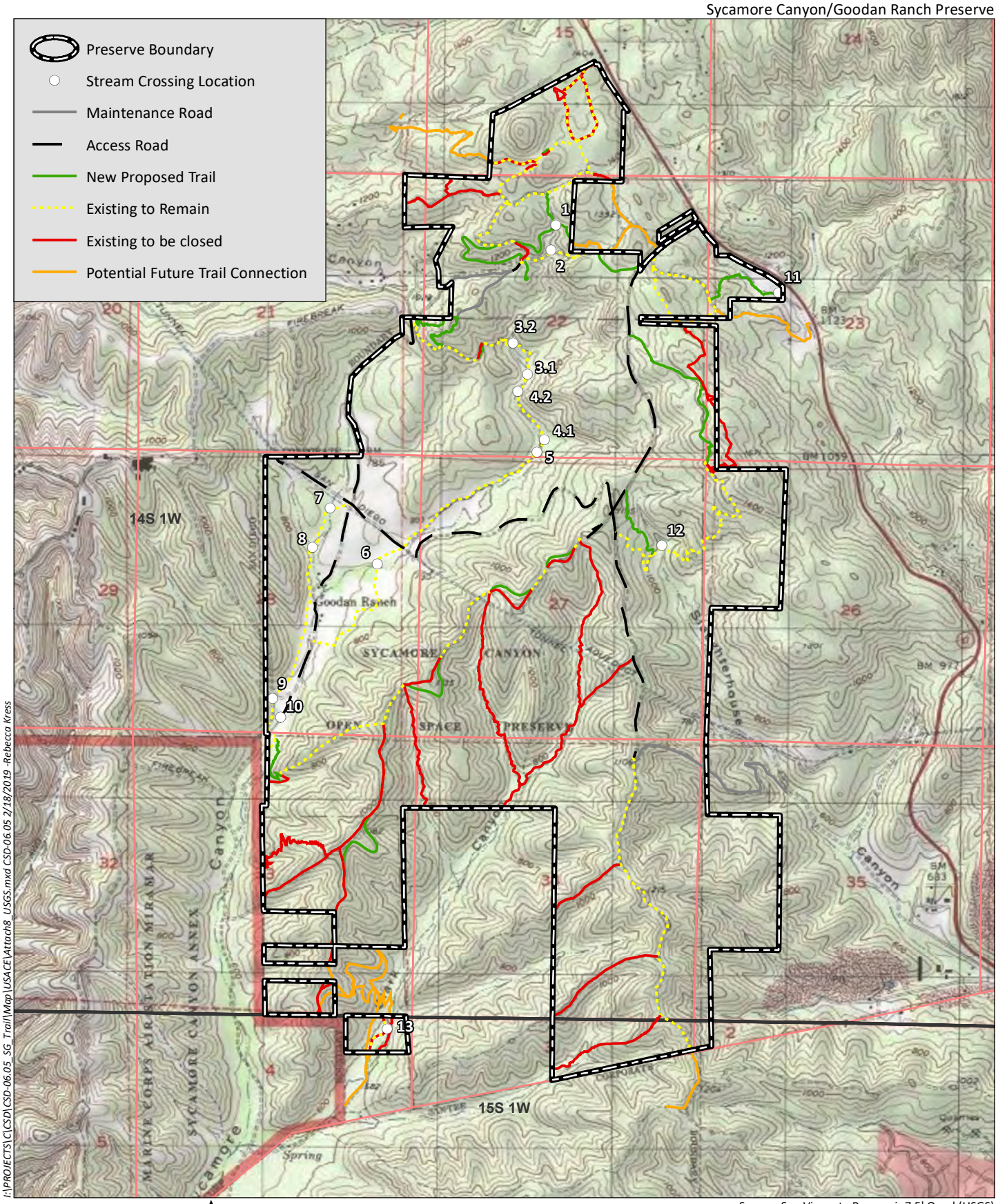


Source: Soils (U.S. Department of Agriculture, Natural Resources Conservation Service 2005)

HELIX Environmental Planning

Soils

Attachment 7



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Source: San Vincente Reservoir 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

Attachment 8

Appendix H

Trails Data Tables

Table H-1
Summary of Vegetation Communities By Trail Segments (Acres)

	Tier I [1,2]							Tier II [1,2]		Tier III [1,2]			Tier IV [1,2]	N/A	
Segment Type[3]	**Southern Riparian Forest**	**Southern Riparian Woodland**	**Scrub Oak Chaparral**	**Dense Coast Live Oak Woodland**	**Open Coast Live Oak Woodland**	**Southern Coast Live Oak Riparian Forest**	**Unvegetated Channel**	**Diegan Coastal Sage Scrub: Coastal Form**	**Coastal Sage-Chaparral Transition**	**Chamise Chaparral**	**Southern Mixed Chaparral**	**Non-Native Grassland**	**Disturbed Habitat**	**Developed**	**Total**
Proposed Trails, Proposed Trails on Existing Disturbed Areas, and Potential Future Trail Connections[4]	--	--	--	--	0.1	--	--	2.1	0.9	0.6	0.9	0.7	1.5	--	**6.8**
Existing Formal Trails, Access, and Maintenance Roads	0.24	<0.1 (0.008)	0.2	0.1	<0.1 (0.001)	<0.1 (0.005)	--	1.1	1.0	1.8	0.9	1.1	15.5	0.2	**22.2**
Closed to be Revegetated	--	--	<0.1 (0.041)	--	--	--	--	0.9	0.6	0.8	1.9	0.3	1.1	--	**5.6**
Subtotals	**0.24**	**<0.1 (0.008)**	**0.2**	**0.1**	**0.1**	**<0.1 (0.005)**	**--**	**4.1**	**2.5**	**3.2**	**3.7**	**2.2**	**15.9**	**0.1**	**34.6**

1 Upland habitats are rounded to the nearest 0.1 acre, while wetland habitats are rounded to the nearest 0.01; thus, total reflects rounding.

2 County Subarea Habitats and Tiers within the MSCP.

3 See Tables H-2, H-3, and H-4 for further breakdown by individual trail segments.

4 Proposed Impacts

Table H-2
Vegetation Communities By Trail Segment (Acres) - Impacts (Proposed Trails, Potential Future Trail Connections, and Proposed Trails on Existing Disturbed Areas)

Trail Segments			Tier I [1,2]							Tier II [1,2]		Tier III [1,2]				Tier IV [1,2]	N/A	
Code	Segment Type	Segment Name	Southern Riparian Forest	Southern Riparian Woodland	Scrub Oak Chaparral	Dense Coast Live Oak Woodland	Open Coast Live Oak Woodland	Southern Coast Live Oak Riparian Forest	Unvegetated Channel	Diegan Coastal Sage Scrub	Coastal Sage-Chaparral Transition	Chamise Chaparral	Southern Mixed Chaparral	Non-Native Grassland	Disturbed Habitat	Developed	Total
3	Proposed Trails	South Raptor Loop	--	--	--	--	--	--	--	<0.1 (0.017)	--	--	--	--	--	--	**<0.1 (0.017)**
6		Paragon Mesa - South	--	--	--	--	--	--	--	0.2	--	--	--	--	--	--	**0.2**
7		Waterfall Trail	--	--	--	--	--	--	--	0.1	--	--	--	--	<0.1 (0.001)	--	**0.1**
12		Martha's Grove	--	--	--	--	--	--	--	--	--	--	<0.1 (0.027)	--	--	--	**<0.1 (0.027)**
14		Ridge Trail	--	--	--	--	--	--	--	0.1	0.4	0.3	0.1	<0.1 (0.001)	<0.1 (0.012)	--	**0.9**
15		South of Ridge Trail	--	--	--	--	--	--	--	0.2	--	0.1	0.1	--	--	--	**0.4**
22		Rock and Roll Trail	--	--	--	--	--	--	--	0.2	--	--	0.1	<0.1 (0.044)	--	--	**0.3**
28		County TCT; Goodan Staging Area to Access Rd	--	--	--	--	--	--	--	--	0.2	--	--	--	<0.1 (0.028)	--	**0.2**
28		County TCT; Martha's Grove to Access Rd	--	--	--	--	--	--	---	--	0.1	--	<0.1 (0.096)	--	<0.1 (0.006)	--	**0.2**
30		Connection-Calle de Rob/South Raptor Loop South	--	--	--	--	--	--	--	<0.1 (0.029)	--	--	<0.1 (0.036)	--	--	--	**0.1**
31		County TCT	--	--	--	--	--	--	--	<0.1 (0.009)	0.1	--	<0.1 (0.007)	--	--	--	**0.1**
32		Overlook	--	--	--	--	--	--	--	--	--	--	0.1	--	--	--	**0.1**

Trail Segments			Tier I [1,2]							Tier II [1,2]		Tier III [1,2]			Tier IV [1,2]	N/A	
Code	Segment Type	Segment Name	Southern Riparian Forest	Southern Riparian Woodland	Scrub Oak Chaparral	Dense Coast Live Oak Woodland	Open Coast Live Oak Woodland	Southern Coast Live Oak Riparian Forest	Unvegetated Channel	Diegan Coastal Sage Scrub	Coastal Sage-Chaparral Transition	Chamise Chaparral	Southern Mixed Chaparral	Non-Native Grassland	Disturbed Habitat	Developed	Total
3	Potential Future Trail Connection	South Raptor Loop	--	--	--	--	--	--	--	<0.1 (0.035)	--	--	--	--	--	--	**<0.1 (0.035)**
4		South Raptor Loop Northwest	--	--	--	--	--	--	--	<0.1 (0.027)	<0.1 (0.019)	--	--	--	--	--	**<0.1 (0.046)**
7		Waterfall Trail	--	--	--	--	--	--	--	0.1	--	--	<0.1 (0.021)	--	--	--	**0.1**
15		South of Ridge Trail	--	--	--	--	--	--	--	---	-	0.2	--	--	--	--	**0.2**
25		Connection to Calle de Rob and Rock and Roll Trail	--	--	--	--	--	--	--	--	--	--	0.1	--	--	--	**0.1**
26		Northern Interior Loop	--	--	--	--	--	--	--	0.1	--	--	--	<0.1 (0.006)	--	--	**0.1**
3	Proposed Trails on Existing Disturbed Areas	South Raptor Loop	--	--	---	-	<0.1 (0.004)	--	--	0.1	<0.1 (0.036)	<0.1 (0.005)	<0.1 (0.003)	<0.1 (0.040)	0.1	--	**0.3**
5		South Raptor Loop South	-	--	---	--	--	--	--	<0.1 (0.035)	--	--	0.1	<0.1 (0.027)	0.1	--	**0.2**
6		Paragon Mesa - South	--	--	--	--	--	--	--	<0.1 (0.018)	--	--	<0.1 (0.020)	--	0.1	--	**0.1**
10		Calle de Rob	--	--	--	--	--	--	--	0.1	<0.1 (0.003)	--	<0.1 (0.048)	--	0.4	--	**0.5**
11		Calle de Rob - Eastern Segment; County TCT	--	--	--	--	<0.1 (0.056)	--	--	0.2	--	--	--	--	0.5	--	**0.8**
15		South of Ridge Trail	--	---	--	--	--	--	--	0.1	--	--	<0.1 (0.015)	--	0.3	--	**0.4**
22		Rock and Roll Trail	--	--	--	--	--	--	--	0.2	<0.1 (0.047)	--	--	0.1	--	--	**0.3**
26		Northern Interior Loop	--	--	--	--	--	--	--	0.1	--	--	--	0.4	--	--	**0.5**
29		Calle de Rob Eastern; County TCT	--	--	--	--	<0.1 (0.001)	--	--	0.1	--	--	--	0.1	--	--	**0.2**
		Subtotals	**--**	**--**	**--**	**--**	**0.1**	**--**	**--**	**2.1**	**0.9**	**0.6**	**0.9**	**0.7**	**1.5**	**--**	**6.8**

1 Upland habitats are rounded to the nearest 0.1 acre, while wetland habitats are rounded to the nearest 0.01; thus, total reflects rounding.

2 County Subarea Habitats and Tiers within the MSCP.

Table H-3
Vegetation Communities By Trail Segment (Acres) - No Impacts (Existing Formal Trails, Access and Maintenance Roads)

Trail Segments			Tier I [1,2]							Tier II [1,2]		Tier III [1,2]			Tier IV [1,2]	N/A	
Code	Segment Type	Segment Name	Southern Riparian Forest	Southern Riparian Woodland	Scrub Oak Chaparral	Dense Coast Live Oak Woodland	Open Coast Live Oak Woodland	Southern Coast Live Oak Riparian Forest	Unvegetated Channel	Diegan Coastal Sage Scrub: Coastal Form	Coastal Sage-Chaparral Transition	Chamise Chaparral	Southern Mixed Chaparral	Non-Native Grassland	Disturbed Habitat	Developed	Total
0a	**Access Road**	**Sycamore Canyon**	0.2	--	<0.1 (0.045)	--	--	--	--	0.2	0.1	--	0.1	0.8	4.5	0.1	**6.0**
0b	**Access Road**	**Sycamore Park Drive**	--	--	--	--	--	--	--	0.1	<0.1 (0.004)	--	<0.1 (0.044)	--	2.4	<0.1 (0.093)	**2.6**
				-							-						
8	**Maintenance Road**	**Calle de Rob**	--	--	--	--	--	--	--	--	--	--	0.1	--	0.7	--	**0.8**
9	**Access Road**	**Calle de Rob - From Access Rd to Paragon**	--	--	--	--	--	--	--	--	0.1	--	0.1	--	0.5	--	**0.7**
12	**Existing Formal Trail**	**Martha's Grove**	<0.1 (0.004)	--	--	0.1	--	<0.1 (0.005)	--	0.1	<0.1 (0.033)	--	0.2	0.1	1.4	--	**1.9**
13	**Existing Formal Trail**	**West Boundary Trail - Connects to Stowe Trail Connector**	<0.1 (0.030)	<0.1 (0.008)	0.1	--	--	--	--	<0.1 (0.008)	<0.1 (0.032)	--	0.1	0.1	0.6	--	**1.0**
14	**Existing Formal Trail**	**Ridge Trail**	--	--	--	--	--	--	--	0.2	0.2	<0.1 (0.024)	0.2	--	0.9	--	**1.5**
21	**Access Road**	**Slaughterhouse Canyon Trail**	--	--	--	--	--	--	--	0.1	0.4	--	--	--	1.7	--	**2.2**
21	**Existing Formal Trail**	**Slaughterhouse Canyon Trail**	--	--	--	--	--	--	--	--	--	1.8	--	--	<0.1 (0.001)	--	**1.8**
24	**Maintenance Road**	**Slaughterhouse Canyon Trail**	--	--	--	--	--	--	--	<0.1 (0.040)	<0.1 (0.048)	--	<0.1 (0.010)	--	0.6	--	**0.7**
27	**Access Road**	**Cardiac Hill**	<0.1 (0.003)	--	<0.1 (0.048)	--	--	--	--	<0.1 (0.027)	0.1	--	--	0.1	2.1	--	**2.4**
													-	--			**--**
33	**Parking Area**	**Rock and Roll Trailhead Parking**	--	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	**0.4**
34	**Existing Trail**	**Stowe Trail Connector**	--	--	<0.1 (0.002)	--	--	--	--	--	--	--	0.1	--	<0.1 (0.030)	--	**0.1**
		Subtotals	**0.24**	**<0.1 (0.008)**	**0.2**	**0.1**	**<0.1 (0.001)**	**<0.1 (0.005)**	**--**	**1.1**	**1.0**	**1.8**	**0.9**	**1.1**	**15.5**	**0.2**	**22.2**

1 Upland habitats are rounded to the nearest 0.1 acre, while wetland habitats are rounded to the nearest 0.01; thus, total reflects rounding.

2 County Subarea Habitats and Tiers within the MSCP.

Table H-4
Vegetation Communities By Trail Segment (Acres) ¬ Existing Trails to Close and Revegetate

Trail Segments			Tier I [1,2]							Tier II [1,2]		Tier III [1,2]		Tier IV [1,2]		N/A	
Code	**Segment Type**	**Segment Name**	**Southern Riparian Forest**	**Southern Riparian Woodland**	**Scrub Oak Chaparral**	**Dense Coast Live Oak Woodland**	**Open Coast Live Oak Woodland**	**Southern Coast Live Oak Riparian Forest**	**Unvegetated Channel**	**Diegan Coastal Sage Scrub: Coastal Form**	**Coastal Sage-Chaparral Transition**	**Chamise Chaparral**	**Southern Mixed Chaparral**	**Non-Native Grassland**	**Disturbed Habitat**	**Developed**	**Total**
1	**Existing Trails to Close**	**Paragon Mesa – West**	--	-	--	--	--	--	--	--	--	<0.1 (0.041)	<0.1 (0.015)	--	0.3	--	**0.4**
2		**Paragon Mesa - Informal**	--	---	--	--	--	--	--	--	--	<0.1 (0.002)	<0.1 (0.018)	--	--	--	**<0.1 (0.020)**
3		**South Raptor Loop**	--	--	--	--	--	--	--	<0.1 (0.016)	<0.1 (0.021)	--	--	--	--	--	**<0.1 (0.037)**
6		**Paragon Mesa – South**	--	--	--	--	--	--	--	<0.1 (0.018)	--	--	<0.1 (0.012)	--	0.1	--	**0.1**
12		**Martha's Grove**	--	--	--	--	--	---	--	--	--	--	<0.1 (0.013)	--	<0.1 (0.016)	--	**<0.1 (0.029)**
14		**Ridge Trail**	--	--	--	--	--	--	--	0.1	0.1	<0.1 (0.062)	0.1	--	0.6	--	**1.0**
15		**South of Ridge Trail**	--	--	--	--	--	--	--	<0.1 (0.005)	--	0.3	<0.1 (0.029)	--	0.1	--	**0.4**
16		**Canyon Trail - Informal**	--	--	--	--	--	--	--	0.6	--	--	0.5	0.1	--	--	**1.2**
17		**Clark Canyon to Ridge - West - Informal**	--	--	--	--	--	--	--	<0.1 (0.035)	--	0.1	<0.1 (0.006)	0.1	--	--	**0.2**
18		**Clark Canyon to Ridge - East - Informal**	--	--	<0.1 (0.041)	--	--	--	--	<0.1 (0.011)	0.2	<0.1 (0.004)	0.2	--	--	--	**0.3**
19		**North Slaughterhouse - Informal**	--	--	--	--	--	--	--	<0.1 (0.007)	--	- -	0.1	--	<0.1 (0.001)	--	**0.1**
20		**South Slaughterhouse**	--	--	--	--	--	--	--	--	0.2	--	0.9	--	--	--	
22		**Rock and Roll Trail**	--	--	--	--	--	--	--	0.1	<0.1 (0.047)	--	--	--	--	--	
23		**Sidewinder Rogue Trail**	--	--	--	--	--	--	--	<0.1 (0.034)	--	0.3	<0.1 (0.003)	--	<0.1 (0.025)	--	
26		**Northern Interior Loop**	--	--	--	--	--	--	--	<0.1 (0.003)	--	--	--	0.1	--	--	**0.1**
		Subtotals	**--**	**--**	**<0.1 (0.041)**	**--**	**--**	**--**	**--**	**0.9**	**0.6**	**0.8**	**1.9**	**0.3**	**1.1**	**--**	**5.6**

1 Upland habitats are rounded to the nearest 0.1 acre, while wetland habitats are rounded to the nearest 0.01; thus, total reflects rounding.
2 County Subarea Habitats and Tiers within the MSCP.

Table H-5
Total Mileage of Trail Segments

Code	Segment Name	Mileage
0a	Sycamore Canyon - Access Road	1.76
0b	Sycamore Park Drive - Access Road	1.40
1	Paragon Mesa – West – Closed to Revegetate	0.38
2	Paragon Mesa – Informal – Closed to Revegetate	0.08
3	South Raptor Loop – Proposed Trail, Proposed Trail on Existing Disturbed Area, Closed to Revegetate, and Potential Future Trail Connection	0.71
4	South Raptor Loop Northwest – Potential Future Trail Connection	0.19
5	South Raptor Loop South – Proposed Trail on Existing Disturbed Area	0.34
6	Paragon Mesa – South - Proposed Trail, Proposed Trail on Existing Disturbed Area, and Closed to Revegetate	0.90
7	Waterfall Trail – Proposed Trail and Potential Future Trail Connection	0.32
8	Calle de Rob – Maintenance Road	0.32
9	Calle de Rob – From Access Road to Paragon – Access Road	0.27
10	Calle de Rob – Proposed Trail on Existing Disturbed Area	0.34
11	Calle de Rob – Eastern Segment; County TCT – Proposed Trail on Existing Disturbed Area	0.37
12	Martha's Grove – Existing Formal Trail, Proposed Trail, and Closed to Revegetate	2.32
13	West Boundary Trail – Connects to Stowe Trail Connector – Existing Formal Trail	1.02
14	Ridge Trail – Existing Formal Trail, Proposed Trail, and Closed to Revegetate	2.52
15	South of Ridge Trail - Proposed Trail, Proposed Trail on Existing Disturbed Area, and Closed to Revegetate	1.40
16	Canyon Trail – Informal – Closed to Revegetate	1.20
17	Clark Canyon to Ridge – West – Informal – Closed to Revegetate	0.49
18	Clark Canyon to Ridge – East – Informal – Closed to Revegetate	0.80
19	North Slaughterhouse – Informal – Closed to Revegetate	0.26
20	South Slaughterhouse – Closed to Revegetate	1.24
21	Slaughterhouse Canyon Trail – Access Road and Existing Formal Trail	2.12
22	Rock and Roll Trail – Proposed Trail, Proposed Trail on Existing Disturbed Area, Potential Future Trail Connection, and Closed to Revegetate	2.18
22a	Rock and Roll Trail – Proposed Trail on Existing Disturbed Area	0.29
22b	Rock and Roll Trail – Proposed Trail	0.31
23	Sidewinder Rogue Trail – Closed to Revegetate	0.66
24	Slaughterhouse Canyon Trail – Maintenance Road	0.30
25	Connection to Calle de Rob and Rock and Roll Trail – Potential Future Trail	0.36
26	North Interior Loop - Proposed Trail on Existing Disturbed Area, Potential Future Trail Connection, and Closed to Revegetate	0.64
27	Cardiac Hill – Access Road	1.63
28a	County TCT; Goodan Ranch Staging Area	0.22
28b	County TCT; Martha's Grove to Access Road	0.22
29	Connection to Calle de Rob Eastern; County TCT – Proposed Trail on Existing Disturbed Area	0.38
30	Connection to Calle de Rob and South Raptor Loop South – Proposed Trail	0.14
31	County TCT – Proposed Trail	0.20
32	Overlook – Proposed Trail	0.09
33	Staging Area Along Sycamore Park Drive	--
34	Stowe Trail Connector – Existing Formal Trail	0.14
	TOTAL	**28.51**

[1] Mileage totals rounded to the nearest 0.01; thus, total reflects rounding.

Appendix I

Draft Multiple Species Conservation Program Conformance Statement

MULTIPLE SPECIES CONSERVATION PROGRAM CONFORMANCE STATEMENT

Sycamore Canyon/Goodan Ranch Preserve Public Access Plan

July 2023

I. Introduction

The Sycamore Canyon/Goodan Ranch County Preserve Public Access Plan Project (proposed project) is located within the 2,847[1]-acre Sycamore Canyon/Goodan Ranch County Preserve (Preserve) that is within the Lakeside Community Planning Area of the unincorporated County of San Diego (County), to the northeast of the Marine Corps Air Station Miramar, southeast of the City of Poway, west of State Route (SR-) 67, and approximately two miles north of the City of Santee. The Preserve is owned by the County DPR and DPR has added several properties to the Preserve over the last 20 years. These include the Sycamore South and Sycamore North (formerly known as Hagey) properties in 2010-2011; the Southern Parcel in 2013; the 2015 Northern Addition (formerly known as Wu) in 2015, the 2015 Southern Addition (formerly known as Cielo); the San Vicente Connector Parcels, which are east of SR-67, between 2003 and 2018; and the Southern Gap parcels in 2019 and 2020. As new additions to the Preserve, these properties are not currently open to the public, and do not include formalized trails[1].

The Preserve is located in United States Geological Survey 7.5-minute San Vicente Reservoir Quadrangle and within Township 14 South, Range 1 West, Sections 14, 15, 16, 21, 22, 23, 25, 26, 27, 28, 33, 34, and 35 and Township 15 South, Range 1 West, Sections 2, 3 and 4. In preparing this report, HELIX established a Study Area encompassing the entirety of the Preserve, and a survey area encompassing the proposed trail segments and a buffer around each segment within the Preserve boundary. The proposed project survey area includes approximately 3.78 miles of new proposed trails, 0.99 mile of potential future trail connections, 4.76 miles of formalization of trails on existing disturbed areas, 5.56 miles of existing formal trails, 6.61 miles of existing access roads, and 7.24 miles of potential closures of existing trails that traverse the entirety of the Preserve (Figure 3, *Aerial Vicinity*), and includes a survey buffer of a 20 to 100 ft. width that totals approximately 108 acres. The Preserve encompasses the following Assessor's Parcel Numbers: 323-111-04; 324-040-41; 324-040-42; 324-040-46; 324-040-50; 324-041-01; 324-041-02; 324-050-28; 325-020-01; 325-020-03; 325-060-01; 325-060-02; 325-060-03; 325-060-08; 325-060-09; 325-060-14; 325-060-15; 325-060-16; 325-060-25; 326-021-02; 326-050-18; 326- 070-01; 325-060-04; 325-060-05; 325-060-06; 325-060-07; 325-060-10; 325-060-11; 325-060-12; 325-060-17; 325-060-18; 325-060-19; 325-060-20; 325-060-21; 325- 060-22, 325-060-23; 325-060-24; 324-040-25; 324-040-26; 32424-040-27; 324-040-28; 324-040-31; 324-040-32; 324-011-15; 324-070-29; 324-040-07; 324-040-08; 374-030-01; 324-050-05; 324-051-04; 324-051-05; 326-020-23; 326-030-06; and 326-020-07. The Preserve is located approximately 16 miles inland from the Pacific coast and is not located in the Coastal Zone.

[1] Based on San Diego Geographic Information Source (SanGIS) parcel data, the total Preserve acreage is approximately 2,994 acres. However, the official Preserve acreage is 2,847, and the size discrepancy is due to the method in which the County reports acreages for conserved lands, using both Assessor and GIS acreages. Assessor's acreage is the formal unit of measurement the County utilizes internally for real estate acquisitions, accounting, and reporting. However, Geographic Information Systems (GIS) acreage is calculated using data provided by SanGIS. Assessor's and GIS acreage totals can differ as records of the legal acreage of parcels are plotted on paper and then converted into GIS. For consistency, SanGIS data is used in this document when calculating acreage for the Preserve, such as land use, habitat, or vegetation areas, within the Preserve.

The Preserve occurs within the Central Poway/San Vicente Reservoir/North Poway Biological Resource Core Area (BRCA), as identified in the Final Multiple Species Conservation Program (MSCP) Plan (County 1998). The Preserve is located on unincorporated lands within the Metro-Lakeside-Jamul segment of the South County MSCP Subarea Plan (herein referred to as Subarea Plan; Figure 4, *MSCP Designations*) and adjacent to areas designated by the City of San Diego MSCP Subarea Plan as Multi-Habitat Planning Area (MHPA). Within the Subarea Plan subregion, the Preserve occurs within areas identified as Pre-Approved Mitigation Area (PAMA; Figure 4). Sycamore Canyon Preserve is fully owned and managed by the County DPR. Goodan Ranch Preserve is owned jointly by DPR, California Department of Fish and Wildlife (CDFW), the City of Poway, and the City of Santee. DPR is identified as responsible for the management of the properties in coordination with all parties through a Joint Powers Agreement.

The proposed project involves an update of the County's 2013 RMP (County 2013) for the Preserve. The RMP serves as a guidance document to manage and preserve the biological and cultural resources within the Preserve while balancing public access. The RMP provides Management Directives pursuant to the Subarea Plan, Framework Management Plan, and Implementing Agreement, which specify that the County is responsible for managing lands that it owns or acquires within the MSCP Preserve System.

The proposed project also includes an update of the Preserve's Vegetation Management Plan (VMP), and a PAP in support of the RMP. The RMP is a guidance document to manage and preserve the biological and cultural resources within the Preserve and is supported by the VMP and PAP. The VMP provides recommendations for invasive non-native plant species management, habitat restoration, and fire management. The PAP serves as the planning document for the Preserve's multi-use trail system. Proposed activities under the PAP include the retention of existing trails, rerouting or modifications to existing trails, the formal addition of new trails, and restoration of some informal trails or existing impacted areas that are not part of the formal trail system.

The Preserve currently contains publicly accessible multi-use trails and access roads, a ranger station, the Goodan Ranch Staging Area and Rock and Roll Trailhead Parking (#33), the 67 Staging Area, restrooms, and the Sycamore Canyon/Goodan Ranch Visitors Center (Visitors Center). The Visitors Center is home to demonstration and exhibit rooms.

The County DPR has added several properties to the Preserve over the last 20 years. These include the Sycamore South and Sycamore North (formerly known as Hagey) properties in 2010 and 2011; the Southern Parcel in 2013; the 2015 Northern Addition (formerly known as Wu) in 2015, the 2015 Southern Addition (formerly known as Cielo) in 2015; the San Vicente Connector parcels east of SR-67 between 2003 and 2018; and the Southern Gap parcels in 2019 and 2020. As new additions to the Preserve, these properties are not currently open to the public, and do not include formalized trails.

As detailed in the PAP (RICK Engineering Company 2023), a multi-year effort involving technical analysis and stakeholder outreach was conducted by the County to evaluate existing and potential future public access within the Preserve. The PAP evaluates areas both open and not currently open for public access, including an evaluation of potential future opportunities for public access. The PAP supports the goals and policies outlined in the Community Trails Master Plan (CTMP; County 2005) that includes objectives, policies, goals, implementation strategies, and guidelines for the management and expansion of the recreational trail network throughout the County. In addition, the PAP supports the County's Subarea Plan by allowing for passive recreational uses (trails) within areas and in a manner that does not significantly impact natural resources within the Preserve.

The proposed project's full Study Area includes the entire Preserve. To assess the effects of implementation of the proposed project's PAP trail network, a survey area totaling approximately 108 acres has been identified. This survey area includes a 20- to 100-foot buffer for approximately 29 miles of existing formal trails, existing informal trails, and proposed trails and connections that traverse the entirety of the Preserve.

Implementation of the proposed project's PAP component would result in approximately 15 miles of trails (including both existing and new trails) dedicated to multi-use routes for hikers, mountain bikers, e-bikers, and horseback riders. The PAP would also maintain existing access roads within the Preserve. The proposed project would include the retention of existing trails, rerouting or modifications to existing trails, the formal addition of new trails, and restoration of some informal trails or existing impacted areas that are not part of the formal trail system.

Specifically, the PAP would provide approximately 3.78 miles of new proposed trails or trail segments, 0.99-mile of potential future trail connections, 4.76 miles of formalization of trails or trail segments on existing disturbed areas, and 5.56 miles of existing formal trails. The formal trail network would therefore increase to 15.09 miles and provide trails dedicated to multi-use routes for hikers, mountain bikers, e-bikers, and horseback riders. The PAP would also maintain 6.61 miles of existing access roads and would plan to close 7.24 miles of existing trails, including informal trails.

The PAP proposes preferred trail routes within the Preserve based on constraints to trails and access points, opportunity destinations, and scenic experiences and routes. Recommendations for trail closures or trail re-routes throughout the Preserve are also provided in the PAP. Although the proposed project survey area includes a 20- to 100-foot survey buffer to provide a large trail corridor and provide flexibility for trail implementation, new trails or trail segments throughout the Preserve would be no more than eight feet wide. While the maximum width of existing trails is 12 feet, the maximum width of proposed trails or trail segments is 8 feet and surface material would consist of decomposed granite/binding agent or suitable native soil; therefore, impacts explained in this BRTR that are expressed in terms of acreage represent the maximum impact that could occur, as some sections of trail may be narrower than the maximum widths.

The proposed trail segments have been designed to follow the County's Preserve Trail Guidelines (County 2018), to support the goals and policies outlined by the Community Trails Master Plan (CTMP; County 2005), and to comply with the Subarea Plan Framework Management Plan (County 2001). The PAP supports the goals and policies outlined by the CTMP, including objectives, policies, goals, implementation strategies, and guidelines for the management and expansion of the recreational trail network throughout the County. The Trans County Trail (TCT), which crosses the northern portion of the Preserve in an east-west direction, was identified in the CTMP as a regional trail, that, once established, will span 110 miles in length and connect Anza-Borrego Desert State Park to Torrey Pines State Natural Reserve. Regional trails have characteristics and conditions that serve a regional function by covering long linear distances, transcending community and/or municipal borders, having State or national significance, or providing important connections to existing parks and open space preserves.

A key objective of the MSCP is to provide public recreation and educational opportunities within the MSCP Preserve System, while providing adequate protection for biological resources. Riding and hiking trails are allowed within appropriate portions of the Preserve to provide passive recreational opportunities for the public. These activities are considered compatible with the biological objectives of the MSCP. In addition, the PAP supports the MSCP by establishing trails and allowing for passive recreational uses (trails) within areas and in a manner that does not significantly impact natural resources within the Preserve.

Per Section 1.5.2 of the Subarea Plan, highly sensitive areas would be protected through the use of natural and artificial barriers. Trails, view overlooks, and staging areas are located or proposed within the least sensitive areas of the Preserve. Trails would be clearly demarcated and monitored for degradation as well as off-trail use.

Per Section 1.9.2 *Public Access and Recreation* of the Subarea Plan, appropriate recreational activities shall be accommodated in concurrence with the goals of the MSCP and Subarea Plan. Per the Subarea Plan, public access and passive recreation are permitted uses within specified areas of the Preserve. Passive recreation includes hiking, scientific research, bird watching, and under specified conditions and locations identified in approved Projects and or management plans, mountain biking, and horseback riding. Equestrian, hiking, and bicycles are allowed when in accordance with approved management plans and if consistent with the Subarea Plan. Other forms of public access and recreation are also allowed per the Subarea Plan if determined to be consistent with the protection of the resources currently existing within the Preserve.

Proposed trails or trail segments consist of new trails or trail segments constructed in previously undisturbed areas, as well as trails or trail segments on existing disturbed areas. Existing disturbed areas generally include informal trails or existing ranch roads that would be formalized into the Preserve trail system by implementation of the PAP component of the proposed project. Formalization of the existing trails on disturbed areas would be compatible with the findings of the Subarea Plan, including the findings in Section 1.9.1, which states: "A. Until all the areas of open space have been dedicated through the processing of maps, there may be a continuation of existing uses within areas shown as Preserve. B. Existing uses shall be allowed to continue, including annual clearing, maintenance and replacement of existing facilities, roads, and structures." The land within the Preserve was privately held at the time of the creation of the Subarea Plan, and ranch roads were present. Based on historical analysis, some of these areas were impacted prior to the adoption of the Subarea Plan in 1998 or prior to when DPR acquired the property, and are considered disturbed.

The proposed trail segments are designed to address maintenance challenges for existing trail segments that are affected by erosion or other issues, as well as to add new trail alignments that would expand the existing trail network. The new trail segments would follow the standards described in the CTMP (County 2005) and have been designed to follow the County's Preserve Trail Guidelines (County 2018). In some cases, existing informal trails would be formalized, requiring realignment of segments to follow the standards for the wider rural trail type. The widened trails or trail segments would facilitate continued vehicular maintenance and emergency response access, as well as consistency with the rest of the trail network. Existing trail segments recommended to be closed primarily consist of segments that are unsustainable or would not add significant value to the trail system. Additionally, existing informal trails would be closed in Clark Canyon due to the presence of sensitive species and habitat in that area. The PAP only includes recommendations for implementation of additions or modifications to trails and trail segments within the Preserve. However, the PAP does also include recommendations for potential future trail connections that could link trails within the Preserve to future connections outside the Preserve, should those outside connections become publicly accessible in the future. Potential future trail connections are noted as such because they do not currently deliver users to approved trails on adjacent properties or are dependent on future acquisitions or actions by other parties. These segments would only be constructed when necessary authorizations have been obtained.

Other improvements include the Rock and Roll Trailhead Parking (#33), which would be located on an existing disturbed area near the center of the Preserve. Rock and Roll Trailhead Parking (#33) would

formalize up to 5 parking spaces, one of which will be a van-accessible Americans with Disabilities Act (ADA) space on a concrete pad. The rest of the parking area will be on bladed, compact soil or compacted decomposed granite. The PAP would also maintain access and maintenance roads and add barriers such as fencing within the Preserve to limit human access to sensitive habitats, nesting locations, rare plants, and significant cultural resources. Additional barriers would be necessary for the prevention of access to unauthorized trails, temporary closures due to unsafe conditions, and prevention of vehicular access. Signage would be provided to provide direction and orientation to visitors, display rules and regulations posted at staging areas and access points, provide educational information, and mark trails. The PAP also recommends accessible trails for use by the general public with varying levels of abilities, including consideration of trails that could be compliant with the requirements of the ADA.

The PAP recommends an approximately 21.7-mile trail and access road network that will provide approximately 15.09 miles of multi-use routes for hikers, mountain bikers, e-bikes, and horseback riders and 6.61 miles of access roads. The PAP network would include the following access roads (currently existing), maintenance roads (currently existing), proposed trails and trail segments (including trails within existing disturbed areas), potential future trail connections, and trails and trail segments to be closed for revegetation. Please note that some of the proposed trails discussed below connect to offsite areas that do not have currently authorized trails, for example the Scripps Poway Parkway tunnel. Under the PAP, DPR would allow trails to connect to other legal connections on offsite areas. However, should an access point become unusable for any reason, DPR would close the connection through the use of signage and potentially barriers, as appropriate. Each segment has a designated number and name, as illustrated on Figure 5.

