Chapter 3 Errata – Revisions or Clarifications to Volume II, Draft Revised EIR Technical Appendices

Based on the City of Santee's (City's) review and in response to the comments received, some text in the following Draft Revised EIR technical appendices for the Fanita Ranch Project (proposed project) has been clarified or amplified:

- Appendix C1, Air Quality Analysis
- Appendix D, Biological Resources Technical Report
- Appendix E2, Confidential Phase II Cultural Resources Testing and Evaluation Report
- Appendix E3, Confidential Tribal Cultural Resources Consultation Efforts Memorandum
- Appendix H, Greenhouse Gas Analysis
- Appendix L, Noise Technical Report
- Appendix N, Transportation Impact Analysis, Vehicle Miles Traveled Analysis, and Transportation Demand Management Plan
- Appendix P1, Fire Protection Plan and Construction Fire Prevention Plan

Changes to the wording of impacts or mitigation measures and information added or deleted to the impact analyses and discussions are presented below with changes shown in underlined text (e.g., underlined text) and deletions indicated as strikethrough text (e.g., ~~strikethrough text~~) or in a descriptive form so that the original and revised text may be compared. Changes are presented by technical appendix in the order they appear in Volume II, Draft Revised EIR Technical Appendices. The technical appendices that did not require revisions are not included in this chapter. Appendices C1, D, E2, E3, H, L, N, and P1 are now considered final as of the date of the Final Revised EIR.

3.1 Appendix C1, Air Quality Analysis

The following lists the revisions and clarifications made to the Air Quality Analysis (May 2020), after the public review comment period for the Fanita Ranch Draft Revised Environmental Impact Report (EIR). It should be noted that the revisions and clarifications listed in this document do not change any conclusions provided in the EIR.

Construction Mitigation Measures

MM AIR-2 **Supplemental Dust-Control Measures.** As a supplement to San Diego Air Pollution Control District's Rule 55, Fugitive Dust Control, the applicant shall require the contractor to implement the following dust-control measures during construction. These measures shall be included in project construction documents, including the grading plan, and be reviewed and approved by the City of Santee prior to issuance of a grading permit.

- The construction contractor shall provide to all employees the fact sheet entitled "Preventing Work-Related Coccidioidomycosis (Valley Fever)" by the California Department of Public Health and ensure all employees are aware of the potential risks the site poses and inform them of all Valley Fever safety protocols, occupational responsibilities and requirements such as contained in these measures to reduce potential exposure to Coccidioides spores.
- Apply water at least three times per day at all active earth disturbance areas sufficient to confine dust plumes to the immediate work area.
- Apply soil stabilizers to inactive construction areas (graded areas that would not include active construction for multiple consecutive days).
- Quickly replace groundcover in disturbed areas that are no longer actively being graded or disturbed. If an area has been graded or disturbed and is currently inactive for 20 days or more but will be disturbed at a later time, soil stabilizers shall be applied to stabilize the soil and prevent windblown dust.
- Limit vehicle speeds on unpaved roads to 20 mph unless high winds in excess of 20 miles per hours are present, which requires a reduced speed limit of 15 mph. Vehicle speeds are limited to 30 mph for onsite haul roads that are paved with gravel to suppress dust or where visual dust is watered and monitored frequently enough to ensure compliance with SDAPCD Rule 55.

The errata revisions to mitigation measure MM AIR-2 are also included in the Executive Summary of the Air Quality Analysis Report.

Appendix E, Valley Fever Technical Report

A new Appendix E was added to the Air Quality Analysis (EIR Appendix C1) to provide a discussion of the proposed project's impacts related to Valley Fever. The text of Appendix E is as follows:

> Valley Fever is a disease caused by the sores of Coccidiodes fungus. The City has considered the potential for Coccidiodes fungus to occur to during construction of the Fanita Ranch Project.
>
> Areas endemic for Coccidioides include portions of the southwestern United States and northern Mexico. According to the Center for Disease Control and Infection (CDC), San Diego County is a suspected endemic area for Coccidioides (CDC 2014).
>
> Soils that are more likely to support Coccidioides are areas with rodent burrows, old (prehistoric) Indian campsites near fire pits, areas with sparse vegetation and alkaline soils, areas with high salinity soils, areas adjacent to arroyos, packrat middens, silty soils, and

well aerated soils with relatively high water holding capacities (County of San Diego 2018). Areas less likely to support Coccidioides include cultivated fields, heavily vegetated areas, areas where commercial fertilizers have been applied, areas that are paved or oiled, soils containing abundant microorganisms, and heavily urbanized areas where there is little undisturbed virgin soil (County of San Diego 2018). The fungal spores are generally found in the upper 20 to 30 centimeters of the soil horizon, especially in virgin, undisturbed soils (USGS 2000).

With the exception of the Special Use Area, the southern half of the Fanita Ranch Project site will remain habitat and will not be disturbed; therefore it is not of concern for Coccidioides. Likewise, the Special Use Area onsite has artificial fill soil associated with the urban development immediately adjacent to this portion of the site and therefore would not be likely to support Coccidioides. Also, roadway improvements within the paved right-of-way of existing roads are eliminated from the potential for Coccidioides because they are paved soils that include engineered underlayment of gravel.

The remainder of the site cannot be eliminated from the potential to contain Coccidioides fungus. These areas are in the northern half of the Fanita Ranch Project site and include the locations of the Vineyard Village, Fanita Commons, and Orchard Village.

The California Department of Public Health (CDPH 2013), County of Los Angeles (LA 2019), and the County of San Diego (2018) all recommend watering topsoil prior to and during earth disturbance in order to reduce airborne dust emissions and the spread of Coccidioides spores. Coccidioides fungus thrives in arid environments. Without water the Coccidioides fungus eventually desiccates into spores. Watering during earth disturbance activities significantly reduces airborne spores and the ability of workers to inhale spores, which is the route of infection.

The Fanita Ranch Project is required to implement the dust control measures listed in compliance with the SDCAPCD Rule 55, which prohibits discharges of visible dust emissions into the atmosphere beyond the property line for periods longer than 3 minutes in any 60 minute period. SDCAPCD also requires use of any of the following or equally effective trackout/carry-out and erosion control measures that apply to the project or operation: track-out grates or gravel beds at each egress point, wheel-washing at each egress during muddy conditions, soil binders, chemical soil stabilizers, geotextiles, mulching, or seeding; use of secured tarps or cargo covering, watering, or treating of transported material for outbound transport trucks. With implementation of these regulatory requirements, impacts related to Coccidioides for both on-site and off-site adjacent uses would be less than significant.

Section 4.2.5.1 of the EIR includes Mitigation Measures AIR-1: Rule 55 Dust-Control Measures memorializing what is required under SDAPCD Rule 55. Mitigation Measure AIR-1 includes provisions requiring that visual fugitive dust emissions monitoring shall be conducted during all construction phases. Visual monitoring shall be logged. If high wind conditions result in visible dust during visual monitoring, this demonstrates that the measures are inadequate to reduce dust in accordance with SDAPCD Rule 55, and construction shall cease until high winds decrease and conditions improve. In addition, the EIR includes AIR-2 Supplemental Dust-Control Measures that will reduce fugitive dust emissions even further and the chance of causing Coccidioides fungus spores to become airborne.

Though impacts related to Valley Fever would be less than significant, in response to concerns raised by some members of the public on the Draft Revised EIR, Mitigation Measure AIR-2 has been revised to provide additional clarification on the precautions that would be carried out to reduce the likelihood of Valley Fever even further. Mitigation Measures AIR-1 and AIR-2 are consistent with those precautions recommended by the California Department of Public Health (CDPH 2013) and the CDC (CDC 2014), as well as those listed in the Valley Fever Technical Report for the El Monte Sand Mining Project (County of San Diego 2018). And though not required by SDACPD, the measure incorporates recommendations from the South Coast Air Quality Management District on reduced vehicle speeds (SCAQMD 2005. Rule 403-Fugitive Dust Control, Best Available Control Measures).

AIR-2: **Supplemental Dust-Control Measures**. As a supplement to San Diego Air Pollution Control District Rule 55, Fugitive Dust Control, the applicant shall require the contractor to implement the following dust-control measures during construction. These measures shall be included in project construction documents, including the grading plan, and be reviewed and approved by the City of Santee prior to issuance of a grading permit.

- The construction contractor shall provide to all employees the fact sheet entitled "Preventing Work-Related Coccidioidomycosis (Valley Fever)" by the California Department of Public Health and ensure all employees are aware of the potential risks the site poses and inform them of all Valley Fever safety protocols, occupational responsibilities and requirements such as contained in these measures to reduce potential exposure to Coccidioides spores.
- Apply water at least three times per day at all active earth disturbance areas sufficient to confine dust plumes to the immediate work area.
- Apply soil stabilizers to inactive construction areas (graded areas that would not include active construction for multiple consecutive days).

- Quickly replace groundcover in disturbed areas that are no longer actively being graded or disturbed. If an area has been graded or disturbed and is currently inactive for 20 days or more but will be disturbed at a later time, soil stabilizers shall be applied to stabilize the soil and prevent windblown dust.
- Limit vehicle speeds on unpaved roads to 20 mph unless high winds in excess of 20 miles per hours are present, which requires a reduced speed limit of 15 mph. Vehicle speeds are limited to 30 mph for on-site haul roads that are paved with gravel to suppress dust or where visual dust is watered and monitored frequently enough to ensure compliance with SDAPCD Rule 55.

References

California Department of Public Health (CDPH). 2013. Preventing Work-Related Coccidioidomycosis (Valley Fever) Fact Sheet. Website: https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/OHB/HESIS/CDPH%20Document%20Library/CocciFact.pdf (accessed August 12, 2020).

Center for Disease Control and Infection (CDC). 2014. Epidemiologic Summary of Coccidioidomycosis in California, 2009 – 2012. Website: https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/CocciEpiSummary09-12.pdf (accessed August 12, 2020).

County of Los Angeles, Department of Public Health. 2019. Coccididioidomycosis (Valley Fever) Management Plan Guide for Employers. Website: http://publichealth.lacounty.gov/Acd/docs/valleyfeverplan2019.pdf (accessed August 12, 2020).

County of San Diego, Planning Department. 2018. El Monte Sand Mining Project Valley Fever Technical Report. Website: https://www.sandiegocounty.gov/content/dam/sdc/pds/ProjectPlanning/El-Monte-Sand-Mining-And-Nature-Preserve/SDEIRPublicReview/Appendices/Appendix%20Q%20-%20Valley%20Fever%20Tech%20Report.pdf (accessed August 7, 2020).

South Coast Air Quality Management District (SCAQMD). 2005. Rule 403-Fugitive Dust Control. Website: https://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf?sfvrsn=4 (accessed August 12, 2020).

United States Geological Survey (USGS). 2000. Operational Guidelines (version 1.0) for Geological Fieldwork in Areas Endemic for Coccidioidomycosis (Valley Fever). Website: https://pubs.usgs.gov/of/2000/0348/pdf/of00-348.pdf (accessed August 12, 2020).

Attachments

CDPH Preventing Work-Related Coccidioidomycosis (Valley Fever) Fact Sheet.

CDC Epidemiologic Summary of Coccidioidomycosis in California, 2009 – 2012.

County of Los Angeles Coccididioidomycosis (Valley Fever) Management Plan Guide for Employers.

County of San Diego El Monte Sand Mining Project Valley Fever Technical Report.

USGS Operational Guidelines (version 1.0) for Geological Fieldwork in Areas Endemic for Coccidioidomycosis (Valley Fever).

3.2 Appendix D, Biological Resources Technical Report

The following lists the revisions and clarifications made to the Biological Technical Report for the Fanita Ranch Project (May 2020), after the public review comment period for the Fanita Ranch Draft Revised Environmental Impact Report (EIR). It should be noted that the revisions and clarifications listed in this document do not change any conclusions provided in the EIR.