0a - Sycamore Canyon - Access Road

The Sycamore Canyon Access Road is located in the western portion of the Preserve and connects to the Calle de Rob proposed trail segment (#10). The access road generally travels north to south, paralleling the West Boundary Trail segment (#13) and the northwestern Preserve boundary. The majority of the access road is located within existing disturbed habitat.

0b - Sycamore Park Drive – Access Road

Sycamore Canyon Drive is located in the eastern portion of the Preserve, connecting the Preserve to SR-67. The access road generally travels north to south from SR-67 to the proposed Ridge Trail segment (#14). The majority of the access road is located within existing disturbed habitat.

1 – Paragon Mesa – West – Closed to Revegetate

The Paragon Mesa - West trail segment is located in the northwestern portion of the Preserve. The trail travels east to west and connects to the South Raptor Loop (#3) proposed trail segment. This trail segment is proposed to be closed for revegetation. The majority of the trail segment is composed of disturbed habitat.

2 – Paragon Mesa –— Informal – Closed to Revegetate

The Paragon Mesa informal trail segment is located in the northern portion of the Preserve. This trail segment is proposed to be closed for revegetation. The majority of the area to be revegetated is composed of chamise chaparral and southern mixed chaparral.

3 – South Raptor Loop – Proposed Trail, Proposed Trail on Existing Disturbed Area, Closed to Revegetate, and Potential Future Trail Connection

The South Raptor Loop proposed trail segment is located in the northern portion of the Preserve and would travel southwest to northeast. The trail segment is primarily located in the 2015 Northern Addition. The trail segment connects to South Raptor Loop - South (#5) trail segment and Paragon Mesa – South (#6) trail segment on the southwest and the southern point of the North Interior Loop (#26) trail segment on the northeast. Portions of the trail segment are proposed to be closed for revegetation; however, the majority of the trail segment proposed to be formalized occurs on existing disturbed areas. There is a portion of the South Raptor Loop trail segment with a potential future trail connection, which would include improvements on an existing trail.

4 – South Raptor Loop Northwest – Potential Future Trail Connection

The South Raptor Loop Northwest potential future trail connection would be located in the northern portion of the Preserve and travel east and west. The trail segment would be entirely located within the 2015 Northern Addition and connect to the middle of the South Raptor Loop (#3) proposed trail segment. The proposed trail segment would be primarily located within an existing trail with improvements proposed, with the surrounding habitat consisting of Diegan coastal sage scrub and coastal sage scrub–chaparral transitional habitat.

5 – South Raptor Loop South – Proposed Trail on Existing Disturbed Area

The South Raptor Loop South proposed trail segment would be located in the northern portion of the Preserve and would enter in the southern portion of the 2015 Northern Addition. The trail segment would generally travel east to west, starting at an intersection with the South Raptor Loop (#3) and Paragon Mesa – South (#6) trail segments. At its eastern end, the South Raptor Loop South trail segment would connect to the proposed South Raptor Loop (#3)trail segment and the South Raptor Loop trail segment's potential future connection. The South Raptor Loop South, south Raptor Loop Northwest (#4) and South Raptor Loop (#3) trails would connect to form a loop. The majority of the trail is proposed on existing disturbed areas as well as Diegan coastal sage scrub habitat, with improvements proposed.

6 – Paragon Mesa South – Proposed Trail, Proposed Trail on Existing Disturbed Area, and Closed to Revegetate

The Paragon Mesa South proposed trail segment would be located in the northern portion of the Preserve. The trail segment would generally travel north and south, connecting the South Raptor Loop (#3) and South Raptor Loop South (#5) trail segments at the north to the Calle de Rob (#10) proposed trail segments and maintenance road to the south. A small section of the trail segment connecting to Calle de Rob (#10) trail segment would be closed for revegetation. A portion of the trail segment is proposed on existing disturbed areas, with additional portions proposed primarily in Diegan coastal sage scrub. This trail segment is a reroute and extension of the original Paragon Mesa South trail.

7 – Waterfall Trail – Proposed Trail and Potential Future Trail Connection

The Waterfall proposed trail segment and proposed future trail connection would be located in the northern portion of the Preserve, and travels east and west. The Waterfall trail segment would connect to the Paragon Mesa South (#6) trail segment at its eastern end and the Preserve boundary at its western end.

The proposed trail segment and potential future trail connection are proposed primarily on existing disturbed habitat, as well as Diegan coastal sage scrub.

8 – Calle de Rob – Maintenance Road

The Calle de Rob Maintenance Road is located in the northwestern portion of the Preserve. The maintenance road travels east and west connecting the Calle de Rob (#9) access road to an existing road outside of the Preserve boundary. The majority of the trail is composed of disturbed habitat.

9 – Calle de Rob – From Access Road to Paragon – Access Road

The Calle de Rob Access Road is located in the northwestern portion of the Preserve. The access road travels northeast and southwest, connecting to the Calle de Rob (#10) proposed trail segment and the proposed section of the TCT (#28a,b) trail. The majority of the trail segment is composed of disturbed habitat.

10 – Calle de Rob – Proposed Trail on Existing Disturbed Area

The Calle de Rob proposed trail segment would be located in the northern portion of the Preserve and enter the northwest corner of the 2015 Southern Addition. The trail would travel east and west, connecting to the Calle de Rob (#9) access road, County TCT (#31) proposed trail, and Paragon Mesa – South (#6) proposed trail segment. The majority of the proposed trail segment is composed of disturbed habitat, with improvements proposed.

11 – Calle de Rob – Eastern Segment; County TCT – Proposed Trail on Existing Disturbed Area

The Calle de Rob – Eastern Segment; County TCT proposed trail segment would be located in the northeastern portion of the Preserve. The trail segment connects to the Sycamore Park Drive (#0b) access road and Connection to Calle de Rob Eastern; County TCT (#11) trail segment. The proposed trail segment would extend southeast to the Preserve boundary. The majority of the proposed trail segment is composed of disturbed habitat, with improvements proposed.

12 – Martha's Grove – Existing Formal Trail, Proposed Trail, and Closed to Revegetate

Martha's Grove is an existing trail that extends generally south from the northwest Preserve boundary to the Sycamore Canyon (#0a) access road. A small section at the north end of the trail is proposed to be closed and revegetated. The closed section would be replaced by a new proposed trail segment. The proposed trail segment is located entirely within southern mixed chaparral.

13 – West Boundary Trail – Connects to Stowe Trail Connector – Existing Formal Trail

The West Trail is an existing formal trail and is located in the western portion of the Preserve and connects to the Sycamore Canyon(#0a) and Cardiac Hill (#27) access roads. The existing trail generally travels north to south, paralleling the Sycamore Canyon access road along the western Preserve boundary. The majority of the trail segment is located within existing disturbed habitat.

14 – Ridge Trail – Existing Formal Trail, Proposed Trail, and Closed to Revegetate

The Ridge Trail is an existing trail located in the western portion of the Preserve. The trail extends northeast from the western Preserve boundary and eventually joins with the Sycamore Park Drive(#0b) access road. A portion of the trail would be closed to be revegetated and would be replaced by a section of proposed trail. The proposed trail segment is primarily located within chamise chaparral and coastal sage–chaparral transitional habitat.

15 – South of Ridge Trail – Proposed Trail, Proposed Trail on Existing Disturbed Area, Potential Future Trail Connection, and Closed to Revegetate

The South of Ridge Trail segment is a proposed trail segment located in the western portion of the Preserve. The trail segment would extend south from the existing Ridge Trail segment (#14), with improvements proposed. A portion of the trail would be closed to be revegetated and would be replaced by a section of the proposed trail. The proposed trail segment is primarily located within existing chamise chaparral, Diegan coastal sage scrub, and disturbed habitats.

16 – Canyon Trail – Informal – Closed to Revegetate

The Canyon Trail informal trail segment, located in the center of the Preserve, is proposed to be closed for revegetation. The trail segment extends north to south from the Ridge Trail (#14) segment to the Preserve boundary. The closed to revegetate area is primarily located within Diegan coastal sage scrub habitat.

17 – Clark Canyon to Ridge West – Informal – Closed to Revegetate

The Clark Canyon to Ridge West informal trail segment, located in the center of the Preserve, is proposed to be closed for revegetation. The trail segment extends north to south from the Ridge Trail (#14) segment to the Preserve boundary. The closed to revegetate area is primarily located within chamise chaparral and non-native grassland habitat.

18 – Clark Canyon to Ridge East – Informal – Closed to Revegetate

The Clark Canyon Ridge East informal trail segment, located in the center of the Preserve, is proposed to be closed for revegetation. The trail segment extends north to south from the Ridge Trail (#14) segment to the Preserve boundary. The closed to revegetate area is primarily located within southern mixed chaparral and coastal sage-chaparral transition habitat.

19 – North Slaughterhouse – Informal – Closed to Revegetate

The North Slaughterhouse informal trail segment, located in the center of the Preserve, is proposed to be closed for revegetation. The trail segment extends northeast to southwest from the Slaughterhouse Canyon Trail (#21) access road to the Canyon Trail (#16) segment. The closed to revegetate area is primarily located within southern mixed chaparral habitat.

20 – South Slaughterhouse – Closed to Revegetate

The South Slaughterhouse informal trail segment consists of three informal trails located in the southeastern portion of the Preserve that are proposed to be closed for revegetation. The three trails

extend southwest from the Slaughterhouse Canyon Trail (#21) segment to the Preserve boundary. The closed to revegetate area is primarily located within southern mixed chaparral habitat.

21 – Slaughterhouse Canyon Trail – Access Road and Existing Formal Trail

Slaughterhouse Canyon Trail segment is an existing access road and formal trail that extends generally south from Sycamore Park Drive (#0b) access road to the southern Preserve boundary. Slaughterhouse Canyon Trail segment is an access road north of the Slaughterhouse Canyon Trail (#24) maintenance road and an existing formal trail segment south of the maintenance road. The existing access road and formal trail segment are primarily composed of disturbed habitat and chamise chaparral habitat.

22 – Rock and Roll Trail –– Proposed Trail, Proposed Trail on Existing Disturbed Area, and Closed to Revegetate

The proposed Rock and Roll Trail segment is located near the eastern Preserve boundary. The one-way trail segment would generally extend travel from north to south and connect to Sycamore Park Drive (#0b) or Slaughterhouse Canyon Trail (#21) access roads. Several sections of informal trails are proposed to be closed for revegetation. A proposed trail on existing disturbed area would travel north from the main trail to the edge of the Preserve. At the trail's southern end, one of two options, 22a and 22b, would be chosen. The proposed trail segment is composed primarily of disturbed habitat and Diegan coastal sage scrub habitat.

23 – Sidewinder Rogue Trail – Closed to Revegetate

The Sidewinder Rogue Trail informal trail segment, located in the southwestern portion of the Preserve, is proposed to be closed for revegetation. The trail segment extends east to west, from the South of Ridge Trail (#15) segment, which is also proposed to be closed for revegetation, to the Preserve boundary. The closed to revegetate area is primarily located within chamise chaparral habitat.

24 – Slaughterhouse Canyon Trail – Maintenance Road

The Slaughterhouse Canyon Trail Maintenance Road is located along the eastern boundary of the Preserve near the southern end. The maintenance road extends east from the Slaughterhouse Canyon Trail (#21) and connects to an existing dirt road outside of the Preserve at the Preserve boundary. The maintenance road is composed primarily of disturbed habitat.

25 – Connection to Calle de Rob and Rock and Roll Trail – Potential Future Trail Connection

The Connection to Calle de Rob and Rock and Roll Trail potential future trail connection would be located in the northeastern portion of the Preserve. The potential future trail would travel north and south and is located immediately east of the 2015 Southern Addition and would connect to Calle de Rob – Eastern Segment; County TCT (#11) trail segment to the north. The potential future trail connection would be located primarily within southern mixed chaparral habitat.

26 – Northern Interior Loop – Proposed Trail on Existing Disturbed Area, Potential Future Trail Connection, and Closed to Revegetate

The Northern Interior Loop proposed trail segment would be located in the northernmost portion of the Preserve and would be entirely located within the 2015 Northern Addition. The trail would generally travel north and south, forming a loop and connecting to the South Raptor Loop (#3) and South Raptor Loop South (#5) proposed trail segments. The majority of the trail segment is proposed on existing disturbed areas. There is also a potential future trail connection, which would connect the Northern Interior Loop (#26) trail segment to Scripps Poway Parkway and SR- 67, primarily within Diegan coastal sage scrub. The close to revegetate areas are primarily within non-native grassland habitat.

27 – Cardiac Hill – Access Road

The Access Road – Cardiac Hill is located in the center of the Preserve connecting Sycamore Canyon (#0a) and Sycamore Park Drive (#0b) access roads. The access road connects to an existing dirt road at the western Preserve boundary through the middle of the Preserve. The access road turns into Slaughterhouse Canyon Trail (#21) access road at Sycamore Park Drive access road. The majority of the trail is composed of disturbed habitat.

28 – County TCT; Goodan Staging Area to Access Road and Martha's Grove to Access Road – Proposed Trails

The County TCT; Goodan Staging Area to Access Road and Martha's Grove to Access Road proposed trail segments would be located in the northwestern portion of the Preserve along the western boundary of the Preserve. There would be two trail segment options: 28a and 28b. The 28a option would connect from the Calle de Rob – From Access Road to Paragon (#9) access road to the Goodan Ranch Staging Area. The 28b option would connect Martha's Grove (#12) to the Calle de Rob – From Access Road to Paragon (#9) access road. Only one option would be selected for implementation. The majority of the trail alignment is composed of coastal sage–chaparral transitional habitat within Martha's Grove (#12) and the Goodan Ranch Staging Area.

29 – Connection to Calle de Rob Eastern; County TCT –Proposed Trail on Existing Disturbed Area

The Connection – Calle de Rob Eastern; County TCT proposed trail segment on existing disturbed area would be located in the northeastern portion of the Preserve. The proposed trail segment on existing disturbed area would generally travel east and west, connecting State Route 67 and Calle de Rob – Eastern Segment; County TCT (#11). The majority of the trail is composed of Diegan coastal sage scrub and non-native grassland, with improvements proposed.

30 – Connection to Calle de Rob and South Raptor Loop South - Proposed Trail

The Connection to Calle de Rob and South Raptor Loop South proposed trail segment would be located in the northern portion of the Preserve. The trail would generally travel north and south, connecting to the Waterfall Trail (#7) to the south and South Raptor Loop South Trail (#5) to the north. The majority of the proposed trail is composed of Diegan coastal sage scrub and southern mixed chaparral habitat.

31 – County TCT – Proposed Trail

The County TCT proposed trail segment would be located in the northwestern portion of the Preserve and entirely within the northeast corner of the 2015 Southern Addition. The trail segment would travel east and west, connecting to the Calle de Rob (#10) trail segment and Sycamore Park Drive (#0b) access road. The majority of the trail segment alignment is composed of coastal sage – chaparral transitional habitat.

32 – Overlook – Proposed Trail

The Overlook proposed trail segment would be located in the northern portion of the Preserve. The trail would generally travel north and south, connecting to the Calle de Rob (#10) existing informal trail segment to the north. The majority of the proposed trail segment alignment is composed of southern mixed chaparral.

33 – Rock and Roll Trailhead Parking

The Rock and Roll Trailhead Parking is located in the center of the Preserve near the intersection of the Sycamore Park Drive (#0b) access road and the Rock and Roll Trail (#22) proposed trail segment. The Rock and Roll Staging Area is located entirely within existing disturbed habitat and Diegan coastal sage scrub habitat.

34 – Stowe Trail Connector – Existing Formal Trail

The Stowe Trail Connector is an existing formal trail segment located in the western portion of the Preserve. The trail segment generally travels north and south, connecting to the Sycamore Canyon (#0a) access road to the Preserve boundary. The existing formal trail is primarily composed of southern mixed chaparral habitat.

Impact Types

Implementation of the proposed project would primarily have two classes of impacts: 1) permanent direct impacts on vegetation communities and the sensitive plants living in them, and the resulting loss of habitat for sensitive animals, and 2) indirect effects on certain sensitive animal species from increased public presence.

However, construction of the trail system would rely on hand tools and small mechanized equipment designed for trail building and would not have significant direct or indirect effects beyond the loss of habitat. The trail construction would be conducted in compliance with state and federal criminal prohibitions against taking of nesting birds and would not be expected to result in any direct or indirect mortality of general or sensitive wildlife species.

Habitat Impacts

Complete development of the proposed project including the proposed trails, proposed trails on existing disturbed areas, and potential future trail connections would result in direct permanent and temporary impacts on a maximum of 5.3 acres of sensitive natural communities, including 0.1 acre of open coast live oak woodland, 2.1 acres of Diegan coastal sage scrub: coastal form, 0.9 acre of coastal sage-chaparral transition, 0.9 acre of southern mixed chaparral, 0.6 acre of chamise chaparral, and 0.7 acre of non-native

grassland. The proposed trails, future trail connections, and proposed trails on existing disturbed areas have been sited and designed to avoid oak trees, and no impacts to oak trees would occur.

Table 1, *Project Impacts on Habitat/Vegetation Communities* below summarizes the impacts on habitat types/vegetation communities from development of the proposed project.

Table 1
PROJECT IMPACTS ON HABITAT/VEGETATION COMMUNITIES[1]

Vegetation Community[2]	Impacts (Acres)[3]	Mitigation Ratio[4]	Mitigation (Acres)[4]
Sensitive Vegetation Communities			
Tier I			
Scrub Oak Chaparral (37900)	--	2:1	--
Southern Riparian Forest (61300)	--	2:1	--
Southern Coast Live Oak Riparian Forest (61310)	--	2:1	--
Southern Riparian Woodland (62500)	--	2:1	--
Unvegetated Channel (64200)	--	2:1	--
Dense Coast Live Oak Woodland (71160)	--	2:1	--
Open Coast Live Oak Woodland (71161)	0.1[5]	2:1	0.2
Tier II			
Diegan Coastal Sage Scrub (32500)	2.1	1.5:1	3.2
Coastal Sage-Chaparral Transition (37G00)	0.9	1.5:1	1.4
Tier III			
Southern Mixed Chaparral (37120)	0.9	1:1	0.9
Chamise Chaparral (37200)	0.6	1:1	0.6
Non-native Grassland (42200)	0.7	0.5:1	0.4
Subtotal Sensitive Communities	*5.3*		*6.7*
Non-Sensitive Vegetation Communities			
Tier IV			
Disturbed Habitat (11300)	1.5	N/A	N/A
N/A			
Developed Land (12000)	--	N/A	N/A
Subtotal Non-Sensitive Communities	*1.5*		
TOTAL	**6.8**		**6.7**

1 Upland habitats are rounded to the nearest 0.1 acre; thus, total reflects rounding.
2 Vegetation categories and numerical codes are from Holland (1986) and Oberbauer (2008). County Subarea Habitats and Tiers are from the MSCP.
3 Impacts are calculated from Proposed Trails, Existing Trails on Previously Disturbed Areas, and Potential Future Trail Connections.
4 Mitigation is calculated assuming mitigation occurs within a BRCA. The revegetation of 5.6 acres of existing trails to be closed as part of the proposed project will fulfill part of the project's mitigation requirements.
5 Although there could be impacts to Open Coast Live Oak Woodland, there would be no impacts to individual oak trees.

Sensitive Plant Impacts

Five special status plant species were observed within the survey area for the PAP during the 2019-2022 biological surveys. Additionally, eleven other special status plant species have been documented within the Study Area during previous surveys for the Preserve. Surveys and documentation indicated that 16 special status plant species occur within the survey area. This includes six County List A species (San Diego thorn-mint [*Acanthomintha ilicifolia*], willowy monardella [*Monardella viminea*], variegated dudleya [*Dudleya variegata*], Deane's milkvetch [*Astragalus deanei*], delicate clarkia [*Clarkia delicata*], and San Diego goldenstar [*Bloomeria clevelandii*]) and ten County List D species (graceful tarplant [*Holocarpha virgata* ssp. *elongata*], small-flowered morning glory [*Convolvulus simulans*], rush chaparral-star [*Xanthisma junceum*], San Diego County viguiera [*Bahiopsis laciniata*], ashy spike moss [*Selaginella cinerascens*], California adder's-tongue [*Ophioglossum californicum*], Palmer's grappling hook [*Harpagonella palmeri*], golden-rayed pentachaeta [*Pentachaeta aurea* ssp. *aurea*], Engelmann oak [*Quercus engelmannii*], and Palmer's sagebrush [*Artemisia palmeri*]).

Impacts from the analyzed trail segments to the following species would be mitigated to less than significant levels, as detailed in the Biological Resources Technical Report (BRTR) for the proposed project: San Diego thorn-mint (Federally Endangered, State Endangered, County List A, and California Rare Plant Rank [CRPR] 1B.1). Impacts to rush chaparral-star, San Diego County Viguiera, and ashy spike-moss would be reduced to a level less than significant because the Preserve includes extensive habitat occupied by these relatively common species, and these species are conserved through the MSCP program. Additionally, impacts would be less than significant given that any development of trails in previously undeveloped areas would occur as thin strips and the proposed project footprint comprises a small fraction of the available habitat for these species throughout the Preserve. No impacts are anticipated to other special status plant species. Proposed project impacts have been sited and designed to avoid oak trees, and no impacts to oak trees would occur.

Sensitive Wildlife Impacts

The proposed project would potentially result in impacts to 44 special status animal species. These include 16 County Group 1 species, 25 County Group 2 species, and two species not on the County lists, but are State species of special concern species. Implementation of the proposed project would affect special status animal species through the reduction in suitable habitat used by the species; however, due to the amount of habitat available within the Preserve, most impacts would be less than significant. Four special status animal species were observed or detected within the survey area during the 2019 general biological survey and 2022 Hermes copper butterfly survey: Quino checkerspot butterfly (QCB; *Euphydryas editha quino*), San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*), coastal California gnatcatcher (*Polioptila californica californica*), and southern mule deer (*Odocoileus hemionus*). The 40 other special status animal species have been documented within the Preserve during previous surveys for the Preserve prior to 2019, including: western spadefoot toad (*Spea hammondii*), Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*), red diamond rattlesnake (*Crotalus ruber*), Coronado skink (*Plestiodon skiltonianus interparietalis*), northern three-lined boa (*Lichanura orcuttii*), Blainville's horned lizard (*Phrynosoma blainvillii*), coast patch-nosed snake (*Salvadora hexalepis virgultea*), two-striped garter snake (*Thamnophis hammondii*), Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), Bell's sage sparrow (*Amphispiza bellii bellii*), golden eagle (*Aquila chrysaetos*), red-shouldered hawk (*Buteo lineatus*), turkey vulture (*Cathartes aura*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), California horned lark (*Eremophila alpestris actia*), bald eagle (*Haliaeetus leucocephalus*), yellow-breasted chat (*Icteria virens*), osprey (*Pandion*

haliaetus), yellow warbler (*Setophaga petechia*), western bluebird (*Sialia mexicana*), barn owl (*Tyto alba*), burrowing owl (*Athene cunicularia*), Vaux's swift (*Chaetura vauxi*), pallid bat (*Antrozous pallidus*), Dulzura pocket mouse (*Chaetodipus californicus femoralis*), Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), Townsend's big-eared bat (*Corynorhinus townsendii*), western mastiff bat (*Eumops perotis californicus*), western red bat (*Lasiurus blossevillii*), western yellow bat (*Lasiurus xanthinus*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), western small-footed myotis (*Myotis ciliolabrum*), Yuma myotis (*Myotis yumanensis*), San Diego desert woodrat (*Neotoma lepida intermedia*), pocketed free-tailed bat (*Nyctinomops femorosaccus*), big free-tailed bat (*Nyctinomops macrotis*), and mountain lion (*Puma concolor*).

Impacts from the analyzed trail segments to the following species would be mitigated to less than significant levels, as detailed in the Biological Resources Technical Report (BRTR) for the proposed project: QCB, Hermes copper butterfly (*Lycaena hermes*), western spadefoot toad, coastal California gnatcatcher, bald eagle, burrowing owl, coastal California gnatcatcher, northern harrier, Vaux's swift, yellow-breasted chat, yellow warbler, barn owl, Bell's sage sparrow, California horned lark, Cooper's hawk, golden eagle, osprey, red-shouldered hawk, sharp-shinned hawk, southern California rufous-crowned sparrow, turkey vulture, western bluebird, and white-tailed kite. Impacts to the other special status animal species listed above would be less than significant.

Jurisdictional Wetlands and Waterways

The proposed project will not result in impacts to jurisdictional wetlands or waterways. The survey area supports fifteen features that were identified and mapped for potential state and federal jurisdiction. A total of 0.51 acre of waters of the U.S. may be subject to U.S. Army Corps of Engineers and Regional Water Quality Control Board regulatory jurisdiction pursuant to Sections 404 and 401 of the CWA. Additionally, 0.60 acre of streambed and riparian resources occur within the jurisdictional delineation review area and would be subject to CDFW jurisdiction pursuant to Sections 1600–1616 of the California Fish and Game Code (CFG Code).

The proposed project would not impact riparian habitats or jurisdictional features because the at-grade crossings proposed as part of the proposed project would not grade, develop, or alter the substrate of the features, nor would the proposed project utilize mechanized earth moving equipment as part of construction. In addition, loose soil material kicked up from walking, riding, or biking across the features would not constitute a regulated discharge of fill material to jurisdictional non-wetland waters. The proposed project would not modify existing culverts, channels, or streams. Thus, no impacts on the identified features or on CDFW jurisdictional habitat would occur. In addition, the proposed project does not propose any new uses for groundwater that would otherwise impact the functions and values of existing wetlands on the Preserve. Therefore, the proposed project would result in less than significant impacts, and would not result in cumulatively considerable impacts, on potentially jurisdictional waterways. No State or Federally protected wetlands would be impacted, and therefore no direct, indirect, or cumulative impacts would occur on State or Federally protected wetlands. No impacts would occur on jurisdictional features.

Core Wildlife/Wildlife Corridors

The Preserve currently consists of 2,847 acres of open space, including approximately 19.5 acres of existing trails, maintenance, and access roads. At a maximum, approximately 2.9 acres of impact would result from establishing new proposed trails, 0.6 acre of impact from potential future trail connections, and

approximately 3.3 acres of impact would result from the PAP component of the proposed project for improvements to existing trails in previously disturbed areas. The proposed project would therefore impact 6.8 acres, including impacts to disturbed habitat and developed land. Additionally, a total of 5.6 acres of trails will be closed and revegetated through implementation of the PAP. All impacts to habitat within the Preserve would occur as thin strips to either establish trail segments in previously undeveloped areas or in previously disturbed areas.

The proposed trail segments would not substantially interfere with the ability of wildlife species to disperse to adjacent conserved land areas, as adequate connectivity is maintained. The proposed project would not propose fixed nighttime lighting that would promote nighttime usage. The proposed project would conform to the goals and requirements of the Subarea Plan and BMO, including effects on habitat linkages and wildlife corridors. The proposed project would maintain connectivity within the core wildlife habitat, to adjacent linkages, and to adjacent, undeveloped habitat. With the proposed project's location within and adjacent to undeveloped areas, incorporation of design features, and implementation of the previously identified habitat mitigation measures, the proposed project's impacts would be less than significant.

Biological open space extends uninterrupted across the Preserve and includes large expanses of native scrub habitats, as well as riparian areas. Due to the lack of permanent water, wildlife likely forage, seek shelter, and move through the Preserve following routes to areas with fresh water, such as San Vicente Reservoir to the east. These habitats within the Preserve will continue to provide foraging and breeding habitat for a variety of species, including coastal California gnatcatcher. Proposed project construction would not impede access or lessen the area available for terrestrial wildlife movement. Coyotes are frequently observed throughout the Preserve and do not avoid the existing trails. Southern mule deer and mountain lion are the largest mammal species that could potentially occur on-site, and suitable expanses of habitat will be maintained for deer and mountain lion to move through the area. Movement of other medium-sized mammals, such as bobcat, is more likely to follow riparian areas associated with Sycamore Canyon Creek and other areas with sufficient vegetative cover. Small animals could also cross the proposed trail segments. No new impacts are proposed for the existing trail segment along Sycamore Canyon Creek, including the West Boundary (#13) trail segment, and vegetation impacts associated with the construction of new trail segments will be minimized. The proposed project would maintain a continuous connection of undeveloped land and native habitat, including connections to Sycamore Canyon Creek, Clark Canyon, and to adjacent open space areas. Therefore, the proposed project would not impede wildlife access to habitat necessary for reproduction. Impacts would be less than significant.

The proposed project is in a relatively undeveloped part of San Diego County. The area consists of continuous blocks of habitat. Wildlife movement in the area has already been impacted by the construction of nearby roadways, including Scripps Poway Parkway and SR-67, residential and commercial development, nearby mineral extraction activities, military activities, agriculture, and the presence of existing trails, maintenance, and access roads.

Trails would be expected to be used by medium and large mammals for ease of movement through the Preserve. No features would be constructed that would impinge any movement areas, including ridgelines or canyons. Wildlife movement is not expected to be substantially constrained by the construction of new trail segments as (1) trail construction would not substantially change topography; (2) the proposed project maintains connectivity to core wildlife habitat along the Sycamore Canyon Creek and Clark Canyon to the surrounding undeveloped areas; (3) the proposed project would not impact existing Waters of the U.S./State at trail crossings; (4) trails would not be so wide or heavily-trafficked as to prevent animals from

moving across them; and (5) existing lines-of-sight would be maintained across trails. The Study Area provides adequate space and resources for wildlife known to use the site, maintains connectivity to off-site resources, and functions to facilitate bird and mammal movement through the area, including for species targeted for conservation in the region, such as the coastal California gnatcatcher. Therefore, the proposed project would not significantly impact the viability of a core wildlife area and biological connectivity between the Preserve and adjacent open space areas would be maintained.

Mitigation Measures

In order to reduce potentially significant impacts to a less than significant level, the County proposes the following Mitigation Measures as part of the proposed project:

BIO-1 Focused surveys for San Diego thorn-mint will be completed within areas of critical habitat during the blooming period for this species (April – May) prior to clearing and grubbing of the proposed Rock and Roll Trail (#22) segment improvements or reroutes. San Diego thorn-mint observed in the proposed impact area will be flagged and avoided during trail construction. If impacts to San Diego thorn-mint individuals cannot be avoided, they shall be quantified and limited to no more than 20 percent of the total population in the area, consistent with the BMO Section 86.507.a.1, as determined during pre-construction surveys and documented in a letter report submitted by the County-approved biologist to DPR. The mapping of plant populations will extend beyond the impact area into the adjacent area that meets the species' habitat requirements, as determined by the County-approved biologist. DPR will review and approve the letter report and implement the mitigation according to the Mitigation Monitoring and Reporting Program for the project. Impacts shall be mitigated consistent with the BMO Section 86.507.a.1 at a 2:1 ratio if less than 10 percent of the total population is impacted, or 3:1 ratio if less than 20 percent of the total population is impacted. The proposed project will avoid impacting more than 20 percent of the total population.

Mitigation will consist of on- or off-site preservation, translocation, and/or restoration within a BRCA, with a preference for species salvage and transplantation on-site if feasible. Seed material will be sourced from within five miles of the Preserve, but if seed is not available, due to seasonality or a poor seeding year, seed collected from southeastern San Diego County may be used. Additionally, any trail or trail segment closure within areas of critical habitat for San Diego thorn-mint will include revegetation with species known as common associates to San Diego thorn-mint populations. If species are transplanted for mitigation, these species will be included in a plant salvage and translocation plan according to mitigation measure **BIO-2**.

BIO-2 Prior to vegetation clearing for the proposed Rock and Roll Trail (#22) segment improvements or reroutes, if San Diego thorn-mint is being impacted and translocation is selected as part of the mitigation package according to the letter report prepared under mitigation measure **BIO-1**, a plant salvage and translocation plan shall be prepared for San Diego thorn-mint impacted by the project. The plan shall, at a minimum, evaluate options for plant salvage and relocation, including native plant mulching, selective soil salvaging, and application/relocation of resources within the Study Area. Relocation efforts may include seed collection and/or transplantation to a suitable receptor site and will be based on the most reliable methods of successful relocation. The program shall contain a recommendation for method of salvage and relocation/application based on feasibility of implementation and likelihood of success. The program shall include, at a minimum, an implementation plan, maintenance and monitoring program, success criteria, estimated completion time, and any relevant contingency measures. The resource salvage plan shall be prepared by a

County-approved biologist and shall be implemented according to the Mitigation Monitoring and Reporting Program for the project.

BIO-3 Grading or clearing of Diegan coastal sage scrub during the breeding season of the coastal California gnatcatcher (March 1 to August 15) shall be avoided to the extent feasible. If grubbing, clearing, or grading would occur during the breeding season, a pre-construction survey shall be conducted by a qualified biologist no more than three days prior to the commencement of activities to determine if active bird nests are present in the affected areas. If there are no nesting birds (includes nest building or other breeding/nesting behavior) within 500 feet of the survey area, clearing, grubbing, and grading shall be allowed to proceed in that area. If active nests or nesting birds are observed within 500 feet of the survey area, the biologist shall flag a buffer around the active nests, and clearing, grubbing, or grading activities shall not occur within 500 feet of active nests until nesting behavior has ceased, nests have failed, or young have fledged as determined by a qualified biologist. If the qualified biologist determines that the species will not be impacted with a reduced buffer, potentially with the implementation of avoidance measures to reduce noise, as necessary, and/or the qualified biologist monitors the active nest during clearing, grubbing, or grading to ensure no impacts to the species occur, these activities may occur outside the reduced buffer during the breeding season, as long as the species is not impacted.

BIO-4 Grubbing or clearing of vegetation during the general avian breeding season (February 15 – September 15) or raptor breeding season (January 15 – July 15) shall be avoided to the extent feasible. If grubbing, clearing, or grading would occur during the general avian breeding season, a pre-construction survey shall be conducted by a qualified biologist no more than three days prior to the commencement of grubbing or clearing activities to determine if active bird nests are present in the affected areas. If there are no nesting birds (includes nest building or other breeding/nesting behavior) within this area, clearing, grubbing, and grading shall be allowed to proceed. Furthermore, if construction activities are to resume in an area where they have not occurred for a period of seven or more days during the breeding season, an updated survey for avian nesting will be conducted. If active nests or nesting birds are observed within the area, the biologist shall flag the active nests and construction activities shall avoid active nests until nesting behavior has ceased, nests have failed, or young have fledged. If the qualified biologist determines that the species will not be impacted with a reduced buffer, potentially with the implementation of avoidance measures to reduce noise, as necessary, and/or the qualified biologist monitors the active nest during clearing, grubbing, or grading to ensure no impacts to the species occur, these activities may occur outside the reduced buffer during the breeding season, as long as the species is not impacted.

BIO-5 Because the Preserve is a Biological Resource Core Area (BRCA), mitigation for impacts to 3.0 acres of Diegan coastal sage scrub and coastal sage-chaparral transition, both Tier II habitats, shall occur at a 1.5:1 ratio through preservation, revegetation/restoration, or purchase of Tier II mitigation credits from an approved mitigation bank within the South County MSCP Subarea Plan per Attachment M of the BMO. The mitigation site will meet the criteria for a BRCA in order to use a 1.5:1 ratio, as the impacted land meets the criteria for BRCA. Otherwise, the mitigation ratio will be 2:1 if the mitigation site does not meet the criteria for BRCA. Some or all of the mitigation for impacts to 3.0 acres of Tier II habitat could occur as part of the revegetation of existing trail segments to be closed. Revegetation will be accomplished by a combination of barricade and sign installation, soil decompaction (where needed), and native seed application (see also BIO-6). Seed material will be sourced from within five miles of the Preserve, but if seed is not available, due to

seasonality or a poor seeding year, seed collected from southeastern San Diego County may be used. Revegetation efforts will be monitored by a qualified biologist and maintained for a period of three years following implementation. Maintenance will be conducted by a qualified contractor with experience in native habitat restoration and will include control of non-native plant species and remedial measures, such as re-seeding and installation of additional barricades and signage, to help ensure the success of the revegetation efforts. Closed trail segments to be revegetated within occupied QCB habitat will be revegetated with passive methods that would avoid impacts to QCB and their larval host plants.

BIO-6 Trail segments to be closed and revegetated will incorporate native species in seed mixes that will enhance sensitive species documented within the Preserve, including San Diego thorn-mint and habitat that supports QCB. Revegetation of trail segments within areas of critical habitat for San Diego thorn-mint will include seeding with native geophytes (i.e., wild onion [*Allium* spp.] and goldenstar [*Bloomeria crocea*]) known to occur with San Diego thorn-mint on gabbro soils. Revegetation of trail segments within areas of suitable habitat for QCB will include host plant species (i.e., dot-seed plantain) and nectar resources.

BIO-7 Mitigation for permanent impacts to Potential Hermes Copper Butterfly Habitat within shall occur at a 1:1 ratio within the South County MSCP Subarea, within a BRCA, or at the ratios identified in the BMO. Permanent impacts to Potential Hermes Copper Butterfly Habitat are expected to be 0.05 acre. Mitigation shall occur through one or a combination of the following: on- and/or off-site preservation, restoration, and/or purchase of mitigation credits at an approved mitigation bank.

BIO-8 The following Hermes Copper Butterfly conservation measures apply along the Hermes Copper Butterfly Avoidance Area on Figure 8b of the proposed project's BRTR. Additional Hermes Copper Butterfly surveys will be conducted prior to construction, in order to ensure that potential habitat is delineated to the greatest extent feasible. This mitigation would be expanded to any additional area where Hermes Copper Butterfly is identified during preconstruction surveys.

Step 1: Survey

- Prior to initiating work within the Hermes Copper Butterfly Avoidance Area, a qualified biologist shall complete protocol flight season surveys for the Hermes Copper Butterfly in accordance with the survey guidelines outlined in Attachment B of the County's Report Format and Content Requirements for Biological Resources (County 2010a).

- During host plant mapping, host plant patches will be mapped using GPS, so they can be flagged prior to construction.

Step 2: Avoidance and Minimization Measures

- Following flight season surveys and host plant mapping, realign or leave potential impact areas unimproved, as needed, to avoid direct impacts to host plants (Spiny redberry plants that are within 15 feet of buckwheat) as much as possible.

- All construction within mapped Hermes Copper Butterfly habitat, including buckwheat within 15 feet of Spiny redberry, will be prohibited during the flight season (defined as the third full week of May through the first full week of July).

- A qualified biologist will monitor construction within the Hermes Copper Butterfly Avoidance Area to ensure that all flagged and mapped host plant locations planned for avoidance are avoided.

- The qualified biologist will conduct environmental awareness training for all personnel entering the site during the construction of the proposed project.

- Following trail installation, maintenance activities in areas supporting Hermes Copper Butterfly host plants within the Hermes Copper Butterfly Avoidance Area shall either occur outside of the Hermes Copper Butterfly flight season or be monitored, as appropriate, by a qualified biologist.

- Install signs and/or fencing along the avoided host plants stating, "Environmentally sensitive area. Please stay on trail," or similar language.

Step 3: Compensatory Mitigation

If the flight season surveys conducted in Step 1 are positive and the proposed project cannot be redesigned to avoid impacts to all Hermes Copper Butterfly host plant patches, then in addition to the surveys and avoidance and minimization measures in Steps 1 and 2 above, the impacts to Occupied Hermes Copper Butterfly host plant patches will be mitigated at a 3:1 ratio through one or a combination of the following: on- and/or off-site preservation, restoration, and/or purchase of mitigation credits at an approved mitigation bank.

BIO-9 The following QCB conservation measures apply along the Rock and Roll Trail (#22) segment, shown as QCB Avoidance Area on Figure 8b of the proposed project's BRTR. Additional QCB host plant mapping will be conducted prior to construction when host plants are blooming, in order to ensure host plant patches are delineated to the greatest extent feasible. This mitigation would be expanded to any additional area where QCB host plants are identified during preconstruction plant mapping.

Step 1: Survey

- Additional QCB host plant mapping will be conducted prior to construction when host plants are blooming, in order to ensure host plant patches are delineated to the greatest extent feasible.

- During host plant mapping, host plant patches will be mapped using GPS, so they can be flagged prior to construction.

Step 2: Avoidance and Minimization Measures

- Following host plant mapping, realign or leave potential impact areas unimproved, as needed, to avoid direct impacts to host plants as much as possible.

- All construction within mapped QCB host plant patches will be prohibited during the QCB flight season (defined as the third week of February through the second Saturday in May).

- A qualified biologist will monitor construction within the QCB Avoidance Area to ensure that all flagged and mapped host plant locations planned for avoidance are avoided.

- The qualified biologist will conduct environmental awareness training for all personnel entering the site during the construction of the proposed project.

- Following construction, maintenance activities in areas supporting QCB host plants within the QCB Avoidance Area shall either occur outside of the QCB flight season or be monitored, as appropriate, by a qualified biologist.

- Install signs and/or fencing along the avoided host plants stating, "Environmentally sensitive area. Please stay on trail," or similar language.

Step 3: Compensatory Mitigation

If the proposed project cannot be redesigned to avoid impacts to all QCB host plant patches, then in addition to the surveys and avoidance and minimization measures in Steps 1 and 2 above, consultation with USFWS will be required. Mitigation may consist of one or a combination of on- or off-site planting of host plants, providing long-term maintenance of existing host plants, preserving occupied QCB habitat, or similar measures to the satisfaction of the USFWS.

BIO-10 Focused surveys for western spadefoot toad will be completed by a qualified biologist prior to clearing and grubbing of the proposed trail segment improvements or reroutes. Occupied western spadefoot toad habitat observed in the proposed impact area will be flagged and avoided during trail construction until the qualified biologist determines that western spadefoot toad are no longer using the habitat.

BIO-11 To help ensure errant impacts to sensitive vegetation communities and jurisdictional waters outside of the impact footprint are avoided during construction, environmental exclusionary fencing, where determined necessary by the qualified biologist, would be installed at the edges of the impact limits prior to initiation of grading. All construction staging shall occur within the approved limits of construction. A qualified biologist will monitor the installation of environmental fencing wherever it would abut sensitive vegetation communities. The biologist also will conduct a pre-construction environmental awareness training for construction personnel prior to all phases of construction to inform personnel of the sensitive biological resources on-site and avoidance measures to remain in compliance with project approvals. The biologist will periodically monitor the limits of construction operations to ensure that avoidance areas are delineated with temporary fencing and that fencing remains intact.

BIO-12 Because the Preserve is a BRCA, mitigation for impacts to 0.1 acre of open coast live oak woodland, a Tier I habitat, shall occur at a 2:1 ratio through on-site preservation of open or dense coast live oak woodland, on- or off-site revegetation of open or dense coast live oak woodland, or purchase of Tier I mitigation credits from an approved mitigation bank within the South County MSCP Subarea Plan per Attachment M of the BMO. The mitigation site will meet the criteria for a BRCA in order to use a 2:1 ratio, as the impacted land meets the criteria for BRCA. Otherwise, the mitigation ratio will be 3:1 if the mitigation site does not meet the criteria for BRCA. Some or all of the mitigation for impacts to 0.1 acre of open coast like oak woodland could occur as part of the revegetation of 5.6 acres of existing trail segments to be closed. Revegetation will be accomplished

by a combination of barricade and sign installation, soil decompaction (where needed), and native seed application (see also BIO-6). Seed material will be sourced from within five miles of the Preserve, but if seed is not available, due to seasonality or a poor seeding year, seed collected from southeastern San Diego County may be used. Revegetation efforts will be monitored by a qualified biologist and maintained for a period of three years following implementation. Maintenance will be conducted by a qualified contractor with experience in native habitat restoration and will include control of non-native plant species and remedial measures, such as re-seeding and installation of additional barricades and signage, to help ensure the success of the revegetation efforts. Closed trail segments to be revegetated within occupied QCB habitat will be revegetated with passive methods that would avoid impacts to QCB and their larval host plants.

BIO-13 Because the Preserve is a BRCA, mitigation for impacts to 2.2 acres of southern mixed chaparral, chamise chaparral, and non-native grassland, Tier III habitats, shall occur at a 1:1 ratio through on-site preservation, revegetation/restoration, or purchase of Tier III mitigation credits from an approved mitigation bank within the South County MSCP Subarea Plan per Attachment M of the BMO. The mitigation site will meet the criteria for a BRCA in order to use a 1:1 ratio, as the impacted land meets the criteria for BRCA. Otherwise, the mitigation ratio will be 1.5:1 if the mitigation site does not meet the criteria for BRCA. Some or all of the mitigation for impacts to 2.2 acres of Tier III habitat could occur as part of the revegetation of 5.6 acres of existing trail segments to be closed. Revegetation will be accomplished by a combination barricade and sign installation, soil decompaction (where needed), and native seed application (see also MM-BIO-6). Seed material will be sourced from within five miles of the Preserve, but if seed is not available, due to seasonality or a poor seeding year, seed collected from southeastern San Diego County may be used. Revegetation efforts will be monitored by a qualified biologist and maintained for a period of three years following implementation. Maintenance will be conducted by a qualified contractor with experience in native habitat restoration and will include control of non-native plant species and remedial measures, such as re-seeding and installation of additional barricades and signage, to help ensure the success of the revegetation efforts. Closed trail segments to be revegetated within occupied QCB habitat will be revegetated with passive methods that would avoid impacts to QCB and their larval host plants.

The findings contained within this document are based on County records and the BRTR for the proposed project. The information contained within these Findings is correct to the best of staff's knowledge at the time the findings were completed. Any subsequent environmental review completed due to changes in the proposed project or changes in circumstance shall need to have new findings completed based on the environmental conditions at that time.

The proposed project has been found to conform to the South County MSCP Subarea Plan, the Biological Mitigation Ordinance (BMO) and the Implementation Agreement between the County, CDFW, and the U.S. Fish and Wildlife Service. Third Party Beneficiary Status and the associated take authorization for incidental impacts to sensitive species (pursuant to the County's Section 10 Permit under the Endangered Species Act) shall be conveyed only after the proposed project has been approved by the County, these MSCP Findings are adopted by the hearing body and all MSCP-related conditions placed on the proposed project have been satisfied.

II. Biological Resource Core Area Determination

The impact area and the mitigation site shall be evaluated to determine if either or both sites qualify as a Biological Resource Core Area (BRCA) pursuant to the BMO, Section 86.506(a)(1).

A. Report the factual determination as to whether the proposed Impact Area qualifies as a BRCA. The Impact Area shall refer only to that area within which project-related disturbance is proposed, including any on and/or off-site impacts.

The proposed project area qualifies as a BRCA because it is wholly located within PAMA and is located within an area of habitat that contains biological resources that support or contribute to the long-term survival of sensitive species.

B. Report the factual determination as to whether the Mitigation Site qualifies as a BRCA.

According to Section 86.506 of the San Diego BMO (2010), if land is shown as PAMA on a pre-approved mitigation map approved by the Wildlife Agencies, such as in the Subarea Plan, it is considered to be a BRCA. The Preserve is designated as PAMA on the Wildlife Agencies' preapproved mitigation map for the Subarea Plan. Mitigation for proposed project impacts will occur primarily or wholly within the Preserve, and any off-site mitigation would be located within a BRCA.

III. Biological Mitigation Ordinance Findings

The proposed project is exempt from the BMO (Section 86.503(a)(8)), which states:

A public facility or public project, determined to be essential by the County, including but not limited to a County Park or County recreational facility, provided that the County decision making body considering such a project makes the following findings:

a. The facility or project is consistent with the County General Plan, the MSCP Plan and Subarea Plan, as approved by the Board of Supervisors;

General Plan conformance: The proposed project is consistent with the County of San Diego General Plan as shown in the following findings:

The proposed project is located within the South County MSCP Subarea Plan. The proposed project supports the goals and policies outlined by the Community Trails Master Plan (County 2005) which includes objectives, policies, goals, implementation strategies, and guidelines for the management and expansion of the recreational trail network throughout the County. This proposed project is within the County's Lakeside Community Planning Area. The non-motorized recreational trail would provide increased opportunities for walking, bicycling, and equestrian use. The proposed project is intended to increase and improve connectivity and mobility of non-motorized users within the community and throughout the region.

The proposed trail segments have been designed to follow the County's Preserve Trail Guidelines (County 2018) and to support the goals and policies outlined by the Community Trails Master Plan

(County 2005) and comply with the MSCP Framework Management Plan (County 2001). The trails would generally follow trail types defined in the Preserve Trail Guidelines.

This proposed project is consistent with the Subarea Plan as detailed in this MSCP Conformance Statement. The project proposes passive recreation (trails), which are an allowable use in the Preserve per the MSCP. The proposed project will help create public access while ensuring all potential impacts are mitigated to a less than significant level.

b. All feasible mitigation measures have been incorporated into the facility or project, and there are no feasible, less environmentally damaging locations, alignments or non-structural alternatives that would meet project objectives;

The PAP would provide approximately 3.78 miles of new proposed trails or trail segments, 0.99-mile of potential future trail connections, 4.76 miles of formalization of trails or trail segments on existing disturbed areas, and 5.56 miles of existing formal trails. The formal trail network would therefore increase to 15.09 miles and provide trails dedicated to multi-use routes for hikers, mountain bikers, e-bikers, and horseback riders. The PAP would also maintain 6.61 miles of existing access roads and would plan to close 7.24 miles of existing trails, including informal trails. The width of proposed trails has been minimized, with trails ranging from 4 to 8 feet in width. Trail surface will be native soil, decomposed granite, crushed granite, or existing road. The trail alignment and design were created to avoid or minimize impacts to the surrounding habitat, sensitive species, and natural resources. Trail alignments were adjusted during the environmental analysis to reduce habitat impacts and avoid wetlands and streams, and the least impactive combination of trail alignments was selected as the proposed project. Habitat-based mitigation for permanent and temporary direct impacts will be implemented through on-site or off-site habitat preservation, enhancement, restoration, and/or purchase of mitigation credits, all within BRCA. Mitigation would follow the mitigation ratios in Attachment M of the BMO, as illustrated in Table 1 above. Mitigation for habitat impacts is described in mitigation measures **BIO-5**, **BIO-12**, and **BIO-13.** Mitigation for impacts on sensitive species and nesting bird protected under the Migratory Bird Treaty Act and CFG Code is described in mitigation measures **BIO-3** and **BIO-4**. These mitigation measures ensure that any significant impacts on sensitive habitat and sensitive species would be reduced to a less than significant level.

c. Where the facility or project encroaches into a wetland or floodplain, mitigation measures are required that result in a net gain in wetland and/or riparian habitat;

The proposed project does not encroach into a wetland or floodplain or result in any impacts to jurisdictional features. The proposed project has been designed to reduce impacts on sensitive vegetation within BRCA, and although the trail will be located adjacent to wetland/riparian habitat, it has been designed to avoid impacts on wetland waters or jurisdictional features.

d. Where the facility or project encroaches into steep slopes, native vegetation will be used to revegetate and landscape cut and fill areas;

The proposed project would require limited grading for the new trails. However, the project would use trail placement, reduced trail width, and/or retaining walls to avoid creating large cut or fill slopes. Revegetation included in the proposed project will use native landscaping.

e. No mature riparian woodland is destroyed or reduced in size due to otherwise allowed encroachments; and

The proposed project would have no impact on mature riparian woodland. Direct impacts to riparian areas and oak trees within the survey area will be avoided.

f. All Critical Populations of Sensitive Plant Species Within the MSCP Subarea, (Attachment C); Rare, Narrow Endemic Animal Species Within the MSCP Subarea, (Attachment D); Narrow Endemic Plant Species Within the MSCP Subarea, (Attachment E); and San Diego County Sensitive Plant Species, as defined herein will be avoided as required by, and consistent with, the terms of the Subarea Plan.

Variegated dudleya, San Diego thorn-mint, and QCB are the only narrow endemic species previously observed within the Preserve and with high potential to occur in the survey area.

While variegata dudleya was observed outside the survey area during the 2019 survey, no variegated dudleya was observed within the survey area or the existing and proposed Rock and Roll Trail (#22) segment alignments. Additionally, the variegated dudleya populations are more than 50 feet from any of the existing or proposed trail segment locations. Therefore, no impacts to this species are expected.

Impacts to San Diego thorn-mint critical habitat would result from improvements to the southwestern portion of the existing Rock and Roll Trail (#22) segment or by the proposed re-route of this trail segment. If impacts to San Diego thorn-mint individuals cannot be avoided, impacts shall be mitigated consistent with the BMO Section 86.507.a.1 at a 2:1 ratio if less than 10 percent of the total population is impacted, or 3:1 ratio if less than 20 percent of the total population is impacted. The proposed project will avoid impacting more than 20 percent of the total population. If species are transplanted for mitigation, these species will be included in a plant salvage and translocation plan according to mitigation measure **BIO-2**. The project would impact less than one percent of the critical habitat for San Diego thorn-mint within the Preserve by proposed improvements to the existing Rock and Roll Trail (#22) segment and/or by the proposed re-route of the southwestern portion of the Rock and Roll Trail (#22) segment. Impacts to the San Diego thorn-mint population within the Preserve would be reduced to less than significant with implementation of Mitigation Measures **BIO-1, BIO-2,** and **BIO-6**. Therefore, the project impacts to MSCP narrow endemic species would not impact core populations and the Project is consistent with the terms of the Subarea Plan.

QCB host plants were observed along the Rock and Roll Trail (#22) segments (dot-seed plantain [*Plantago erecta*], woolly plantain [*Plantago patagonica*], purple owl's clover [*Castilleja exserta*], and rigid bird's beak [*Cordylanthus rigidus*]). Project construction within on-site breeding habitat for this sensitive species would therefore result in significant impacts. These impacts would be mitigated through the implementation of Mitigation Measure **BIO-9**. Therefore, the proposed project impacts to QCB associated with the Rock and Roll Trail (#22) segment would be less than significant following mitigation. The revegetation of adjacent trail segments to be closed (see Mitigation Measure **BIO-6**) would include habitat enhancement (inclusion of host plant species in seed mixes) for the QCB. Therefore, the proposed project impacts to QCB associated with the Slaughterhouse Canyon Trail (#21) segment and adjacent ridgelines as well as Rock and Roll Trail

(#22) segments would be less than significant following mitigation. Additionally, project impacts to QCB within the Preserve would be less than significant.

IV. Subarea Plan Findings

Conformance with the objectives of the County Subarea Plan is demonstrated by the following findings:

1. **The project will not conflict with the no-net-loss-of-wetlands standard in satisfying State and Federal wetland goals and policies.**

   The project has been designed to avoid impacts on wetland waters or jurisdictional features. Because the project will not result in any impacts to jurisdictional waters, the project will be consistent with the no-net-loss-of-wetlands standard, satisfying State and Federal wetland goals and policies.

2. **The project includes measures to maximize the habitat structural diversity of conserved habitat areas including conservation of unique habitats and habitat features.**

   The Project maximizes the habitat structural diversity of conserved habitat areas by confining impacts to only 5.3 acres of sensitive habitat out of a 107.8-acre survey area. The Project will place trails along existing paved or dirt roads when possible in order to preserve a wide range of existing habitats in place, ranging from non-native grassland to scrub and chaparral habitats, to woodland and riparian forest habitats, to unvegetated channel.

3. **The project provides for conservation of spatially representative examples of extensive patches of Coastal sage scrub and other habitat types that were ranked as having high and very high biological values by the MSCP habitat evaluation model.**

   The project will impact only 2.1 acres of Diegan coastal sage scrub and 0.9 acre coastal sage-chaparral transition out of 26.6 acres existing within the survey area, thus preserving 90% of the Diegan coastal sage scrub/coastal sage-chaparral transition within the survey area. There are extensive patches of Diegan coastal sage scrub surrounding the survey area that are preserved within the trails in the 2015 Northern and Southern Additions and Martha's Grove (#12), Rock and Roll Trail (#22), Slaughterhouse Canyon Trail (#21), Ridge Trail (#14), and Canyon Trail (#16) segments. Additional undeveloped lands surrounding the survey area include connections to Sycamore Canyon Creek, Clark Canyon, and to adjacent open space areas. These areas, in combination with the preserved areas within the survey area itself, provide for conservation of spatially representative examples of extensive patches of coastal sage scrub and other high value habitat types. The majority of the survey area is mapped as very high and high habitat value on the MSCP habitat evaluation model, and the proposed project has been designed to conserve these areas as much as possible by following existing dirt roads and trails where possible, avoiding jurisdictional waters and riparian habitats, reducing trail widths, and closing and revegetating unnecessary trails. The Project would result in direct and permanent impacts on 5.3 acres of sensitive natural or naturalized vegetation communities. Habitat-based mitigation for direct impacts on sensitive habitats will be satisfied primarily through the revegetation of 5.6 acres of existing trails to be closed within the Preserve. Additional mitigation would occur through the purchase of mitigation credits or habitat preservation, enhancement, and/or restoration within a BRCA.

4. The project provides for the creation of significant blocks of habitat to reduce edge effects and maximize the ratio of surface area to the perimeter of conserved habitats.

This proposed project is consistent with the Subarea Plan. As a trail project, the proposed project would have the potential to increase edge effects. However, the proposed project will reduce edge effects through the following design features: (1) signs precluding access to areas outside of established trails shall be posted; (2) off-leash pets would not be allowed on trails or public areas and signs would be posted along trails notifying pet owners of this regulation; (3) only non-invasive, native plant species would be included in the landscape plan for the site (species not listed on the California Invasive Plant Inventory prepared by the Cal-IPC [2006]); (4) if night lighting is utilized during construction, the project is required to direct all necessary lighting in a downward direction with appropriate shield and illumination technology to prevent adverse spillover of light; and (5) no operational project lighting is proposed. In addition, the proposed project has been designed to minimize impacts as much as possible by following existing dirt roads and trails where possible, avoiding jurisdictional waters and riparian habitats, reducing trail widths, and closing and revegetating unnecessary trails. Mitigation will occur either on-site or off-site within a BRCA, meaning that the proposed project's mitigation will contribute to preserving significant blocks of habitat on-site and/or off-site within a BRCA. Mitigation will include the closure and revegetation of 7.24 miles (5.6 acres) of existing trails, reducing edge effects from those existing trails. This will contribute to preserving the significant blocks of habitat that surround the survey area, including undeveloped habitat within the PAMA land surrounding the Preserve.

5. The project provides for the development of the least sensitive habitat areas.

The proposed Project has been designed to reduce impacts on sensitive vegetation and completely avoid impacts on wetland and non-wetland waters and riparian areas. With the survey area, no impacts would occur on scrub oak chaparral, southern riparian forest, southern coast live oak riparian forest, southern riparian woodland, unvegetated channel, and dense coast live oak woodland. The Project would impact 6.8 acres in total, of which 1.5 acres are non-sensitive disturbed habitat. This was accomplished by following existing roads and trails where possible. During the design process the proposed project team also reduced trail widths, selected the least impactive trail segments as proposed project, and identified unnecessary trails for closure and revegetation. The sensitive habitats that will be impacted consist of 5.3 acres of open coast live oak woodland, Diegan coastal sage scrub: coastal form, coastal sage-chaparral transition, southern mixed chaparral, chamise chaparral, and non-native grassland, which are less sensitive than the riparian habitats that have been avoided.

6. The project provides for the conservation of key regional populations of covered species, and representations of sensitive habitats and their geographic sub-associations in biologically functioning units.

Limited development as part of the proposed project will not eliminate key regional populations of covered species. Impacts to San Diego thorn-mint (*Acanthomintha ilicifolia*) are considered significant and would be mitigated to less than significant levels as described in mitigation measures **BIO-1**, **BIO-2**, and **BIO-6**. The project would impact Diegan coastal sage scrub and coastal sage-chaparral transition habitat occupied by the coastal California gnatcatcher, but there is abundant coastal sage scrub habitat remaining in and around the survey area that supports or can support the coastal California gnatcatcher, and breeding season avoidance would be implemented

to avoid breeding season impacts as described in mitigation measures **BIO-3** and **BIO-4**. The proposed project would impact small areas of potential Hermes copper butterfly habitat, but mitigation would be provided at a 1:1 ratio following County guidelines as described in mitigation measures **BIO-7** and **BIO-8**. Project construction within on-site breeding habitat for QCB would result in significant impacts, these impacts would be mitigated through the implementation of Mitigation Measure **BIO-9**. Construction related to implementation of the proposed project could impact western spadefoot toad, these impacts would be mitigated through Mitigation Measures **BIO-10** and **BIO-11.**

7. **Conserves large interconnecting blocks of habitat that contribute to the preservation of wide-ranging species such as Mule deer, Golden eagle, and predators as appropriate. Special emphasis will be placed on conserving adequate foraging habitat near Golden eagle nest sites.**

   The specific mitigation location(s) for the proposed project have not been identified yet; however, the Project is consistent with the Subarea Plan, which provides for the conservation of large interconnecting blocks of habitat that contribute to the preservation of wide-ranging species. To the extent possible, the proposed project avoids impacts to sensitive species by minimizing trail width, locating trails on existing roads or trails where possible, and selecting the least impactive trail locations in order to conserve the existing large interconnecting blocks of habitat within and adjacent to the survey area. For unavoidable habitat impacts, mitigation will be provided either on-site or off-site within a BRCA according to the mitigation ratios pursuant to the County BMO and shown in Table 1 above. Mitigation for habitat impacts is described in mitigation measures **BIO-5**, **BIO-12**, and **BIO-13**. These mitigation measures ensure that any significant impacts from impacts on sensitive habitat would be reduced to a less than significant level. It was determined that implementation of the proposed project would not have a significant effect on sensitive animals occurring or potentially occurring within the survey area, including wide-ranging species such as mule deer, mountain lion, and raptors. In addition, the survey area does not contain eagle foraging habitat or nesting habitat and is not within any known golden eagle territory.

8. **All projects within the San Diego County Subarea Plan shall conserve identified critical populations and narrow endemics to the levels specified in the Subarea Plan. These levels are generally no impact to the critical populations and no more than 20 percent loss of narrow endemics and specified rare and endangered plants.**

   Variegated dudleya, San Diego thorn-mint, and QCB are narrow endemic species observed within and adjacent to the survey area.

   With the proposed avoidance, minimization, and mitigation measures, the proposed project will avoid impacts to critical populations of sensitive plant species, narrow endemic animal species, narrow endemic plant species, and San Diego County sensitive plant species consistent with the terms of the Subarea Plan, including the 20 percent impact limit.

9. **No project shall be approved which will jeopardize the possible or probable assembly of a preserve system within the Subarea Plan.**

   The proposed project is a trail project, and passive recreation (trails) are an allowable use and covered activity in the Preserve per the MSCP, meaning that the proposed project will not jeopardize preserve assembly. The survey area occurs within MSCP PAMA lands, and the proposed

project is consistent with the preservation of these areas because the trail system has been designed to minimize habitat impacts, follow existing roads as closely as possible, close and revegetate unnecessary trails, and use fencing and signage to keep trail users from intruding on preserved habitat. The Central Poway/San Vicente Reservoir/North Poway BRCA overlaps the northern portion of the Preserve and Mission Trails/Kearny Mesa/East Elliot/Santee BRCA overlaps the southern portion of the Preserve. The Preserve helps facilitate connections to other large open space areas, including Mission Trails Regional Park to the southwest, MCAS Miramar to the west, Mount Woodson and Iron Mountain to the north, and San Vicente Highlands Preserve and Boulder Oaks Preserve to the east. Additionally, ridgelines on-site may provide local movement for a wide range of wildlife, including mule deer, coyote, bobcat, and mountain lion, and these movement corridors will remain in place with the proposed project. The proposed project will help create public access, direct the public to less impactful locations, and improve appreciation of nature while ensuring all potential impacts are mitigated to a less than significant level.

10. **All projects that propose to count on-site preservation toward their mitigation responsibility must include provisions to reduce edge effects.**

    The proposed project will provide either on-site or off-site mitigation within a BRCA. The mitigation provided on-site within the Preserve will be protected from edge effects through project design features including signs, a prohibition on off-leash pets, directing construction lighting downward, not lighting the trails once constructed, and designing and constructing trails to minimize erosion and runoff.

11. **Every effort has been made to avoid impacts to BRCAs, to sensitive resources, and to specific sensitive species as defined in the BMO.**

    The proposed project area qualifies as a BRCA because it is wholly located within PAMA. However, the proposed project has been designed to reduce impacts on sensitive vegetation within BRCA and avoid impacts on wetland waters or jurisdictional features. The trail construction would be conducted in compliance with state and federal criminal prohibitions against taking of nesting birds, and would not be expected to result in direct or indirect mortality of general or sensitive wildlife species. Additionally, this proposed project has been designed to minimize impacts on BRCA and PAMA by reducing trail widths, routing trails along existing roads and trails where possible, selecting less impactful trail locations for improvement or formalization, and closing and revegetating unnecessary trails. The proposed project would result in temporary and permanent impacts to 5.3 acres of sensitive natural or naturalized vegetation communities within a BRCA. Habitat-based mitigation for direct impacts on sensitive habitats will be satisfied primarily through the revegetation of 5.6 acres of existing trails to be closed within the Preserve. Additional mitigation would occur through the purchase of mitigation credits or habitat preservation, enhancement, and/or restoration within a BRCA. Mitigation would be provided according to the mitigation ratios in Attachment M of the BMO. Mitigation for habitat impacts from each analyzed trail segment are described in mitigation measures **BIO-5**, **BIO-12**, and **BIO-13.** These mitigation measures ensure that any significant impacts from impacts on sensitive habitat would be reduced to a less than significant level and the proposed project is consistent with the MSCP.

HELIX Environmental Planning, Inc.
July 2023

Initial Study Appendix C

Cultural Resources Inventory and Assessment Report

HELIX Environmental Planning

Sycamore Canyon/ Goodan Ranch County Preserve Public Access Plan

Cultural Resources Inventory and Assessment

July 2023 | 00187.00006.005
Contract No: 557665
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National Archaeological Database Information

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Consulting Firm:	HELIX Environmental Planning, Inc.
Client:	County of San Diego Department of Parks and Recreation
Report Date:	July 2023
Report Title:	Cultural Resources Inventory and Assessment: Sycamore Canyon/ Goodan Ranch County Preserve Public Access Plan
Type of Study:	Archaeological Survey
New Sites:	P-37-038957, P-37-038958, P-37-038959, P-37-038960, P-37-038961, P-37-038946, P-37-038947, P-37-038948, P-37-038949, P-37-038950, P-37-038951, P-37-038952, P-37-038953, P-37-038954, P-37-038955, P-37-038956
Updated Sites:	P-37-000119 (CA-SDI-119), P-37-009704 (CA-SDI-9704), P-37-009706 (CA-SDI-9706), P-37-009707 (CA-SDI-9707), P-37-009712 (CA-SDI-9712), P-37-012821 (CA-SDI-12821), P-37-012852 (CA-SDI-12852), P-37-013221 (CA-SDI-13221), P-37-013223 (CA-SDI-13223), P-37-024271, P-37-024959 (CA-SDI-16515), P-37-024960 (CA-SDI-16516), P-37-024961 (CA-SDI-16517), P-37-024962 (CA-SDI-16518), P-37-024963, P-37-024964, P-37-024967, P-37-024969, P-37-025793 (CA-SDI-17151), P-37-025794 (CA-SDI-17152), P-37-025797 (CA-SDI-17153), P-37-025799 (CA-SDI-17155), P-37-025802 (CA-SDI-17158), P-37-028924, P-37-030078, P-37-030080 (CA-SDI-19170), P-37-030081 (CA-SDI-19171), P-37-030083, P-37-030084, P-37-030094, P-37-030095 (CA-SDI-19181), P-37-030104, P-37-030107, P-37-030197, P-37-035979, P-37-035980, P-37-035981, P-37-035983, P-37-035989 (CA-SDI-21921), P-37-035990 (CA-SDI-21922), P-37-035991 (CA-SDI-21923), P-37-035992, P-37-035993
USGS Quad:	San Vicente Reservoir 7.5' Quadrangle
Acreage:	Approximately 108 acres
Key Words:	San Diego County; Township 15 and 16 South, Range 1 West; Sycamore Canyon/Goodan Ranch County Preserve; Slaughterhouse, Clark, Sycamore, and Beeler canyons; prehistoric bedrock milling features; Lusardi Formation Volcanic; Goodan Ranch; Stowe; Eckhardt; Reetzke; Kirkham; Clark; Foster Truck Trail; First San Diego Aqueduct.

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
Barona	Barona Group of the Capitan Grande
BP	Before Present
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CRHR	California Register of Historical Resources
County	County of San Diego
CTMP	Community Trails Master Plan
CRM	Cultural Resource Management
DPR	Department of Parks and Recreation
ESAs	Environmentally Sensitive Areas
GIS	Geographic Information Systems
HELIX	HELIX Environmental Planning, Inc.
HRTP	Historical Resources Treatment Plan
KCRC	Kumeyaay Cultural Repatriation Committee
LFV	Lusardi Formation Volcanic
MLD	Most Likely Descendant
NAHC	Native American Heritage Commission
NRHP	National Register of Historic Places
Preserve	Sycamore Canyon/ Goodan Ranch County Preserve
PRC	Public Resources Code
SanGIS	San Diego Geographic Information Source
SCIC	South Coastal Information Center
SLF	Sacred Lands File
SR	State Route
STP	shovel test pit
TCP	Traditional Cultural Properties
TCR	Tribal Cultural Resources
TCT	Trans-County Trail
USGS	U.S. Geological Survey

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EXECUTIVE SUMMARY

At the request of the County of San Diego (County) Department of Parks and Recreation (DPR), HELIX Environmental Planning, Inc. (HELIX) provided cultural resources services for the Sycamore Canyon/ Goodan Ranch County Preserve (Preserve) Public Access Plan (project). A cultural resources study, including a review of previous studies undertaken within the Preserve, Sacred Lands File (SLF) search, Native American outreach, as well as a field survey were conducted for the project Survey Area. This report details the methods and results of the cultural resources study and has been prepared to comply with the California Environmental Quality Act (CEQA) and the San Diego County CEQA Guidelines.

Five Phase 1 baseline inventories have occurred since the creation of the Preserve: Jordan et al. (2008), Ní Ghabhláin et al. (2012), Cooley et al. (2016), McGinnis and Cox (2019), and Wilson (2019). In addition to the five Phase I surveys, 12 other cultural resource studies have been conducted within portions of the Preserve. The previous survey and inventory studies documented the presence of 100 cultural resources within the Preserve, consisting of 17 historic-period resources (buildings, structures, objects, or archaeological sites/isolates); four multicomponent archaeological sites; 56 prehistoric archaeological sites; and 23 prehistoric isolates.

The field investigations included intensive pedestrian surveys of the 107.8-acre project Survey Area by HELIX and a Kumeyaay Native American monitor between March 25th and April 23rd, 2019. During the surveys, 43 previously recorded resources were determined to be located within the Survey Area, and 16 newly recorded resources were identified, resulting in a total of 59 cultural resources within the project Survey Area. The 59 cultural resources consist of 11 historic-period structures, objects, or archaeological sites; two multicomponent archaeological sites; 26 prehistoric archaeological sites; and 20 prehistoric isolates.

The SLF search conducted by the Native American Heritage Commission (NAHC) returned positive results. However, no Tribal Cultural Resources (TCRs) that currently serve religious or other community practices are known to exist within the project Survey Area. Tribal consultation under Assembly Bill (AB) 52 and Sacred Lands consultation is being undertaken by County staff with all the tribes who have requested consultation.

Of the 59 cultural resources within the project Survey Area, only one has been previously evaluated for significance; P-37-030107, the First San Diego Aqueduct, has been recommended as eligible for listing in the National Register of Historic Places (NRHP; Cook et al. 2012). This resource, along with 13 prehistoric archaeological sites, four historic-period resources, and the two multicomponent archaeological sites would not be impacted by the implementation of the Public Access Plan, primarily due to their presence along existing formal trails or access roads where no improvements are proposed.

Of the remaining 39 cultural resources, 20 are prehistoric isolates, which are not considered significant resources under CEQA and are not considered to be important resources under County Guidelines. Two prehistoric archaeological sites, P-37-012852 (CA-SDI-12852) and P-37-035983, and two historic roads, P-37-012821 (CA-SDI-12821) and P-37-035993, were determined to be within areas of the Survey Area that may be subject to unavoidable impacts by the implementation of the Public Access Plan; these resources were evaluated and were determined to not be eligible for listing in the California Register of Historical Resources (CRHR) or Local Register under CEQA and County guidelines. Although all archaeological sites are considered important under County guidelines, impacts to these resources have

been reduced to a level below significant through testing, recording, and documentation undertaken as part of this current study.

The remaining 15 cultural resources that may be subject to impacts from the implementation of the Public Access Plan are being treated as significant for the purposes of this project. Three of the historic-period resources, P-37-028924, -035992, and -038958, are located at the edge of the Survey Area along routes for either proposed trails or existing trails/disturbed areas with trails proposed; the fourth historic resource (CA-SDI-21923) is located within the Study Area of an existing trail proposed for closure. Of the prehistoric sites, seven (CA-SDI-9706, -19170, -19171, -19181, -21921, -21922, and P-37-035980) are located within the Study Area of either proposed trails or existing trails/disturbed areas with improvements proposed, and four (P-37-024271, -030084, -038959, and -038960) are located within the Study Area of trails proposed for closure. The resources will be identified as environmentally sensitive areas (ESAs) in order to ensure no adverse impacts to the resources occur. The ESA locations will be avoided by all project design considerations for new trails and existing trails to be improved. No ground disturbance will occur within the boundary of the ESAs, and during revegetation efforts within trail routes to be closed, only passive revegetation shall occur within the ESAs.

As only preliminary design for the Public Access Plan has been undertaken, if, during trail engineering, it is determined that avoidance of an ESA proves infeasible, a Historical Resources Treatment Plan (HRTP) will be prepared. The HRTP will present the measures that will be implemented, and include appropriate methodologies, to address the preservation, minimization of impacts, or mitigation of potential impacts/adverse effects to significant cultural/historical resources. The County shall approve the HRTP prior to final engineering design, and all cultural resources investigations and reporting deliverables outlined in the HRTP shall be completed prior to trail construction.

No human remains were observed during the field investigations, and there is very minimal potential for the unanticipated discovery of human remains during the implementation of the Public Access Plan. Due to the general cultural sensitivity of the Preserve, it is recommended that all ground-disturbing activity related to the Public Access Plan be monitored by a qualified archaeologist and a Native American monitor.

Should the project limits change to incorporate new areas of study, an archaeological pedestrian survey of these areas will be required.

1.0 INTRODUCTION

Under contract to the County of San Diego (County) Department of Parks and Recreation (DPR), HELIX Environmental Planning, Inc. (HELIX) conducted a cultural resources inventory and assessment for the Public Access Plan (PAP) component of the update of the Sycamore Canyon/Goodan Ranch County Preserve (Preserve) 2013 Resource Management Plan (County 2013; RMP; proposed project). The PAP proposes the creation of a non-motorized multi-use trail system within the approximately 2,847-acre Preserve, located in unincorporated San Diego County. Upon completion, the PAP would include 35 trail segments totaling approximately 15 miles of trails dedicated to non-motorized multi-use routes for hikers, mountain bikers, e-bikes, and horseback riders. The PAP would also maintain 6.61 miles of existing access roads and 7.24 miles of potential closures of existing trails.