Section 2, Applicable Regulations

Section 2.1, Federal

Section 2.1.1, Federal Endangered Species Act

If USFWS or NMFS concludes that the action is not likely to adversely affect a listed species, the action may be conducted without further review under the FESA. Otherwise, USFWS or NMFS must prepare a written Biological Opinion describing how the agency's action will affect the listed species and its Critical Habitat. USFWS-designated and proposed Critical Habitat within a 1-mile buffer surrounding the project area is shown on Figure 2-1.

Section 5, Anticipated Project Impacts

Section 5.1, Direct Impacts

Section 5.1.1, Vegetation Communities

Sensitive vegetation communities to be impacted on site include scrub and chaparral, grasslands, vernal pools, bog and marsh, riparian and bottomland habitat, and woodland communities (Table 5-2a). Sensitive vegetation communities to be impacted off site include scrub ~~and chaparral~~, grasslands, vernal pools, and ~~bog and marsh, riparian and bottomland habitat~~ unvegetated channel ~~and woodland communities~~ (Table 5-2b). Within both on- and off-site areas, the project would permanently or temporarily impact 988.77 acres of sensitive habitats, including 978.54 acres of sensitive uplands, 0.41 acres of vernal pools, and 9.81 acres of wetland habitats.

Section 5.1.6, Wildlife Movement

This crossing, which would measure 6.9 meters (22.5 feet) wide by 3.7 meters (12.0 feet) tall by 35.0 meters (115 feet) long (0.7 openness ratio),[1] would meet the suggested 0.6 openness ratio suggested for mule deer and other ~~large mammals in Southern California~~ mid-sized mammal species documented during camera studies listed in Table 4-8, including bobcat and coyote. Mountain lion would also use the undercrossing. MM-BIO-15, which accounts for the wildlife crossing at Cuyamaca Street, would reduce impacts to wildlife corridors to less than significant. The crossing will have a raised floor and/or side platform to allow dry passage for wildlife when water is flowing.

Section 5.4, MSCP Plan Consistency Analysis

For those special-status species that are not included under the Draft Santee MSCP Subarea Plan but are included as Covered Species under the MSCP Plan (City of San Diego 1998), project-specific mitigation measures would be implemented, as summarized in Table 5-3 in Section 5.1.2 of this report for plants, and Table 5-4a in Section 5.1.3 of this report for wildlife, to reduce the proposed project's cumulative impacts to these special-status species to less than significant. For MSCP Covered Species occurring within the project area but with no other status (e.g., mule deer, mountain lion[2], western bluebird, etc.), cumulative impacts to these species would be reduced to less than significant due to the project-specific mitigation program providing wildlife movement corridors, and through establishment of the Habitat Preserve, which would conserve suitable habitat in a configuration that preserves genetic exchange and species viability.

Section 6, Mitigation

Section 6.1, Vegetation Communities

MM-BIO-1: **Preserve Management Plan.** Within the on-site Habitat Preserve, the applicant shall preserve in perpetuity a total of 1,650.38 acres of on-site Multiple Species Conservation Program (MSCP) open space including 1,518.50 acres within the Habitat Preserve (including 1,448.84 acres of sensitive upland

[1] The ACOE defines a culvert's openness ratio as the culvert's cross-sectional area divided by its length. This is calculated in meters.

[2] To clarify the listing status of this species, the mountain lion was not considered a CESA species at the time the Notice of Preparation (NOP) was issued for the Fanita Ranch EIR, which was November 10, 2018. The mountain lion was petitioned for listing on July 16, 2019, which initiated a CDFW review process that involves determining if there is enough evidence to warrant elevation to the next step of review. It was listed as a Candidate on April 21, 2020, meaning that it satisfied criteria for additional review, thus providing it with the same interim protections as a listed species until a decision is made. These dates were after the issuance of the NOP for the Fanita Ranch EIR. Pursuant to CEQA Guidelines § 15125, the EIR did not consider mountain lion as a Candidate species. It is acknowledged that the lion is legislatively considered a "specially protected mammal" species under California Department of Fish and Game Code since 1990, which effectively protects it from hunting pressure. However, no hunting is proposed or would be allowed by the proposed project and, therefore, this listing legislation was not considered relevant to the proposed project.

habitats), 10.52 acres of proposed trails, 6.88 acres of San Diego Gas & Electric access road, and 114.47 acres of on-site temporary impacts that shall become part of the Habitat Preserve once restored (see MM-BIO-2). Preservation of on-site open space requires recordation of a Habitat Preserve conservation easement and in-perpetuity management by the Preserve Manager in accordance with ~~a~~the Preserve Management Plan (PMP), which would be funded by an endowment or other acceptable permanent funding mechanism. The PMP includes a combination of active and passive restoration programs to gradually increase biological resources within open space areas through periodic treatments, mainly involving seed application on a landscape level combined with weed control activities.

An example diagram is included as Figure 6-1, Potential Restoration Treatment Areas, and an example diagram of the rotational hexagonal treatment areas is included as Figure 6-2, but the actual distribution of restoration and long-term treatment blocks ~~shall be proposed~~is within the PMP and the restoration plans. As shown on Figure 6-2, the Habitat Preserve was divided into Zone A and Zone B. Zone A includes areas that will receive treatment on a rotational basis, whereas Zone B will receive as-needed treatment since this area of the Habitat Preserve is more intact than in Zone A. . . .

~~As outlined in the PMP (Appendix P), at a minimum, t~~ The PMP addresses ~~a~~ long-term, permanently funded management ~~plan for~~of the on-site open space that accomplishes the goal of maintaining appropriate, high-value native plant communities throughout the Habitat Preserve. The PMP addresses management and monitoring of vegetation communities through specific minimum survey and management requirements. . . .

MM-BIO-3: **Vernal Pool Mitigation Plan.** A Vernal Pool Mitigation Plan (Appendix R) has been prepared and will allow disturbance of seasonal basin features (i.e., natural vernal pools and road ruts containing vernal pool indicator plant and wildlife species). . . .

Section 6.2, Plant Species

MM-BIO-5: **Oak Tree Restoration.** Impacts to 5 individual Engelmann oak trees and 17 individual oak trees within the coast live oak woodland vegetation community shall be mitigated at a ratio of 3:1; that is, three established sleeve-sized seedlings for each mature tree (i.e., oak trees with at least one trunk of 6-inch or more diameter at breast height [DBH] or multitrunked native oak trees with aggregate diameter of 10-inch DBH) to be impacted by the project. Therefore,

a total of 66 oak trees shall be planted to meet the 3:1 mitigation ratio requirement. Oak tree restoration ~~shall be~~is included as a component of the Wetland Mitigation Plan (Appendix S), ~~and~~ which shall be reviewed and approved by the City of Santee ~~prepared~~ prior to issuance of mass grading permits ~~with review and approval by the City of Santee~~. . . .

Section 6.3, Wildlife Species

MM-BIO-7: **Nesting Bird Survey.** ~~To the extent feasible,~~ Except as specified below, there shall be no brushing, clearing, and/or grading allowed during the breeding season of migratory birds ~~or raptors~~ (between ~~January~~February 15 and ~~September 15~~August 31) or raptors (January 1 and August 31) or coastal California gnatcatcher (between February 15 and August 15). If vegetation is to be cleared during the nesting season, all suitable habitat within 500 feet of the impact area shall be thoroughly surveyed for the presence of nesting birds by a qualified biologist no earlier than 72 hours prior to clearing. If project activities are delayed or suspended for more than 14 days during the nesting bird season, surveys should be repeated. The survey results shall be submitted by the project applicant to the City of Santee Director of Development Services. If any active nests are detected, the area shall be flagged and mapped on the construction plans along with an initial 100-foot buffer for non-listed passerines, 300-foot buffer for listed passerines (e.g. coastal California gnatcatcher), and up to a 500-foot maximum buffer for raptors. The nests shall be avoided and buffers maintained until the nesting cycle is complete or it is determined that the nest has failed. The final appropriate buffer distance, as well as cycle completion or nest failure, shall be determined by a qualified biologist.

MM-BIO-8: **Western Spadefoot Relocation.** During the wet season prior to clearing or grading operations, biologists shall collect western spadefoot adults from areas within 300 meters of known occupied pools. Adults shall ~~either be held by a Wildlife Agency approved biologist to be released back into the site after construction activities using standard methods, or they shall~~ be relocated to another area on the Fanita Ranch Project area that has suitable breeding habitat and few or no western spadefoot individuals.

~~A Western Spadefoot Relocation Plan is~~ Details on the western spadefoot relocation effort are included as a component of the Vernal Pool Mitigation Plan (Appendix R), were made available to the U.S. Geological Survey (USGS) for review, and subject to approval by the Wildlife Agencies. . . .

MM-BIO-9: Restoration of Suitable Habitat for Quino Checkerspot Butterfly and Hermes Copper Butterfly . . .

As described in the Draft Santee Multiple Species Conservation Program Subarea Plan, impacts to potentially suitable habitat for Hermes copper butterfly requires mitigation by preservation of suitable habitat at a ratio of 1:1, or 2:1 if the suitable habitat was previously occupied. Previously occupied habitat includes areas of potentially suitable habitat within 500 feet of a previously known occurrence of Hermes copper butterfly but where the butterfly was not identified during subsequent and more recent focused surveys. Mitigation of suitable habitat ~~shall be~~is included in the PMP (Appendix P) and ~~occur in~~includes the following~~ ways~~: preservation and management of existing suitable habitat within the Habitat Preserve, restoration/enhancement of existing suitable habitat within the Habitat Preserve, and creation of new suitable habitat areas within the Habitat Preserve and along manufactured slopes within development areas, as appropriate. . . .

MM-BIO-12: Coastal Cactus Wren Habitat Management. Coastal cactus wren is a Covered Species under the Draft Santee Multiple Species Conservation Program Subarea Plan. Because suitable and occupied habitat for this species will be impacted by grading and construction of the project, habitat enhancement and restoration of coastal cactus wren habitat shall occur. Based on project impacts to 0.57 acres of suitable habitat, a ~~2~~3:1 mitigation ratio resulting in a total of 1.~~14~~71 acres of habitat enhancement and restoration would be required for mitigation. . . .

Section 6.4, Jurisdictional Aquatic Resources

MM-BIO-13: Wetlands Mitigation Plan. . . .

A Wetland Mitigation Plan (Appendix S) for the Fanita Ranch Project has been prepared and describes the on-site mitigation program to mitigate anticipated temporary and permanent development impacts to waters of the United States and wetlands vegetation communities. Both on- and off-site mitigation sites are needed to provide full compensation for project impacts, and therefore two plans shall be required. . . .

The Wetland Mitigation Plan (Appendix S) is consistent with the ~~ACOE's~~ EPA's 2008 Compensatory Mitigation Rule and subsequent guidance documents. The Wetland Mitigation Plan shall use the latest available tentative tract map to define the mitigation areas. . . .

Section 6.5, Wildlife Movement

MM-BIO-14: Wildlife Corridor . . .

6. Streets V and W, which connect the Vineyard Village to Fanita Commons and Orchard Village, shall provide safety lighting that shall be button started with a timer shut-off delay, such that lighting will not permanently be on at night, but only on when needed for emergency purposes or pedestrian safety.

MM-BIO-19: Habitat Preserve Protection. In order to help protect against incursions by domestic pets, children, or recreationists, brush management zones, temporary impact zones between roadways, manufactured slopes in development areas, and open space shall be planted with native cactus species, ~~poison oak, stinging nettle,~~ and redberry buckthorn as appropriate. Native ~~C~~cactus shall be planted so that it does not hinder fire access, but will be clustered so that it discourages or inhibits encroachment.