The cultural resources inventory and assessment included a review of previous studies undertaken for the creation of the Preserve, a Sacred Lands File (SLF) search, and a pedestrian field survey. Tribal consultation under Assembly Bill (AB) 52 and Sacred Lands consultation were undertaken by County staff with all the tribes who have requested consultation. This report details the methods and results of the cultural resources study and has been prepared to comply with County of San Diego guidelines and the California Environmental Quality Act (CEQA).

1.1 PROJECT LOCATION AND DESCRIPTION

1.1.1 Project Location

The Preserve is located approximately four miles southeast of the City of Poway in west-central San Diego County, California (Figure 1, *Regional Location*). It is bounded by Scripps Poway Parkway to the north; State Route (SR) 67 to the east; the Marine Corps Air Station, Miramar to the west; and the City of Santee to the south. The Preserve is owned mostly by the County Department of Parks and Recreation (DPR) and is the result of a series of acquisitions. Several additions to the Preserve have been acquired by the County DPR over the last 20 years. These include the acquisition of the Sycamore South and Sycamore North (formerly known as Hagey) properties in 2010-2011; acquisition of the Southern Parcel in 2013; acquisition of the Wu and Cielo properties in 2015; acquisition of the San Vicente Connector Parcels, which are east of SR-67, between 2003 and 2018; and acquisition of the Southern Gap parcels in 2019 and 2020. Based on San Diego Geographic Information Source (SanGIS) parcel data, the total Preserve acreage is approximately 2,994 acres. However, the official Preserve acreage is 2,847, and the size discrepancy is due to the method in which the County reports acreages for conserved lands, using both Assessor and GIS acreages. Assessor's acreage is the formal unit of measurement the County utilizes internally for real estate acquisitions, accounting, and reporting. However, Geographic Information Systems (GIS) acreage is calculated using data provided by SanGIS. Assessor's and GIS acreage totals can differ as records of the legal acreage of parcels are plotted on paper and then converted into GIS. For consistency, SanGIS data is used in this document when calculating acreage for the Preserve, such as land use, habitat, or vegetation areas, within the Preserve.

The Preserve is located in the U.S. Geological Survey (USGS) 7.5-minute San Vicente Reservoir Quadrangle and within Township 14 South, Range 1 West, Sections 14, 15, 16, 21, 22, 23, 25, 26, 27, 28, 33, 34, and 35 and Township 15 South, Range 1 West, Sections 2, 3 and 4 (Figure 2, USGS Topography). The Preserve encompasses the following Assessor's Parcel Numbers: 323-111-04; 324-040-41; 324-040-42; 324-040-46; 324-040-50; 324-041-01; 324-041-02; 324-050-28; 325-020-01; 325-020-03; 325-060-01; 325-060-02; 325-060-03; 325-060-08; 325-060-09; 325-060-14; 325-060-15; 325-060-16; 325-060-

25; 326-021-02; 326-050-18; 326- 070-01; 325-060-04; 325-060-05; 325-060-06; 325-060-07; 325-060-10; 325-060-11; 325-060-12; 325-060-17; 325-060-18; 325-060-19; 325-060-20; 325-060-21; 325- 060-22, 325-060-23; 325-060-24; 324-040-25; 324-040-26; 32424-040-27; 324-040-28; 324-040-31; 324-040-32; 324-011-15; 324-070-29; 324-040-07; 324-040-08; 374-030-01; 324-050-05; 324-051-04; 324-051-05; 326-020-23; 326-030-06; and 326-020-07. The Preserve is located approximately 16 miles inland from the Pacific coast and is not located in the Coastal Zone. The Preserve is owned jointly by the County, California Department of Fish and Wildlife, City of Poway, and City of Santee. DPR is identified as responsible for management of the properties in coordination with all parties through a Joint Powers Agreement.

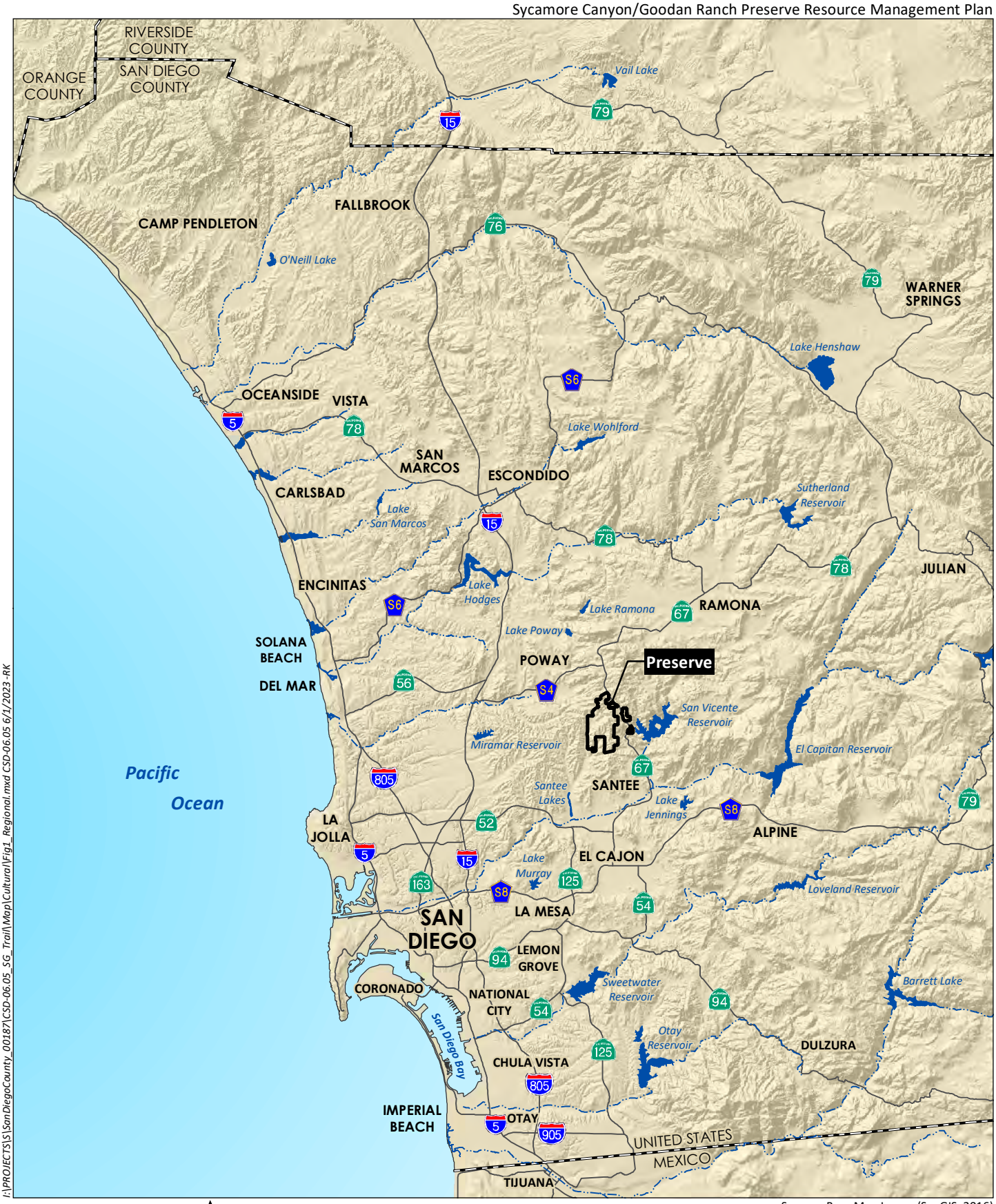
1.1.2 Project Description

This Cultural Resources Inventory and Assessment is prepared to support the implementation of and analyze impacts associated with the PAP component of the proposed project.

The proposed project includes a PAP for a non-motorized multi-use trail system in the Preserve. Implementation of the Public Access Plan would include retention of existing trails, rerouting or modifications to existing trails, the formal addition of new trails, and restoration of some existing impacted areas that are not part of the formal trail system. The Public Access Plan would provide approximately 3.78 miles of new proposed trails, 0.99 mile of potential future trail connections, 4.76 miles of formalization of trails on existing disturbed areas, 5.56 miles of existing formal trails, 6.61 miles of existing access roads, and 7.24 miles of potential closures of existing trails. The number of proposed informal trail closures (7.24 miles of trails) would be greater than the number of proposed trails and potential future trail connections (4.77 miles).; however, the PAP would result in an increase of the formal trail network from 5.56 miles to 10.33 miles. The Preserve currently contains publicly accessible multi-use trails and access roads, a ranger station, two staging areas, restrooms, and the Goodan Ranch Center. The Goodan Ranch Center is home to demonstration and exhibit rooms. As discussed above, In 2015, the County acquired properties to add on to the existing Preserve, including the 100-acre Wu property and 39-acre Cielo property. As new additions to the Preserve, these properties are not currently open to the public, and do not include formalized trails. The Public Access Plan evaluates areas both open and not currently open for public access, including an evaluation of potential public access to the recently acquired Wu and Cielo properties.

The proposed project involves an update of the Resource Management Plan (RMP), Vegetation Management Plan (VMP), and Public Access Plan (PAP) for the Preserve. The RMP is a guidance document to manage and preserve the biological and cultural resources within the Preserve and is supported by the VMP and PAP. The VMP provides recommendations for invasive non-native plant species management, habitat restoration, and fire management.

The proposed trail segments have been designed to follow the County's Preserve Trail Guidelines (County 2018) and support the goals and policies outlined by the Community Trails Master Plan (CTMP; County 2005). The Public Access Plan supports the goals and policies outlined by the CTMP, which includes objectives, policies, goals, implementation strategies, and guidelines for the management and expansion of the recreational trail network throughout the County. The Public Access Plan proposes preferred trail routes within the Preserve based on constraints to trails and access points, opportunity destinations, and scenic experiences and routes. Portions of the Preserve are currently open to the public, and the Public Access Plan evaluates areas both open and not currently open for public access. In addition, the Public Access Plan encourages the public to utilize established trails, thus protecting the integrity of native habitats and known cultural resources.



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0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

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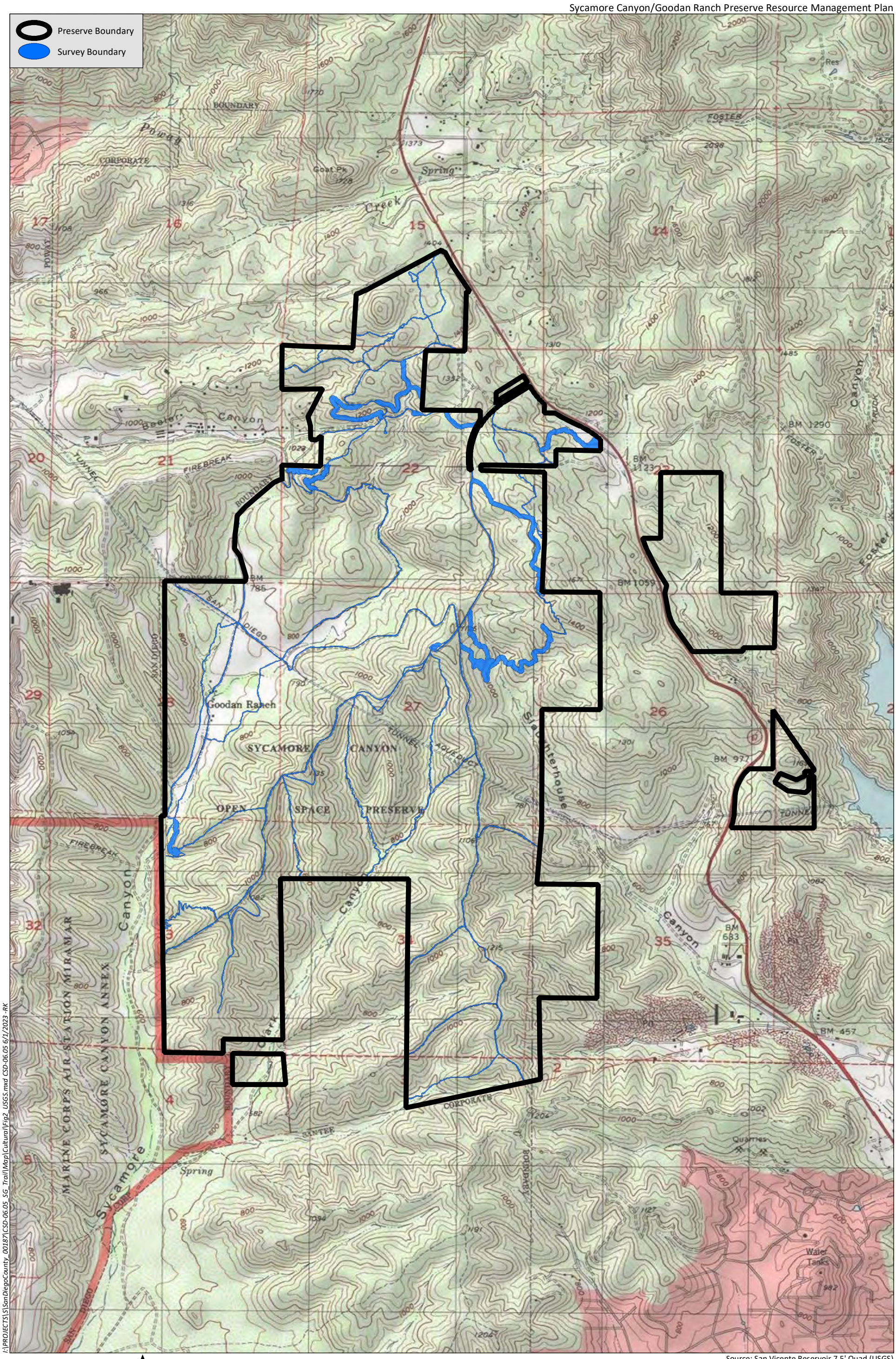
Regional Location

Figure 1



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Source: San Vicente Reservoir 7.5' Quad (USGS)

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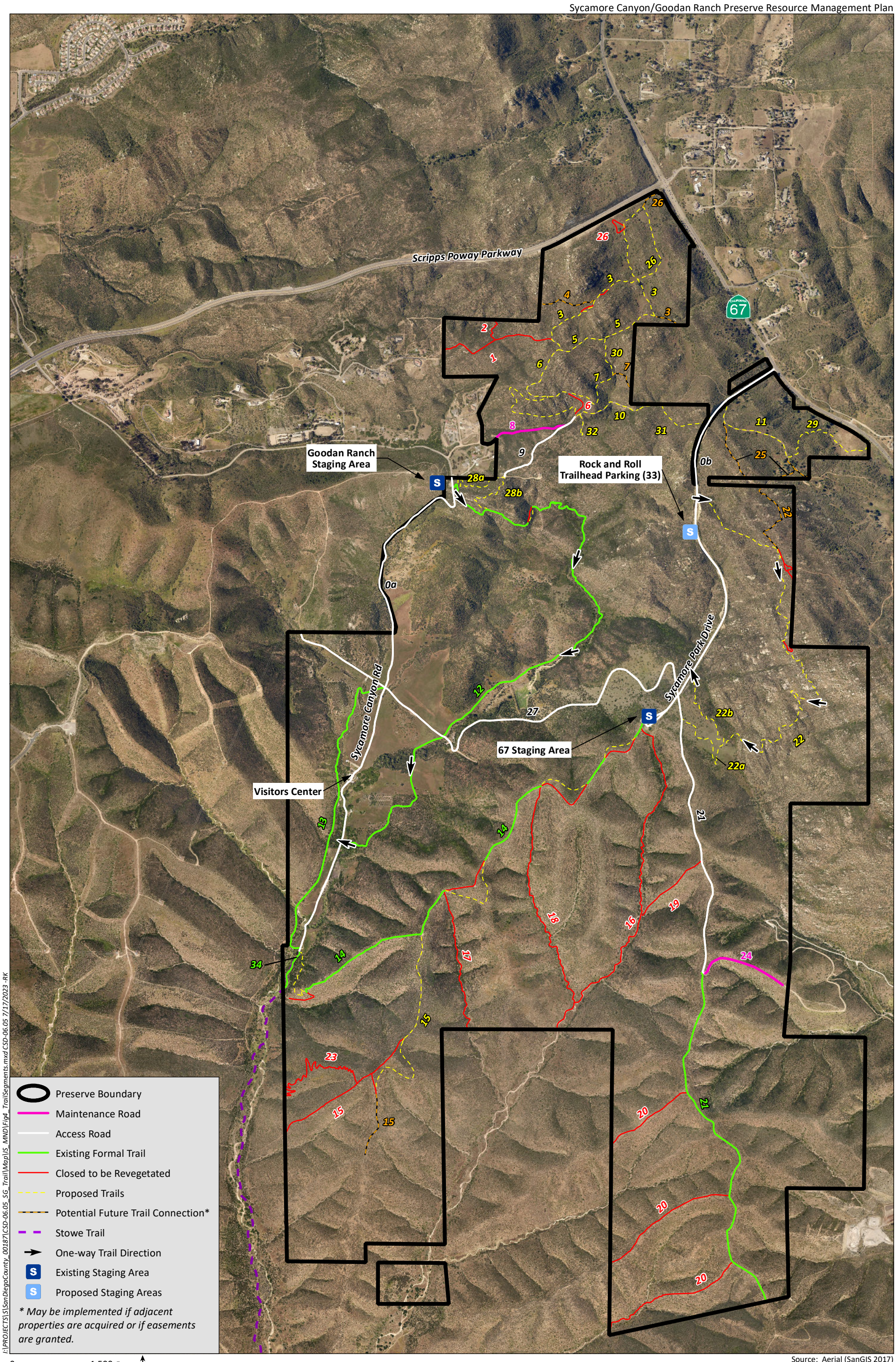
USGS Topography

Figure 2



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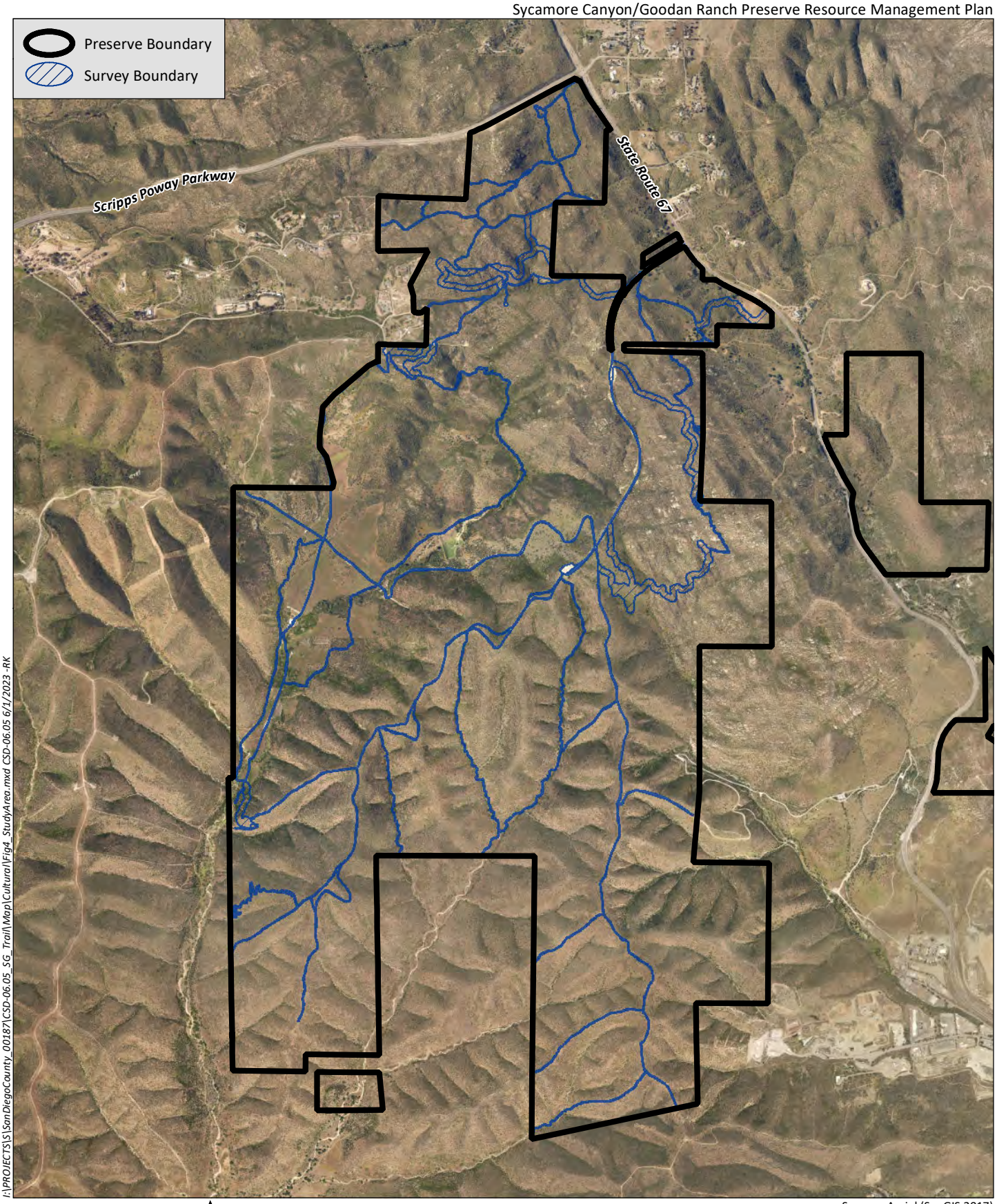
Public Access Plan Trail Segments

Figure 3



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Survey Area

Figure 4

The Public Access Plan proposes preferred trail routes within the Preserve based on constraints to trails and access points, opportunity destinations, and scenic experiences and routes. Recommendations for trail closures or trail re-routes throughout the Preserve are also provided in the Public Access Plan. The Public Access Plan evaluated trails by segments, as shown in Figure 3, *Public Access Plan Trail Segments*. While the maximum width of existing trails is 12 feet, the maximum width of proposed trails is 8 feet, and surface material would consist of decomposed granite/binding agent or suitable native soil. This report proposes mitigation measures to reduce the impacts associated with the project to less than significant pursuant to CEQA.

The proposed trails are designed to address existing trail segments that have maintenance challenges due to erosion or other issues, as well as new trail alignments that would expand the existing trail network. The new trails would follow the standards described in the CTMP (County 2005) and have been designed to follow the County's Preserve Trail Guidelines (County 2018). In some cases, existing informal trails would be formalized, requiring realignment of segments to follow the standards for the wider rural trail type. The widened trails would facilitate continued vehicular maintenance and emergency response access, as well as consistency with the rest of the trail network. Existing trails recommended to be closed primarily consist of segments that are unsustainable or would not add significant value to the trail system. The Public Access Plan only includes recommendations for additions or modifications to trails within the Preserve. However, the Public Access Plan does include recommendations for potential future trail connections that could link trails within the Preserve to future connections outside the Preserve, should those outside connections become publicly accessible in the future.

Other improvements include the Rock and Roll staging area, a parking area for approximately 4 vehicles which would be located on an existing disturbed area near the center of the Preserve. The Public Access Plan would also maintain access and maintenance roads and add barriers, such as fencing within the Preserve to limit access to sensitive habitats, nesting locations, rare plants, and significant cultural resources. Additional barriers would be necessary for prevention of access to unauthorized trails, temporary closures due to unsafe conditions, and prevention of vehicular access. Signage would be installed to provide direction and orientation to visitors, display rules and regulations posted at staging areas and access points, provide educational information, and mark trails.

The project proposes the following access roads, maintenance roads, proposed trails (including within existing disturbed areas), potential future trail connections, and trails to be closed for revegetation, as illustrated on Figure 3:

0a - Sycamore Canyon - Access Road

The Sycamore Canyon Access Road is located in the western portion of the Preserve and connects to the Calle de Rob proposed trail segment (#10). The access road generally travels north to south paralleling the West Boundary Trail segment (#13) and the northwestern Preserve boundary. The majority of the access road is located within existing disturbed habitat.

0b – Sycamore Park Drive – Access Road

Sycamore Canyon Drive is located in the eastern portion of the Preserve, connecting the Preserve to SR-67. The access road generally travels north to south from SR-67 to the proposed Ridge Trail segment (#14). The majority of the access road is located within existing disturbed habitat.

1 – Paragon Mesa – West – Closed to Revegetate

The Paragon Mesa – West trail segment is located in the northwestern portion of the Preserve. The trail travels east to west and connects to the South Raptor Loop (#3) proposed trail segment. This trail segment is proposed to be closed for revegetation. The majority of the trail segment is composed of disturbed habitat.

2 – Paragon Mesa –– Informal – Closed to Revegetate

The Paragon Mesa informal trail segment is located in the northern portion of the Preserve. This trail segment is proposed to be closed for revegetation. The majority of the area to be revegetated is composed of chamise chaparral and southern mixed chaparral.

3 – South Raptor Loop - Proposed Trail, Proposed Trail on Existing Disturbed Area, Closed to Revegetate, and Potential Future Trail Connection

The South Raptor Loop proposed trail segment is located in the northern portion of the Preserve and would travel southwest to northeast. The trail segment is primarily located in the 2015 Northern Addition. The trail segment connects to South Raptor Loop – South (#5) trail segment and Paragon Mesa – South (#6) trail segment on the southwest and the southern point of the North Interior Loop (#26) trail segment on the northeast. Portions of the trail segment are proposed to be closed for revegetation; however, the majority of the trail segment proposed to be formalized occurs on existing disturbed areas. There is a portion of the South Raptor Loop trail segment with a potential future trail connection, which would include improvements on an existing trail.

4 – South Raptor Loop Northwest – Potential Future Trail Connection

The South Raptor Loop Northwest potential future trail connection would be located in the northern portion of the Preserve and travel east and west. The trail segment would be entirely located within the 2015 Northern Addition and connect to the middle of the South Raptor Loop (#3) proposed trail segment. The proposed trail segment would be primarily located within an existing trail with improvements proposed, with the surrounding habitat consisting of Diegan coastal sage scrub and coastal sage scrub–chaparral transitional habitat.

5 – South Raptor Loop South – Proposed Trail on Existing Disturbed Area

The South Raptor Loop South proposed trail segment would be located in the northern portion of the Preserve and enter the southern portion of the 2015 Northern Addition. The trail segment would generally travel east to west, starting at an intersection with the South Raptor Loop (#3) and Paragon Mesa – South (#6) trail segments. At its eastern end, the South Raptor Loop South trail segment would connect to the proposed South Raptor Loop (#3) trail segment and the South Raptor Loop trail segment's potential future connection. The South Raptor Loop South, South Raptor Trail Loop Northwest (#4), and South Raptor Loop (#3) trail segments would connect to form a loop. The majority of the trail segment is proposed on existing disturbed areas, as well as Diegan coastal sage scrub habitat, with improvements proposed.

6 – Paragon Mesa South – Proposed Trail, Proposed Trail on Existing Disturbed Area, and Closed to Revegetate

The Paragon Mesa South proposed trail segment would be located in the northern portion of the Preserve. The trail segment would generally travel north and south, connecting the South Raptor Loop (#3) trail segment and South Raptor Loop South (#5) trail segment at the north to the Calle de Rob (#10) proposed trail segments and maintenance road to the south. A small section of the trail segment connecting to Calle de Rob (#10) trail segment would be closed for revegetation. A portion of the trail segment is proposed on existing disturbed areas, with additional portions proposed primarily in Diegan coastal sage scrub. This trail segment is a reroute and extension of the original Paragon Mesa South trail.

7 – Waterfall Trail – Proposed Trail and Potential Future Trail Connection

The Waterfall proposed trail segment and proposed future trail connection would be located in the northern portion of the Preserve, and travels east and west. The Waterfall trail segment would connect to the Paragon Mesa South (#6) trail segment at its eastern end and the Preserve boundary at its western end. The proposed trail segment and potential future trail connection is proposed primarily on existing disturbed habitat as well as Diegan coastal sage scrub.

8 – Calle de Rob – Maintenance Road

The Calle de Rob Maintenance Road is located in the northwestern portion of the Preserve. The maintenance road travels east and west connecting to the Calle de Rob (#9) access road to an existing road outside of the Preserve boundary. The majority of the road is composed of disturbed habitat.

9 – Calle de Rob – From Access Road to Paragon – Access Road

The Calle de Rob Access Road is located in the northwestern portion of the Preserve along the western Preserve boundary. The access road travels northeast and southwest connecting to the Calle de Rob (#10) proposed trail segment and proposed section of the County Trans County Trail (TCT; #28a,b). The majority of the trail segment is composed of disturbed habitat.

10 – Calle de Rob – Proposed Trail on Existing Disturbed Area

The Calle de Rob proposed trail segment would be located in the northern portion of the Preserve and enter the northwest corner of the 2015 Southern Addition. The trail would travel east and west connecting to the Calle de Rob (#9) access road, County TCT (#31) proposed trail, and Paragon Mesa – South (#6) proposed trail segment. The majority of the proposed trail segment is composed of disturbed habitat, with improvements proposed.

11 – Calle de Rob – Eastern Segment; County TCT – Proposed Trail on Existing Disturbed Area

The Calle de Rob – Eastern Segment; County TCT proposed trail segment would be located in the northeastern portion of the Preserve. The trail segment connects to the Sycamore Park Drive (#0b) access road and Connection to Calle de Rob Eastern; County TCT trail segment. The proposed trail segment would extend southeast to the Preserve boundary. The majority of the proposed trail segment is composed of disturbed habitat, with improvements proposed.

12 – Martha's Grove – Existing Formal Trail, Proposed Trail, and Closed to Revegetate

Martha's Grove is an existing trail that extends generally south from the northwest Preserve boundary to the Sycamore Canyon (#0a) access road. A small section at the north end of the trail is proposed to be closed and revegetated. The closed section would be replaced by a new proposed trail segment. The proposed trail segment is located entirely within southern mixed chaparral.

13 – West Boundary Trail – Connects to Stowe Trail Connector – Existing Formal Trail

The West Boundary Trail is an existing formal trail and is located in the western portion of the Preserve and connects to the Sycamore Canyon (#0a) and Cardiac Hill (#27) access roads. The existing trail generally travels north to south paralleling the Sycamore Canyon access road along the northwestern Preserve boundary. The majority of the trail segment is located within existing disturbed habitat.

14 – Ridge Trail – Existing Formal Trail, Proposed Trail, and Closed to Revegetate

The Ridge Trail is an existing trail located in the western portion of the Preserve. The trail extends northeast from the western Preserve boundary and eventually joins with the Sycamore Park Drive (#0b) access road. A portion of trail would be closed to be revegetated and would be replaced by a section of proposed trail. The proposed trail segment is primarily located within chamise chaparral and coastal sage – chaparral transitional habitat.

15 – South of Ridge Trail – Proposed Trail, Proposed Trail on Existing Disturbed Area, Potential Future Trail Connection, and Closed to Revegetate

The South of Ridge Trail segment is a proposed trail segment located in the western portion of the Preserve. The trail segment would extend south from the existing Ridge Trail segment (#14), with improvements proposed. A portion of trail would be closed to be revegetated and would be replaced by a section of the proposed trail segment. The proposed trail segment is primarily located within existing chamise chaparral, Diegan coastal sage scrub, and disturbed habitats.

16 – Canyon Trail – Informal – Closed to Revegetate

The Canyon Trail informal trail segment, located in the center of the Preserve, is proposed to be closed for revegetation. The trail segment extends north to south from the Ridge Trail (#14) segment to the Preserve boundary. The closed to revegetate area is primarily located within Diegan coastal sage scrub habitat.

17 – Clark Canyon to Ridge West – Informal – Closed to Revegetate

The Clark Canyon to Ridge West informal trail segment, located in the center of the Preserve, is proposed to be closed for revegetation. The trail segment extends north to south from the Ridge Trail (#14) segment to the Preserve boundary. The closed to revegetate area is primarily located within chamise chaparral and non-native grassland habitat.

18 – Clark Canyon to Ridge East – Informal - Closed to Revegetate

The Clark Canyon Ridge East informal trail segment, located in the center of the Preserve, is proposed to be closed for revegetation. The trail segment extends north to south from the Ridge Trail (#14) segment

to the Preserve boundary. The closed to revegetate area is primarily located within southern mixed chaparral and coastal sage-chaparral transition habitat.

19 – North Slaughterhouse – Informal – Closed to Revegetate

The North Slaughterhouse informal trail segment, located in the center of the Preserve, is proposed to be closed for revegetation. The trail segment extends northeast to southwest from Slaughterhouse Canyon Trail (#21) access road to Canyon Trail (#16) segment. The closed to revegetate area is primarily located within southern mixed chaparral habitat.

20 – South Slaughterhouse – Closed to Revegetate

The South Slaughterhouse informal trail segment consists of three informal trails located in the southeastern portion of the Preserve that are proposed to be closed for revegetation. The three trail segments extend southwest from the Slaughterhouse Canyon Trail (#21) segment to the Preserve boundary. The closed to revegetate area is primarily located within southern mixed chaparral habitat and chamise chaparral habitat.

21 – Slaughterhouse Canyon Trail – Access Road and Existing Formal Trail

Slaughterhouse Canyon Trail segment is an existing access road and formal trail that extends generally south from Sycamore Park Drive (#0b) access road to the southern Preserve boundary. Slaughterhouse Canyon Trail segment is an access road north of Slaughterhouse Canyon Trail (#24) maintenance road and an existing formal trail segment south of the maintenance road. The existing access road and formal trail segment are primarily composed of disturbed habitat.

22 – Rock and Roll Trail –– Proposed Trail, Proposed Trail on Existing Disturbed Area, Potential Future Trail Connection, and Closed to Revegetate

The proposed Rock and Roll Trail segment is located near the eastern Preserve boundary. The one-way trail segment would generally extend travel from north to south and connect to Sycamore Park Drive (#0b) and Slaughterhouse Canyon Trail (#21) access roads. Several sections of informal trails are proposed to be closed for revegetation. A Potential Future Trail Connection would travel north from the main trail to the edge of the Preserve. At the trail segment's southern end, one of two options, 22a and 22b, would be chosen. The proposed trail segment is composed primarily of disturbed habitat and Diegan coastal sage scrub habitat.

23 – Sidewinder Rogue Trail – Closed to Revegetate

The Sidewinder Rogue Trail informal trail segment, located in the southwestern portion of the Preserve, is proposed to be closed for revegetation. The trail segment extends east to west from the South of Ridge Trail (#15) segment that is also proposed to be closed for revegetation to the Preserve boundary. The closed to revegetate area is primarily located within chamise chaparral habitat.

24 – Slaughterhouse Canyon Trail – Maintenance Road

The Slaughterhouse Canyon Trail Maintenance Road is located along the eastern boundary of the Preserve near the southern end. The maintenance road extends east from the Slaughterhouse Canyon

Trail (#21) segment and connects to an existing dirt road outside of the Preserve at the Preserve boundary. The maintenance road is composed primarily of disturbed habitat.

25 – Connection to Calle de Rob and Rock and Roll Trail – Potential Future Trail

The Connection to Calle de Rob (#10) and Rock and Roll Trail (#22) potential future trail connection would be located in the northern portion of the Preserve. The potential future trail segment would travel north and south and is located immediately east of the 2015 Southern Addition and would connect to Calle de Rob – Eastern Segment; County TCT (#11) trail segment to the north. The potential future trail connection would be located primarily within southern mixed chaparral habitat.

26 – Northern Interior Loop – Proposed Trail on Existing Disturbed Area, Potential Future Trail Connection, and Closed to Revegetate

The Northern Interior Loop proposed trail segment would be located in the northernmost portion of the Preserve and would be entirely located within the 2015 Northern Addition. The trail segment would generally travel north and south forming a loop and connecting to the South Raptor Loop (#3) and South Raptor Loop - South (#5) proposed trail segments. The majority of the trail segment is proposed on non-native grassland. There is also a potential future trail connection which would connect the Northern Interior Loop (#26) trail segment to Scripps Poway Parkway and SR-67 primarily within Diegan coastal sage scrub. The close to revegetate areas are primarily within non-native grassland habitat.

27 – Cardiac Hill – Access Road

The Cardiac Hill **–** Access Road is located in the center of the Preserve connecting Sycamore Canyon (#0a) and Sycamore Park Drive (#0b) access roads. The access road connects to an existing dirt road at the western Preserve boundary through the middle of the Preserve. The access road turns into Slaughterhouse Canyon Trail (#21) access road at Sycamore Park Drive (#0b) access road. The majority of the access road is composed of disturbed habitat.

28 – County TCT; Goodan Staging Area to Access Road and Martha's Grove to Access Road – Proposed Trails

The County TCT; Goodan Staging Area to Access Road and Martha's Grove to Access Road proposed trail segments would be located in the northwestern portion of the Preserve along the western boundary of the Preserve. There would be two trail segment options: 28a and 28b. The 28a option would connect from the Calle de Rob – From Access Road to Paragon (#9) access road to the Goodan Ranch Staging Area. The 28b option would connect Martha's Grove (#12) to the Calle de Rob – From Access Road to Paragon (#9) access road. Only one option would be selected for implementation. The majority of the trail segment alignment is composed of coastal sage–chaparral transitional habitat within Martha's Grove (#12) and the Goodan Ranch Staging Area.

29 – Connection to Calle de Rob Eastern; County TCT –- Proposed Trail on Existing Disturbed Area

The Connection – Calle de Rob Eastern; County TCT proposed trail segment on existing disturbed area would be located in the northeastern portion of the Preserve. The proposed trail segment on existing disturbed area would generally travel east and west connecting SR-67 and Calle de Rob – Eastern Segment; County TCT (#11). The majority of the trail segment is composed of Diegan coastal sage scrub and non-native grassland, with improvements proposed.

30 – Connection to Calle de Rob and South Raptor Loop South - Proposed Trail

The Connection to Calle de Rob (#10) and South Raptor Loop South (#5) proposed trail segment would be located in the northern portion of the Preserve. The trail segment would generally travel north and south connecting to the Waterfall Trail (#7) to the south and South Raptor Loop South (#5) to the north. The majority of the trail segment is composed of Diegan coastal sage scrub and southern mixed chaparral habitat.