MM-BIO-20: Wildlife Protection. In order to generally protect wildlife species and habitat, the following measures shall be implemented ~~during construction~~:

1. Adequate fencing (i.e. wildlife safe that would prevent unnecessary snaring or injury) shall be erected to guide human users away from open space areas where open space abuts roads, parks, and trails. ~~Fencing locations shall be shown on the Construction Plans.~~
2. Covenants, Conditions, and Restrictions shall include a section that forbids collection of native wildlife (e.g., coast horned lizards, toads, snakes) without obtaining the necessary collection permits from California Department of Fish and Wildlife or the destroying of wildlife habitat.
3. Covenants, Conditions, and Restrictions shall include a notice describing the necessary role that coyotes, bobcats, and rattlesnakes have in the environment and shall make recommendations for keeping pets and pet food indoors and safe, and restrictions against controlling these and other native species unless there is a threat to life or property. The Preserve Manager's phone number shall be provided for residents to call when they feel threatened by wildlife or observe injured wildlife.
4. Covenants, Conditions, and Restrictions shall include a notice describing the trail and preserve restrictions. . . .

Figures

Figure 2-1, USFWS-Designated and Proposed Critical Habitat

The Biological Resources Technical Report (Appendix D to EIR), has been revised to show the location of the surrounding USFWS-designated Critical Habitat within a 1-mile buffer around the project site.

Figure 5-5B, Impacts to USFWS Designated Critical Habitat - Coastal California Gnatcatcher

The Biological Resources Technical Report (Appendix D to EIR), which contained an error (i.e., a GIS query was left on, which filtered out some of the suitable modeled habitat shown on Biological Resources Technical Report Figure 3-4), has been revised to correctly show the suitable habitat areas within the project site.

Figure 5-8, Regional Wildlife Corridors

The Biological Resources Technical Report (Appendix D to EIR) was revised to include a representative male lion territory of around 73,000 acres.

Appendix K, Wildlife Species Observed within the Project Area

SALAMANDERS

PLETHODONTIDAE—LUNGLESS SALAMANDERS

Batrachoseps major—garden slender salamander ~~Batrachoseps pacificus—Channel Islands slender salamander~~

Appendix P, Preserve Management Plan

Section 1, Introduction

Section 1.3, Agency Review Coordination

The City and applicant will interact and coordinate with other public agencies with jurisdiction over the project during environmental review; during City consideration of the project for approval; and, if approved, during implementation of the PMP. Additionally, this PMP shall be provided to the County of San Diego Department of Parks and Recreation for review of consistency with the County Trails Program and the Community Trails Master Plan.

Section 1.4, Implementation

Section 1.4.2, Financial Responsibility and Mechanism

In accordance with Mitigation Measure (MM) BIO-1 outlined in the Biological Technical Report (Dudek 2020a), preservation of on-site open space requires recordation of a Habitat

Preserve conservation easement, and a commitment to fund and manage in perpetuity in accordance with the PMP. As stated in the Draft Santee MSCP Subarea Plan, a conservation easement or equivalent land protection mechanism (e.g., Restrictive Covenant) will be recorded for the Habitat Preserve. The land protection mechanism, as required by the City's condition of approval, will be ~~recorded~~ in-place prior to issuance of a grading permit or first ground-disturbing activity.

Appendix R, Vernal Pool Mitigation Plan

Section 8, Final Success Criteria and Performance Standards

Section 8.4, Performance Standards

Section 8.4.3, Western Spadefoot Performance Standards

Western spadefoot have been documented in 24 of the 131 basins within the Habitat Preserve and 14 of the 111 impacted basins. This translates into a maximum occupation of 16% of the basins, as not all basins were occupied every year. During the wet season prior to grading or contouring operations, biologists shall collect western spadefoot adults from areas within 300 meters of known occupied pools. Adults shall ~~either be held by a Wildlife Agency approved biologist to be released back into the site after construction activities using standard methods, or they shall~~ be relocated to another area on the Fanita Ranch Project site that has suitable breeding habitat and few or no western spadefoot individuals.

Appendix T, Public Access Plan

Section 3, Existing Plans, Goals, and Objectives

Section 3.3, County of San Diego Community Trails Master Plan

The following sections of the CTMP are applicable to the proposed trails at Fanita Ranch:

- Chapter 7: Design and Construction Guidelines
- Chapter 10: Regional Trails

This Public Access Plan shall be provided to the County of San Diego Department of Parks and Recreation for review of consistency with the County Trails Program and the CTMP.

Section 6, Implementation

Section 6.1, Maintenance and Management of Trails

Based on recommendations in the U.S. Department of Agriculture Trail Construction and Maintenance Notebook (USDA 2007), the following trail maintenance recommendations would be implemented for the Habitat Preserve:

- Maintain trails when the need is first noticed to prevent more severe and costly damage later.

- Keep surface water from running down trails. For rolling contour trails, keep grades sustainable by using the half rule (i.e., the trail grade is not more than half of the grade of the side-slope), and add reversals in grade to keep water moving across the trail with tread sloped outboard (i.e., rolling dips). Outboard sloping tread should be graded approximately 5% from the inside to outside edge to help move water across the trail.
- Keep trails well-drained to keep tread material on the trail.
- Compact trail surfaces to discourage damage by burrowing mammals (e.g., pocket mice, gophers).
- ~~Maintain trail corridor clearing limits, including the area above and to the sides of the tread, by trimming vegetation and removing fallen logs. For safety, a clear zone should be maintained between 2 feet and 8 feet high within 3 feet of the trail. Additionally, any dead or dying trees or limbs overhanging the trail should be removed to reduce the likelihood of injury from falling debris.~~
- ~~Outside of the 3-foot clearance zone, consider removing brush from only the uphill side of the trail. This approach encourages users to avoid using the trail's downhill edge, which would help maintain trail alignment.~~
- Tree roots can pose hazards for tripping and erosion. The following maintenance prescriptions apply to tree roots:
  - Consider ~~R~~removing~~e~~ roots that are parallel with the tread. These help funnel water down the trail and create slipping hazards.
  - Route trails around large trees. Construction of trails close to trees undermines their root systems, which may lead to premature tree mortality and safety issues.
  - Do not remove roots that are perpendicular to the tread, fairly flush, and not a tripping hazard.
- Maintain trail tread periodically. Trails should be monitored yearly as part of long-term management of the trail. Problems should be corrected as soon as they are noted to reduce the likelihood of continued damage and/or public safety issues. Tread maintenance includes the following:
  - Removing and scattering berm material that collects at the outside edge of the trail.
  - Reshaping the tread and restoring the out-slope.
  - Maintaining the tread at the designed width.
  - Removing debris that has fallen on the tread, including logs, sticks, stones, and trash.
  - Removing obstacles, such as protruding roots, ~~and~~ rocks and low-hanging branches.
  - Repairing any sections that have been damaged by landslides, uprooted trees, washouts, or boggy conditions.
  - Compacting tread and sections of back-slope that have been reworked.

Figure 4, Fanita Ranch Specific Plan Trails Map

Figure 4 of the Public Access Plan (Appendix T to the Biological Resources Technical Report [EIR Appendix D]) has been revised to state the following:

> Connection to Stowe Trail and Weston via MCAS Miramar and East Elliott Expansion Area of Mission Trails Regional Park.

3.3 Appendix E2, Confidential Phase II Cultural Resources Testing and Evaluation Report

The following lists the revisions or clarifications corrected in the Confidential Phase II Cultural Resources Testing and Evaluation Report (May 2020) after the public review comment period for the Fanita Ranch Draft Revised Environmental Impact Report (EIR). It should be noted that the revisions and clarifications listed in this document do not change any conclusions provided in the EIR.

Executive Summary

Site Capping

> Capping soils shall be visually distinguishable from the native soils below. A minimum of 24 inches of fill material shall be maintained between the surface of the archaeological cap and any ground disturbing activities. Ground disturbing activities include but are not limited to grading; excavation; compaction; placement of soil, sand, rock, gravel, or other material; clearing of vegetation; construction, erection, or placement of any, underground utilities, building or structure. Restrictions shall be applied regarding species planted within the cap (deep-rooted species would be avoided in areas where the cap does not exceed 10 feet). Additionally, chemical agents such as fertilizer shall be avoided in areas where the cap does not exceed 24 inches.

Phase III Data Recovery

> The Phase III Data Recovery field work should be completed in accordance with the established Plan by a qualified archaeologist. The fieldwork should be observed by a minimum of one Native American monitor. The Native American monitor(s) should be of Kumeyaay descent with ancestral ties to the San Diego region and at minimum one year of monitoring experience within Kumeyaay ancestral territory.
>
> Following the completion of the Phase III Data Recovery field work, the results should be summarized in a Phase III Data Recovery Report. The report should be completed by the qualified archaeologist and should include the results of the field work, laboratory analysis, and address the research questions established in the Phase III Data Recovery Plan. The report should also include Department of Parks and Recreation Series 523 updates for sites CA-SDI-8243 and CA-SDI-8345. The report should be submitted to the consulting Native

American groups and the Project Planner at the City of Santee for review. Upon acceptance of the final report, an electronic version of the final report should be submitted to the South Coastal Information Center and the San Diego Archaeological Center ~~Society~~.

Native American Construction Monitoring

A minimum of one Native American monitor should be present during ground-disturbing activity for project construction, including but not limited to site clearing, grubbing, trenching, and excavation, for the duration of the proposed project or until the qualified archaeologist determines monitoring is no longer necessary. The Native American monitor(s) should be of Kumeyaay descent with ancestral ties to the San Diego region and at minimum one year of monitoring experience within Kumeyaay ancestral territory. The Native American monitor(s) should prepare daily logs and submit weekly updates to the qualified archaeologist and the Project Planner at the City of Santee. In addition, the Native American monitor(s) should prepare and submit a summary statement upon completion of monitoring to include in the Cultural Resources Monitoring Report prepared for the project. The Project Planner at the City of Santee should review and include the statement as part of the Cultural Resources Monitoring Report prepared for the proposed project.

Curation of Archaeological Resources

Upon completion of project construction, all archaeological collections that have not been repatriated or buried on site, along with final reports, field notes, and other standard documentation collected, should be permanently curated at a facility in San Diego County that meets the State Historical Resources Commission's Guidelines for the Curation of Archaeological Collections. A qualified archaeologist who meets or exceeds the Secretary of the Interior's Professional Qualifications Standards for archaeology should be required to secure a written agreement with a recognized museum repository regarding the final disposition and permanent storage and maintenance of all archaeological resources recovered as a result of the Phase III archaeological investigations and monitoring activities that have not been repatriated or buried on site. The written agreement should specify the level of treatment (preparation, identification, curation, cataloging) required before the collection would be accepted for storage. The cost of curation is assessed by the repository and is the responsibility of the applicant.

Cultural and Tribal Cultural Impacts Associated with Biological Restoration

Prior to the execution of Mitigation Measures BIO-1, BIO-2, BIO-12, and BIO-15, the supervising biologists and applicant should consult with the City of Santee, a qualified archaeologist who meets the Secretary of Interior's Professional Qualifications Standards for archaeology, and the Native American groups who have participated in consultation for

the project to complete the following tasks to address potential impacts to cultural and tribal cultural resources:

1) After the identification of possible biological restoration areas, the archaeologist(s) and Native American monitor(s) of Kumeyaay descent with ancestral ties to the San Diego region and at minimum one year of monitoring experience within Kumeyaay ancestral territory should complete a cultural resource records search of the California Historical Resources Information System (CHRIS) and in-fill pedestrian surveys of any areas not previously investigated by Atkins (December 2017) or Rincon (May 2020) as part of the proposed project.

Section 8, NRHP and CRHR Eligibility and Management Recommendations

Section 8.3.2, Mitigation Measure CUL-1 Site Capping.

Prior to implementation of a site (or locus) capping program, a site capping plan shall be prepared by a qualified archaeologist who meets or exceeds the Secretary of Interior's Professional Qualifications Standards for archaeology. The plan shall be reviewed and approved by the Project Planner for the City of Santee with input from Native American tribal groups who have consulted on the project. The plan shall include the following or equivalent steps:

1) Retain an archaeological monitor and Native American monitor of Kumeyaay descent with ancestral ties to the San Diego region and at minimum one 1 year of monitoring experience within Kumeyaay ancestral territory to observe the capping process. . . .