31 – County TCT – Proposed Trail

The County TCT proposed trail segment would be located in the northwestern portion of the Preserve and entirely within the northeast corner of the 2015 Southern Addition. The trail segment would travel east and west connecting to the Calle de Rob (#10) trail segment and Sycamore Park Drive (#0b) access road. The majority of the trail segment alignment is composed of coastal sage – chaparral transitional habitat.

32 – Overlook - Proposed Trail

The Overlook proposed trail segment would be located in the northern portion of the Preserve. The trail segment would generally travel north and south, connecting to the Calle de Rob (#10) existing informal trail segment to the north. The majority of the proposed trail segment alignment is composed of southern mixed chaparral.

33 – Rock and Roll Trailhead Parking

The Rock and Roll Trailhead Parking is located in the center of the Preserve near the intersection of the Sycamore Park Drive (#0b) access road and the Rock and Roll Trail (#22) proposed trail segment. The Trailhead Parking is located entirely within existing disturbed habitat and Diegan coastal sage scrub habitat.

34 – Stowe Trail Connector – Existing Formal Trail

The Stowe Trail Connector is an existing formal trail segment located in the western portion of the Preserve. The trail segment generally travels north and south, connecting to the Sycamore Canyon (#0a) access road to the Preserve boundary. The existing formal trail segment is primarily composed of southern mixed chaparral habitat.

1.2 EXISTING CONDITIONS

1.2.1 Environmental Setting

1.2.1.1 Natural Environment

The Preserve is situated within the inland foothills of western San Diego County, where the climate is characterized as semi-arid steppe, with warm, dry summers and cool, moist winters (Hall 2007; Pryde 2004). The Preserve extends across the upper reaches of Slaughterhouse, Clark, Sycamore, and Beeler canyons and is characterized by foothill uplands with narrow ridgelines separated by numerous steep canyons, ravines, and drainages. The elevation within the Preserve ranges from approximately 600 to 1640 feet above mean sea level.

The Preserve encompasses portions of two coastal drainage watersheds. The southern crest of the Poway/Peñasquitos Creek watershed extends along the northern margin of the Preserve, with the Beeler Canyon drainage being a tributary in that watershed. Most of the Preserve, however, falls within the upper elevations of the San Diego River watershed, with the Slaughterhouse, Clark, and Sycamore Canyon drainages all being tributaries of the river in that watershed.

The Preserve is located within the western portion of the Peninsular Ranges geomorphic province of southern California (Hall 2007). It is situated atop three distinct geologic categories of bedrock: pre-Cretaceous metamorphic rocks, Cretaceous granitic rocks, and Eocene sedimentary rocks, while the Mesozoic-age metavolcanic Santiago Peak Volcanics Formation is also present along the eastern margin of the northern part of the Preserve. The pre-Cretaceous metamorphic and Cretaceous granitic bedrock is present mostly in the north and eastern areas of the Preserve, while the Eocene, sedimentary Poway Conglomerate Formation is present in the central and southwestern area of the Preserve. The pre-Cretaceous rocks consist of various metamorphic types. The granitic rocks, consisting of granite, granodiorite, and gabbro, are part of the southern California batholith in the area. The Poway Conglomerate Formation, which overlies these granitic and/or metamorphic rocks, is now recognized as consisting of several distinct formations, including the Stadium Conglomerate, the Mission Valley Formation, and the Pomerado Conglomerate (Kennedy and Peterson 1975). Now referred to as the Poway Group, these formations variously contain rounded-cobble conglomerate and sandstone, with lesser occurrences of siltstone and mudstone. Also present in the broad valley along upper Sycamore Canyon within the Preserve area are more recent sediments of Pleistocene and/or Holocene age (Strand 1962; Weber 1963).

Within the Preserve, two general soil associations are represented: the Redding-Olivenhain association and the Friant-Escondido association. The Redding-Olivenhain association is characterized as well-drained gravelly loams and stony loams that have a subsoil of gravely clay and very cobbly clay over a hard pan or cobbly alluvium with 9 to 50 percent slopes. The association is present, principally, in the areas underlain by the sedimentary Poway Conglomerate Formation. The Friant-Escondido association exists in eroded areas and consists of well drained, fine sandy loams and very fine sandy loams over metasedimentary rock, with 30 to 70 percent slopes (Bowman 1973). This association is present in most of the metamorphic and granitic bedrock areas.

Within these two associations, various specific soil types are present. The physical and chemical decomposition of the metamorphic and granitic rocks in the area has produced mainly two soil types, Friant and Escondido. These soils, along with areas categorized as “metamorphic rock land,” are situated in the areas containing pre-Cretaceous metamorphic and granitic bedrock. Friant soils, consisting of rocky fine sandy loams ranging from 9 to 70 percent slopes, and Escondido soils are present, principally, in the northern part of the Preserve, as well as occurrences of the metamorphic rock land. Most of the central and southern portions of the Preserve contain Redding cobbly loam soils, dissected, with 15 to 50 percent slopes. These soils are associated with the sedimentary Poway Conglomerate Formation. The area of recent sediments of Pleistocene and/or Holocene age, present in the broad valley along upper Sycamore Canyon drainage, has produced Huerhuero loam soils with either 2 to 9 percent slopes or 9 to 15 percent slopes, eroded. These various soil types account for more than 95 percent of the soils present within the Preserve. The remainder consist of minimal occurrences of Visalia gravelly sandy loam, 2 to 5 percent slopes, and “stony land” along the bottoms of Sycamore Canyon and in uppermost Clark Canyon (Bowman 1973).

Biological surveys conducted for the Preserve have identified 14 vegetation communities/land use types within the Preserve (HELIX 2019). These communities consist of scrub oak chaparral, southern riparian

forest, southern coast live oak riparian forest, southern riparian woodland, coast live oak woodland, open coast live oak woodland, Diegan coastal sage scrub, coastal sage-chaparral transition, southern mixed chaparral, chamise chaparral, disturbed habitat, non-native grassland, unvegetated channel, and developed land. Several of these represent communities of native vegetation that would have existed on the Preserve prehistorically prior to historic and modern disturbance. These plant communities, as well as the native plant resources supported by these habitats, would have been used by Native American populations for clothing, food, tools, decorative, and ceremonial purposes (Christenson 1990; Cuero 1970; Hedges and Beresford 1986; Luomala 1978). Many of the animal species living within these communities (such as rabbits, deer, small mammals, and birds) would have been used by native inhabitants, as well. Rabbits, jackrabbits, and rodents were important to the prehistoric diet; deer were somewhat less significant for food, but were an important source of leather, bone, and antler.

1.2.1.2 Cultural Setting

Prehistoric Period

The following culture history outlines and briefly describes the known prehistoric cultural traditions in the vicinity of the Preserve. The approximately 10,000 years of documented prehistory of the San Diego region has often been divided into three periods: Early Prehistoric Period (San Dieguito tradition/complex), Archaic Period (Milling Stone Horizon, Encinitas tradition, La Jolla and Pauma complexes), and Late Prehistoric Period (Cuyamaca and San Luis Rey complexes).

The Early Prehistoric Period represents the time period of the first known inhabitants in California. In some areas of California, it is referred to as the Paleo-Indian period and is associated with the Big-Game-Hunting activities of the peoples of the last Ice Age, occurring during the Terminal Pleistocene (pre-10,000 years ago) and the Early Holocene, beginning circa 10,000 years ago (Erlandson 1994, 1997; Erlandson et al. 2007). In the western United States, most evidence for the Paleo-Indian or Big-Game-Hunting peoples, derives from finds of large fluted spear and projectile points (Fluted-Point Tradition) in places such as Clovis and Folsom in the Great Basin and the Desert southwest (Moratto 1984:79–88). In California, most evidence for the Fluted-Point Tradition derives principally from areas along the margins of the Great Basin and the Desert southwest, such as the Sierras, the southern Central Valley, and the deserts of southeastern California (Moratto 1984:79–88) with several, mostly isolated, occurrences of fluted spear points encountered on or near the coast of California (Dillon 2002; Rondeau et al. 2007). A few of these isolated fluted points or point fragments have recently occurred in some proximity to the Preserve; one in the mountainous eastern area of San Diego County (Kline and Kline 2007), as well as another along the coast in adjacent Orange County to the north (Fitzgerald and Rondeau 2012), and two in Baja California to the south (Des Lauriers 2008; Hyland and Gutierrez 1995).

Despite these isolated occurrences, fluted points in the San Diego area are the earliest sites documented to be over 9,000 years old and belong to the San Dieguito Tradition (Warren et al. 1998; Warren and Ore 2011). The San Dieguito Tradition, with an artifact assemblage distinct from that of the Fluted Point Tradition, has been documented mostly in the coastal and near coastal areas in San Diego County (Carrico et al. 1993; Rogers 1966; True and Bouey 1990; Warren 1966; Warren and True 1961), as well as in the southeastern California deserts (Rogers 1939, 1966; Warren 1967), but with some evidence for it recently proposed in the eastern Mountains of San Diego County (Pigniolo 2005) and in the coastal area north of San Diego County (Sutton and Grenda 2012). The content of the earliest component of the C.W. Harris Site (CA-SDI-149/316/4935B), located along the San Dieguito River and approximately 13 miles to the northwest of the Preserve, formed the basis upon which Warren and others (Rogers 1966; Vaughan 1982; Warren 1966, 1967; Warren and True 1961) identified the “San Dieguito complex,”

and which Warren later reclassified as the San Dieguito Tradition (1968). This tradition is characterized by an artifact inventory consisting almost entirely of flaked stone biface and scraping tools, but lacking the fluted points associated with the Fluted Point Tradition. Diagnostic artifact types and categories associated with the San Dieguito Tradition include elongated bifacial knives; scraping tools; crescentics; and Silver Lake, Lake Mojave, and leaf-shaped projectile points (Rogers 1939; Warren 1967; Knell and Becker 2017).

The subsistence system or emphasis of the San Dieguito Tradition, while not yet entirely agreed upon, is suggested by Warren as having an orientation toward a hunting rather than a gathering economy. This characterization is based on an artifact assemblage of primarily hunting associated tools, in contrast to the more gathering-oriented complexes that were to follow in the Archaic Period (Warren 1967, 1968, 1987; Warren et al. 1998). Other researchers have interpreted the San Dieguito subsistence system to be possibly ancestral to, or a developmental stage for, the predominantly gathering-oriented "La Jolla/Pauma complex" of the subsequent Archaic Period (e.g., Bull 1983; Ezell 1987; Gallegos 1985, 1987, 1991; Koerper et al. 1991). Based on uncalibrated radiocarbon dates, Warren originally indicated the San Dieguito Tradition to have begun sometime prior to 9000 years before present (BP) and to have ended sometime between 8500 and 7500 BP (1967; 1968:4). Recent calibrations of these dates, however, have indicated them to be significantly earlier (Warren et al. 1998; Warren and Ore 2011). Despite the relative proximity of the C.W. Harris Site to the Preserve, based on current information, no resources dating to, or associated with, the Early Prehistoric Period have been firmly documented within the Preserve.

In the southern coastal region, the subsequent Archaic Period dates from circa 8600 BP to circa 1300 BP (Warren et al. 1998). A large number of archaeological site assemblages dating to this period have been identified at a range of coastal and inland sites. This appears to indicate that a relatively stable, sedentary hunting and gathering complex, possibly associated with one people, was present in the coastal and immediately inland areas of what is now San Diego County for more than 7000 years. These assemblages, designated as the La Jolla/Pauma complexes, are considered part of Warren's (1968) "Encinitas tradition" and Wallace's (1955) "Milling Stone Horizon." In general, the content of these site assemblages includes manos and metates; shell middens; terrestrial and marine mammal remains; burials; rock features; bone tools; doughnut stones; discoidals; stone balls; plummets; biface points/knives; beads made of stone, bone, or shell; and cobble-based tools at coastal sites, as well as increased hunting equipment and quarry-based tools at inland sites. As defined by True (1958), the "Pauma complex" aspect of this culture is associated with sites located in inland areas that lack shellfish remains, but are otherwise similar in content to the La Jolla complex. The Pauma complex may, therefore, simply represent a non-coastal expression of the La Jolla complex (True 1980; True and Beemer 1982). During the latter half of the Archaic Period, artifacts such as dart points and mortars and pestles, which are essentially absent during the early Archaic Period, begin to occur in site assemblages dating after circa 5500 BP. Also noted by Warren (2012) was an increase in the presence of larger mammal remains in La Jolla complex, faunal assemblages during the Late Archaic Period. This new, and subsequently increasing, use of these resources represents a significant shift in the Encinitas/La Jolla/Pauma complex subsistence system in the southern coastal region (Warren et al. 1998; Warren 2012).

Sites dating to the Archaic Period are more numerous along the coast, west of the Preserve. Inland archaeological sites in the vicinity of the Preserve, attributable to the Early Milling Stone Horizon and/or the La Jolla/Pauma complex are not unknown (e.g., Cooley and Barrie 2004; Raven-Jennings and Smith 1999; True 1980; Warren et al. 1961:10). However, similar to the San Dieguito complex, most of the

substantiating archaeological evidence for the Encinitas tradition/La Jolla/Pauma complex (Milling Stone Horizon) in present-day San Diego County is derived from sites in near-coastal valleys, estuaries, and/or embayments that are present along the San Diego coast south of the San Luis Rey River (e.g., Cooley et al. 2000; Cooley and Mitchell 1996; Gallegos 1995:200; Pigniolo et al. 1991; Shumway et al. 1961; Smith and Moriarty 1985). The location of the Preserve is approximately 27 kilometers (17 miles) from the coast, which places it within the rising elevation, inland foothill area where sites can be radiometrically dated to the Archaic Period, and where sites that contain La Jolla or Pauma complex assemblages are less common (Warren et al. 1998).

While not plentiful, however, some Archaic Period sites in foothill circumstances have been documented. In the Poway area, the Scripps Poway Parkway Site (CA-SDI-4608), situated approximately 15.3 miles from the ocean, is close to the Preserve along the Beeler Canyon drainage, approximately 2 miles to the west of the Preserve. The site has been radiocarbon dated to as early as 5800 BP and is described as associated with the "transitional periods between the San Dieguito and La Jolla complexes and the later Archaic/Late Prehistoric transition" (Raven-Jennings and Smith 1999:3.0-5). The radiocarbon results from a data recovery program conducted at the site appear to indicate that it was repeatedly occupied over a period of nearly 6,000 years, with the last occupation occurring during the Late Prehistoric Period. La Jolla complex artifacts recovered from the site include doughnut stones; discoidals; as well as Pinto, Elko, and large side-notched points. Elsewhere, at sites along the Santa Maria Creek near Ramona, approximately 10.5 kilometers (6.5 miles) to the east of the Preserve, an Elko-eared style projectile point and a radiocarbon date of circa 2000 BP have also documented occupation during the Late Archaic Period (Cooley and Barrie 2004). Other inland foothill sites in the vicinity of the Preserve dated or attributed to the Archaic Period include CA-SDI-5545 (Chace and Sutton 1990) and site CA-SDI-9243 (Cooley 1995).

Despite the proximity of a documented Archaic Period site (CA-SDI-4608), and an observation made by Jordan et al. (2008:70) that some archaeological sites in the Preserve have artifact assemblages consisting only of manos, hammerstones, scrapers and scraper planes, and patinated volcanic debitage (which may indicate an Archaic Period occupation), no site within the Preserve can be definitively attributed to the Archaic period (Cooley and Foglia 2016; Jordan et al. 2008; Ní Ghabhláin et al. 2012; Wilson 2019). Future investigations at sites in the Preserve, however, could potentially reveal the presence of resources from this period.

While there has been considerable debate about whether San Dieguito and La Jolla patterns might represent the same people using different environments and subsistence techniques, or whether they are separate cultural patterns (e.g., Bull 1983; Ezell 1987; Gallegos 1987; Warren et al. 1998), abrupt shifts in subsistence practices and the use of new tool technologies are documented in the archaeological record to have occurred at the onset of the Late Prehistoric Period (ca. 1500 to 1300 BP). The Late Prehistoric Period (ca. 1500 BP to AD 1769) is also characterized by higher population densities and intensification of social, political, and technological systems. The technological changes observed include a shift from the use of atlatl and dart to the bow and arrow; subsistence shifts that include a reduction in shellfish gathering in some areas (possibly due to silting of the coastal lagoons); and the storage of crops, such as acorns. New traits, such as the production of pottery and cremation of the dead, were also introduced during the Late Prehistoric Period.

Movements of people during the last 2,000 years can account for at least some of these changes. Yuman-speaking people had occupied the Gila/Colorado River drainages of what is now western Arizona 2,000 years ago (Moriarty 1968) and then continued to migrate westward. An analysis by Moriarty (1966, 1967) of materials recovered from the Spindrift site in La Jolla indicated a preceramic Yuman

phase. Based on this analysis and a limited number of radiocarbon samples, Moriarty concluded that Yumans, lacking ceramic technology, penetrated into and occupied what is now the San Diego coastline circa 2000 BP. Subsequently, approximately 1,200 to 1300 BP, ceramic technology diffused into the coastal area from the eastern deserts. Although these Yuman speakers may have shared cultural traits with the people occupying what is now eastern San Diego County before 2000 BP, their influence is better documented throughout present-day San Diego County after 1300 BP, with the introduction of small points, ceramics, Obsidian Butte obsidian, and the practice of cremation of the dead.

Based on early research by Meighan (1954) and True (1970), two distinct archaeological complexes have been proposed for the Late Prehistoric Period in what is now San Diego County. The Cuyamaca complex is based on analysis by True of archaeological excavations within Cuyamaca Rancho State Park and of San Diego Museum of Man collections. Based on the results of this analysis, True (1970) defined a Late Prehistoric Period complex for southern San Diego County that was distinct from Meighan's (1954) San Luis Rey complex in the northern county area. The presence or absence, or differences in the relative occurrence, of certain diagnostic artifacts in site assemblages provide the principal distinctions between these archaeological complexes. Cuyamaca complex sites, for example, generally contain both Cottonwood Triangular-style points and Desert Side-notched arrow points, while Desert Side-notched points are quite rare or absent in San Luis Rey complex sites (Pigniolo 2004). Other examples include Obsidian Butte obsidian, which is far more common in Cuyamaca complex sites than in San Luis Rey complex sites, and ceramics. While ceramics are present during the Late Prehistoric Period throughout what is now San Diego County, they are more common in the southern or Cuyamaca complex portions of San Diego County where they occur earlier in time and appear to be somewhat more specialized in form. Both complexes have produced a variety of ceramic vessel types, along with straight and bow-shaped ceramic pipes and effigies. Interment of the dead at Cuyamaca complex sites is almost exclusively by cremation, often in special burial urns for interment, while archaeological evidence from San Luis Rey complex sites indicates both inhumation and cremation. Based on ethnographic data, including the areas defined for the Hokan-based Yuman-speaking peoples (Diegueño/Kumeyaay) and the Takic-speaking peoples (Luiseño) at the time of contact, it is generally accepted that the Cuyamaca complex is associated with the Diegueño/Kumeyaay people and the San Luis Rey complex with the Luiseño people (True 1970; True and Waugh 1982).

The Preserve lies within the area currently defined for the Cuyamaca complex (True 1970:58). A Cuyamaca complex artifact assemblage commonly contains Tizon Brown Ware pottery, various cobble-based tools (e.g., scrapers, choppers, and hammerstones), arrow shaft straighteners, pendants, manos and metates, and mortars and pestles. The arrow point assemblage often includes Desert Side-notched and Cottonwood Triangular points with the Dos Cabezas Serrated type also sometimes occurring (McDonald and Eighmey 1998:III-21 - III-23).

Compared to Archaic Period sites, Late Prehistoric Period sites attributable to the San Luis Rey or Cuyamaca complexes are less common in the near-coastal areas of the county. Gallegos (1995:200) states, "For San Diego County, there is temporal patterning, as the earliest sites are situated in coastal valleys and around coastal lagoons. Late Prehistoric Period sites are also found in coastal settings but are more common along river valleys and interior locations." In contrast, numerous Late Prehistoric Period sites, attributable to the San Luis Rey or Cuyamaca complexes have been identified for the near-coastal inland foothill areas of the county through diagnostic artifacts and/or radiocarbon dating, including in the vicinity of the Preserve in the Poway/Ramona area (e.g., Carrico and Cooley 2005; Chace and Hightower 1979:48; Cooley and Barrie 2004; McCown 1945; Raven-Jennings and Smith 1999; Willey and

Dolan 2004), and to the south along the San Diego River at multicomponent sites CA-SDI-9243 (Carrico et al. 1994; McDonald et al. 1994) and CA-SDI-5669 (Berryman 1981).

One of the best documented, and nearest of these sites to the Preserve, is the Scripps Poway Parkway Site (CA-SDI-4608), already described above for its Archaic component. This site also contains evidence of a significant Late Prehistoric Period, Cuyamaca complex occupation, documented by both a temporally diagnostic artifact assemblage that includes Desert Side Notched points as well as Cottonwood Triangular points, and eight radiocarbon dates spanning the period from 1500 to 50 BP. The radiocarbon dating, as well as the variety and quantity of cultural materials at the site indicate a pattern of settlement connected with the repeated occupation of the site and the surrounding vicinity, extending from the Archaic Period through the Late Prehistoric Period. In the Preserve, as well as in the archaeological record for the surrounding vicinity, most of the prehistoric sites that can be confidently associated with a particular time period represent Cuyamaca complex-related occupation of the area during the Late Prehistoric Period (Cooley and Foglia 2016; Jordan et al. 2008; Ní Ghabhláin et al. in 2012; Wilson 2019).

Ethnohistory

Based on ethnographic data, including the areas defined for the Hokan-based Yuman-speaking peoples (Kumeyaay) and the Takic-speaking peoples (Luiseño), the Preserve is located in the traditional territory of the Yuman-speaking Kumeyaay who inhabited the area at the time of European contact. The Kumeyaay were originally labeled Diegueño by the Spaniards, a term derived from their association with Mission San Diego de Alcalá. The term Diegueño was adopted by early anthropologists and further divided into the southern Diegueño and northern Diegueño (e.g., Kroeber 1925). Luomala (1978) later assigned the terms Ipai to the northern Diegueño and Tipai to the southern Diegueño. The Kumeyaay people, whose population in San Diego in the late 1700s was estimated to be 20,000, lived in semi-sedentary, politically autonomous villages or rancherias. Most rancherias were the seat of a clan, although it is thought that, aboriginally, some clans had more than one rancheria and some rancherias contained more than one clan, often depending on the season within the year (Luomala 1978). Each village was comprised of many households, and groups of villages were part of a larger social system, referred to as a consanguineal kin group (*cimuL*) (Carrico 1998). Campsites and villages were chosen based on proximity to water, boulder outcrops, environmental protection, and availability of plants and animals (Luomala 1978). Consequently, many of the Kumeyaay villages or rancherias were located in river valleys and along the shoreline of coastal estuaries (Carrico 1998; Kroeber 1925).

The only ethnographically documented Indian village or *rancheria* thought to have been located in proximity to the Preserve is the village of *Pauwaii* (paaw wy) (Kroeber 1925:Plate 57). This village is identified by Kroeber as Diegueño and is indicated by Trafzer and Carrico (1992:53) to have been located along Poway Creek to the west of the Preserve in the vicinity of the present-day City of Poway. While little is known ethnographically about the village of *Pauwaii*, it is the source of the anglicized version "Poway", the name used today for the city and the creek. While several different locations in the Poway area have been speculated by various researchers to be the location of the village, no definite location has yet been agreed upon. Kroeber (1925:Plate 57), and Trafzer and Carrico (1992:53) also indicate that three other villages *Sinyau-Pichkara*, *Ahmukatlkatl*, and *Hapai*, were located farther away from the Preserve, approximately 16.1 kilometers (10 miles) to the north, along the San Dieguito River, and that these villages were also Diegueño (Kumeyaay [Ipai]) villages. Another Ipai village, the village of *Pámu* (paa moo), is postulated to have been located in the Santa Maria Valley, approximately 6 miles to the northeast of the Preserve (Carrico 2003; Carrico and Cooley 2005).

History

While Juan Rodriguez Cabrillo visited San Diego briefly in 1542, the beginning of the historic period in the San Diego area is generally given as 1769. In the mid-eighteenth century, Spain had escalated its involvement in California from exploration to colonization (Weber 1992) and in that year, a Spanish expedition headed by Gaspar de Portolá and Junípero Serra established the Royal Presidio of San Diego. Portolá then traveled north from San Diego seeking suitable locations to establish military presidios and religious missions, in order to extend the Spanish Empire into Alta California.

Initially, both a mission and a military presidio were located on Presidio Hill overlooking the San Diego River. A small pueblo, now known as Old Town San Diego, developed below the presidio. The Mission San Diego de Alcalá was constructed in its current location five years later. The missions and presidios stood, literally and figuratively, as symbols of Spanish colonialism, importing new systems of labor, demographics, settlement, and economies to the area. Cattle ranching, animal husbandry, and agriculture were the main pursuits of the missions. The San Diego River valley, located to the south of the Preserve, was used by the mission to graze livestock.

Although Mexico gained its independence from Spain in 1821, Spanish patterns of culture and influence remained for a time. The missions continued to operate as they had in the past, and laws governing the distribution of land were also retained in the 1820s. Following secularization of the missions in 1834, large ranchos were granted to prominent and well-connected individuals, ushering in the Rancho Era, with the society making a transition from one dominated by the church and the military to a more civilian population, with people living on ranchos or in pueblos. Rancho El Cajon (also spelled Caxon) was granted to Doña Ana Maria Antonia Estudillo de Pedrorena. Totaling 48,800 acres, the Rancho El Cajon land grant included the present-day cities of Santee and El Cajon, as well as the communities of Lakeside and Flinn Springs to the east.

The ranchos put new pressures on California's native populations along the coast, as grants were made for inland areas still occupied by the Kumeyaay, forcing them to acculturate or relocate farther into the backcountry. In rare instances, former mission neophytes were able to organize pueblos and attempt to live within the new confines of Mexican governance and culture. The most successful of these was the Pueblo of San Pasqual, located inland along the San Dieguito River Valley, founded by Kumeyaay who were no longer able to live at the Mission San Diego de Alcalá (Carrico 2008; Farris 1994).

American governance began in 1848, when Mexico signed the Treaty of Guadalupe Hidalgo, ceding California to the United States at the conclusion of the Mexican–American War. A great influx of settlers to California and the San Diego region occurred during the American Period, resulting from several factors, including the discovery of gold in the state in 1848, the end of the Civil War, the availability of free land through passage of the Homestead Act, and later, the importance of San Diego County as an agricultural area supported by roads, irrigation systems, and connecting railways. The increase in American and European populations quickly overwhelmed many of the Spanish and Mexican cultural traditions, and greatly increased the rate of population decline among Native American communities.

While the American system required that the newly acquired land be surveyed prior to settlement, the Treaty of Guadalupe Hidalgo bound the United States to honor the land claims of Mexican citizens who were granted ownership of ranchos by the Mexican government. The Land Act of 1851 established a board of commissioners to review land grant claims, and land patents for the land grants were issued throughout the following years. Pedrorena submitted a petition to the Land Commission for Rancho El Cajon and, along with Thomas W. Sutherland and various family members, received a patent in 1876

(Bureau of Land Management General Land Office record PLC 534/CACAAA 080718). By that time, however, the land had already been sold to Mr. and Mrs. Van Ives, and Suzanna and J.A. Laukershire.

The inland area of San Diego County initially saw a population boom after the discovery of gold in 1869 near Julian, which brought settlers to San Diego's backcountry. In addition, the confirmation of ranchos' boundaries in the late 1860s and early 1870s drew additional settlers, as land became officially conveyable. Under the Homestead Act of 1862 settlers could claim up to 160 acres of public land for the cost of a filing fee of $10, with a condition that the land was occupied for at least five years and that certain improvements were made. The increase of land claims significantly reduced the remaining lands which sustained the Native American populations as settlers marked, surveyed, and fenced property, which in turn changed the landscape of what is now San Diego County. The increase of land claims pushed for Native American reservations to be established in what were often lands of poor subsistence (Carrico 2008). The Kumeyaay who had moved to Capitan Grande, east of the Preserve, in 1850 were formally given the El Capitan Indian Reservation by presidential order in 1875.

Following the completion of the California Southern Railroad in 1885 up through the Cajon Pass to Barstow to a junction of the Atlantic and Pacific Railroad, San Diego County entered a period of marked growth, and San Diego County was characterized by "boom and bust" cycles that brought thousands more people to the area. By the end of the decade, many had left, although some remained to form the foundations of small communities based on dry farming, orchards, dairies, and livestock ranching. During the late nineteenth and early twentieth centuries, rural areas of San Diego County developed small agricultural communities, consisting of individuals and families tied together through geographical boundaries, a common schoolhouse, and a church.

One such community was Stowe, located in the Preserve within Sycamore Canyon, which was established in the 1880s and grew with a population of mainly farmers and ranchers (Jacques and Quillen 1983). Stowe and the families that lived there, many from German immigrant families, prospered as a small farming and ranching community and housed many beekeepers, also known as Apiarists. The post office in Stowe was established in 1889, and a one-room schoolhouse was established at the junction of Beeler and Sycamore Canyons in 1890 (Jacques and Quillen 1983). The 1897 directory for San Diego lists 14 families as residents of Stowe (Cooley and Foglia 2016). Notable heads of households are Julius Buehler, the namesake of Beeler Canyon, James Kirkham, B.F. Kirkham, and Joseph Fisher. The residents included 11 farmers, two teachers, and one postmistress. In 1891, Harry Clark, the presumable namesake of Clark Canyon, purchased tracts within Clark Canyon at the south end of the Preserve (Wilson 2019). In the northern portion of the Preserve, several land patents were granted under the authority of the Homestead Act between 1889 and 1939 (Cooley and Foglia 2016). The patentees included George Eckhardt and his son Solomon, Charles Smith, William McKee, Fredaricka Kirkham, Frederick Reetzke, Joseph Fischer, and Denver Pardee. Cornelius Butler and Martin O'Neill also owned property in the 1890s within the Preserve (Crafts and Young 2002).

Transportation was essential in these relatively isolated areas, causing the need for effective transportation links for goods, mail, and people to and from San Diego County. Numerous important travel routes in the vicinity of the Preserve allowed homesteaders within Stowe a more accessible route to San Diego and other outlying towns, which in turn connected them to more supplies and trade routes. Stowe Road, located along the western boundary of the Preserve, originally operated as a wagon route and was in use as early as 1876 (Jordan et al. 2008). Stowe Road followed Sycamore Canyon from Santee at the San Diego River north through the community of Stowe and into Poway.

The first backcountry stagecoach traveling through the Poway vicinity had been established by William Tweed in 1871 and followed the St. Vincent's trail (a horse trail). The troublesome Poway route encouraged Lemuel and Henry Atkinson to create a more efficient route, the Atkinson Toll Road, which was then acquired by the County a year later. The steep nature of the route, however, proved difficult to maintain for Joseph Foster, who took charge of all the maintenance work for the Atkinson Toll Road. In 1888, Mussey Grade Road was completed and proved essential as a link between San Diego and Ramona. Foster, after having maintained Atkinson's Toll Road, provided a stagecoach service allowing backcountry settlers to travel to San Diego in one day by going from Ramona down Mussey Grade to the Foster Depot located within his ranch (LeMenager 1989).

In 1886, the San Diego Central Railroad was incorporated, and a railroad route was proposed and promoted by the developer, running from the San Diego Bay through El Cajon and north to Poway, up through Escondido, and then west to Oceanside (Ní Ghabhláin et al. 2012; Sisson 2007). But the smaller inland towns could not fund the project, and only the Oceanside to Escondido portion was built (in 1887), as a branch of the California Central Railway (Sisson 2007; Vivian 1891).

Despite the efforts to establish reliable transportation routes within the inland area of the County and the Preserve vicinity, the town of Stowe was short-lived, with the post office being terminated in 1905, and the schoolhouse closing a year later, in 1906. The drought that occurred in the 1910s drove many of the remaining families away, with the Fischers being one of the last families to remain, as they had developed wells and had access to a water supply (Jordan et al. 2008).

The influence of military development, beginning in 1916 and 1917 during World War I, further moved much of the population away from rural life, and the need to fight a two-ocean war during World War II resulted in substantial development in infrastructure and industry to support the military and accommodate soldiers, sailors, and defense industry workers. Although little urban development occurred north of the San Diego River until the 1940s, when military housing was developed in Linda Vista (City of San Diego 2001), military influence was still witnessed within the Preserve during this time. The military stored equipment within the Preserve lands, and Pipelines 1 and 2 of the First San Diego Aqueduct were constructed through the Preserve in 1947 and 1954, respectively. The aqueduct delivered water from the Colorado River to the San Vicente Reservoir, located to the east of the Preserve, and was constructed to alleviate the water needs of a growing wartime San Diego, and to prevent water shortages.

The Goodan Ranch came under its namesake's ownership in 1938, when the land was sold to Roger and Mary Chandler Goodan of Los Angeles. With this purchase, the Goodans became "sole owners of all property encompassing Sycamore Canyon in Section 28 and Fischer Canyon in Sections 27 and 22, totaling 640 acres, or 1 square mile of valley and canyon lands" (Jacques and Quillen 1983:B-5). In 1943, additional property at the head of Sycamore Canyon was added to the Goodan landholdings. The Goodans constructed a one-story stone and wood ranch house and used the property and rural ranch for weekend visits. Since at least the 1950s, Sycamore Canyon Road has been a wider, graded road leading to Goodan Ranch.

During the 1960s, the region surrounding the Preserve to the south in the cities of Santee and San Diego, and to the north within the City of Poway, saw huge increases in residential, commercial, and infrastructure development, which has been reflected into the present time. In 1991, Goodan Ranch was sold to the Cities of Santee and Poway, the State Wildlife Conservation Board, and the County of San Diego (Jordan et al. 2008).

1.2.2 Record Search Results

The County has conducted four baseline studies to survey and inventory the cultural resources present within the Preserve, as well as to document the previous cultural resource studies that had been conducted prior to acquisition of property by the County. The initial study (Jordan et al. 2008) was augmented by four inventory and survey studies for parcels that, subsequent to 2008, were added to the Preserve (Cooley and Foglia 2016; McGinnis and Cox 2019; Ní Ghabhláin et al. 2012; Wilson 2019). The baseline studies conducted record searches that included a review of archaeological and historical resources, locations, and citations for previous cultural resources studies, and a review of the state Office of Historic Preservation historic properties directory. Together, these five studies compiled an inventory of the cultural resources in the Preserve and of the previous studies that had been conducted within the Preserve boundary. The following sections provide a summary of the studies that have been previously conducted, and the cultural resources that have been recorded, within the Preserve.

1.2.2.1 Previous Studies

Seventeen cultural resource studies have been conducted that encompassed some portions of the Preserve (Table 1, *Cultural Resources Studies Previously Conducted within the Preserve*). All of these studies consisted of Phase I pedestrian surveys. No subsurface archaeological investigations have been conducted with the Preserve.

Table 1
CULTURAL RESOURCES STUDIES PREVIOUSLY CONDUCTED WITHIN THE PRESERVE

Author	Date	Report Title
Jacques, Terri E., and Dennis Quillen	1983	Archaeological and Historical Impact Report for Sycamore Canyon State Vehicular Recreation Area
WESTEC	1983	Sycamore Canyon State Vehicular Recreation Area Draft EIR Appendices
Pacific Southwest	1985	EIR Wyroc Project P85-049, Rp85-05, Log #85-14-51
TMI Environmental Services	1986	Environmental Impact Report on the Wyroc Project-Quarry Site Highway 67 P85-076, Log Number 85-2-68
Hector, Susan	1990	Update on Cultural Resources Located Within the Sycamore Valley Ranch Project Area County of San Diego, California
Pigniolo, Andrew	1992	Cultural Resource Survey of the South Poway Expressway Alternatives Poway, California
Pigniolo, Andrew, Kathleen Crawford, Marla Mealy, et al.	1994	Cultural Resources Survey of the Scripps Poway Parkway/County SA 780 Alternatives
Ogden	1995	Cultural Resources Technical Report for Draft Environmental Impact Report/Environmental Impact Statement; Emergency Water Storage Project
Schroth, Adella B., Dennis R. Gallegos, Petei McHenry, and Nina Harris	1996	Historical/Archaeological Survey Report for the Water Repurification Pipeline and Advanced Water Treatment Facility, City of San Diego, California
Cooley, Theodore G.	2001	Report of Cultural Resources Surveys for 17 Geotechnical Investigation Locations for the Proposed San Vicente Pipeline Tunnel Project (Route 16B) in Southwestern San Diego County, California
Noah, Anna C., and Dennis R. Gallegos	2008	Final Class III Archaeological Inventory for the SDG&E Sunrise Powerlink Project, San Diego and Imperial Counties, California

Table 1 (cont.)
CULTURAL RESOURCES STUDIES PREVIOUSLY CONDUCTED WITHIN THE PRESERVE

Author	Date	Report Title
Jordan, Stacey C., Theodore G. Cooley, and Andrea M. Craft	2008	Cultural Resources Phase I Survey and Inventory, Sycamore Canyon and Goodan Ranch Preserves, San Diego County, California
Garcia-Herbst, Arleen, David Iversen, Don Laylander, and Brian Williams	2010	Final Inventory Report of the Cultural Resources Within the Approved San Diego Gas & Electric Sunrise Powerlink Final Environmentally Superior Southern Route, San Diego and Imperial Counties, California
Ní Ghabhláin, Sinéad, Shelby Gunderman, and Sarah Stringer-Bowsher	2012	Archaeological Survey Report for the Hagey and Sycamore South Properties, Additions to the Sycamore Canyon and Goodan Ranch Preserves, San Diego County, California
Cooley, Theodore G., and Shannon Foglia	2016	Cultural Resources Phase I Survey and Inventory, Sycamore Canyon/Goodan Ranch Preserve, Cielo and Wu Additions, San Diego County, California
McGinnis, Patrick, and Nara Cox	2019	Phase I Cultural Resources Survey and Inventory of Six Parcels for Addition to theSycamore-Goodan Ranch Preserve, San Diego County, California
Wilson, Stacie	2019	Cultural Resources Phase I Survey and Inventory: Sycamore Canyon/Goodan Ranch Preserve, Southern Parcel

In addition to the five Phase I survey and inventory studies performed for the County for the creation of the Preserve (Cooley and Foglia 2016; Jordan et al. 2008; McGinnis and Cox 2019; Ní Ghabhláin et al. 2012; Wilson 2019), 12 other cultural resources studies have been conducted within some portion of the Preserve. Two of the earliest of these studies were surveys for the proposed creation of a vehicle recreation area (Jacques and Quillen 1983; WESTEC 1983). Two other studies were surveys performed for the then-proposed construction of Scripps Poway Parkway in the early 1990s (Pigniolo 1992; Pigniolo et al. 1994). Two studies were an EIR and a survey for water projects for the San Diego County Water Authority (Cooley 1996; Ogden 1995). One study was for the "Sycamore Valley Ranch Project" (Hector 1990). A 1996 study was a survey for a pipeline route for a water repurification and advanced treatment plant project for the City of San Diego (Schroth et al. 1996). Two other studies were surveys for the San Diego Gas & Electric Sunrise Powerlink route through the Preserve (Noah and Gallegos 2008; Garcia-Herbst et al. 2010). Lastly, two studies were surveys for a proposed quarry development in the northernmost part of the Preserve (Pacific Southwest 1985; TMI Environmental Services 1986).