   Capping soils shall be visually distinguishable from the native soils below. A minimum of 24 inches of fill material shall be maintained between the surface of the archaeological cap and any ground disturbing activities. Ground disturbing activities include but are not limited to grading; excavation; compaction; placement of soil, sand, rock, gravel, or other material; clearing of vegetation; construction, erection, or placement of any, underground utilities, building or structure. Restrictions shall be applied regarding species planted within the cap (deep-rooted species would be avoided in areas where the cap does not exceed 10 feet). Additionally, chemical agents such as fertilizer shall be avoided in areas where the cap does not exceed 24 inches.

Section 8.3.3, Mitigation Measure CUL-2 Phase III Data Recovery . . .

The Phase III Data Recovery field work should be completed in accordance with the established Plan by a qualified archaeologist. The fieldwork should be observed by a minimum of one Native American monitor. The Native American monitor(s) should be of Kumeyaay descent The Native American monitor(s) should be of Kumeyaay descent with

ancestral ties to the San Diego region and at minimum one year of monitoring experience within Kumeyaay ancestral territory.

Following the completion of the Phase III Data Recovery field work, the results should be summarized in a Phase III Data Recovery Report. The report should be completed by the qualified archaeologist and should include the results of the field work, laboratory analysis, and address the research questions established in the Phase III Data Recovery Plan. The report should also include Department of Parks and Recreation Series 523 updates for sites CA-SDI-8243 and CA-SDI-8345. The report should be submitted to the consulting Native American groups and the Project Planner at the City of Santee for review. Upon acceptance of the final report, an electronic version of the final report should be submitted to the South Coastal Information Center and the San Diego Archaeological Center ~~Society~~.

Section 8.3.5, Mitigation Measure CUL-4 Cultural Resources Mitigation and Monitoring Program

Following the completion of the Phase III Data Recovery Excavation Program, and prior to the start of any ground-disturbing activity for project construction, including but not limited to site clearing, grubbing, trenching, and excavation, a qualified archaeologist who meets or exceeds the Secretary of Interior's Professional Qualifications Standards for archaeology shall be retained to prepare a Cultural Resources Mitigation and Monitoring Program for unanticipated discoveries during project construction. The information gathered during the Phase III Data Recovery Excavation Program will help to inform the Cultural Resources Mitigation and Monitoring Program. The Cultural Resources Mitigation and Monitoring Program shall be prepared in consultation with Native American tribes who have participated in consultation for the proposed project. The Cultural Resources Mitigation and Monitoring Program shall include provisions for archaeological and Native American monitoring of all ground disturbance related to construction of the proposed project, project construction schedule, procedures to be followed in the event of discovery of archaeological resources, and protocols for Native American coordination and input, including review of documents. The Cultural Resources Mitigation and Monitoring Program shall outline the role and responsibilities of Native American monitors. It shall include communication protocols and opportunity and timelines for review of cultural resources documents related to discoveries that are Native American in origin. The Cultural Resources Mitigation and Monitoring Program shall include provisions for Native American monitoring during testing or data recovery efforts for unknown resources that are Native American in origin (Mitigation Measures CUL-6 and CUL-7). The Native American monitors shall be of Kumeyaay descent with ancestral ties to the San Diego region and at minimum one 1 year of monitoring experience within Kumeyaay ancestral territory. Once completed, the Cultural Resources Mitigation and

Monitoring Program shall be reviewed and approved by the Project Planner at the City of Santee prior to the start of any ground-disturbing activities.

Section 8.3.6, Mitigation Measure CUL-5: Cultural Resources Construction Monitoring

A qualified archaeologist who meets or exceeds the Secretary of Interior's Professional Qualifications Standards for Archaeology shall be present during ground-disturbing activity for project construction, including but not limited to site clearing, grubbing, trenching, and excavation, for the duration of the proposed project or until the qualified archaeologist determines monitoring is no longer necessary. The archaeological monitor shall prepare daily logs and submit weekly updates to the Project Planner at the City of Santee regarding the activities observed. In the event that previously unidentified prehistoric or historic archaeological materials or human remains are encountered during project construction, the significance of the discovery shall be assessed based on the steps outlined in the Cultural Resources Mitigation and Monitoring Program identified in Mitigation Measures CUL-4, CUL-7, and CUL-10 for the proposed project.

At the completion of monitoring, the qualified archaeologist shall prepare a Cultural Resources Monitoring Report to document the findings during the monitoring effort for the proposed project. The report shall include the monitoring logs completed for the proposed project and shall document any discoveries made during monitoring. The report shall also include the monitoring logs prepared by the Native American monitor for the proposed project. <u>The Native American monitors shall be of Kumeyaay descent</u> <u>with ancestral ties to the San Diego region and at minimum one 1 year of monitoring experience within Kumeyaay ancestral territory</u>. The Cultural Resources Monitoring Report shall be submitted to the City of Santee and the South Coastal Information Center.

Section 8.3.7, Mitigation Measure CUL-6 Native American Construction Monitoring

A minimum of one Native American monitor should be present during ground-disturbing activity for project construction, including but not limited to site clearing, grubbing, trenching, and excavation, for the duration of the proposed project or until the qualified archaeologist determines monitoring is no longer necessary. The Native American monitor(s) should be of Kumeyaay descent <u>with ancestral ties to the San Diego region and at minimum one year of monitoring experience within Kumeyaay ancestral territory</u>. The Native American monitor(s) should prepare daily logs and submit weekly updates to the qualified archaeologist and the Project Planner at the City of Santee. In addition, the Native American monitor(s) should prepare and submit a summary statement upon completion of monitoring to include in the Cultural Resources Monitoring Report prepared for the project. The Project Planner at the City of Santee should review and include the statement as part of the Cultural Resources Monitoring Report prepared for the proposed project.

Section 8.3.9, Mitigation Measure CUL-8 Curation of Archaeological Resources

Upon completion of project construction, all archaeological collections that have not been repatriated or buried on site, along with final reports, field notes, and other standard documentation collected, should be permanently curated at a facility in San Diego County that meets the State Historical Resources Commission's Guidelines for the Curation of Archaeological Collections. A qualified archaeologist who meets or exceeds the Secretary of the Interior's Professional Qualifications Standards for archaeology should be required to secure a written agreement with a recognized museum repository regarding the final disposition and permanent storage and maintenance of all archaeological resources recovered as a result of the Phase III archaeological investigations and monitoring activities that have not been repatriated or buried on site. The written agreement should specify the level of treatment (preparation, identification, curation, cataloging) required before the collection would be accepted for storage. The cost of curation is assessed by the repository and is the responsibility of the applicant.

Section 8.3.10, Mitigation Measure CUL-9 Cultural and Tribal Cultural Impacts Associated with Biological Restoration

Prior to the execution of Mitigation Measures BIO-1, BIO-2, BIO-12, and BIO-15, the supervising biologists and applicant should consult with the City of Santee, a qualified archaeologist who meets the Secretary of Interior's Professional Qualifications Standards for archaeology, and the Native American groups who have participated in consultation for the project to complete the following tasks to address potential impacts to cultural and tribal cultural resources:

1) After the identification of possible biological restoration areas, the archaeologist(s) and Native American monitor(s) of Kumeyaay descent with ancestral ties to the San Diego region and at minimum one year of monitoring experience within Kumeyaay ancestral territory should complete a cultural resource records search of the California Historical Resources Information System (CHRIS) and in-fill pedestrian surveys of any areas not previously investigated by Atkins (December 2017) or Rincon (May 2020) as part of the proposed project. . . .

3.4 Appendix E3, Confidential Tribal Cultural Resources Consultation Efforts Memorandum

The following lists the revisions or clarifications corrected in the Confidential Tribal Cultural Resources Consultation Efforts Memorandum (May 2020) after the public review comment period for the Fanita Ranch Draft Revised Environmental Impact Report (EIR). It should be noted that the revisions and clarifications listed in this document do not change any conclusions provided in the EIR.

Mitigation Measures

Mitigation Measure CUL-1 Site Capping Program

Prior to implementation of a site (or locus) capping program, a site capping plan shall be prepared by a qualified archaeologist who meets or exceeds the Secretary of Interior's Professional Qualifications Standards for archaeology. The plan shall be reviewed and approved by the Project Planner for the City of Santee with input from Native American tribal groups who have consulted on the project. The plan shall include the following or equivalent steps:

1) Retain an archaeological monitor and Native American monitor of Kumeyaay descent with ancestral ties to the San Diego region and at minimum one 1 year of monitoring experience within Kumeyaay ancestral territory to observe the capping process. . . .

   Capping soils shall be visually distinguishable from the native soils below. A minimum of 24 inches of fill material shall be maintained between the surface of the archaeological cap and any ground disturbing activities. Ground disturbing activities include but are not limited to grading; excavation; compaction; placement of soil, sand, rock, gravel, or other material; clearing of vegetation; construction, erection, or placement of any, underground utilities, building or structure. Restrictions shall be applied regarding species planted within the cap (deep-rooted species would be avoided in areas where the cap does not exceed 10 feet). Additionally, chemical agents such as fertilizer shall be avoided in areas where the cap does not exceed 24 inches. . . .

Mitigation Measure CUL-2 Phase III Data Recovery Excavation Program. . .

The Phase III Data Recovery field work should be completed in accordance with the established Plan by a qualified archaeologist. The fieldwork should be observed by a minimum of one Native American monitor. The Native American monitor(s) should be of Kumeyaay descent with ancestral ties to the San Diego region and at minimum one year of monitoring experience within Kumeyaay ancestral territory.

Following the completion of the Phase III Data Recovery field work, the results should be summarized in a Phase III Data Recovery Report. The report should be completed by the qualified archaeologist and should include the results of the field work, laboratory analysis, and address the research questions established in the Phase III Data Recovery Plan. The report should also include Department of Parks and Recreation Series 523 updates for sites CA-SDI-8243 and CA-SDI-8345. The report should be submitted to the consulting Native American groups and the Project Planner at the City of Santee for review. Upon acceptance

of the final report, an electronic version of the final report should be submitted to the South Coastal Information Center and the San Diego Archaeological Center ~~Society~~.

Mitigation Measure CUL-4 Cultural Resources Mitigation and Monitoring Program

Following the completion of the Phase III Data Recovery Excavation Program, and prior to the start of any ground-disturbing activity for project construction, including but not limited to site clearing, grubbing, trenching, and excavation, a qualified archaeologist who meets or exceeds the Secretary of Interior's Professional Qualifications Standards for archaeology shall be retained to prepare a Cultural Resources Mitigation and Monitoring Program for unanticipated discoveries during project construction. The information gathered during the Phase III Data Recovery Excavation Program will help to inform the Cultural Resources Mitigation and Monitoring Program. The Cultural Resources Mitigation and Monitoring Program shall be prepared in consultation with Native American tribes who have participated in consultation for the proposed project. The Cultural Resources Mitigation and Monitoring Program shall include provisions for archaeological and Native American monitoring of all ground disturbance related to construction of the proposed project, project construction schedule, procedures to be followed in the event of discovery of archaeological resources, and protocols for Native American coordination and input, including review of documents. The Cultural Resources Mitigation and Monitoring Program shall outline the role and responsibilities of Native American monitors. It shall include communication protocols and opportunity and timelines for review of cultural resources documents related to discoveries that are Native American in origin. The Cultural Resources Mitigation and Monitoring Program shall include provisions for Native American monitoring during testing or data recovery efforts for unknown resources that are Native American in origin (Mitigation Measures CUL-6 and CUL-7). The Native American monitors shall be of Kumeyaay descent with ancestral ties to the San Diego region and at minimum one 1 year of monitoring experience within Kumeyaay ancestral territory. Once completed, the Cultural Resources Mitigation and Monitoring Program shall be reviewed and approved by the Project Planner at the City of Santee prior to the start of any ground-disturbing activities.