1.2.2.2 Previously Recorded Sites Within Preserve

The previous survey and inventory studies have documented the presence of 100 cultural resources previously recorded within the Preserve, 43 of which are within the current Survey Area (Table 2, *Cultural Resources Previously Recorded within the Preserve*). The 100 resources in the Preserve consist of 16 historic-period buildings, structures, objects or archaeological sites; four multicomponent archaeological sites; 56 prehistoric archaeological sites; 23 prehistoric isolates; and one historic isolate. The previously recorded cultural resources documented within the Preserve are shown on Figure 5, *Cultural Resources Previously Recorded within the Preserve* (Confidential Appendices, bound separately). The 43 resources within the Survey Area are discussed in more detail in Section 3.3, *Results*, below.

Table 2
CULTURAL RESOURCES PREVIOUSLY RECORDED WITHIN THE PRESERVE

Primary Number	Trinomial Number	Age and Resource Type Present	Description	Preserve Report, Date	In Survey Area
P-37-000119	CA-SDI-119	Prehistoric Site	Lithic and ground stone scatter	Jordan et al. 2008	X
P-37-006859	CA-SDI-6859	Prehistoric Site	Bedrock milling features	Cirilo et al. 1979	
P-37-008340	CA-SDI-8340	Prehistoric Site	Bedrock milling features	Wilson 2019	
P-37-009704	CA-SDI-9704	Prehistoric Site	Lithic scatter - 12 waste flakes	Jordan et al. 2008	X
P-37-009705	CA-SDI-9705	Prehistoric Site	Bedrock milling features (9 or 10 features with at least 15 slicks and one mortar) and associated lithic scatter	Jordan et al. 2008	
P-37-009706	CA-SDI-9706	Prehistoric Site	Two bedrock milling features (with one slick each) and an associated lithic scatter	Jordan et al. 2008	X
P-37-009707	CA-SDI-9707	Historic Site	The remains of the Joseph Fischer homestead and the Stowe Post Office dating to the early 1880s to 1900	Jordan et al. 2008	X
P-37-009708	CA-SDI-9708	Multicomponent Site	Sixteen bedrock milling features with at least 30 slicks and six basins, and an associated lithic and ground stone scatter; also, a possible historic cobble-lined path and possible historic trash scatter	Jordan et al. 2008	
P-37-009712	CA-SDI-9712	Multicomponent Site	Goodan Ranch structural ruins and other historic features; prehistoric lithic artifacts	Jordan et al. 2008	X
P-37-012821	CA-SDI-12821	Historic Site	Historic Road - Foster Truck Trail; western spur of the Foster Truck Trail	Jordan et al. 2008; Ní Ghabhláin et al. 2012; Cooley and Foglia 2016	X
P-37-012838	CA-SDI-12838	Prehistoric Site	Locus A consists of two bedrock milling features with one slick each and an artifact scatter consisting of a mano, five cores, ten quartz fragments, five metavolcanic flakes, and a quartzite flake tool; Locus B was recorded as a quartz quarry	Cooley and Foglia 2016	

Table 2 (cont.)
CULTURAL RESOURCES PREVIOUSLY RECORDED WITHIN THE PRESERVE

Primary Number	Trinomial Number	Age and Resource Type Present	Description	Preserve Report, Date	In Survey Area
P-37-012839	CA-SDI-12839	Prehistoric Site	Rock feature	Jordan et al. 2008	
P-37-012842	CA-SDI-12842	Prehistoric Site	One bedrock milling feature with four slicks	Jordan et al. 2008	
P-37-012843	CA-SDI-12843	Prehistoric Site	Lithic and ground stone scatter	Jordan et al. 2008	
P-37-012850	CA-SDI-12850	Prehistoric Site	Bedrock milling feature	Cooley and Foglia 2016	
P-37-012852	CA-SDI-12852	Prehistoric Site	Lithic scatter and quartz quarry, with one volcanic core, one chopper, and 16 flakes, mostly of quartz material	Cooley and Foglia 2016	X
P-37-012861	CA-SDI-12861	Historic Site	Trash scatter and stacked rock wall	Jordan et al. 2008	
P-37-013221	CA-SDI-13221	Prehistoric Site	Lithic scatter	Jordan et al. 2008	X
P-37-013223	CA-SDI-13223	Prehistoric Site	Lithic scatter consisting of one core/domed scraper, one unifacial quartzite core with adjacent angular waste, one quartzite chopper, and one hammerstone	Jordan et al. 2008	X
P-37-013636	CA-SDI-13636	Prehistoric Site	One bedrock milling feature with one slick and thumb scraper	Jordan et al. 2008	
P-37-013850	CA-SDI-13850	Prehistoric Site	Lithic scatter with two domed scrapers	Jordan et al. 2008	
P-37-015294	--	Prehistoric Isolate	One flake	Jordan et al. 2008	
P-37-024271	--	Prehistoric Site	Lithic scatter consisting of two volcanic flakes, a metavolcanic flake, and a metavolcanic core	Jordan et al. 2008	X
P-37-024959	CA-SDI-16515	Prehistoric Site	Lithic scatter consisting of five cores, five fragments of ground stone, three manos, one flake-based chopper, and debitage	Jordan et al. 2008	X
P-37-024960	CA-SDI-16516	Prehistoric Site	Lithic scatter consisting of one core tool, one core, and two metavolcanic flakes	Jordan et al. 2008	X

Table 2 (cont.)
CULTURAL RESOURCES PREVIOUSLY RECORDED WITHIN THE PRESERVE

Primary Number	Trinomial Number	Age and Resource Type Present	Description	Preserve Report, Date	In Survey Area
P-37-024961	CA-SDI-16517	Multicomponent Site	Lithic scatter consisting of three granitic hammerstones, two granitic mano fragments, one basalt "spokeshave", one domed scraper, two quartzite choppers (white and tan), and one flake; and a concrete dam	Jordan et al. 2008	X
P-37-024962	CA-SDI-16518	Prehistoric Site	Lithic scatter consisting of two domed scrapers, two granitic mano/hammerstones, three quartzite choppers, one quartzite scraper, one granitic polishing stone, one quartzite spokeshave, and one core	Jordan et al. 2008	X
P-37-024963	--	Prehistoric Isolate	A cobble smoothing/ burnishing tool	Jordan et al. 2008	X
P-37-024964	--	Prehistoric Isolate	One quartzite flake	Jordan et al. 2008	X
P-37-024965	--	Prehistoric Isolate	Two quartzite cores	Jordan et al. 2008	
P-37-024966	--	Prehistoric Isolate	One quartzite flake	Jordan et al. 2008	
P-37-024967	--	Prehistoric Site	Lithic scatter consisting of a green metavolcanic scraper, two green volcanic flakes, and a volcanic cobble hammerstone	Jordan et al. 2008	X
P-37-024968	--	Prehistoric Isolate	One quartzite domed scraper	Jordan et al. 2008	
P-37-024969	--	Prehistoric Isolate	One mano fragment	Jordan et al. 2008	X
P-37-025793	CA-SDI-17151	Prehistoric Site	Six bedrock milling features with at least 16 milling slicks and basins, three pottery sherds, two manos, one mano fragment, one core, and two metavolcanic flakes	Jordan et al. 2008	X

Table 2 (cont.)
CULTURAL RESOURCES PREVIOUSLY RECORDED WITHIN THE PRESERVE

Primary Number	Trinomial Number	Age and Resource Type Present	Description	Preserve Report, Date	In Survey Area
P-37-025794	CA-SDI-17152	Prehistoric Site	Eight bedrock milling features containing seven mortar/basins, 23 basins, and at least 50 milling slicks; 15 pottery sherds (including one rim sherd); at least 25 Santiago Peak volcanic, Lusardi Formation Volcanic (LFV), jasper, metavolcanic, quartz, and quartzite flakes; a portable metate; and a white quartz projectile point base fragment	Jordan et al. 2008	X
P-37-025797	CA-SDI-17153	Historic Site	Historic dam constructed of stacked rock	Jordan et al. 2008	X
P-37-025798	CA-SDI-17154	Multicomponent Site	Stone foundation, one mano and one hammerstone	Jordan et al. 2008	
P-37-025799	CA-SDI-17155	Prehistoric Site	Two bedrock milling features containing a total of three milling slicks and one basin	Jordan et al. 2008	X
P-37-025800	CA-SDI-17156	Historic Site	Farm site with three eucalyptus trees and a field	Jordan et al. 2008	
P-37-025801	CA-SDI-17157	Historic Site	Trash dump	Jordan et al. 2008	
P-37-025802	CA-SDI-17158	Historic Site	Target shooting range	Jordan et al. 2008	X
P-37-028924	--	Historic Site	Four cement cistern/guzzlers (1950) located in various areas of the Preserve (note: site is mis-labelled as P-37-028294 in some maps and reports)	Jordan et al. 2008; Cooley and Foglia 2016	X
P-37-030078	--	Prehistoric Isolate	One pottery sherd	Jordan et al. 2008	X
P-37-030079	--	Prehistoric Isolate	Unifacial volcanic tool	Jordan et al. 2008	
P-37-030080	CA-SDI-19170	Prehistoric Site	One bedrock milling feature with one slick	Jordan et al. 2008	X
P-37-030081	CA-SDI-19171	Prehistoric Site	One bedrock milling feature with two slicks	Jordan et al. 2008	X
P-37-030082	CA-SDI-19172	Prehistoric Site	One bedrock milling feature with three slicks	Jordan et al. 2008	
P-37-030083	--	Prehistoric Isolate	One quartz flake	Jordan et al. 2008	X
P-37-030084	--	Prehistoric Isolate	One green metavolcanic flake	Jordan et al. 2008	X

Table 2 (cont.)
CULTURAL RESOURCES PREVIOUSLY RECORDED WITHIN THE PRESERVE

Primary Number	Trinomial Number	Age and Resource Type Present	Description	Preserve Report, Date	In Survey Area
P-37-030085	CA-SDI-19173	Prehistoric Site	Two bedrock milling features with four slicks and a possible mano	Jordan et al. 2008	
P-37-030086	CA-SDI-19174	Prehistoric Site	One bedrock milling feature with two slicks	Jordan et al. 2008	
P-37-030087	CA-SDI-19175	Prehistoric Site	One bedrock milling feature with one mortar	Jordan et al. 2008	
P-37-030088	CA-SDI-19176	Prehistoric Site	Lithic scatter with two metavolcanic flakes and one jasper flake	Jordan et al. 2008	
P-37-030089	CA-SDI-19177	Prehistoric Site	One bedrock milling feature with one slick	Jordan et al. 2008	
P-37-030090	CA-SDI-19178	Prehistoric Site	Two bedrock milling features with three slicks	Jordan et al. 2008	
P-37-030091	--	Prehistoric Isolate	Jasper flake	Jordan et al. 2008	
P-37-030092	CA-SDI-19179	Prehistoric Site	One bedrock milling feature with one slick	Jordan et al. 2008	
P-37-030093	CA-SDI-19180	Prehistoric Site	One bedrock milling feature with four slicks and one flake	Jordan et al. 2008	
P-37-030094	--	Prehistoric Isolate	One chopper made of LFV and one metavolcanic flake	Jordan et al. 2008	X
P-37-030095	CA-SDI-19181	Prehistoric Site	Sparse lithic scatter consisting on a jasper flake with cortex, a chunk of jasper, and three pieces of quartz	Jordan et al. 2008	X
P-37-030096	--	Prehistoric Isolate	One green metavolcanic flake	Jordan et al. 2008	
P-37-030097	CA-SDI-19182	Prehistoric Site	Lithic scatter with five volcanic flakes and five quartzite flakes	Jordan et al. 2008	
P-37-030098	--	Prehistoric Isolate	One quartz core	Jordan et al. 2008	
P-37-030099	CA-SDI-19183	Prehistoric Site	Lithic scatter with 20 flakes	Jordan et al. 2008	
P-37-030100	CA-SDI-19184	Prehistoric Site	One bedrock milling feature with one basin	Jordan et al. 2008	
P-37-030101	CA-SDI-19185	Prehistoric Site	One bedrock milling feature with one slick and one mano	Jordan et al. 2008	
P-37-030102	--	Prehistoric Isolate	One mano	Jordan et al. 2008	
P-37-030103	CA-SDI-19186	Prehistoric Site	Artifact scatter with over 20 flakes and three mano fragments	Jordan et al. 2008	

Table 2 (cont.)
CULTURAL RESOURCES PREVIOUSLY RECORDED WITHIN THE PRESERVE

Primary Number	Trinomial Number	Age and Resource Type Present	Description	Preserve Report, Date	In Survey Area
P-37-030104	--	Prehistoric Isolate	One LFV flake	Jordan et al. 2008	X
P-37-030105	CA-SDI-19187	Prehistoric Site	One bedrock milling feature with one slick	Jordan et al. 2008	
P-37-030106	--	Historic Site	An earthen dam or levee (1950)	Jordan et al. 2008	
P-37-030107	--	Historic Site	San Diego Aqueduct	Jordan et al. 2008	X
P-37-030197	--	Historic Site	Stowe Road, a wagon trail of at least 110 years of age	Jordan et al. 2008	X
P-37-030226	--	Prehistoric Site	Lithic scatter	Cox et al. 2019	
P-37-032646	CA-SDI-20691	Historic Site	Historic trash scatter	Ní Ghabhláin et al. 2012	
P-37-032647	--	Prehistoric Isolate	One metate fragment	Ní Ghabhláin et al. 2012	
P-37-033276	CA-SDI-20944	Prehistoric Site	Eight bedrock milling features and lithic scatter	Cox et al. 2019	
P-37-035977	--	Prehistoric Isolate	Two flakes	Cooley and Foglia 2016	
P-37-035978	--	Prehistoric Isolate	One flake	Cooley and Foglia 2016	
P-37-035979	--	Prehistoric Isolate	One porphyritic volcanic flake	Cooley and Foglia 2016	X
P-37-035980	--	Prehistoric Isolate	One flake	Cooley and Foglia 2016	X
P-37-035981	--	Prehistoric Isolate	Two flakes	Cooley and Foglia 2016	X
P-37-035982	--	Historic Isolate	One lamp	Cooley and Foglia 2016	
P-37-035983	--	Prehistoric Site	Sparse lithic artifact scatter consisting of a cobble core tool and two metavolcanic flakes	Cooley and Foglia 2016	X
P-37-035984	CA-SDI-21918	Prehistoric Site	Moderately dense lithic artifact scatter	Cooley and Foglia 2016	
P-37-035985	CA-SDI-21919	Prehistoric Site	One milling feature	Cooley and Foglia 2016	
P-37-035986	CA-SDI-21920	Prehistoric Site	One milling feature with two slicks and an extensive artifact scatter including more than 100 flakes, a chert biface fragment, and a volcanic scraper	Cooley and Foglia 2016	
P-37-035987	--	Prehistoric Site	Lithic artifact scatter consisting of 12 observed flakes	Cooley and Foglia 2016	

Table 2 (cont.)
CULTURAL RESOURCES PREVIOUSLY RECORDED WITHIN THE PRESERVE

Primary Number	Trinomial Number	Age and Resource Type Present	Description	Preserve Report, Date	In Survey Area
P-37-035988	--	Prehistoric Site	Lithic artifact scatter consisting of three observed flakes	Cooley and Foglia 2016	
P-37-035989	CA-SDI-21921	Prehistoric Site	One milling feature	Cooley and Foglia 2016	X
P-37-035990	CA-SDI-21922	Prehistoric Site	One bedrock milling feature with one slick and artifact scatter consisting one mano, two mano fragments, and two flakes	Cooley and Foglia 2016	X
P-37-035991	CA-SDI-21923	Historic Site	Homestead, rectangular stone foundations	Cooley and Foglia 2016	X
P-37-035992	--	Historic Site	Outbuilding, possibly related to site CA-SDI-21923	Cooley and Foglia 2016	X
P-37-035993	--	Historic Site	Historic road segment	Cooley and Foglia 2016	X
P-37-038409	--	Prehistoric Site	Two bedrock milling features each with one slick; no associated artifacts	Wilson 2019	
P-37-038410	--	Prehistoric Site	One bedrock milling feature with two basins and one slick; no associated artifacts	Wilson 2019	
P-37-040514	--	Historic Object	Survey monument marker	Cox et al. 2019	
P-37-040515	CA-SDI-23439	Prehistoric Site	Lithic scatter	Cox et al. 2019	
P-37-040516	--	Prehistoric Site	Bedrock milling feature with one slick	Cox et al. 2019	

1.3 APPLICABLE REGULATIONS

Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance. Resource importance is assigned to those cultural resources that possess exceptional values or qualities illustrating or interpreting the heritage of San Diego County in history, architecture, archaeology, engineering, and culture.

1.3.1 California Environmental Quality Act

CEQA, Public Resources Code (PRC) 21084.1, and California Code of Regulations (CCR) Title 14 Section 15064 discuss significant cultural resources as "historical resources," which are defined as:

- resource(s) listed or determined eligible by the State Historical Resources Commission for listing in the California Register of Historical Resources (CRHR) (14 CCR Section 15064.5[a][1])

- resource(s) either listed in the National Register of Historic Places (NRHP) or in a "local register of historical resources" or identified as significant in a historical resource survey meeting the

requirements of Section 5024.1(g) of the PRC, unless "the preponderance of evidence demonstrates that it is not historically or culturally significant" (14 CCR Section 15064.5[a][2])

- resources determined by the Lead Agency to meet the criteria for listing on the CRHR (14 CCR Section 15064.5[a][3])

For listing in the CRHR, a historical resource must be significant at the local, state, or national level under one or more of the following four criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;

2. It is associated with the lives of persons important to local, California, or national history;

3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; and

4. It has yielded or has the potential to yield information important to the prehistory or history of the local area, California, or the nation.

Under 14 CCR Section 15064.5(a)(4), a resource may also be considered a "historical resource" for the purposes of CEQA at the discretion of the lead agency.

All resources that are eligible for listing in the CRHR must have integrity, which is the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. In an archaeological deposit, integrity is assessed with reference to the preservation of material constituents and their culturally and historically meaningful spatial relationships. A resource must also be judged with reference to the particular criteria under which it is proposed for nomination.

According to CEQA (§15064.5b), a project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. CEQA defines a substantial adverse change as:

(1) Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.

(2) The significance of an historical resource is materially impaired when a project:

(a) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or

(b) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of

> the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
>
> (c) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

Section 15064.5 8 of CEQA applies to effects on archaeological sites and contains additional provisions regarding archaeological sites. If an archaeological site does not meet the criteria defined in subsection (a) as a historical resource but does meet the definition of a unique archaeological resource in Section 21083.2 of the PRC, the site shall be treated in accordance with the provisions of Section 21083.2. The time and cost limitations described in Public Resources Code Section 21083.2 (c-f) do not apply to surveys and site evaluation activities intended to determine whether the project location contains unique archaeological resources. If an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or EIR, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.

Section 15064.5 (d) & (e) contain additional provisions regarding human remains. Regarding Native American human remains, paragraph (d) provides the following:

> When an initial study identifies the existence of, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code §5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the Native American Heritage Commission.

1.3.2 San Diego County Local Register of Historical Resources (Local Register)

The County requires that resource importance be assessed not only at the state level as required by CEQA, but at the local level, as well. If a resource meets any one of the following criteria, as outlined in the Local Register, it will be considered an important resource.

1. Resources associated with events that have made a significant contribution to the broad patterns of California or San Diego County's history and cultural heritage;

2. Resources associated with the lives of persons important to the history of San Diego County or its communities;

3. Resources that embody the distinctive characteristics of a type, period, San Diego County region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

4. Resources that have yielded, or may be likely to yield, information important in prehistory or history.

1.3.3 Native American Heritage Values

Federal and state laws mandate that consideration be given to the concerns of contemporary Native Americans with regard to potentially ancestral human remains, associated funerary objects, and items of cultural patrimony. Consequently, an important element in assessing the significance of the study site has been to evaluate the likelihood that these classes of items are present in areas that would be affected by the proposed project.

Potentially relevant to prehistoric archaeological sites is the category termed Traditional Cultural Properties (TCP) in discussions of cultural resource management (CRM) performed under federal auspices. According to Patricia L. Parker and Thomas F. King (1998), "Traditional" in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice. The traditional cultural significance of a historic property, then, is significance derived from the role the property plays in a community's historically rooted beliefs, customs, and practices.

The County of San Diego Guidelines identify that cultural resources can also include TCPs, such as gathering areas, landmarks, and ethnographic locations in addition to archaeological districts (County of San Diego 2007). These guidelines incorporate both State and Federal definitions of TCPs. Generally, a TCP may consist of a single site, or group of associated archaeological sites (district or traditional cultural landscape), or an area of cultural/ethnographic importance.

The Traditional Tribal Cultural Places Bill of 2004 requires local governments to consult with Native American representatives during the project planning process, specifically before adopting or amending a General Plan or a Specific Plan, or when designating land as open space for the purpose of protecting Native American cultural places. The intent of this legislation is to encourage consultation and assist in the preservation of "Native American places of prehistoric, archaeological, cultural, spiritual, and ceremonial importance" (County of San Diego 2007). It further allows for tribal cultural places to be included in open space planning. State AB 52, in effect as of July 1, 2015, introduced the Tribal Cultural Resource (TCR) as a class of cultural resource and additional considerations relating to Native American consultation into CEQA. As a general concept, a TCR is similar to the federally-defined TCP, however, incorporates consideration of local and state significance and required mitigation under CEQA. A TCR may be considered significant if included in a local or state register of historical resources; or determined by the lead agency to be significant pursuant to criteria set forth in PRC §5024.1; or is a geographically defined cultural landscape that meets one or more of these criteria; or is a historical resource described in PRC §21084.1, a unique archaeological resource described in PRC §21083.2, or is a non-unique archaeological resource if it conforms with the above criteria.

2.0 GUIDELINES FOR DETERMINING SIGNIFICANCE

For the purposes of this technical report, any of the following will be considered a potentially significant environmental impact to cultural resources:

1. The project causes a substantial adverse change in the significance of a historical resource as defined in §15064.5 of the State CEQA Guidelines. This shall include the destruction, disturbance, or any alteration of characteristics or elements of a resource that cause it to be significant in a manner consistent with the Secretary of Interior Standards.

2. The project causes a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 of the State CEQA Guidelines. This shall include the destruction or disturbance of an important archaeological site or any portion of an important archaeological site that contains or has the potential to contain information important to history or prehistory.

3. The project disturbs any human remains, including those interred outside of formal cemeteries.

4. The project proposes activities or uses that would impact tribal cultural resources as defined under PRC §21074.

3.0 ANALYSIS OF PROJECT EFFECTS

3.1 METHODS

3.1.1 Survey Methods

In preparing this report, HELIX established a Study Area encompassing the entirety of the Preserve, and a Survey Area encompassing the proposed trail segments and a buffer around each segment within the Preserve boundary. The field survey focused on the approximately 108-acre Public Access Plan Survey Area, which covers approximately 29 miles of existing and proposed trails and roads that are situated throughout the approximately 2,847-acre Preserve (see Figures 3 and 4). Field surveys were conducted by use of intensive pedestrian methods with buffers of 10 feet on either side of the trail centerline for existing formal and informal trails and access roads. Newly proposed trails were also surveyed by intensive pedestrian methods with a buffer of up to 50 feet on either side of the trail centerline to account for potential revisions to the proposed trail route. The trail systems were surveyed for cultural resources between March 25 and April 23, 2019 by HELIX archaeological field director Julie Roy with the assistance of HELIX archaeologist Allana O'Conner, and Kumeyaay Native American monitors Shuuluk Linton and Gabe Kitchen of Red Tail Environmental.

The Survey Area was surveyed in parallel transects spaced approximately 3 to 5 meters apart within formal and informal trails. Within the areas proposed for new trails, transects were spaced approximately 10 meters apart. All bedrock outcrops within the Survey Area were inspected for evidence of milling. All of the mapped locations of the previously recorded resources were also revisited during the survey. The cultural resources have been recorded or updated on appropriate DPR 523 forms.

The completed DPR site forms will be submitted to the South Coastal Information Center (SCIC) and are included as Confidential Appendix B.

The Preserve has been subjected to past human disturbances associated with historic roads, ranches, and associated historic activities, as well as modern activities, such as the Sunrise Powerlink transmission line, which travels across the northern portion of the Preserve, and utility distribution lines. Fire roads and trails have modified the landscape, and access and maintenance roads are regularly maintained by the County and/or San Diego Gas & Electric. Informal trails, , natural erosion, and deterioration have also disturbed the original state of portions of the Preserve.

3.1.2 Test and Evaluation Methods

During the course of the study, it was determined that four cultural resources identified within the Survey Area may be subject to unavoidable impacts by the implementation of the Public Access Plan. The four resources consist of two prehistoric archaeological sites, P-37-012852 (CA-SDI-12852) and P-37-035983, and two historic roads, P-37-012821 (CA-SDI-12821) and P-37-035993.

The two historic roads consist of the Foster Truck Trail (CA-SDI-12821), which comprises the Calle de Rob maintenance road, and a historic dirt road P-37-035993, which comprises portions of the Northern Interior Loop and Wu trail. The two roads were evaluated for significance under CEQA and County Guidelines by additional research and documentation; the results of which are discussed in Sections 3.3 and 4.1 below.

The two prehistoric archaeological sites are both lithic scatters; P-37-035983 is located along the Northern Interior Loop, which is a proposed trail on existing disturbed area, and CA-SDI-12852 is located along a potential future trail connection in the northernmost portion of the Preserve that would connect the Northern Interior Loop trail to Scripps Poway Parkway and SR 67. Due to avoidance likely being infeasible for these resource locations and because the resources consisted of artifact scatters, subsurface testing was required to assess their eligibility for listing in the CRHR and the Local Register.

The two lithic scatters were subjected to a testing program conducted on May 20 and 21, 2020. Testing was conducted by Julie Roy, Mary Villalobos, and Kent Smolik of HELIX, and Kumeyaay Native American monitor Gabe Kitchen of Red Tail Environmental. A total of 23 shovel test pits (STPs) were excavated to determine the subsurface content of the sites; the circular STPs measured 30 centimeters in diameter and were excavated to a minimum depth of 30 centimeters. The soil from the STPs was screened through 1/8-inch mesh screens. Standard STP forms were completed noting soil conditions, artifact and ecofact recovery, and other relevant information.

Prior to the excavations at CA-SDI-12852, a surface survey consisting of an intensive (2-meter-interval transects) walk-over occurred. All observed surface artifacts were flagged, documented, and mapped; no surface material was collected during the investigation. Twenty STPs were excavated at the location of CA-SDI-12852, with nine of the STPs placed within the Survey Area and the remaining placed within the site area in proximity to where artifacts were identified. At site P-37-035983, three STPs were excavated. No subsurface artifacts or ecofacts were recovered from any of the STPs; as such, no artifacts or ecofacts were collected during the testing program.

The four cultural resources evaluated for significance under CEQA and County Guidelines have been updated on appropriate DPR 523 forms. The completed DPR site forms will be submitted to the SCIC and are included as Confidential Appendix B.

3.2 NATIVE AMERICAN PARTICIPATION/CONSULTATION

The NAHC was contacted on June 4, 2019 for a SLF search and a list of Native American contacts. A response dated June 19, 2019 was received from the NAHC indicating that the results of the SLF search were returned with positive results. The NAHC indicated that the Barona Group of the Capitan Grande (Barona)and the Kumeyaay Cultural Repatriation Committee (KCRC) should be contacted for more information. On September 27, 2019, DPR staff conducted a Sacred Lands consultation with Clint Linton, representing the KCRC, who indicated that no resource-specific issues are known to KCRC for the Preserve, but indicated the area is culturally sensitive. A letter was sent on October 15, 2019 to Chairperson Edwin Romero, the Barona representative identified by the NAHC. A phone call to the Barona Tribal Government office was placed by HELIX Senior Archaeologist Stacie Wilson on October 25, 2019; a voicemail was left describing the reason for the call. No response to the letter or voicemail has been received to date. Native American correspondence is included as Confidential Appendix C.

Tribal consultation under AB 52 was initiated by County staff in February 2020 with the following tribes: Barona Band of Mission Indians (Barona), Campo Band of Mission Indians, Iipay Nation of Santa Ysabel (Santa Ysabel), Jamul Indian Village (Jamul), Kwaaymii Laguna Band, Manzanita Band of Kumeyaay Nation, San Pasqual Band of Mission Indians (San Pasqual), Sycuan Band of the Kumeyaay Nation, and Viejas Band of Kumeyaay Indians (Viejas). Barona, Jamul, San Pasqual, Santa Ysabel, and Viejas responded to the consultation invitation and have requested a copy of this cultural resources technical report; the draft version of which was provided by DPR. Barona expressed interest in the watercourses located within the Preserve and inquired whether trails would be situated near them; while existing trails do travel through water features, the implementation of the Public Access Plan would not impact any watercourses. The Preserve area is sensitive, with known cultural resources. Jamul inquired about clearing on the proposed trails during the implementation of the Public Access Plan and requested to receive a copy of the CEQA document. San Pasqual indicated that the Preserve is within the boundaries of the territory that the Tribe considers its Traditional Use Area and requested to be kept in the information loop as the project progresses. Viejas requested that a Kumeyaay Cultural Monitor be present for ground-disturbing activities, in order to inform them of any new developments, such as inadvertent discovery of cultural artifacts, cremation sites, or human remains.

Consultation remains ongoing with the tribes. The results of consultation will also be provided in the CEQA document for the project. Correspondence between County staff, the NAHC, and tribal contacts is included in Confidential Appendix C.

No TCRs are known to exist within the Preserve. During the current survey, no artifacts or remains were identified or recovered within the project Survey Area that could be reasonably associated with such practices. However, all areas of past cultural use are of cultural importance to the Native American community.

Shuuluk Linton and Gabe Kitchen, Kumeyaay Native American monitors from Red Tail Environmental, participated in the field survey and Mr. Kitchen was present during the testing and evaluation program conducted at sites CA-SDI-12852 and P-37-035983.

3.3 RESULTS

A total of 59 cultural resources have been identified within the current Public Access Plan Survey Area; 43 were previously recorded and 16 are newly documented (Figure 6, *Cultural Resources within Project*

Survey Area [Confidential Appendices, bound separately]). The 43 previously recorded resources in the Survey Area consist of 10 historic-period buildings, structures, or archaeological sites; two multicomponent archaeological sites; 20 prehistoric archaeological sites; and 11 prehistoric isolates. The 20 prehistoric sites include bedrock milling features, some with associated artifacts, and sites described as habitation sites, temporary camps, artifact scatters, and lithic artifact scatters, which include artifacts such as flaked stone, ground stone, Tizon Brown Ware pottery, and in some cases, midden soil. Ten of the prehistoric sites contain one or more bedrock milling features. The prehistoric isolates consist of pottery sherds, flakes, scrapers, cores, manos, and metates. The two multicomponent resources consist of prehistoric artifact scatters, one located at the same location as the Goodan Ranch complex, and the other at the remnants of a concrete dam. The 10 historic resources include a segment the First San Diego Aqueduct; a stacked rock dam; cement cistern/guzzlers; a target shooting range; segments of the Foster Truck Trail and Stowe Road; and the archaeological remnants of the Stowe Post Office and several homesteads, including the Goodan Ranch complex, the Fischer homestead, and the Eckhardt homestead. Of the 16 resources newly identified during the current study, five are prehistoric archaeological sites, 10 are prehistoric isolates, and one is a historic archaeological isolate. Each of the resources are described below.

3.3.1 Prehistoric Archaeological Sites

3.3.1.1 P-37-000119 (CA-SDI-119)

Originally recorded by Treganza (1950) as consisting of core tools and a blade, CA-SDI-119 was updated by Franklin (1983a) as a small seasonal encampment consisting of at least 30 flakes, 10 scraping tools, four manos, two chopping tools, one graver, one chalcedony core, and one quartzite core. The site was visited again by James et al. (1993) and updated as a moderate density lithic and tool scatter consisting of at least 50 volcanic flakes and one mano fragment. During the 2008 survey of the Preserve (Jordan et al. 2008), only five small volcanic flakes and one possible mano fragment could be identified at the location mapped by Franklin (1983a) and James et al. (1993). Based upon a review of the site forms and the descriptive locational information for the resource, Jordan et al. (2008) hypothesized that the location of site CA-SDI-119 as recorded by Treganza (1950) is further upstream, at the location of site CA-SD-19186 that was documented during the 2008 survey of the Preserve, as the original site form by Treganza (1950) describes the site location as “1/4 mile upstream from Stowe” (CA-SDI- 9707).

A portion of CA-SDI-119, as mapped by Franklin (1983a) and James et al. (1993), was reidentified during the current survey within the Survey Area; numerous artifacts were located within the within the formal trail and adjacent to the edge of the trail. Artifacts include flakes of metavolcanic and quartz material, a mano fragment, one flake tool, and two fragments of crystal quartz. It is likely that additional artifacts may be found outside of the Survey Area limits on either side of the trail. Visibility within the trail route was 100 percent; however, on either side of the trail vegetation was thick with dense low growing ground cover and sparse sage scrub vegetation, dropping visibility to less than 10 percent.

3.3.1.2 P-37-009704 (CA-SDI-9704)

Recorded by Franklin (1983b) as 12 waste flakes from the reduction of a single basalt cobble. During the 2008 survey of the Preserve, three flakes were reidentified in the previously recorded location on the west side of the access road. In addition, three flakes were observed on the east side of the road, thereby expanding the site boundary. All of the flakes are of the same lithic material, a dark reddish volcanic rock derived from cobble reduction (Jordan et al. 2008).

The site was reidentified during the current survey, but no artifacts were observed within the Survey Area boundary. Outside of the access road, visibility was less than 20 percent due to dense sage scrub and chaparral vegetation.

3.3.1.3 P-37-009706 (CA-SDI-9706)

This site was originally recorded as two bedrock milling features with one milling slick each, and an associated lithic scatter of quartzite flakes and debitage (Franklin 1983c). The 2008 survey of the Preserve (Jordan et al. 2008) reidentified the two bedrock milling features, but the lithic scatter could not be located (visibility, however, was only approximately 10 percent). The 2008 survey also indicated that the resource appeared to have been mis-plotted on the location map of the 1983 site record, with the actual location approximately 100 meters to the west of the originally plotted location.

This resource was reidentified in the Survey Area during the current survey and both milling features were found to be in good condition. One feature is located within a cluster of exposed boulders and the other to the west in tall meadow grass. No artifacts were observed during the current visit. Visibility was low, approximately 15 percent, due to low ground cover, tall weeds and grass, and sage scrub and chaparral vegetation in the area.

3.3.1.4 P-37-012852 (CA-SDI-12852)

This resource was previously recorded in 1992 as a lithic scatter and quartz quarry located on a saddle between a knoll and a ridge line (Pigniolo 1992). The site was noted as containing one volcanic core, one chopper, and 16 flakes, mostly of quartz material. During the 2016 survey of the Preserve, the site was revisited and was generally observed to be as originally described, but with two additional volcanic tertiary flakes observed, south of the previously recorded site boundary. It was also observed that the construction of Scripps Poway Parkway, subsequent to the original 1992 survey, has impacted the site. Other disturbances noted include modern debris, an informal trail, and the installation of a California Department of Transportation chain link fence.

During the survey of the Survey Area, the resource was reidentified in the Survey Area. Numerous flakes were found adjacent to or within an existing informal trail. A hammerstone, approximately six small pieces of shatter, and a few flakes were found within 3 meters south of the trail. Additional artifacts were observed approximately 10 meters south of the trail; the artifacts were five large quartz sub-angular cobbles (possible cores), measuring approximately 15 centimeters to 25 centimeters in length. The possible cores were mostly embedded into the ground, although the flakes and shatter were mainly on the surface. An intensive survey of the area was initiated to locate the source of the quartz material. However, there were no signs of a quarry or vein in the area that would have offered such large chunks of good quality quartz. Therefore, the quartz material was likely brought in from somewhere else and was then worked at this location.