Mitigation Measure CUL-5 Cultural Resources Construction Monitoring

A qualified archaeologist who meets or exceeds the Secretary of Interior's Professional Qualifications Standards for Archaeology shall be present during ground-disturbing activity for project construction, including but not limited to site clearing, grubbing, trenching, and excavation, for the duration of the proposed project or until the qualified archaeologist determines monitoring is no longer necessary. The archaeological monitor shall prepare daily logs and submit weekly updates to the Project Planner at the City of Santee regarding the activities observed. In the event that previously unidentified prehistoric or historic

archaeological materials or human remains are encountered during project construction, the significance of the discovery shall be assessed based on the steps outlined in the Cultural Resources Mitigation and Monitoring Program identified in Mitigation Measures CUL-4, CUL-7, and CUL-10 for the proposed project.

At the completion of monitoring, the qualified archaeologist shall prepare a Cultural Resources Monitoring Report to document the findings during the monitoring effort for the proposed project. The report shall include the monitoring logs completed for the proposed project and shall document any discoveries made during monitoring. The report shall also include the monitoring logs prepared by the Native American monitor for the proposed project. The Native American monitors shall be of Kumeyaay descent with ancestral ties to the San Diego region and at minimum one 1 year of monitoring experience within Kumeyaay ancestral territory. The Cultural Resources Monitoring Report shall be submitted to the City of Santee and the South Coastal Information Center.

Mitigation Measure CUL-6 Native American Construction Monitoring

A minimum of one Native American monitor should be present during ground-disturbing activity for project construction, including but not limited to site clearing, grubbing, trenching, and excavation, for the duration of the proposed project or until the qualified archaeologist determines monitoring is no longer necessary. The Native American monitor(s) should be of Kumeyaay descent with ancestral ties to the San Diego region and at minimum one year of monitoring experience within Kumeyaay ancestral territory. The Native American monitor(s) should prepare daily logs and submit weekly updates to the qualified archaeologist and the Project Planner at the City of Santee. In addition, the Native American monitor(s) should prepare and submit a summary statement upon completion of monitoring to include in the Cultural Resources Monitoring Report prepared for the project. The Project Planner at the City of Santee should review and include the statement as part of the Cultural Resources Monitoring Report prepared for the proposed project.

Mitigation Measure CUL-8 Curation of Archaeological Resources

Upon completion of project construction, all archaeological collections that have not been repatriated or buried on site (per Mitigation Measure CUL-11, Treatment and Disposition of Tribal Cultural Resources), along with final reports, field notes, and other standard documentation collected, should be permanently curated at a facility in San Diego County that meets the State Historical Resources Commission's Guidelines for the Curation of Archaeological Collections. A qualified archaeologist who meets or exceeds the Secretary of the Interior's Professional Qualifications Standards for archaeology should be required to secure a written agreement with a recognized museum repository regarding the final disposition and permanent storage and maintenance of all archaeological resources

recovered as a result of the Phase III archaeological investigations and monitoring activities that have not been repatriated or buried on site. The written agreement should specify the level of treatment (preparation, identification, curation, cataloging) required before the collection would be accepted for storage. The cost of curation is assessed by the repository and is the responsibility of the applicant.

Mitigation Measure CUL-9 Cultural and Tribal Cultural Impacts Associated with Biological Restoration

Prior to the execution of Mitigation Measures BIO-1, BIO-2, BIO-12, and BIO-15, the supervising biologists and applicant shall consult with the City of Santee, a qualified archaeologist who meets the Secretary of Interior's Professional Qualifications Standards for archaeology, and the Native American groups who have participated in consultation for the project to complete the following tasks to address potential impacts to cultural and tribal cultural resources:

1) After the identification of possible biological restoration areas, the archaeologists and a Native American monitor of Kumeyaay descent <u>with ancestral ties to the San Diego region and at minimum one year of monitoring experience within Kumeyaay ancestral territory</u> shall complete a cultural resource records search of the California Historical Resources Information System and in-fill pedestrian surveys of any areas not previously investigated by Atkins (December 2017) or Rincon (March 2020) as part of the proposed project. . . .

Mitigation Measure CUL-11 Treatment and Disposition of Tribal Cultural Resources

The applicant shall relinquish ownership of all non-burial related tribal cultural resources collected during the grading monitoring program and to the extent performed by the applicant, from any previous archaeological studies or excavations on the project site to the most likely descendant tribe for proper treatment and disposition per the Cultural Resources Mitigation and Monitoring Program (Mitigation Measure CUL-4). Any burial related tribal cultural resources (as determined by the most likely descendant) shall be repatriated to the most likely descendant as determined by the Native American Heritage Commission pursuant to California Public Resources Code, Section 5097.98. If none of the consulting tribes accept the return of the cultural resources, then the cultural resources shall be subject to the curation requirements stipulated in Mitigation Measure CUL-8, Curation of Archaeological Resources) In the event that curation of tribal cultural resources is required by a superseding regulatory agency, curation shall be conducted by an approved facility and the curation shall be guided by the State Historical Resources Commission's Guidelines for the Curation of Archaeological Collections. <u>In the event the superseding agency is a Federal agency, Title 36 of the Code of Federal Regulations, part 79 shall be followed</u>. . . ..

Condition of Approval

In an effort to cooperate with Barona, the City of Santee has agreed that a surface inventory of sensitive areas adjacent to the proposed project development footprint (but located outside the area of potential effect) will be a Condition of Approval for the project and will be completed prior to the issuance of grading permits. This survey will completed by a qualified archaeologist who meets or exceeds the Secretary of Interiors standards for archaeology and a Native American monitor of Kumeyaay descent. The survey shall be limited to 300 ~~100~~ feet from the development footprint and will be focused on areas that are known to be sensitive for cultural resources. In the event a cultural resource and/ or TCR is identified adjacent to the development footprint, the resource will be recorded using Department of Parks and Recreation Series 523 forms and Environmental Sensitive Area (ESA) fencing will be put in place prior to ground disturbing activities and will remain in place until project related ground disturbance is complete. Because these areas are outside of the project development footprint and will not be impacted by the development, no further analysis beyond a surface inventory will be completed.

3.5 Appendix H, Greenhouse Gas Analysis

The following lists the revisions or clarifications corrected in the Greenhouse Gas Analysis Report for the Fanita Ranch Project after the public review comment period for the Fanita Ranch Draft Revised Environmental Impact Report (EIR). It should be noted that the revisions and clarifications listed in this document do not change any conclusions provided in the EIR.

Regulatory Setting

State Regulations/Standards

Executive Oder B-55-18

On September 12, 2018, California Governor Jerry Brown announced, through Executive Order B 55-18, the following GHG emissions target:

- By 2045, California shall achieve statewide net carbon neutrality.

The emission reduction target of net carbon neutrality is a long-term goal. The order includes specific CARB actions including setting a goal of five million zero emission vehicles and doubling the reduction of carbon fuels by 2030 and developing a forest carbon plan with specific regulations to reduce statewide sources of GHG emissions toward carbon neutrality. The Executive Order does not include a specific guideline for local governments.

Regulatory Compliance Measures and Project Design Features that Reduce GHG Emissions

Table I summarizes each PDF and how the GHG reductions were calculated.

Table I: Project Design Features That Reduce GHG Emissions

PDF Number	Strategy to Reduce GHG Emissions	Description	Qualification Details
Water			
PDF-UT-4	Residential Landscaping	All proposed project landscaping shall comply with the City's Landscape Ordinance, and California Code Regulations Title 23, Division 2, Chapter 2.7 (section 490 et Seq.) By complying with this ordinance, it is estimated that outdoor water use at single family residences will be reduced by approximately 10 percent. With an estimated total water use of ~~500~~ 340 gpd per home and approximately 50 percent of this water used outdoors, the estimated annual water savings is 9,125 gallons per home. Residential water use can vary widely based on the size of lots; however, based on local Padre Dam Municipal Water District factors for the proposed project, estimated water use for a typical single family home is 435 gpd for densities of 3.0 to 10 units per acre, 700 gpd for densities of 1.0 to 3.0 units per acre, and 1,000 gpd for densities of less than 1.0 unit per acre. With an estimated 50 percent of this water savings is 7,940 gallons per single family residence where densities are from 1.0 to 3.0 units per acre, and 18,250 gallons per single family residence where densities are less than 1.0 units per acre based on these assumptions.	Estimated that outdoor water use at single-family residences will be reduced by approximately 10%. Reduction included in water use estimates. No additional reduction assumed.

GHG Mitigation Measures

MM GHG-3 Prior to the issuance of building permits, the applicant or its designee shall provide evidence to the City of Santee that the project will implement water conservation strategies that are designed to be as efficient as possible with potable water supplies, and achieve at least 20 percent indoor and outdoor water reduction compared to the statewide average water consumption rate ~~in the City of Santee~~ at the time of project approval.

3.6 Appendix L, Noise Technical Report

The following lists the revisions and clarifications made to the Noise Technical Report (May 2020), after the public review comment period for the Fanita Ranch Draft Revised Environmental Impact Report (EIR). It should be noted that the revisions and clarifications listed in this document do not change any conclusions provided in the EIR.

Section 3.4.3.1, Aviation

The following change is incorporated into Section 3.4, Existing Noise Environment, under Section 3.4.3, Transportation Noise Sources:

> MCAS Miramar is located adjacent to the west/northwestern boundary of the project site. The runways are located approximately 6 miles west of the project site. Aircraft currently flown at MCAS Miramar include F-35, F/A-18, KC-130, and C-12 aircraft, as well as ~~CH-46~~ tilt-rotor MV-22 Osprey and CH-53 helicopters (MCAS Miramar 2018). The maximum presently authorized mission of the airfield is 112,242 annual aircraft operations. MCAS Miramar also typically hosts an annual air show that includes additional aircraft and higher than normal levels of aircraft operations during the event. ~~As noise abatement measures for normal operations, fixed-wing aircraft and helicopter flight routes have been designed to follow major rail lines and highways or to remain over base property.~~ The current Airport Land Use Compatibility Plan adopted by the County Airport Land Use Commission for MCAS Miramar indicates that the entire project site is outside the 60 dBA CNEL noise contour (SDCRAA 2011).

Section 5.1.1, Threshold 1: Exceedance of Noise Standards

On-Site Water Infrastructure

The following change is incorporated into Section 4.12.5.1, Threshold 1: Exceedance of Noise Standards, under the On-Site Water Infrastructure subheading, in order to clarify the assumptions of the pump station analysis.

> Development of the proposed project would involve construction of water infrastructure improvements, including pipelines, storage tanks, and pump stations. Following construction, proposed underground pipelines and aboveground storage tanks would be passive and would not generate operational noise. However, two pump stations are proposed to provide potable water to the project site. Noise sources at typical pump stations include air compressors, motors, air bleed valves, and backup generators.

Construction Traffic Noise

The following change is incorporated into Section 5.1.1, Threshold 1: Exceedance of Noise Standards, under the Construction Traffic Noise subheading, in order to clarify access routes during project construction.

> Following Phase 1, the analysis conservatively assumes 100 percent of construction traffic on each segment of Fanita Parkway, Cuyamaca Street, and Magnolia Avenue. This represents a worst-case scenario for ~~Cuyamaca Street and Magnolia Avenue because construction traffic is anticipated to primarily access the site from Fanita Parkway~~ all roadways.

Construction Noise Mitigation Measures

The following change is incorporated into Section 5.1.1, Threshold 1: Exceedance of Noise Standards, under the Construction Noise Mitigation Measures subheading, to clarify where monitoring information would be available by request to residents.

> **Mitigation Measure NOI- 6: Roadway Construction Notification.** In accordance with Section 5.04.090 of the Santee Municipal Code, the construction contractor shall provide written notification to any existing uses within 300 feet of roadway construction activities. The notification shall be provided no later than 10 days before the start of construction activities. The notice shall describe the nature of the construction activities, including the expected duration, and provide a point of contact to resolve noise complaints. If a complaint is received, construction noise shall be monitored by a qualified acoustical consultant at the nearest affected receptor for the duration of a normal day of construction. If the hourly average monitored noise level from construction exceeds a normal conversation level (65 A-weighted decibels) at the nearest sensitive receptor or the ambient noise level at the receptor if the ambient noise level exceeds 65 A-weighted decibels, construction activities in the immediate area of the affected receptor shall cease. Construction shall not resume until activities can be adjusted or noise reduction measures are implemented to reduce noise at the affected receptor to below normal conversation levels (65 A-weighted decibels) or the ambient noise level at the receptor if the ambient noise level exceeds 65 A-weighted decibels. Monitoring results shall be submitted to the Director of Development services prior to the resumption of construction activities. . . .