As discussed above, site CA-SDI-12852 was included in the testing and evaluation program that included an intensive survey of the site (at 2-meter-interval transects) and the excavation of 20 STPs. Nine of the STPs were placed within the Survey Area and another 11 STPs were placed in proximity to identified surface artifacts. All but one of the STPs were excavated to between 40 and 60 centimeters; the one STP terminated above that was due to the presence of bedrock at 20 centimeters. The soils observed consisted of a silty loam intermixed with roots within the first 10 to 20 centimeters, then transitioned to medium to dark orange-brown sandy silt with fractured angular rock and decomposing granitic gravel and rock.

No subsurface artifacts were recovered in any of the STPs. The intensive surface survey identified quartz shatter and waste material, a multi-purpose tool, core fragments, flakes, and a possible notched tool. All of the identified artifacts were quartz material with the exception of two: a quartzite flake and a metavolcanic multi-purpose tool (core/hammerstone/borer). The artifacts were recorded, photographed, and left in place. Quartz shatter that could not be identified as cultural was not photographed or recorded.

3.3.1.5 P-37-013221 (CA-SDI-13221)

This site was originally recorded by Briggs and James (1993a) as a lithic scatter consisting of one volcanic flake, five quartzite flakes, one unifacial core, one unifacial core tool, and one unifacially retouched flake. The location was subsequently visited by Bischoff and Manley (1995), and the site was not identified. During the 2008 survey of the Preserve, the lithic scatter was also not reidentified, and It appeared that the construction of the multi-use trail at the location may have completely disturbed the integrity of the of the site (Jordan et. al. 2008).

As originally recorded, the site appears to be located primarily outside of the Preserve boundaries (Briggs and James (1993a). During the current survey, no artifacts were observed within the portion of the Survey Area situated along the site boundary; however, one bifacial mano was identified within the Survey Area 20 to 30 meters northeast of the site, embedded into the west side of the existing West Trail route. The trail route in this area has deeply eroded ruts, due to the heavy rains; cobbles are predominant and have been washed out of the trail and the cut bank on the west shoulder. Vegetation consisted of chaparral and sage scrub communities with scrub oak, sumac, buckwheat, and native and non-native flowering plants and weeds. Visibility within the trail was approximately 70 percent, but vegetation on either side of the trail was dense.

3.3.1.6 P-37-013223 (CA-SDI-13223)

This site was originally recorded by Briggs and James (1993b) as a sparse lithic scatter consisting of one core/domed scraper, one unifacial quartzite core with adjacent angular waste, one quartzite chopper, and one hammerstone. During the 2008 survey of the Preserve, the lithic scatter was reidentified (Jordan et. al. 2008). However, it was noted that the resource was mis-plotted on the location map of the 1993 site record and was determined to actually be located approximately 100 meters to the northwest.

This resource was not reidentified within the Survey Area during the current survey; however, it is not known if any of the previously identified artifacts were observed within the Survey Area or were all located further away from the existing formal trail route. Additionally, while visibility was approximately 90 percent along the trail, vegetation on either side of the trail was dense, limiting visibility to less than 10 percent beyond the trail footprint.

3.3.1.7 P-37- 024271

This resource was originally recorded by Cooley (2001b) as two volcanic flakes. During the 2008 Preserve survey, one metavolcanic flake and one unidirectional core were identified (Jordan et al. 2008). During the current survey, this resource was not reidentified. The vegetation was thick along the sides of the existing formal trail route, causing the ground visibility to be less than five percent.

3.3.1.8 P-37-024959 (CA-SDI-16515)

Originally recorded by Underwood et al. (2003) as a lithic scatter consisting of five cores, five fragments of ground stone, three manos, one flake-based chopper, and debitage. The site was revisited by "Friends of Goodan Ranch" (Crafts 2004a), and one flake and some angular waste were noted. During the 2008 survey of the Preserve, the lithic and tool scatter was reidentified, including one mano, one core tool, several fragments of ground stone, and several flakes (Jordan et al. 2008). Thick vegetation, however, did not allow for a complete reidentification of the lithic scatter. It was also noted that this resource is located in proximity to the recorded location of site CA-SDI-13221, and, therefore, the two resources may be associated.

During the current survey, no artifacts were observed within the portion of the Survey Area situated along the site boundary. Vegetation, however, was dense with low ground cover, causing visibility to be approximately 10 percent outside of the existing access road corridor.

3.3.1.9 P-37-024960 (CA-SDI-16516)

This site was originally recorded by Underwood and Fitzsimons (2003a) as a lithic scatter consisting of one core tool, one core, and two metavolcanic flakes. The site was revisited by "Friends of Goodan Ranch" (Crafts 2004b), and one exhausted core, one mano fragment, and one scraper were identified. During the 2008 survey of the Preserve, the lithic scatter was reidentified as one mano, one metavolcanic scraper, one volcanic flake, and one quartzite flake. Thick vegetation, however, did not allow for a complete examination of the surface within the previously recorded site area.

During the current survey, the site was reidentified within the Survey Area. One mano fragment was located within the east track of the access road. The granitic mano fragment is bifacial and battered on the side margins. No other artifacts were observed on or adjacent to the road. The vegetation on either side of the road is dense low ground cover. Ground visibility was approximately 10 percent, with rodent hole extrusion dirt piles allowing an examination of subsurface soils.

3.3.1.10 P-37-024962 (CA-SDI-16518)

This resource, located east of the Goodan Ranch complex along the east side of the Sycamore Canyon drainage, was originally recorded by Underwood and Fitzsimons (2003c) as a lithic scatter consisting of scrapers, ground stone artifacts, choppers, a polishing stone, a spokeshave, and a core. During the 2008 survey of the Preserve, the site was observed to include several of the same artifact types as recorded in 2003 and at least six flakes (metavolcanic and quartzite). The occurrence of these materials was observed during the 2008 survey to extend over a larger area than originally noted (Jordan et al. 2008).

During the current survey, several artifacts were observed within the Survey Area, on and next to the existing formal trail. One granitic, oblong-shaped mano, a quartzite flake, a metavolcanic flake tool, and a unifacially flaked quartzite core tool with step fracturing on one side were observed within the previously documented boundary of the site. The trail route and Survey Area along the site have been highly impacted by erosion, creating numerous ruts along the trail.

3.3.1.11 P-37-024967

This resource was originally recorded by Underwood and Fitzsimons (2003d) as a metavolcanic scraper. During the 2008 Preserve survey, the scraper was not reidentified, possibly due to dense grasses in the

area (Jordan et al. 2008). However, the 2008 survey located a sparse, prehistoric lithic tool and flake scatter, including two volcanic flakes, and a volcanic cobble hammerstone less than 20 meters to the south of the previously recorded scraper location.

This resource was not reidentified within the Survey Area during the current survey. The area was wet and had dark soils within the trail; if artifacts were present within the trail corridor during the time of the 2008 recordation, they may now be buried under the soils due to subsequent alluvial deposition from the nearby drainage.

3.3.1.12 P-37-025793 (CA-SDI-17151)

This site was originally recorded by "Friends of Goodan Ranch" (Crafts et al. 2004a) as a temporary camp consisting of six bedrock milling features with at least 16 milling slicks and basins, and three associated pottery sherds. During the 2008 survey of the Preserve, the six bedrock milling features and two pottery sherds were reidentified. In addition, a lithic scatter consisting of ground stone artifacts, a core, and flakes was observed. It was also noted that the resource was mis-plotted on the location map of the 2004 site record and is actually located approximately 150 meters to the southwest (Jordan et al. 2008).

During the current survey, the site was reidentified within the Survey Area. Features and artifacts located within the Survey Area include one previously recorded milling feature, one newly identified milling feature, a metate fragment, a mano, numerous metavolcanic flakes, and one quartzite flake. The newly documented milling feature is located 30 meters to the south of the previously documented site boundary and contains one milling slick. The artifacts were scattered along both sides of the existing formal trail through the Survey Area and also extended south beyond the previously recorded site boundary. Vegetation is dense on both the sides of the trail route, limiting visibility.

3.3.1.13 P-37-025794 (CA-SDI-17152)

This site was originally recorded by "Friends of Goodan Ranch" (Crafts et al. 2004b) as a site containing four bedrock milling features with at least six milling slicks, and three manos. The milling features originally noted were reidentified during the 2008 survey of the Preserve, along with additional milling features for a total of eight bedrock milling features at the site (Jordan et al. 2008). The features contain a total of seven mortar/basins, 23 basins, and at least 50 milling slicks. Also observed was an associated lithic and ceramic scatter including at least 15 pottery sherds, at least 25 Santiago Peak volcanic, LFV, jasper, metavolcanic, quartz and quartzite flakes; a metate with grinding on both sides, and a quartz projectile point base fragment (Jordan et al. 2008). The 2008 survey indicated that the resource was mis-plotted on the location map of the 2004 site record and is actually located approximately 100 meters to the south of the 2004 plotted location.

During the current survey, the site was reidentified within the Survey Area. A green metavolcanic flake, a metavolcanic secondary flake, three LFV flakes, one quartzite flake, and a granitic mano fragment were identified within the existing formal trail route through the Survey Area, as well as extending north beyond the previously recorded site boundary. In addition, numerous bedrock milling features, a quartzite preform, and numerous flakes and pottery sherds were observed outside of the Survey Area within the previously recorded site boundary. The survey effort within portions of the Survey Area was limited due the presence of dense poison oak.

3.3.1.14 P-37-025799 (CA-SDI-17155)

This site was originally recorded by "Friends of Goodan Ranch" as a bedrock milling feature with one milling slick and one basin (Crafts et al. 2004f). During the 2008 survey of the Preserve, this bedrock milling feature was reidentified, and an additional bedrock milling feature with one milling slick was identified, located approximately five meters west of the original feature (Jordan et al. 2008).

During the current survey, the resource was reidentified within and adjacent to the Survey Area along an existing formal trail. Both milling features were reidentified, and a third milling feature with one milling slick was observed adjacent to the milling feature documented in 2008. Also observed were a mano fragment, one LFV core, and a quartzite flake.

3.3.1.15 P-37-030080 (CA-SDI-19170)

This resource was recorded during the 2008 survey of the Preserve (Jordan et al. 2008) and consists of a bedrock milling feature with one milling slick. No surface artifacts were observed in association with this milling feature.

During the current survey, the resource was reidentified within the eastern margin of the Survey Area. The milling slick element is in good to fair condition with high spots around the well-defined interior of the grinding surface. Ground visibility was approximately 10 percent, with dense ground cover and leaf duff. No artifacts were observed in the area of the feature.

3.3.1.16 P-37-030081 (CA-SDI-19171)

This resource was recorded during the 2008 survey of the Preserve (Jordan et al. 2008) and consists of a bedrock milling feature containing two milling slicks. No surface artifacts were observed in association with this milling feature.

During the current survey, the bedrock milling feature was reidentified within the Survey Area. The feature is a ground level outcrop in moderately thick, ankle high grass on a gradual east-facing slope of a large meadow. Except for substantial weathering and thick lichen growth on some areas of the outcrop, the feature appears to remain as originally recorded.

3.3.1.17 P-37-030084

This resource was originally recorded during the 2008 survey of the Preserve (Jordan et al. 2008) as an isolated metavolcanic cobble core/tool with cortex remaining on one side and several flake scars on the other.

While the cobble core/tool was not reidentified within the Survey Area during the current survey, two flaking stations, found approximately 16 meters northeast of the recorded location of the isolate, were documented, expanding the site boundary. The flaking stations are located on a knoll top within a 10-meter by 10-meter area. Both flaking stations consist of green metavolcanic material; one flaking station consists of seven flakes with one flake having a possibly modified or utilized edge, the other station consists of a core, a core fragment, at least eight definitive flakes, and approximately 10 pieces of shatter. A hammerstone was located approximately 10 meters east of the flaking stations.

3.3.1.18 P-37-030095 (CA-SDI-19181)

This resource was recorded during the 2008 survey of the Preserve (Jordan et al. 2008) along the top of a ridge between the Beeler Canyon and the Fischer Creek. The resource consists of a sparse lithic scatter that includes one jasper cortex flake, a chunk of jasper, and three pieces of white quartz debitage.

The resource was reidentified within the Survey Area during the current survey. All previously recorded artifacts were reidentified except for the jasper cortical flake. Visibility was good, with open areas of sandy decomposing granite on the ridgetop.

3.3.1.19 P-37-035980

This prehistoric isolate was originally recorded during the 2016 survey of the Preserve as two tertiary flakes, one of volcanic and the other of metavolcanic lithic material (Cooley and Foglia 2016).

During the current survey, the flakes were reidentified in the Survey Area, adjacent to an existing trail. In addition, a bedrock milling feature with one milling slick, a quartzite flaked stone tool, and a metavolcanic flaked stone tool were also found and recorded in proximity to the previously recorded artifacts.

3.3.1.20 P-37-035983

This resource was originally recorded during the 2016 survey of the Preserve as a small lithic scatter consisting of one core tool and two metavolcanic flakes located at the base of the south slope of a small knoll in a relatively open, low sloping meadow (Cooley and Foglia 2016). The core tool was LFV material with battering present at one end. A possible rock feature consisting of approximately 19 locally gathered stones stacked one course high was also observed, but it was noted as likely modern in age.

During the survey of the Survey Area, one metavolcanic flake was reidentified within the original site boundary. The other artifacts and the rock feature were not reidentified; however, they appear to have been documented outside of the Survey Area.

As discussed above, site P-37-035983 was included in the testing and evaluation program that included an intensive survey of the site (at 2-meter-interval transects) and the excavation of three STPs. Two of the STPs were placed on either side of the existing trail, and the third was placed in the trail route. The soils observed consisted of compact orange-brown silty sands with angular rock and decomposing granitic gravel and rock.

Likely due to the very dense brush and grasses present within the site boundary, no surface artifacts were identified during the testing program. In addition, no subsurface artifacts were recovered from the STPs.

3.3.1.21 P-37-035989 (CA-SDI-21921)

This resource is a bedrock milling feature with three milling slicks, located at the southeast end of an open meadow. It was recorded during the 2016 survey of the Preserve (Cooley and Foglia 2016). It appears that the area may be used as a resting or dumping place. There is a laurel sumac bush east of the feature and a large coast live oak tree to the west. No associated artifacts were identified in the vicinity of the feature.

During the current survey, the original bedrock milling feature was reidentified to the east of the Survey Area. An additional milling feature with one slick was identified on the west side of the trail under the large oak tree noted during the 2016 survey. The slick is located on the south end of a large outcrop under a sumac tree. The outcrop is highly exfoliated and weathered, but the slick is in good condition.

3.3.1.22 P-37-035990 (CA-SDI-21922)

This resource was recorded during the 2016 survey of the Preserve as a bedrock milling feature and five associated artifacts (Cooley and Foglia 2016). The site is located at the northeast base of a knoll surrounded by dense chaparral vegetation. All five artifacts were identified within a historic dirt road (P-37-035993) that runs through the site. The artifacts include one bifacial mano, two bifacial mano fragments and two debitage flakes; they may have washed downslope or may have been exposed by the road construction.

During the current survey, the bedrock milling feature and all five associated artifacts were reidentified as originally recorded. An additional bedrock milling feature was identified on the east side of the road. This feature consists of one basin and six slicks on a large, highly exfoliated outcrop. The milling elements range from very good to poor condition. A previously unrecorded metavolcanic mano fragment was found in a crack in the bedrock at the newly recorded milling feature. Several of the artifacts are situated within the Survey Area, while both bedrock milling features are located outside of the Survey Area.

3.3.1.23 P-37-038957

This site was identified during the current survey and consists of a bedrock milling feature, a mano, and a sherd of Tizon Brown Ware pottery. The site is located within and adjacent to the existing formal trail. The milling feature is located on the west side of the trail and consists of one milling slick with a slight basin, and two pecked areas. The mano is granitic and bifacially utilized.

3.3.1.24 P-37-038959

This site was identified in the Survey Area during the current survey and consists of a lithic scatter situated along an existing informal trail. Artifacts include a red rhyolite core and green metavolcanic cores, tools, and flakes. A horseshoe of unknown age was observed within the site boundaries. Visibility was approximately 75 percent, with the site being located on a cobble terrace with light brown silty sand and decomposing granitic soils. Site P-37-038960 is located within 100 meters on the same ridgeline.

3.3.1.25 P-37-038960

This site was identified in the Survey Area during the current survey and consists of a lithic scatter situated on both sides of an existing informal trail, on a southwest-facing finger of a slope. The resource contains three metavolcanic cores, a quartzite scraper/tool, a quartzite multi-use tool, and at least five metavolcanic flakes. Visibility was approximately 75 percent; the site is situated on a cobble outcrop with a light brown silty sand and decomposing granitic soil matrix. Site P-37-038959 is located within 100 meters on the same ridgeline.

3.3.1.26 P-37-038961

This site was identified in the Survey Area during the current survey and consists of a lithic scatter situated along an existing formal trail. The resource contains three granitic manos, one utilized flake tool, and one flake. The flakes are of a metavolcanic material. Visibility within the trail route was 100 percent; however, on either side of the trail, vegetation was thick with dense low growing ground cover and sparse sage scrub vegetation, dropping visibility to less than 10 percent.

3.3.2 Prehistoric Isolates

3.3.2.1 P-37-024963

This resource was originally recorded in 2003 by Underwood et al. (Jordan et al. 2008) as a granite cobble that was probably used for smoothing or burnishing. During the 2008 survey of the Preserve, this isolated cobble tool was not reidentified, possibly due to obscuring vegetation in the area (Jordan et al. 2008). The isolate was also not reidentified during the current survey.

3.3.2.2 P-37-024964

This resource was originally recorded in 2003 by Underwood et al. (Jordan et al. 2008) as a large quartzite flake. During the 2008 survey of the Preserve, this isolate cobble tool was not reidentified, possibly due to obscuring vegetation in the area (Jordan et al. 2008). During the current survey, the flake was not reidentified.

3.3.2.3 P-37-024969

This resource was originally recorded in 2003 by Underwood et al. (Jordan et al. 2008) as a granitic mano. During the 2008 survey of the Preserve, this artifact was not reidentified, possibly due to poor ground surface visibility caused by thick vegetation in the area (Jordan et al. 2008). The resource could also not be reidentified during the current survey. Vegetation on either side of the existing access road is dense chaparral and sage scrub, with native and non-native weeds and grasses. Ground visibility in the area is less than five percent, except for the access road route.

3.3.2.4 P-37-030078

This resource was originally recorded during the 2008 survey of the Preserve as a Brown Ware pottery sherd on the slope of a southwest-facing knoll overlooking Sycamore Creek to the west (Jordan et al. 2008). It was suggested that its location may indicate the presence of a prehistoric trail system along a similar route as the existing formal trail. This resource could not be reidentified during the current survey.

3.3.2.5 P-37-030083

This prehistoric resource was recorded during the 2008 survey of the Preserve as a white, transparent quartz flake situated on the east slope of a ridge overlooking an unnamed drainage to the east (Jordan et al. 2008).

This resource as originally described was not reidentified within the Survey Area during the current survey. However, one quartz flake and numerous pieces of non-diagnostic quartz shatter were located

within the Survey Area in the same locale. The shatter, however, cannot be definitely identified as cultural in origin, due to the presence of natural quartz debris observed around the area.

3.3.2.6 P-37-030094

This resource was originally recorded during the 2008 survey of the Preserve as an isolated chopper tool of LFV, with a metavolcanic flake located approximately 20 meters to the north of the chopper tool (Jordan et al. 2008).

This isolate was not reidentified in the Survey Area during the current survey. The recorded location of the resource is on a steep slope and surrounded by dense vegetation; as such, ground visibility in the area was limited, varying between 10 and 40 percent.

3.3.2.7 P-37-030104

This resource was originally recorded during the 2008 survey of the Preserve as a LFV flake situated on the slope of a southwest-facing knoll overlooking Sycamore Creek (Jordan et al. 2008). The resource was not reidentified during the current survey.

3.3.2.8 P-37-035979

This resource was originally recorded during the 2016 survey of the Preserve as a volcanic flake (Cooley and Foglia 2016). The resource could not be reidentified within the Survey Area during the current survey, possibly due to a thick growth of ground cover vegetation resulting in visibility of less than five percent.

3.3.2.9 P-37-035981

This resource was originally recorded during the 2016 survey of the Preserve as a tertiary flake of LFV material observed within a shoulder of a graded historic dirt road (P-37-035993)/existing trail. The resource could not be reidentified during the current survey.

3.3.2.10 P-37-038946

This isolated resource was identified in the Survey Area during the current survey and consists of a mano located along existing formal trail. While the mano is highly deteriorated (weathered) on one side, the other side is in good condition, with the grinding surface intact. The artifact is of a porphyritic volcanic material.

3.3.2.11 P-37-038947

This isolated resource was identified in the Survey Area during the current survey and consists of a mano located along an existing formal trail approximately 60 meters south of site CA-SDI-16518. The mano is granitic, round in shape, bifacially utilized, and is fire-affected.

3.3.2.12 P-37-038948

This isolated resource was identified in the Survey Area during the current survey and consists of a granitic mano fragment located along an existing formal trail. The resource was found in a water-eroded rut along the trail approximately 55 meters south of site CA-SDI-17151.

3.3.2.13 P-37-038949

This resource was identified in the Survey Area during the current survey and consists of an isolated, fire affected, mano fragment. The mano fragment is located on the west bank of an ephemeral drainage, south of site CA-SDI-16515.

3.3.2.14 P-37-038950

This resource was identified in the Survey Area during the current survey, on a knoll top on the east side of a narrow ridgeline along an existing formal trail. The resource consists of a core/scraper and a core. Both artifacts are of a green porphyritic metavolcanic material. The core is unidirectionally flaked with cortex observed and with possible edge modification. The core/scraper has multidirectional flake removals with cortex observed, and is edge modified. Cobbles are common in the resource vicinity and are eroding out of the ground. There is an old fire break/road berm between the artifacts and the trail.

3.3.2.15 P-37-038951

This resource was identified adjacent to the Survey Area during the current survey effort. The resource is located along an existing informal trail at the edge of an ephemeral drainage and consists of an isolated green porphyritic metavolcanic flake tool. Soils were brown silty sand, moderately compacted with low ground cover on either side of the existing informal trail.

3.3.2.16 P-37-038952

This resource was identified in the Survey Area during the current survey. The resource is an isolated LFV, primary flake located on an east facing slope above an ephemeral drainage. The soil was orange brown sand with decomposing granite; visibility was less than 30 percent due to dense brush.

3.3.2.17 P-37-038953

This resource was identified in the Survey Area during the current survey, along a proposed trail route. The resource consists of a metavolcanic flake and a quartzite hammerstone fragment, located along an east-facing slope at the top of a knoll. The soil was orange brown sand with decomposing granite; visibility was less than 30 percent due to dense brush.

3.3.2.18 P-37-038954

This resource was identified in the Survey Area during the current survey, within an existing informal trail. The resource consists of an isolated metavolcanic flake. The soil was medium brown silty sand with decomposing granite. Visibility was close to 85 percent along the trail with some ruts present from water erosion; however, off the trail visibility was less than 20 percent due to dense brush.

3.3.2.19 P-37-038955

This resource was identified in the Survey Area during the current survey on the east side of an existing informal trail. The resource consists of two isolated stone tools, a core/hammerstone and a flake. The scraper is of a green, porphyritic metavolcanic material and the flake is of a green aphanitic material. Visibility along the trail route was approximately 60 percent; however, on the sides of the trail, visibility was less than 30 percent due to dense vegetation, with only sporadic open areas.

3.3.2.20 P-37-038956

This resource was identified in the Survey Area during the current survey, on the north side of a narrow, existing informal trail. The resource consists of two isolated lithic tools, a core/scraper and a hammerstone. The core/scraper is of a green, porphyritic metavolcanic material and the hammerstone is rhyolite. Visibility was approximately 60 percent within the trail route, but only 30 percent along the sides of the trail, due to dense vegetation.

3.3.3 Multicomponent Sites

3.3.3.1 P-37-009712 (CA-SDI-9712)

This resource was originally recorded by Jacques, in 1993, as the historic Goodan Ranch complex. Jacques recorded the complex as consisting of the main Goodan Ranch house constructed of stone and wood, one two-story wooden water tank house, three small wooden cottages, five to six tin equipment sheds and garages, one hay and dairy barn, two active wells (one of which has a windmill), a two-acre olive orchard, one concrete dam on Sycamore Creek, two large native oak groves, and scattered ranch equipment which dates from the nineteenth century. Unfortunately, of the ranch house, all but the stone walls burned in the 2003 Cedar Fire.

In 2004, a prehistoric component was added to the site, consisting of a lithic scatter containing flakes, cores, and ground stone artifacts. This prehistoric artifact scatter was indicated as being located just north of the parking lot for the current Goodan Ranch Visitors Center (Crafts et al. 2004d).

Portions of this resource were reidentified in the Survey Area during the current survey, and the main house and windmill appear to be in a similar condition as they were described to be in 2008 (Jordan et al. 2008). Although much of the area north of the parking lot where the prehistoric artifact scatter was noted as being situated is outside of the Survey Area, a few prehistoric artifacts were observed within the Survey Area along and adjacent to either side of the existing trail and access road throughout the site boundary.

3.3.3.2 P-37-016517 (CA-SDI-16517)

This resource was originally recorded by Underwood and Fitzsimons (2003b) as a prehistoric lithic scatter with ground stone artifacts, a basalt “spokeshave”, a scraper, two choppers, and one flake. The site was revisited by “Friends of Goodan Ranch” (Crafts 2004c), who noted one metate fragment and one mano fragment. During the 2008 survey of the Preserve, the site area was observed to retain many of the artifacts recorded in 2003, as well as several additional flakes of either LFV or jasper material (Jordan et al. 2008). Also noted during the 2008 survey was a historic component consisting of a nearby concrete dam and earthen embankment structure within the Sycamore Canyon drainage. This dam and structure are mentioned by Jacques and Quillen (1983) as having been constructed, circa 1950, by the Soil Conservation Service.

No prehistoric artifacts were reidentified within the Survey Area during the current survey. Vegetation on either side of the existing access road is dense low ground cover, causing ground visibility to be approximately 10 percent. The historic dam and embankment components of the resource were observed to lie outside of the Survey Area.

3.3.4 Historic Sites

3.3.4.1 P-37-009707 (CA-SDI-9707)

This resource was originally recorded by Quillen (1983) as the remnants of the Joseph Fisher homestead and the Stowe Post Office from the late nineteenth century. Quillen documented cobble and adobe wall foundations, an artificial building platform-terrace, three cobble lined privies, pepper trees, and a trash scatter. The site was updated during a survey in 2004 by "Friends of Goodan Ranch", who recorded the cobble adobe wall foundations as Feature 6, artificial building platform terrace as Feature 4, one of the privies as Feature 5, three pepper trees as Feature 9, and the historic trash scatter as Feature 3. Two of the privies, located further up the hill, were not reidentified. In addition to the previously recorded features, the 2004 update recorded the post of a well (Feature 1), a linear rock structure (Feature 2), and two additional linear structures (Features 7 and 8) (Crafts et al. 2004e). During the 2008 survey of the Preserve, it was determined that the previously recorded features appeared to remain as previously recorded (Jordan et al. 2008).

This resource was reidentified during the current survey; however, the resource components are all located outside of the Survey Area. Visibility within the existing formal trail boundaries was 90 percent, with some weeds growing in the trail and erosion present. Visibility on either side of the trail, however, was low, approximately 20 percent.

3.3.4.2 P-37-012821 (CA-SDI-12821)

As discussed in the Cultural Setting, the Preserve is situated in the inland area of San Diego County, which saw an increase in American-period settlers after the discovery of gold in 1869 near Julian. Several small agricultural communities developed in the inland region, and transportation routes became essential for the movement of goods, mail, and people to and from the developing areas and the mining locations in the mountains. In 1871, Chester Gunn established the first pony express and mail route that connected San Diego to Julian, running through San Vicente Valley to the east of the Preserve (Jordan et al. 2008; LeMenager 1989:77). In 1873, two brothers, Lemuel and Henry Atkinson, who worked at the Golden Chariot Mine, created a more efficient route for the transport of mining hauls (Cooley and Foglia 2016). The resulting toll road was named the Atkinson Toll Road and ran from their homestead in Foster Canyon, later known as Shady Dell, and ended at Foster's Station, which is now submerged under San Vicente Reservoir (Gallegos and Associates 2003; LeMenager 1989:67). The toll road was acquired by the County a year later; Henry Atkinson was appointed Road Master at that time, with Joseph Foster being appointed as 'overseer of roads' a few years later, in 1883 (Moore n.d.). Foster's maintenance of the road led it to become known as the Foster Truck Trail.

The route was prone to erosion due to its steepness and flooding events causing large sections to wash out. In 1875, the County realigned the road on its northern end to travel through Wildwood Ranch (LeMenager 1989). In the early 1880s, Foster attempted to stabilize the road using such resources as straw; however, by the mid-1880s, a new roadway alignment down Mussey Grade to the east, along a lower elevation was developed, taking advantage of that valley's four to five percent grade (LeMenager 1989:69).

The resource documented as CA-SDI-12821 was originally recorded by Gross et al. (1992) as a historic unpaved road. That recordation included the Boulder Oak Spur; subsequent recordings by Jordan et al. (2008), Craft (2007), Patterson and Glenny (2008), Williams (2009), Gunderman et al. (2012), Guerrero (2003), Hoffman (2013), and Cooley and Foglia (2016) have identified other elements of Foster Truck

Trail or updated previously recorded segments. The 2007 update by Craft added the Western Spur of the Foster Truck Trail, which heads west from the 1875 realignment through the Preserve to Beeler and Sycamore Canyons. This segment is labeled as Foster Truck Trail on the 1955 and subsequent San Vicente Reservoir (1:24,000) USGS topographic maps (see Figure 2); however, as described in the paragraph above, this route is not part of the original Atkinson Toll Road or the 1870s Foster Truck Trail alignments.

The construction date of the road segment traveling east-west through the Preserve along Calle de Rob is unknown, but the route is shown on the 1903 Cuyamaca (1:125,000) USGS topographic map. As stated by Cooley and Foglia, "Over the years, the network of roads within the area was improved and expanded. It was likely that this alignment was constructed for or by the residents of Stowe so that they had access to a more direct route south via the Foster Truck Trail. This segment is later labeled as Foster Truck Trail on the 1955 San Vicente Reservoir (1:24,000) USGS Topographic map, perhaps after the closure of the original Foster Truck Trail; this segment appeared as a logical continuation" (2016: 64).

Within the Preserve, the entirety of the resource is within the Survey Area and portions are currently used as a maintenance road.

3.3.4.3 P-37-025797 (CA-SDI-17153)

This historic resource was originally recorded by "Friends of Goodan Ranch" in 2004 as a small, historic period dam constructed of stacked rocks along the Fischer Creek bed (Crafts et al. 2004c). During the 2008 survey of the Preserve, the remnants of this stacked rock dam were reidentified and it appeared to remain as originally recorded (Jordan et al. 2008).

During the current survey, the resource was reidentified approximately 5 meters east of the Survey Area. The dam is intact on either side of Fischer Creek, however, the center of the dam is not present, allowing water to flow through. Vegetation is dense on both the sides of the trail.

3.3.4.4 P-37-025802 (CA-SDI-17158)

This historic resource was originally recorded in 2004 by the "Friends of Goodan Ranch" as the Frontiersman Black Powder Club target shooting range, consisting of one cement foundation, three engraved cement post hole pads, and a target berm (Boggleln et al. 2004). During the 2008 survey of the Preserve, these features were reidentified and the site remained as originally recorded (Jordan et al. 2008).

During the current survey, the resource was reidentified, and appears to be unchanged since its last recording. The concrete pad and two of the concrete post hole pads are located within 2 meters of the existing formal trail; one post hole pad and the berm are located further to the west, away from the trail.

3.3.4.5 P-37-028924

This resource was originally recorded by Piek and Kitchen (2007) as a historic concrete cistern with the date "12/4/50" engraved over the small opening. It is located in the northeast corner of the Preserve. During the 2008 survey of the Preserve, the cistern was reidentified, and two similarly configured cisterns, with similar engravings, were also identified and recorded elsewhere in the Preserve (Jordan et al. 2008). Jordan et al. described the function of these features as "guzzlers", which provide water to

animals. The tank associated with them is the cistern originally identified by Piek and Kitchen (2007). They also noted that Jacques and Quillen (1983) had previously described them as "Quail guzzlers" that were built in the "1940s and 1950s" (Jordan et al. 2008). Another such cistern/guzzler was recorded in the northernmost part of the Preserve during the 2016 Preserve survey (Cooley and Foglia 2016).

During the current survey, two of the guzzlers were reidentified and determined to lie within the Survey Area. The first identified guzzler is located on the south side of an existing maintenance road. The guzzler is in poor condition, with the opening crumbling and the apron cracked from weathering, with vegetation growing out of the cracks. The second guzzler within the Survey Area is located within an alternative for the proposed Airplane trail. This guzzler is in good condition, with the opening intact and the apron in fair condition but with cracks. It appears that some of the cracks have been repaired in the past with a black rubberized material.

3.3.4.6 P-37-030107

This historic structure consists of two pipelines of the First San Diego Aqueduct: Pipeline 1 which was constructed 1945-1947 and Pipeline 2, which was constructed in 1952-1954 (Cook 2012; Cooley 2001a). The pipeline delivered water to San Vicente Reservoir. The two pipelines combined had a capacity of 196 cubic feet per second. The entire portion of the aqueduct recorded within the Preserve is subsurface (buried pipelines). The portion within with Preserve was originally recorded during the 2008 survey of the Preserve (Jordan et al. 2008).

3.3.4.7 P-37-030197

This historic resource was originally recorded during the 2008 survey of the Preserve as the "Stowe Road", a dirt road that has been in use since at least 1898 based on early San Diego County maps and USGS topographic maps from the early twentieth century (Jordan et al. 2008). The wagon route followed Sycamore Canyon from the San Diego River north through the community of Stowe and into Poway.

The road is graded and regularly maintained for access; the northern portion is an existing access road within Sycamore Canyon, and the southern portion within the Preserve is utilized as a formal trail. The road has been redirected along the route over the years, and the County has deposited gravel on it.

3.3.4.8 P-37-035991 (CA-SDI-21923)

This site consists of the heavily disturbed remnants of an old homestead occupied by the Eckhardt family during the late nineteenth and early twentieth centuries. It was recorded during the 2016 survey of the Preserve (Cooley and Foglia 2016). The site is located within an open meadow at the east base of a small mountain. The resource consists of a stone-lined rectangular house foundation constructed from local stones with no visible mortar and a retaining wall also made from loosely stacked local stones. A graded area, a linear stone feature of unknown use, and a possible reservoir or pond recorded within the site boundary may be associated historic-period features. A sparse debris scatter was recorded throughout the site. The trash consists of fragments of glass, bricks, adobe tile, whiteware ceramics and floral print ceramics; metal sheet fragments; concrete rubble; a metal weight; a hinge; and burnt milled wood (Cooley and Foglia 2016).

While the recorded resource boundary encompasses a portion of the Survey Area, the features and most of the non-feature site materials are located outside of the Survey Area.

3.3.4.9 P-37-035992

The resource was recorded during the 2016 survey of the Preserve (Cooley and Foglia 2016) as the remains of a possibly historic outbuilding, most likely relating to the Eckhardt homestead (CA-SDI-21923), situated a short distance to the north. The site has been mostly destroyed; only the bottom layer of the foundation exists, of which only the west and south portions remain. It consists of one course of local stones, with more stones strewn about the area. The resource is located within a meadow between two knolls on the eastern side of a historic road (P-37-035993), described below.

This resource was reidentified immediately adjacent to the Survey Area during the current survey. Tall grass and weeds obscure some of the rocks, however, the feature appears to be as originally recorded.

3.3.4.10 P-37-035993

This resource consists of a historic road segment described as being in use at least since 1876, as an alignment of the road is documented on the survey plat map of that year. The road was recorded during the 2016 survey of the Preserve (Cooley and Foglia 2016), and runs generally north to south before meeting up with Western Spur of the Foster Truck Trail (CA-SDI-12821) at the section line between Sections 15 and 22. The road extends north beyond the Preserve boundary, traveling by two houses that are indicated on the 1876 survey plat, one in the northern portion of Section 15, and one in Section 3.

As described by Cooley and Foglia, the road "travels through the natural contour of a valley between two knolls for approximately 0.42 mile" (2016: 68). They further state, "It is believed that this road was used as a trail to reach Poway, Ramona, and the original alignment of the Foster Truck Trail (beginning at Shady Dell and ending at Foster) by the residents of the pioneer community of Stowe" (2016: 68). Sites CA-SDI-21923 and P-37-035992, described above, are situated to the west and east of the road, respectively.

This resource was reidentified during the current survey; the road is overgrown, and portions of the road route are utilized as an informal trail.

3.3.4.11 P-37-038958

The site was identified during the current survey and consists of a linear stacked rock wall or foundation feature situated on a northwest-facing slope. This wall or foundation feature was observed to be at least two courses high and one course wide, with no mortar observed between the rocks. The bottom rocks of the feature are embedded into the ground, and rocks are scattered below the feature to the west. It is possible that more rocks are buried to the east of the visible portion of the feature, but due to thick ground cover and the accumulation of alluvial soils, it was difficult to gather information on the feature, including complete dimensions. There were burnt pieces of milled wood at the north end and within linear rocks alignment, and one of the boulders has a wire fastened around it. The visible portion of the feature is approximately 12 feet long.