3.7 Appendix N, Transportation Impact Analysis, Vehicle Miles Traveled Analysis, and Transportation Demand Management Plan

The following lists the revisions and clarifications made to the Transportation Impact Analysis, Vehicle Miles Traveled Analysis, and Transportation Demand Management Plan (March 2020), after the public review comment period for the Fanita Ranch Draft Revised Environmental Impact Report (EIR). It should be noted that the revisions and clarifications listed in this document do not change any conclusions provided in the EIR.

Table 21-3, Mitigation Measures

Mitigation Measure TRA-1: Construction Traffic Control Lanes

The last bullet in Mitigation Measure TRA-1 has been revised as follows:

- In addition, vendor trip limitations shall be imposed, which would prohibit vendor truck trips on ~~Cuyamaca Street and~~ Magnolia Avenue and require all truck traffic to use Fanita Parkway or Cuyamaca Street for site access. Additionally, medium- and heavy-duty truck trips shall be limited on Fanita Parkway. Truck trips shall be limited to 170

one-way trips (85 two-way trips) on Fanita Parkway during Phase 1 building construction activities and to a maximum of 140 one-way trips (70 two-way trips) on Fanita Parkway during simultaneous building construction activities and project operation. Worker vehicle trips would be allowed on all roadways. ~~In addition, vendor trip limitations shall be imposed which would prohibit vendor truck trips on Cuyamaca Street and Magnolia Avenue and requires all truck traffic to use Fanita Parkway for site access. Worker vehicle trips would be allowed on all roadways.~~

3.8 Appendix P1, Fire Protection Plan and Construction Fire Prevention Plan

The following lists the revisions and clarifications made to the Fire Protection Plan and Construction Fire Prevention Plan (May 2020), after the public review comment period for the Fanita Ranch Draft Revised Environmental Impact Report (EIR). It should be noted that the revisions and clarifications listed in this document do not change any conclusions provided in the EIR.

Section 3, Determination of Significance Thresholds

Occupant Exposure

- Installation of a public water system with a redundant or looped water supply for fire protection and system reliability in the event of a large water demand fire. The public water system provides 2,500 gallons per minute for ~~2~~3 hours of fire flow for single-family and multi-family residential and 3,500 gallons per minute for 4 hours of fire flow for commercial areas with 300-foot spacing between hydrants, a dedicated fire water pipeline system, and appropriate hose connections.

Section 6.2.3, Roadside Fuel Modification Zones

- Per code, ~~R~~roadside FMZs would ~~either~~ be permanently irrigated and replanted with fire resistive plant material. ~~or 30% native shrubs to be retained per Zone 2 guidelines as specified in Section 6.1.1.4.~~

Section 6.4.2, Fire Protection System Requirements

Infrastructure, Structural Fire Protection, and Fire Protection Systems

Water

Water service for the Fanita Ranch project would be provided by the Padre Dam Municipal Water District (PDMWD). The water system shall be a public system designed and installed by PDMWD and SFD requirements. The water system for Fanita Ranch shall provide 2,500 gallons per minute for ~~2 hours fire flow~~3 hours of fire flow for single-family and multi-family residential and 3,500 gallons per minute for 4 hours of fire flow for commercial areas.

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Attachments to Volume II, Draft Revised EIR Appendices Errata

- Revised Figures in Appendix D, Biological Resources Technical Report:
  - Figure 2-1, USFWS-Designated and Proposed Critical Habitat
  - Figure 5-5B, Impacts to USFWS-Designated Critical Habitat – Coastal California Gnatcatcher
  - Figure 5-8, Regional Wildlife Corridors
  - Figure 4, Fanita Ranch Specific Plan Trails Map (in Appendix T, Public Acces Plan, to the Biological Resources Technical Report)
- Resumes

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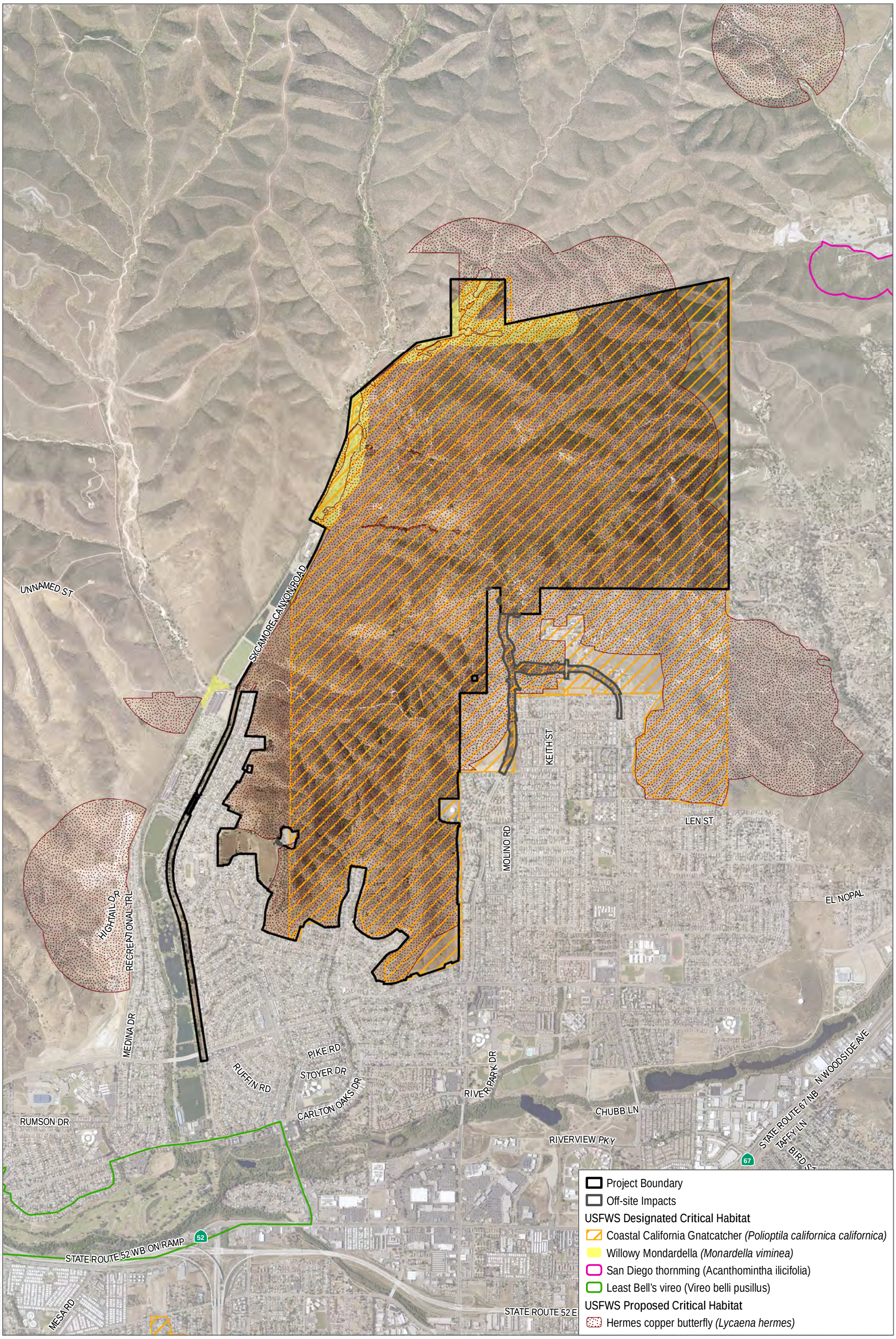


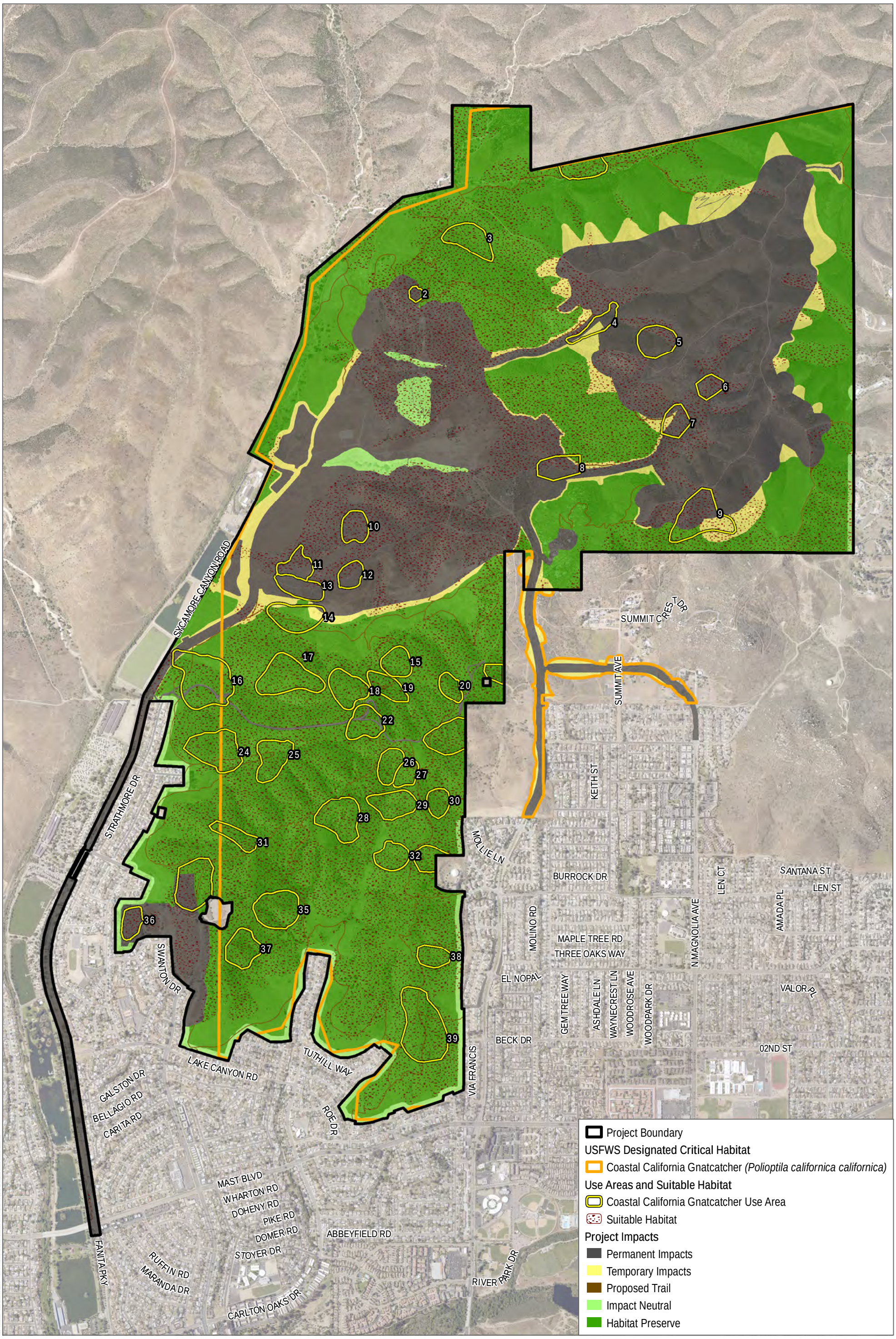
SOURCE: USFWS 2019, 2020; SANGIS 2017, 2019