3.3.5 Discussion and Evaluation

3.3.5.1 Prehistoric Resources

The current project Survey Area extends across the entire expanse of the Preserve. As such, the cultural resources to be affected also occur within all areas of the Preserve. The Preserve is situated in the

upland area along the crest between two principal watersheds, Poway/Peñasquitos Creek to the north and the San Diego River to the south, with the smaller drainages originating in the northern part of the Preserve, such as the Beeler Canyon drainage, flowing into the former, and those in south, such as Sycamore Canyon, flowing into the latter. The upper Slaughterhouse Canyon drainage in the southeasternmost part of the Preserve is a tributary of San Vicente Creek, which is also part of the San Diego River watershed. This geographical location of the Preserve suggests that the prehistoric resources in the Preserve area were likely a result of seasonal resource procurement, with more substantial habitation sites situated closer to where these smaller drainages intersect with the more major drainages (e.g., site CA-SDI-4608 near the confluence of Beeler Canyon drainage and Poway/Peñasquitos Creek), or to the river (e.g., site CA-SDI-5669 near the confluence of the Sycamore Canyon drainage and the San Diego River). It seems likely that the smaller drainages within the Preserve, such as Sycamore Canyon and Beeler Canyon, which, prehistorically, may have been spring-fed, would have provided fresh water for seasonal campsites in these upland areas.

Of the 28 prehistoric sites or prehistoric site components within the project Survey Area, 18 consist entirely of flaked lithic and/or ground stone artifact scatters, and three consist exclusively of bedrock milling features. Of the 20 prehistoric isolates in the Survey Area, 14 consist of flaked stone lithic artifacts, five of ground stone artifacts, and one of a single pottery sherd. Of the seven sites containing both lithic artifacts and milling features, based on current information (surface survey observations), only sites CA-SDI-17151 and CA-SDI-17152 appear to contain the potential evidence for extended habitation, indicating that they represent campsites where people stayed for a longer period of time. While not abundant, the area contains lithic raw materials for tool production; most of the lithic tools observed at the sites in the Preserve appear to have derived from local sources and most appear to be of an expedient nature (Cooley and Foglia 2016; Jordan et al. 2008). Most importantly this upland area likely contained seasonal vegetal and/or game resources. Of interest is the paucity of mortar holes in the bedrock milling features; only one of the sites in the project Survey Area contains bedrock mortars. This could suggest that acorns may not have been an important seasonal vegetal resource in the area, or that the sites represent earlier occupations. The milling elements most common in the bedrock milling features consist of basins and slicks, and the ground stone artifacts occurring most often at sites and as isolates are manos. This would seem to suggest that seeds from grasses and/or sage scrub plants may have been the vegetal resources being most often obtained in the area. Also, of interest is the paucity in the flaked stone artifacts of hunting tools, such as projectile points. However, the absence of projectile points does not preclude hunting, as it has been suggested that the use, prehistorically, of traps and snares was also a likely means of hunting game animals (Warren 2012). Their near absence, therefore, could indicate, either that hunting was not an important prehistoric endeavor in the Preserve area, or that the use of traps and snares was the more preferred means of hunting in the area.

As noted, the types of lithic raw material of the artifacts observed in the area are almost all of local origin, but perhaps from not within the Preserve itself. Three of the most common lithic raw materials are metavolcanics, milky quartz, and LFV. While all of these materials can be obtained from sources within from one to 10 miles of the Preserve, geologically it has not been confirmed that any of them occur naturally within the boundary of the Preserve. The only source of potential lithic raw material within the Preserve is from cobbles present in the Poway Conglomerate Formation present along the western edge of the Preserve. While usable, these latter materials consist of various volcanics and quartzite, which are not optimal in quality. The presence of non-local lithic materials, such as obsidian or chert has, so far, been rare in the Preserve. Only a single chert projectile point has been observed, at a site (CA-SDI-21920) adjacent to the project Survey Area, in the northern area of the Preserve (Cooley and Foglia 2016); to date, no obsidian has been discovered at sites in the Preserve. This paucity of exotic

materials at sites in the Preserve may also be suggestive of the more temporary or seasonal nature of the sites in this upland area.

All of these observations of the prehistoric sites in the Preserve, including those in the current Survey Area, have been made based entirely on the results of pedestrian survey. To date, no subsurface investigations have occurred at sites in the Preserve. The 28 prehistoric sites (or sites with prehistoric components) and 20 isolates within the project Survey Area, while varying in the potential they contain to contribute to answering future research questions, all do contain some potential to contribute to the archaeological record for the area.

3.3.5.2 Historic Resources

All of the historic-era resources located within the project Survey Area date to, or likely date to, the American Period, more specifically to the late nineteenth century or early twentieth century. The historic site types present within the Survey Area include the remains of the Stowe Post Office, the remains of the Fischer and Eckhardt homesteads, one homestead outbuilding, portions of three roads including the Stowe Road and the Foster Truck Trail, two guzzlers, a stacked-rock dam, a rock alignment or foundation, and a target shooting range. These sites are representative of larger themes of backcountry life in San Diego County's early history such as transportation, homesteading, and ranching. Due to available historical information and cultural material located on the Preserve, associations with specific persons or events, or reflection on the various uses of this area over time, can be made.

Limited information about the community of Stowe and the families that lived there remains. However, although not much remains of the sites, CA-SDI-21923 and P-37-035992 fit in with the Preserve's period of historic-era significance. The Eckhardt family lived on this property for a short time period, from 1888 to approximately 1896, and the Fischer family between 1880 and 1900 (Cooley and Foglia 2016; Jordan et al. 2008). Not much information was previously known about them, but the Eckhardts seem to mirror many of the other families documented in or near Stowe. George W. Eckhardt was a German immigrant who likely moved to the area to seek further opportunities in San Diego County. The Eckhardts left their ranch shortly before the turn of the twentieth century likely due to hardships of the time, including the boom and bust cycle of the economy, general isolation, and the lack of water in the area (Cooley and Foglia 2016). These sites present an interesting opportunity for visitors to visit a piece of the historic past while visiting the Preserve.

Numerous early travel routes cross through or near the project Survey Area, such as the Atkinson Toll Road/Foster Truck Trail, Mussey Grade, the Stowe Road, the Main Road to Julian, and the road down Poway Grade. During the time that the Preserve was occupied in the American Period, transportation was continually growing and changing in the region. This is demonstrated by the network of roads that appears within canyons surrounding the Preserve. These networks allowed the homesteaders within Stowe to more easily reach San Diego and other outlying towns. The roads connected them to more supplies, trade routes, and a way to the train at Foster Station. The two cement wildlife guzzlers are two of four within the Preserve and were apparently created in the 1940s and 1950s. The Frontiersman Black Powder Club shooting range was created in the mid-twentieth century.

Based on current archaeological data and historical research, it appears that preservation or informational displays at the historic sites in the Survey Area could greatly add to public knowledge of the area. The earliest of these sites tie in nicely to the structural remains at the Goodan Ranch complex as associated historic homesteads, and the later ones reflect subsequent historic activities occurring within the Preserve.

4.0 INTERPRETATION OF RESOURCE IMPORTANCE AND IMPACT IDENTIFICATION

4.1 RESOURCE IMPORTANCE

Fifty-nine cultural resources have been recorded within the Public Access Plan Survey Area (Table 3, *Cultural Resources Within Project Survey Area*). The County's Guidelines for Determining Significance indicate that any site that yields information or has the potential to yield information is considered a significant ("important") site, although the resource may not meet the significance criteria of CEQA. Only one of the cultural resources within the Survey Area has been previously evaluated for significance; P-37-030107, the First San Diego Aqueduct, has been recommended as eligible for listing in the NRHP (Cook et al. 2012). Table 3 notes recommendations for the resources that may be subject to potential impacts from the development of the Public Access Plan.

Table 3
CULTURAL RESOURCES WITHIN PROJECT SURVEY AREA

Cultural Resource	Description	Trail	Trail Type/Action	Significance Evaluation	Recommendation
Prehistoric Resources (Sites)					
P-37-000119 (CA-SDI-119)	Lithic and ground stone scatter	Martha's Grove (12)	Existing Formal Trail	Not evaluated	None; located along existing formal trail, no new disturbance proposed.
P-37-009704 (CA-SDI-9704)	Lithic scatter	Slaughter-house Canyon Trail (21)	Access Road	Not evaluated	None; located along existing access road, no new disturbance proposed.
P-37-009706 (CA-SDI-9706)	Two bedrock milling features and associated lithic scatter	Airplane Trail (22)	Proposed Trail	Treat as significant	Avoidance; otherwise, additional treatment measures recommended.
P-37-012852 (CA-SDI-12852)	Lithic scatter and possible quartz quarry	Northern Interior Loop (26)	Potential Future Trail Connection	Tested; not significant	None.
P-37-013221 (CA-SDI-13221)	Lithic and ground stone scatter	West Trail (13)	Existing Formal Trail	Not evaluated	None; located along existing formal trail, no new disturbance proposed.
P-37-013223 (CA-SDI-13223)	Lithic scatter	West Trail (13)	Existing Formal Trail	Not evaluated	None; located along existing formal trail, no new disturbance proposed.
P-37-024271	Lithic scatter	Ridge Trail (14)	Closed to Revegetate	Treat as significant	Avoidance and passive revegetation.

Table 3 (cont.)
CULTURAL RESOURCES WITHIN PROJECT SURVEY AREA

Cultural Resource	Description	Trail	Trail Type/Action	Significance Evaluation	Recommendation
P-37-024959 (CA-SDI-16515)	Lithic scatter	Sycamore Canyon (0) & West Trail (13)	Access Road & Existing Formal Trail	Not evaluated	None; located along existing access road and formal trail, no new disturbance proposed.
P-37-024960 (CA-SDI-16516)	Lithic scatter	Sycamore Canyon (0)	Access Road	Not evaluated	None; located along existing access road, no new disturbance proposed.
P-37-024962 (CA-SDI-16518)	Lithic and ground stone scatter	Martha's Grove (12)	Existing Formal Trail	Not evaluated	None; located along existing formal trail, no new disturbance proposed.
P-37-024967	Lithic scatter	Martha's Grove (12)	Existing Formal Trail	Not evaluated	None; located along existing formal trail, no new disturbance proposed.
P-37-025793 (CA-SDI-17151)	Six bedrock milling features and associated lithic, ground stone, and ceramic scatter	Martha's Grove (12)	Existing Formal Trail	Not evaluated	None; located along existing formal trail, no new disturbance proposed.
P-37-025794 (CA-SDI-17152)	Eight bedrock milling features and associated lithic, ground stone, and ceramic scatter	Martha's Grove (12)	Existing Formal Trail	Not evaluated	None; located along existing formal trail, no new disturbance proposed.
P-37-025799 (CA-SDI-17155)	Two bedrock milling features and associated lithic and ground stone scatter	Martha's Grove (12)	Existing Formal Trail	Not evaluated	None; located along existing formal trail, no new disturbance proposed.
P-37-030080 (CA-SDI-19170)	One bedrock milling feature	Connection to Calle de Rob – Eastern; County TCT (29)	Proposed Access Road	Treat as significant	Avoidance; otherwise, additional treatment measures recommended.
P-37-030081 (CA-SDI-19171)	One bedrock milling feature	Connection to Calle de Rob – Eastern; County TCT (29)	Proposed Access Road	Treat as significant	Avoidance; otherwise, additional treatment measures recommended.
P-37-030084	Lithic scatter (two flaking stations)	South Slaughter-house (20)	Closed to Revegetate	Treat as significant	Avoidance and passive revegetation.

Table 3 (cont.)
CULTURAL RESOURCES WITHIN PROJECT SURVEY AREA

Cultural Resource	Description	Trail	Trail Type/Action	Significance Evaluation	Recommendation
P-37-030095 (CA-SDI-19181)	Lithic scatter	County TCT; Goodan Staging Area to Access Road and Martha's Grove to Access Road (28)	Proposed Trail	Treat as significant	Avoidance; otherwise, additional treatment measures recommended.
P-37-035980	One bedrock milling feature and associated lithic scatter	Wu South (5)	Proposed Trail on Existing Disturbed Area	Treat as significant	Avoidance; otherwise, additional treatment measures recommended.
P-37-035983	Lithic scatter	Northern Interior Loop (26)	Proposed Trail on Existing Disturbed Area	Tested; not significant	None.
P-37-035989 (CA-SDI-21921)	Two bedrock milling features	Wu (3)	Proposed Trail on Existing Disturbed Area	Treat as significant	Avoidance; otherwise, additional treatment measures recommended.
P-37-035990 (CA-SDI-21922)	One bedrock milling feature and associated lithic and ground stone scatter	Wu (3)	Potential Future Trail Connection	Treat as significant	Avoidance and passive revegetation.
P-37-038957	One bedrock milling feature and associated ground stone and ceramic scatter	Martha's Grove (12)	Existing Formal Trail	Not evaluated	None; located along existing formal trail, no new disturbance proposed.
P-37-038959	Lithic scatter	South Slaughter-house (20)	Closed to Revegetate	Treat as significant	Avoidance and passive revegetation.
P-37-038960	Lithic scatter	South Slaughter-house (20)	Closed to Revegetate	Treat as significant	Avoidance and passive revegetation.
P-37-038961	Lithic scatter with three granitic manos, one utilized flake tool, and one flake	Martha's Grove (12)	Existing Formal Trail	Not evaluated	None; located along existing formal trail, no new disturbance proposed.
Prehistoric Resources (Isolates)					
P-37-024963	One cobble smoothing/ burnishing tool	Stowe Trail (34)	Existing Formal Trail	Not significant	None.
P-37-024964	One flake	Ridge Trail (14)	Proposed Trail	Not significant	None.

Table 3 (cont.)
CULTURAL RESOURCES WITHIN PROJECT SURVEY AREA

Cultural Resource	Description	Trail	Trail Type/Action	Significance Evaluation	Recommendation
P-37-024969	One mano fragment	Access Road - Cardiac Hill (27)	Access Road	Not significant	None.
P-37-030078	One pottery sherd	Ridge Trail (14)	Existing Formal Trail	Not significant	None.
P-37-030083	Two flakes	Connection to Calle de Rob – Eastern; County TCT (29)	Proposed Access Road	Not significant	None.
P-37-030094	One chopper and one flake	County TCT; Goodan Staging Area to Access Road and Martha's Grove to Access Road (28)	Proposed Trail	Not significant	None.
P-37-030104	One flake	Ridge Trail (14)	Existing Formal Trail	Not significant	None.
P-37-035979	One flake	Northern Interior Loop (26)	Proposed Trail on Existing Disturbed Area	Not significant	None.
P-37-035981	Two flakes	Wu (3)	Potential Future Trail Connection	Not significant	None.
P-37-038946	One mano	Martha's Grove (12)	Existing Formal Trail	Not significant	None.
P-37-038947	One mano	Martha's Grove (12)	Existing Formal Trail	Not significant	None.
P-37-038948	One mano fragment	Martha's Grove (12)	Existing Formal Trail	Not significant	None.
P-37-038949	One mano	Ridge Trail (14)	Proposed Trail	Not significant	None.
P-37-038950	One core/scraper and one core	Slaughter-house Canyon Trail (21)	Existing Formal Trail	Not significant	None.
P-37-038951	One flake tool	Canyon Trail – Informal (16)	Closed to Revegetate	Not significant	None.
P-37-038952	One flake	Connection to Calle de Rob – Eastern; County TCT (29)	Proposed Access Road	Not significant	None.
P-37-038953	One flake and one hammerstone fragment	Airplane Trail (22)	Proposed Trail on Existing Disturbed Area	Not significant	None.
P-37-038954	One flake	Wu (3)	Proposed Trail on Existing Disturbed Area	Not significant	None.

Table 3 (cont.)
CULTURAL RESOURCES WITHIN PROJECT SURVEY AREA

Cultural Resource	Description	Trail	Trail Type/Action	Significance Evaluation	Recommendation
P-37-038955	One flake and one core/hammerstone	South of Ridge Trail (15)	Proposed Trail on Existing Disturbed Area	Not significant	None.
P-37-038956	One core/scraper and one hammerstone	Sidewinder Rogue Trail (23)	Closed to Revegetate	Not significant	None.
Multicomponent Resources (Sites)					
P-37-009712 (CA-SDI-9712)	Goodan Ranch structural ruins and features; lithic scatter	Sycamore Canyon (0) & West Trail (13)	Access Road & Existing Formal Trail	Not evaluated	None; located along existing access road and formal trail, no new disturbance proposed.
P-37-024961 (CA-SDI-16517)	Concrete dam; lithic scatter	Sycamore Canyon (0)	Access Road	Not evaluated	None; located along existing access road, no new disturbance proposed.
Historic Resources (Sites)					
P-37-009707 (CA-SDI-9707)	The remains of the Joseph Fischer homestead and the Stowe Post Office	Martha's Grove (12)	Existing Formal Trail	Not evaluated	None; located along existing formal trail, no new disturbance proposed.
P-37-012821 (CA-SDI-12821)	Historic Road - western spur of the Foster Truck Trail	Calle de Rob (8)	Maintenance Road	Not significant	None.
P-37-025797 (CA-SDI-17153)	Historic dam constructed of stacked rock	Martha's Grove (12)	Existing Formal Trail	Not evaluated	None; located along existing formal trail, no new disturbance proposed.
P-37-025802 (CA-SDI-17158)	Target shooting range	Martha's Grove (12)	Existing Formal Trail	Not evaluated	None; located along existing formal trail, no new disturbance proposed.
P-37-028924	Four cement cistern/guzzlers located in various areas of the Preserve (two are within Survey Area)	Airplane Trail (22) & Connection to Calle de Rob and Airplane Trail (25)	Proposed Trail & Potential Future Trail	Treat as significant	Avoidance; cisterns are located at edge of Survey Area.

Table 3 (cont.)
CULTURAL RESOURCES WITHIN PROJECT SURVEY AREA

Cultural Resource	Description	Trail	Trail Type/Action	Significance Evaluation	Recommendation
P-37-030107	San Diego Aqueduct; previously evaluated as significant (Cook et al. 2012)	N/A	N/A	NRHP/CRHR eligible	None; resource is buried, no impact would occur due to proposed project.
P-37-030197	Stowe Road (wagon trail)	Sycamore Canyon (0) & West Trail (13)	Access Road & Existing Formal Trail	Not evaluated	None; located along existing access road and formal trail, no new disturbance proposed.
P-37-035991 (CA-SDI-21923)	Homestead, rectangular stone foundations	not named (26)	Closed to Revegetate	Treat as significant	Avoidance and passive revegetation.
P-37-035992	Outbuilding, possibly related to site CA-SDI-21923	Northern Interior Loop (26)	Proposed Trail on Existing Disturbed Area	Treat as significant	Avoidance; resource is located at edge of Survey Area.
P-37-035993	Historic road segment	Northern Interior Loop (26) & Wu (3)	Proposed Trails on Existing Disturbed Area	Not significant	None.
P-37-038958	Rock alignment or foundation	Ridge Trail (14)	Proposed Trail	Treat as significant	Avoidance; resource is located at edge of Survey Area.

4.1.1 Prehistoric Archaeological and Native American Resources

A total of 28 prehistoric sites (or sites with prehistoric components) and 20 prehistoric isolates are located within the project Survey Area. None of the prehistoric cultural resources recorded within the project Survey Area have been tested or evaluated for importance prior to this study.

As noted above in Section 3.1.2, it was determined that two prehistoric sites identified within the Survey Area may be subject to unavoidable impacts by the implementation of the Public Access Plan. As such, these two prehistoric archaeological sites, P-37-012852 (CA-SDI-12852) and P-37-035983, were subjected to a testing program to assess their potential significance and eligibility for listing in the CRHR and Local Register. As a result of the testing program, it was determined that the resources are sparse surface lithic scatters with limited material and artifact types. Documentation of the surface presentation of the sites has exhausted the research potential of the resources (Criterion 4). As such, the two resources are recommended as not significant and not eligible for listing in the CRHR or Local Register under CEQA and County guidelines. In addition, isolates are not considered significant resources under CEQA and are not considered to be an important resource under County Guidelines.

It is recommended that any of the remaining prehistoric sites/portions of multicomponent sites within the Survey Area that may be subject to impacts from implementation of the Public Access Plan be treated as significant for the purposes of this project.

No information has been obtained through Native American consultation or communication that any of the archaeological resources within the project Survey Area are culturally or spiritually significant. No TCRs that currently serve religious or other community practices are known to exist within the Survey Area. During the current archaeological investigation, no artifacts or remains were identified that could be reasonably associated with such practices. However, all areas of past cultural use are of cultural importance to the Native American community, even if they do not meet the significance criteria for archaeological resources. Also, as indicated above, the search of the NAHC's Sacred Lands File was returned with positive results.

4.1.2 Historic Resources

A total of 13 historic-period resources (or sites with historic components) are located within the project Survey Area. Only one resource, the San Diego Aqueduct (P-37-030107), has been previously evaluated and recommended as significant.

As noted above in Section 3.1.2, it was determined that two historic resources identified within the Survey Area may be subject to unavoidable impacts from the implementation of the Public Access Plan. As such, these two resources, the Western Spur of the Foster Truck Trail (CA-SDI-12821), which comprises the Calle de Rob maintenance road, and a historic dirt road, P-37-035993, which comprises portions of the Northern Interior Loop and Wu trail, were evaluated for CEQA and County significance. The Foster Truck Trail was first constructed in 1873 within a route located outside and east of the Preserve. At this time, it was known as the Atkinson Brothers' Toll Road; this road was one of the first routes connecting the gold mining operations near Julian to the growing City of San Diego during the formative years of inland San Diego County's history. However, as described above, the portion of the Foster Truck Trail that travels east-west through the Preserve to connect to Beeler and Sycamore Canyons was not part of the original alignment of the Atkinson Toll Road/Foster Truck Trail. Although the 2016 site record update for this Western Spur indicates that the Western Spur is a portion of a fire road that was added between 1928 and 1939 (Foglia 2016), the road appears to have been present as early as the turn of the twentieth century, as it appears on 1903 Cuyamaca (1:125,000) USGS topographic map. It is likely that this spur was an addition constructed by the local landowners to connect Stowe and other communities in the Preserve area to the Foster Truck Trail. Likewise, the historic road segment recorded as P-37-035993 also has a long history and appears to have been constructed as early as the 1870s. But like the portion of the Foster Truck Trail (Western Spur) within the Preserve, the road was likely a locally constructed and utilized connection between residences and the nearby communities. Neither of the road segments within the Preserve are connected to events that have made a significant contribution to the broad patterns of California or San Diego County's history and cultural heritage (Criterion 1), are directly associated with the lives of persons important to the history of San Diego County or its communities (Criterion 2), or embody the distinctive characteristics of a type, period, San Diego County region, or method of construction, or represent the work of an important creative individual, or possess high artistic values (Criterion 3). The research that has been conducted by the various documentations conducted for the two roads has exhausted the research potential of the resources (Criterion 4). As such, the portions of the two historic roadways located within the Preserve are recommended as not significant and not eligible for listing in the CRHR or Local Register under CEQA and County guidelines.

No other significance evaluations occurred for the remaining historic-period resources within the Survey Area. However, according to the 2008 baseline report for the Preserve:

> In 2000, the California State Office of Historic Preservation found two of the buildings on the property, a small red-painted wooden house known as Catalpa Cottage and Fred Allbee's house, eligible for the National Register based on their presumed association with Stowe. Unfortunately, Albee's House was burned sometime following this evaluation and before the 2003 Cedar Fire that destroyed all other buildings save the stone ranch house [Jordan et al. 2008].

Unfortunately, after the fire, evaluation of the resources before the local Historical Site Board did not proceed (Jordan et al. 2008).

Regardless, it is recommended that any of the remaining historic-period resources/portions of multicomponent resources within the Survey Area that may be subject to impacts from implementation of the Public Access Plan be treated as significant for the purposes of this project.

4.2 IMPACT IDENTIFICATION

4.2.1 Prehistoric Resources

Two prehistoric archaeological sites within the Survey Area, CA-SDI-12852 and P-37-035983, consist of lithic scatters located within areas that may be subject to unavoidable impacts by the implementation of the Public Access Plan; these two resources have been evaluated as not eligible for listing in the CRHR or Local Register under CEQA and County guidelines. In addition, 20 (non-significant) prehistoric isolates are located within the project Survey Area. Impacts to these resources have been reduced to a level below significant through testing, recording, and documentation undertaken as part of this current study.

Of the 26 unevaluated prehistoric sites (or sites with prehistoric components) located within the project Survey Area, 15 (CA-SDI-119, -9704, -9712, -13221, -13223, -16515, -16516, -16517, -16518, -17151, -17152, -17155, P-37-024967, -038957, and -038961) are located along existing formal trails or access roads. No improvements are proposed for these routes; as such, no impacts to the resources will occur as a result of the Public Access Plan.

Four of the prehistoric sites (P-37-024271, - 030084, -038959, and -038960), are located along an existing trail proposed for closure for revegetation and could be subject to impacts from implementation of the Public Access Plan.

Seven of the unevaluated prehistoric sites (CA-SDI-9706, -19170, -19171, -19181, -21921, -21922, and P-37-035980) are located within the Survey Area of either proposed trails or access roads, proposed trails on existing disturbed areas, or within a potential future trail connection; as such, these resources could be subjected to impacts from implementation of the Public Access Plan.

4.2.2 Historic Resources

The San Diego Aqueduct (P-37-030107) is a subsurface pipeline previously evaluated as significant; due to its buried condition, no impact to the resource will occur as a result of the Public Access Plan. Two historic roads, CA-SDI-12821 and P-37-035993, may be subject to unavoidable impacts by the implementation of the Public Access Plan; the portions of the roads within the Preserve have been evaluated as not eligible for listing in the CRHR or Local Register under CEQA and County guidelines. As

such, impacts to these two resources have been reduced to a level below significant through the recording and documentation undertaken as part of this current study.

Of the 10 unevaluated historic-period resources (or sites with historic components) located within the Survey Area, six (CA-SDI-9707, -9712, -16517, -17153, -17158, and P-37-030197) are located along existing formal trails or access roads. No improvements are proposed for these routes; as such, no impacts to the resources will occur as a result of the Public Access Plan.

Three resources, P-37-028924, -035992, and -038958, are located at the edge of the Survey Area along routes for proposed trails. Although unlikely due to the distance from the proposed trail routes and existing disturbed areas, these resources may be subject to impacts from implementation of the Public Access Plan. One resource CA-SDI-21923 is located along an existing trail proposed to be closed to revegetate and could be subject to impacts from implementation of the Public Access Plan.

5.0 MANAGEMENT CONSIDERATIONS – MITIGATION MEASURES AND DESIGN CONSIDERATIONS

5.1 UNMITIGATED IMPACTS

No unmitigated impacts to cultural resources are associated with the implementation of the Public Access Plan. TCRs have not been identified during consultation or by the Native American monitors.

5.2 MITIGATED IMPACTS

As addressed in the previous section, 11 prehistoric archaeological sites and four historic resources could be subjected to impacts from implementation of the Public Access Plan. Table 3 above provides recommendations to reduce project-related impacts to the potentially effected prehistoric sites to a level below significant. In general, it is recommended that these 15 resources be treated as significant for the purposes of this project and impacts avoided through project design.

Three of the historic-period resources, P-37-028924, -035992, and -038958, are located at the edge of the Survey Area along routes for either proposed trails or existing trails/disturbed areas with trails proposed; the fourth historic resource (CA-SDI-21923) is located within the Survey Area of an existing trail proposed for closure. Of the prehistoric sites, seven (CA-SDI-9706, -19170, -19171, -19181, -21921, -21922, and P-37-035980) are located within the Survey Area of either proposed trails or existing trails/ disturbed areas with improvements proposed, and four (P-37-024271, -030084, -038959, and -038960) are located within the Survey Area of trails proposed for closure.

For the resources located within the Survey Area of existing trails proposed for closure, avoidance of the resources will be ensured and passive revegetation will occur within the boundary of these sites in order to reduce project-related impacts to a level below significant.

For the resources located within the Survey Area of either proposed trails or existing trails/disturbed areas with trails proposed, avoidance of the resources will be ensured through project redesign (i.e., realignment of proposed trail routes) and by the exclusion of all ground-disturbing activities within the

site boundaries. Should avoidance of these resources prove infeasible, further treatment measures will be developed and implemented prior to construction or other ground-disturbing activities related to the implementation of the Public Access Plan.

As noted above, all areas of past cultural use are of cultural importance to the Native American community, even if they do not meet the significance criteria for archaeological resources. As such, a cultural resource monitoring program for initial ground-disturbing activities related to the implementation of the Public Access Plan will occur, including within or near all recorded prehistoric cultural resources.

5.2.1 Mitigation Measures and Design Considerations

A total of 15 cultural resources (consisting of 11 prehistoric archaeological sites and four historic-period resources) may be subject to impacts from implementation of the Public Access Plan, and as such are being treated as eligible resources for the purposes of the project. The following mitigation measures and design considerations will serve to mitigate project impacts to these resources to below a level of significance.

MM-CUL-1: Cultural resources CA-SDI-9706, -19170, -19171, -19181, -21921, -21922, and -21923; P-37-024271, -028924, -030084, -035980, -035992, -038958, -038959, and -038960 shall be identified as ESAs in order to ensure no adverse impacts to the resources occur.

- The ESAs shall consist of the recorded site boundary and a 20-foot buffer.
- The ESA locations shall be provided to the project development team and the ESA locations shall be avoided by all project design considerations for new trails and existing trails to be improved.
- If during trail engineering, it is determined that avoidance of an ESA proves infeasible, a Historical Resources Treatment Plan (HRTP) shall be prepared. The HRTP will present the measures that will be implemented, and include appropriate methodologies, to address the preservation, minimization of impacts, or mitigation of potential impacts/adverse effects to significant cultural/historical resources. The County shall approve the HRTP prior to final engineering design, and all cultural resources investigations and reporting deliverables outlined in the HRTP shall be completed prior to trail construction.
- During project construction, no ground disturbance shall occur within the boundary of the ESAs unless otherwise addressed in the HRTP. During revegetation efforts within trail routes to be closed, only passive revegetation shall occur within the boundaries of the ESAs. Archaeological monitors will be present to confirm the ESA and buffer around each resource and ensure there are no direct or indirect impacts to the resources.
- During project construction activities, the ESAs shall be temporarily flagged by the project archaeologist prior to construction activities occurring in the vicinity of the ESA.
- All construction activities within 100 feet of an ESA shall be monitored by an archaeological monitor; in addition, all construction activities within 100 feet of an ESA surrounding prehistoric archaeological resources shall be monitored by a Kumeyaay Native American monitor.

In addition, the general area of the Preserve is sensitive in terms of both historic-period and prehistoric archaeological resources and is within a tribally culturally significant area; as such, the potential remains for subsurface cultural material or deposits that could not be seen during the survey. Based on this, a monitoring program is recommended for ground-disturbing activities related to the implementation of the Public Access Plan. The following mitigation measures are recommended to mitigate potential project impacts to unknown cultural resources to below a level of significance.

MM-CUL-2: The County DPR will retain a qualified project archaeologist and a Kumeyaay Native American representative to monitor initial ground-disturbing activities related to the implementation of the Public Access Plan in order to minimize impacts to unknown subsurface archaeological deposits. Specifically, the following measures will be implemented to reduce impacts:

- Prior to the start of construction, the project archaeologist shall prepare a monitoring plan that describes the nature of the archaeological monitoring work; a monitoring schedule and a map illustrating ESA boundaries (MM-CUL-1) and areas where monitoring shall occur; procedures to follow in the event of an unanticipated discovery; and reporting requirements.

- The monitoring program shall include attendance by the archaeologist and Native American monitor at a preconstruction meeting with the construction contractor to discuss monitoring scheduling and coordination and to inform all personnel of the high probability of archaeological materials being encountered during construction.

- Both archaeological and Native American monitors shall have the authority to temporarily halt or redirect grading and other ground-disturbing activity in the event that cultural resources are encountered. Isolates and non-significant deposits shall be minimally documented in the field. If significant cultural material is encountered, appropriate actions shall be implemented according to the protocols outlined in the monitoring plan.

MM-CUL-3: Should human remains be identified during ground-disturbing activities related to the project, whether during construction, maintenance, or any other activity, State Public Resources Code §5097.98, CEQA §15064.5 and Health & Safety Code §7050.5 and County-mandated procedures will be followed for the treatment and disposition of those remains, as follows.

- A County (DPR) official is contacted.

- Upon identification of human remains, there will be no further excavation or disturbance in the area of the find or any nearby area reasonably suspected to overlie adjacent human remains until the County Coroner has made the necessary findings as to origin. If the human remains are to be taken offsite for evaluation, they shall be accompanied by the Kumeyaay Native American monitor.

- If the remains are determined to be of Native American origin, the coroner will contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC will identify a Most Likely Descendant (MLD), the person or persons it believes to be most likely descended from the deceased Native American.

- The immediate vicinity where the Native American human remains are located is not to be damaged or disturbed by further development activity until consultation with the MLD regarding their recommendations as required by Public Resources Code Section 5097.98 has been conducted.

- The MLD, as identified by the NAHC, shall be contacted by DPR or their representative in order to determine proper treatment and disposition of the remains. The MLD may make recommendations to the landowner (DPR), or the person responsible for the excavation work, for the treatment of human remains and any associated grave goods as provided in PRC Section 5097.98.

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7.0 LIST OF PREPARERS AND PERSONS AND ORGANIZATIONS CONTACTED

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8.0 LIST OF MITIGATION MEASURES AND DESIGN CONSIDERATIONS

Resource	Mitigation Measures	Design Considerations
P-37-000119 (CA-SDI-119)	None Required	None Required
P-37-009704 (CA-SDI-9704)	None Required	None Required
P-37-009706 (CA-SDI-9706)	MM-CUL-1; MM-CUL-2; MM-CUL-3	Placement within an ESA and avoidance by all project design considerations
P-37-009707 (CA-SDI-9707)	None Required	None Required
P-37-009712 (CA-SDI-9712)	None Required	None Required
P-37-012821 (CA-SDI-12821)	None Required	None Required
P-37-012852 (CA-SDI-12852)	None Required	None Required
P-37-013221 (CA-SDI-13221)	None Required	None Required
P-37-013223 (CA-SDI-13223)	None Required	None Required
P-37-024271	MM-CUL-1; MM-CUL-2; MM-CUL-3	Placement within an ESA and avoidance by passive revegetation
P-37-024959 (CA-SDI-16515)	None Required	None Required
P-37-024960 (CA-SDI-16516)	None Required	None Required
P-37-024961 (CA-SDI-16517)	None Required	None Required
P-37-024962 (CA-SDI-16518)	None Required	None Required
P-37-024963	None Required	None Required
P-37-024964	None Required	None Required
P-37-024967	None Required	None Required
P-37-024969	None Required	None Required
P-37-025793 (CA-SDI-17151)	None Required	None Required
P-37-025794 (CA-SDI-17152)	None Required	None Required
P-37-025797 (CA-SDI-17153)	None Required	None Required
P-37-025799 (CA-SDI-17155)	None Required	None Required
P-37-025802 (CA-SDI-17158)	None Required	None Required
P-37-028924	MM-CUL-1; MM-CUL-2; MM-CUL-3	Placement within an ESA and avoidance by all project design considerations
P-37-030078	None Required	None Required
P-37-030080 (CA-SDI-19170)	MM-CUL-1; MM-CUL-2; MM-CUL-3	Placement within an ESA and avoidance by all project design considerations.
P-37-030081 (CA-SDI-19171)	MM-CUL-1; MM-CUL-2; MM-CUL-3	Placement within an ESA and avoidance by all project design considerations
P-37-030083	None Required	None Required
P-37-030084	MM-CUL-1; MM-CUL-2; MM-CUL-3	Placement within an ESA and avoidance by passive revegetation
P-37-030094	None Required	None Required
P-37-030095 (CA-SDI-19181)	MM-CUL-1; MM-CUL-2; MM-CUL-3	Placement within an ESA and avoidance by all project design considerations
P-37-030104	None Required	None Required
P-37-030107	None Required	None Required
P-37-030197	None Required	None Required
P-37-035979	None Required	None Required
P-37-035980	MM-CUL-1; MM-CUL-2; MM-CUL-3	Placement within an ESA and avoidance by all project design considerations

Resource	Mitigation Measures	Design Considerations
P-37-035981	None Required	None Required
P-37-035983	None Required	None Required
P-37-035989 (CA-SDI-21921)	MM-CUL-1; MM-CUL-2; MM-CUL-3	Placement within an ESA and avoidance by all project design considerations
P-37-035990 (CA-SDI-21922)	MM-CUL-1; MM-CUL-2; MM-CUL-3	Placement within an ESA and avoidance by passive revegetation
P-37-035991 (CA-SDI-21923)	MM-CUL-1; MM-CUL-2; MM-CUL-3	Placement within an ESA and avoidance by passive revegetation
P-37-035992	MM-CUL-1; MM-CUL-2; MM-CUL-3	Placement within an ESA and avoidance by all project design considerations
P-37-035993	None Required	None Required
P-37-038946	None Required	None Required
P-37-038947	None Required	None Required
P-37-038948	None Required	None Required
P-37-038949	None Required	None Required
P-37-038950	None Required	None Required
P-37-038951	None Required	None Required
P-37-038952	None Required	None Required
P-37-038953	None Required	None Required
P-37-038954	None Required	None Required
P-37-038955	None Required	None Required
P-37-038956	None Required	None Required
P-37-038957	None Required	None Required
P-37-038958	MM-CUL-1; MM-CUL-2; MM-CUL-3	Placement within an ESA and avoidance by all project design considerations.
P-37-038959	MM-CUL-1; MM-CUL-2; MM-CUL-3	Placement within an ESA and avoidance by passive revegetation
P-37-038960	MM-CUL-1; MM-CUL-2; MM-CUL-3	Placement within an ESA and avoidance by all project design considerations
P-37-038961	None Required	None Required
General Survey Area	The potential exists that unrecorded cultural resources could be encountered during earth disturbing activities. As a condition of approval, an Archaeological Monitoring Program shall be implemented. MM-CUL-1; MM-CUL-2; MM-CUL-3	Monitoring Plan