DUDEK

0 750 1,500 Feet

FIGURE 2-1

USFWS - Designated Critical Habitat within the Project Area



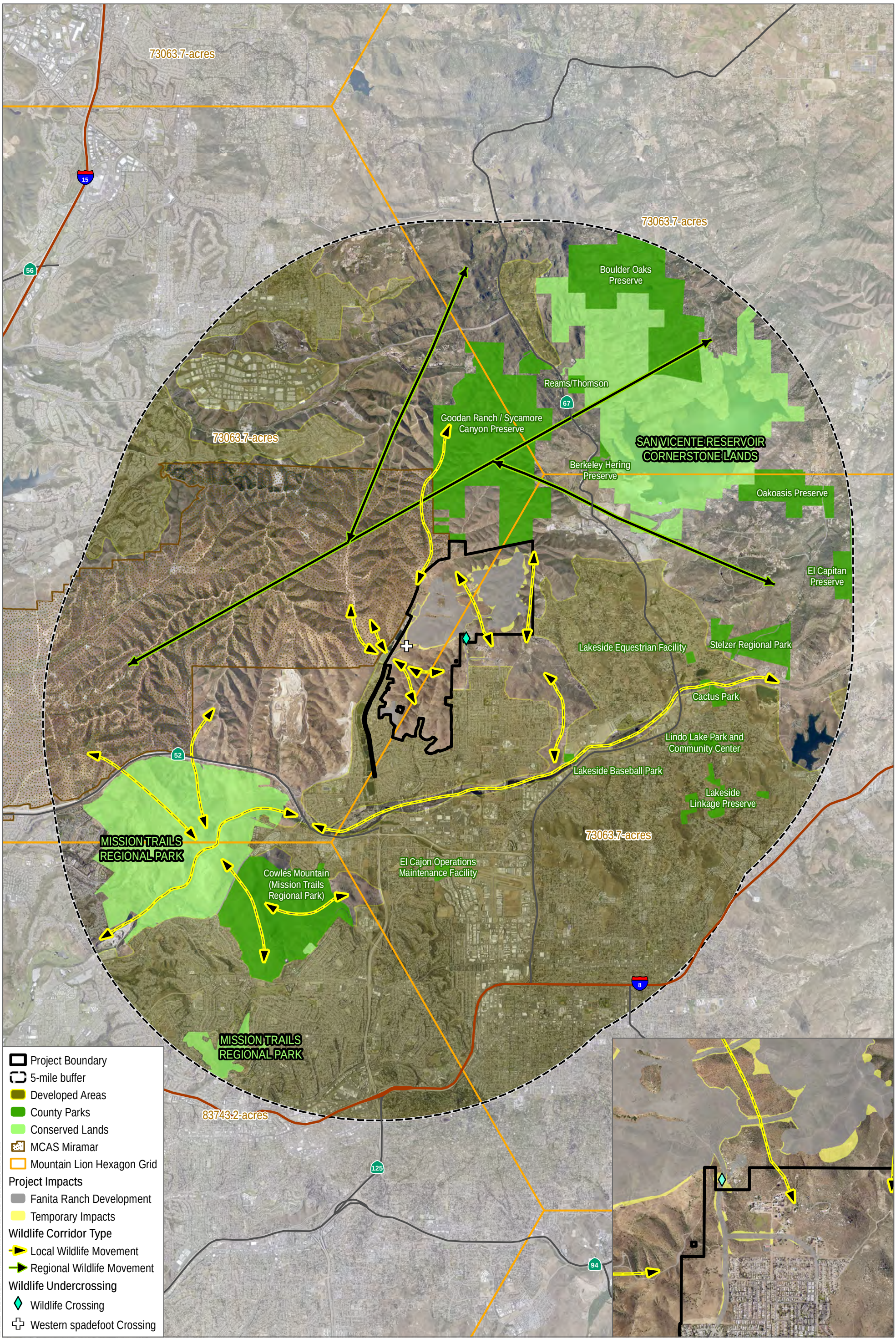
SOURCE: Hunsaker 2019; USFWS 2019, 2020; SANGIS 2017, 2019

DUDEK

0 750 1,500 Feet

FIGURE 5-5B

Impacts to USFWS Designated Critical Habitat - Coastal California Gnatcatcher



SOURCE: SANGIS 2017, 2019

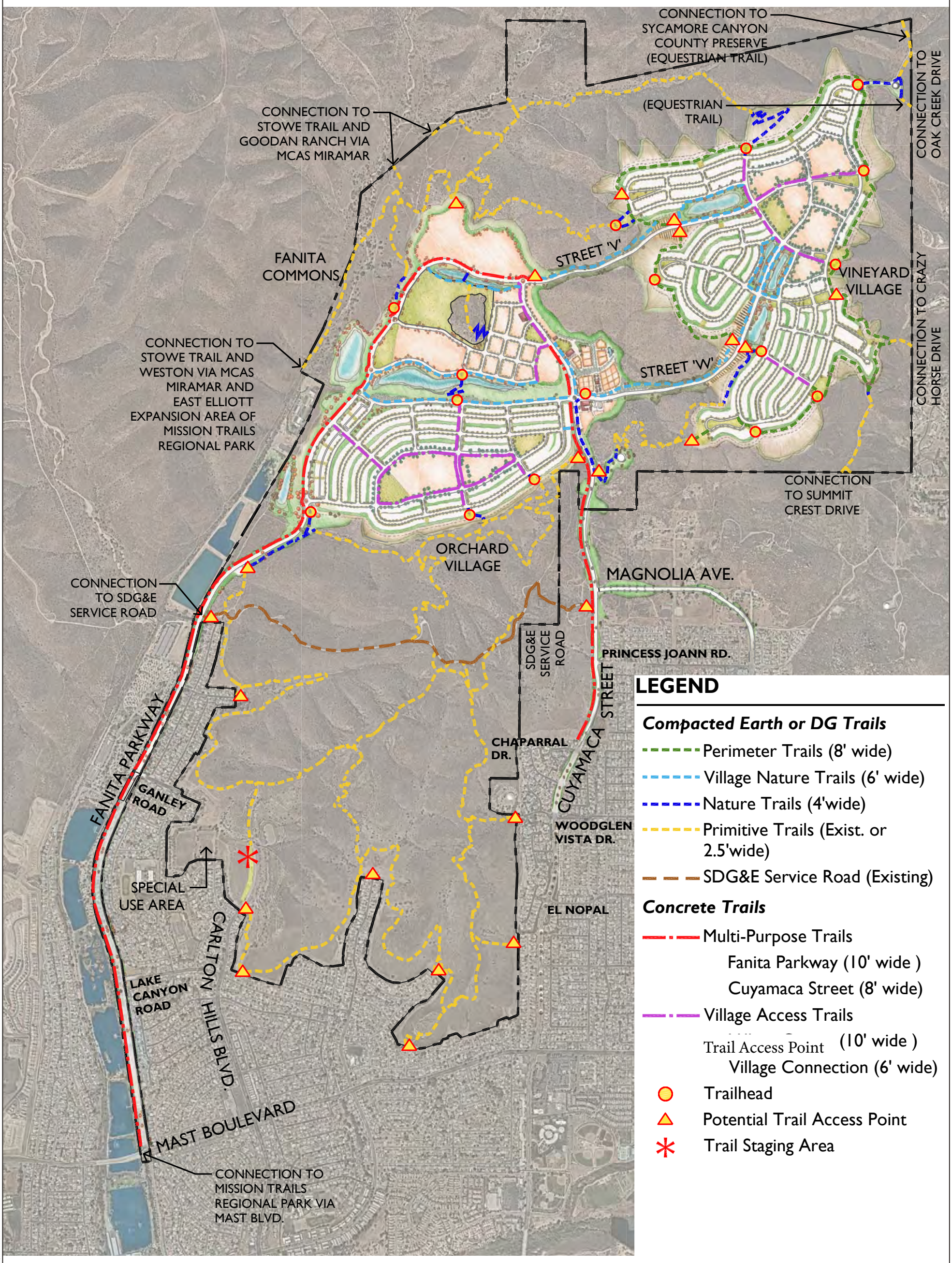
DUDEK

0 1 2 Miles

FIGURE 5-8

Regional Wildlife Corridors

Fanita Ranch Biological Technical Report



SOURCE: Fanita Ranch Specific Plan

FIGURE 4

Fanita Ranch Specific Plan Trails Map

Fanita Ranch Habitat Preserve Public Access Plan

DUDEK

MICHAEL HENDRIX

ASSOCIATE, SENIOR CLIMATE CHANGE SPECIALIST/
PROJECT MANAGER

EXPERTISE

WHO air quality guidelines

IPCC guidance and protocols

U.S. Ambient Air Quality Standards

NEPA guidelines

CEQA guidelines

EDUCATION

Certified Air Dispersion Modeler-Lakes Environmental 2004.

Land Use and Environmental Planning Certification, University of California, Riverside, 2002.

Air Quality Management Certification, University of California, Riverside, 2001.

B.S., Environmental Science, University of California, Riverside, 1998.

PROFESSIONAL EXPERIENCE

Associate, LSA, Riverside, California. February 2016–Present.

Project Director, Atkins North America. 2009–2016. Mr. Hendrix led the air quality and climate change services in Atkins North America Environmental Sciences and Planning Division.

PROFESSIONAL RESPONSIBILITIES

Mr. Hendrix has over 21 years of experience involving air quality and health risk analysis, greenhouse gas (GHG) emissions analysis, energy analysis, climate change analysis, and climate action planning. He has done extensive research analyzing specific technical issues of air quality, energy, GHG emissions, and global climate change, as they relate to project compliance with World Health Organization (WHO) air quality guidelines, United Nations Intergovernmental Panel on Climate Change (IPCC) guidance and protocols, United States Ambient Air Quality Standards (AAQS), the National Environmental Policy Act (NEPA), and the California Environmental Quality Act (CEQA). His experience also includes public outreach efforts for project-specific meetings and for informing local and State officials on general air quality and GHG emissions issues.

PROJECT EXPERIENCE

Western Riverside County Council of Governments Energy Action Plans
Riverside County, California

Mr. Hendrix served as the Project Director in charge of overseeing the technical adequacy and quality of the Energy Action Plans (EAPs). The EAPs for the 11 participating cities provide a local context to statewide energy efficiency and GHG reduction goals within the region. The project implements the California Energy Commission's (CEC) California Energy Efficiency Strategic Plan (CEESP) and is funded by a CEC Grant administered by Southern California Edison. There are 22 EAPs for the 11 participating cities: one municipal EAP each for local government operations and one each for communitywide energy use. The focus of the municipal and communitywide EAPs consists of energy efficiency planning with baseline inventories of energy use and resulting GHG emissions, emission and energy use forecasts, energy efficiency and GHG reduction targets, a set of reduction measures to achieve the reduction targets, and an implementation plan. The EAPs become Energy Chapters in a Regional Climate Action Plan (RCAP) for incorporated areas of western Riverside County. Mr. Hendrix also worked with the team in charge of the RCAP to develop 2020 and 2035 reduction targets and GHG inventories.

Corona Climate Action Plan
City of Corona, California

Mr. Hendrix was project manager overseeing development of the CAP. The project also included coordination with the Energy Coalition and Southern California Edison (SCE) to ensure that the City's CAP includes the energy elements necessary to satisfy the gold level requirements for SCE's Energy Leader Partnership model. This gold level attainment allows the City the opportunity to receive substantial rebates for energy efficiency retrofits. Challenges in the development of the CAP include the accelerated growth that has occurred in the city of Corona and the ability of the City to improve upon the jobs-to-housing balance and reduce vehicle emissions as the city continues to grow and mature. Mr. Hendrix met with the City, SCE, State Attorney General's office, SCAQMD, and CARB to gain consensus in the development and implementation of alternative energy within the CAP. The CAP included screening tables in implementing the reduction strategies.

PROFESSIONAL EXPERIENCE (CONTINUED)

Director of Air Quality and Climate Change, Chambers Group. 2007–2009.
Mr. Hendrix supervised air quality and climate change analysis work at Chambers and initiated business development of these services to clients.

Senior Project Manager, Michael Brandman Associates. 2002–2007.

Associate Environmental Analyst, Albert A. Webb Associates. 1998–2002.

PROFESSIONAL AFFILIATIONS

- Air & Waste Management Association
- Association of Environmental Professionals
- National Association of Environmental Professionals
- Institute for Sustainable Infrastructure
- Illuminative Engineering Society of North America

PROJECT EXPERIENCE (CONTINUED)

The screening tables provide a legally defensible document that future projects can tier from in the analysis of climate change during the CEQA process, which will streamline future project approval and implementation. Elements in the CAP also demonstrate compliance with recently enacted regulations regarding development including the sustainable communities strategy and GHG reduction targets of SB 375 and new building standards resulting from AB 32. During the 2019 update of the Corona CAP, LSA worked with the City's IT Department and developed their CAP Monitoring Program that works within the Permit Application (eTRAKiT) software and provided a webpage CAP Monitoring dashboard that automatically updates whenever new entries are made for permit applications.

Riverside County Climate Action Plan
Riverside County, California

Mr. Hendrix served as the Project Director overseeing the development of the CAP. This project is a two-phased process. Phase one calculates total emissions for the County, sets a reduction goal, and provides performance standards for new development projects as part of the General Plan Update. Phase two provides a CAP that develops a comprehensive set of reduction strategies and the implementation of those strategies to meet the reduction goal. Mr. Hendrix developed Screening Tables as an implementation method for the CAP reduction strategies. The CAP provides a legally defensible document from which future projects can tier in the analysis of climate change during the CEQA process, which streamlines project approval and implementation.

Sustainable Santee Plan (Santee CAP)
City of Santee, California

Mr. Hendrix is the project manager overseeing, data collection in the GHG emissions inventories for the City, and development of emissions reduction measures in the CAP. Some of the challenges in the development of the CAP included extensive negotiations with environmental groups and the building industry association to come to consensus on the components and implementation methods within the CAP.

City of Tampa, Sustainability Action Plan
Tampa, Hillsborough County, Florida

Mr. Hendrix assisted the City of Tampa in applying for the Energy Efficiency and Conservation block program (EECBG) administered by United States Department of Energy (DOE). Mr. Hendrix served as Project Director in charge who oversaw the data collection for the City of Tampa's municipal operations and communitywide GHG emissions inventories, and the development of energy efficiency and GHG reduction measures in the sustainability action plan. A cost-benefit analysis of potential sustainability, energy efficiency, and emission reduction measures was used in the selection and prioritization of the measures in order to achieve the objectives at least cost. This included an estimate of jobs created as a result of the sustainability action plan.

Los Angeles County Metropolitan Transportation Authority (LACMTA), Sustainability Services Support
Los Angeles County, California

Mr. Hendrix serves as the Program Manager to develop, update and address sustainability planning, climate adaptation, climate vulnerability, climate resiliency, carbon capture, GHG emissions reduction/mitigation, and other LACMTA sustainability goals. Mr. Hendrix has coordinated with LACMTA staff in assessing progress with GHG reduction goals. In this, role he supervises and assists LACMTA in the update of its Sustainability Project Prioritization Plan (SP3), supervises and provides the vision and architecture for the update to the Climate Adaptation and Action Plan (CAAP), is supervising the criteria and mapping of transit-dependent populations in order to assess climate risk and the needs for this part of the community, and is assisting LACMTA in the integration of climate resiliency into the Metro Rail Design Criteria (MRDC) specifications.

California High-Speed Rail Authority, California High-Speed Rail Project: San Francisco to San Jose Segment
San Jose, Santa Clara County, California

Mr. Hendrix supervised the Greenhouse Gas Emissions Offset Analysis of the San Francisco to San Jose segment of the California High-Speed Rail Project for the forthcoming Draft Environmental Impact Statement/ Environmental Impact Report (EIS/EIR). The analysis included review of the electrification of the Caltrain rail line as a component of the project. The EIS/EIR analysis also reviewed potential air quality impacts, including health risks, to determine impacts to the adjacent receptors from the construction and operation of a high-speed rail line through the area. The analysis used the AERMOD dispersion model and focused on the potential cancer and non-cancer health risks from diesel-operated construction equipment along the line. In addition, the analysis addressed potential for creating carbon monoxide hotspots through project-level increases in traffic idling at intersections or in parking lots at or in the vicinity of the Diridion station. The analysis uses current methodology for determining cancer and non-cancer risks and carbon monoxide impacts and based the significance findings on compliance with Bay Area Air Quality Management District thresholds.

Exposition Authority, Exposition Light Rail Line
Los Angeles, Los Angeles County, California

Mr. Hendrix conducted a Climate Change Mitigation and Localized Air Quality Impact Analysis and supervised the climate change mitigation with respect to the construction and operation of the new or upgraded Metro transit corridors. In addition, a localized significance impact analysis was conducted to determine the impact on nearby sensitive receptors of different layouts of a maintenance facility along the Exposition rail line. The analysis of localized impacts to sensitive receptors also reviewed the construction and operation of additional track, stations, and parking areas.

City of Santa Monica, Sustainability and Climate Change Analysis of the Land Use and Circulation Elements (LUCE) Updates to the General Plan
Santa Monica, Los Angeles County, California

Mr. Hendrix served as Project Director reviewing the sustainability metrics and climate change impact analysis in support of the EIR for the City of Santa Monica's Land Use and Circulation Element Update. The analysis used current methodology for determining GHG emissions and based the significance findings on a combination of compliance with Assembly Bill (AB) 32 and the City of Santa Monica's Sustainability Plan. According to CEQA regulations, the incorporation of mitigation measures was appropriate to reduce emissions.

South Bay Cities Council of Governments (SBCCOG), Energy Efficiency Climate Action Plans
Los Angeles County, California

Mr. Hendrix supervised the development of 16 Energy Efficiency Climate Action Plans for SBCCOG. In collaboration with the SBCCOG and 15 participating South Bay Cities, a subregional CAP and 15 City-level energy efficiency CAPs (EECAPs) were developed to reduce energy-related GHG emissions in the region. These reports were structured to function as both stand-alone documents and the energy efficiency chapters of the

forthcoming CAPs. The final CAPs, which are still in progress, will consolidate the EECAPs with the other sector chapters (energy storage, urban greening, solid waste, transportation, and land use) into one holistic document. The CAP process was broken down into separate phases to take advantage of sector-specific funding opportunities.

Each EECAP involved updating GHG emissions inventories for the years 2010 and 2012, forecasting future emissions to 2020 and 2035, setting State-aligned reduction targets, and quantifying energy efficiency strategies to determine how close the cities and subregion are to achieving these targets. In addition, the reduction strategies were evaluated for co-benefits such as improved air quality and water conservation. During the inventory process, LSA worked with ICLEI and other SEEC ClearPath developers to update and amend the tool when errors were encountered. Upon completion, the EECAPs were presented to environmental/planning commissions and city councils for adoption by resolution.

San Bernardino Associated Governments, Multijurisdictional Greenhouse Gas Reduction Plan
San Bernardino County, California

Mr. Hendrix served as a technical advisor to San Bernardino Associated Governments (SANBAG) in developing inventories, traffic modeling, and reduction measures for this multijurisdictional plan. In addition, he served as Project Manager for the EIR in compliance with CEQA. This project was a cooperative planning effort that included 21 cities and the County of San Bernardino with a goal of reducing GHG emissions within the region. The project included a regional traffic model that is compatible with the Senate Bill (SB) 375-compliant Southern California Association of Governments (SCAG) modeling effort to demonstrate on-road transportation sector GHG reductions and a Sustainable Community Strategy (SCS) for the region. SANBAG was the lead agency for the project. The plan fulfilled the requirements of *CEQA Guidelines* Section 15183.5–Tiering and Streamlining the Analysis of GHG Emissions, and allowed CEQA streamlining of future development project analysis within the 21 participating cities and the County.

San Bernardino County Transportation Authority (SBCTA), San Bernardino County Regional Greenhouse Gas Reduction Plan Update
San Bernardino County California

Mr. Hendrix and Rich Walters of ICF, assisted SBCTA in the grant applications to the Southern California Association of Governments (SCAG) and the California Energy Commission (CEC) to help fund an update to the Multijurisdictional Greenhouse Gas Reduction Plan. This project includes a cooperative planning update for the County unincorporated areas and all 24 cities within San Bernardino County. The project included a regional traffic model that is compatible with the Senate Bill (SB) 375-compliant SCAG modeling effort to demonstrate on-road transportation sector GHG reductions and a Sustainable Community Strategy (SCS) for the region. SB CTA is the lead agency for the project. The plan will fulfill the requirements of *CEQA Guidelines* Section 15183.5–Tiering and Streamlining the Analysis of GHG Emissions, and allowed CEQA streamlining of future development project analysis within the 24 participating cities and the County through the use of Screening Tables.

County of San Bernardino Land Use Services Department, Settlement Agreement between the County of San Bernardino and the California Attorney General's Office to Provide a GHG Reduction Plan
San Bernardino County, California

Mr. Hendrix served as technical advisor to the County during the development of the GHG Reduction Plan. In that role, Mr. Hendrix participated in meetings with the State Attorney General's Office, the South Coast Air Quality Management District (SCAQMD), the Mojave Desert Air Quality Management District (MDAQMD), the California Air Resources Board (ARB), and the Governor's Office of Planning and Research to determine the exact scope of work needed to develop and implement the GHG Reduction Plan. He met regularly with the SCAQMD and MDAQMD in the development of the various GHG Emissions Inventories (for years 1990, 2006, 2020, and 2030).

Mr. Hendrix also supervised and assisted in data collection for these various emissions inventories in coordination with technical staff at SCAQMD and MDAQMD. Mr. Hendrix negotiated the details needed to fulfill

the settlement agreement with the Attorney General's Office on the County's behalf. In this role, Mr. Hendrix has acted as an intermediary between these various State Agencies and the County. As a result, the ARB and SCAQMD have both looked to San Bernardino County for guidance on how to address these issues in CEQA analysis of GHG emissions and climate change. Mr. Hendrix played a vital role in reversing the relationship between the Attorney General's Office and the County of San Bernardino from one of adversaries on the issues of GHG emissions and climate change to one of cooperation.

Imperial Irrigation District and Regenerate Power, Economic Impact Analysis of the Strategic Transmission Investment Plan for Photovoltaic Solar, Wind, and Geothermal Power
Imperial County, California

The Imperial Irrigation District (IID) and Regenerate Power (REGP) proposed a multi-regional strategic transmission expansion alternative known as the Strategic Transmission Investment Plan (STEP), which would expand the export of renewable energy to California and the Southwest. Mr. Hendrix supervised the economic impact analysis of the STEP Project, which focused primarily on the 160-mile proposed STEP path through Imperial, Riverside, and San Diego Counties and wind, solar photovoltaic (PV), and geothermal renewable energy development that the line will serve. Using the Jobs and Economic Development Impacts (JEDI) modeling methodology, the analysis predicts the economic activities that will collectively be created in Imperial, Riverside, and San Diego Counties. Because of the high variation in solar and wind energy output that could result with the development of this transmission line, the portion of the STEP analyzed was divided into two scenarios: a conservative or "Base" scenario of renewable energy output that would achieve a total of 1,100 megawatts (MW), and a "High Renewable Portfolio Standard (RPS)" scenario with a maximum amount of renewable energy output of 2,200 MW.

City of Redlands, Energy Action Plan
Redlands, San Bernardino County, California

Mr. Hendrix was Project director in charge of overseeing the technical adequacy and quality of the Redlands Energy Action Plans (EAP). The Redlands EAP provides a local context to statewide energy efficiency and GHG reduction goals within the region. The project implements the California Energy Commission's (CEC) California Energy Efficiency Strategic Plan (CEESP) and is funded by a CEC Grant administered by Southern California Edison. The EAPs implement many of the goals in the Redlands Community Sustainability Plan. There are two EAPs: one municipal EAP for local government operations and one for communitywide energy use. The focus of the municipal and communitywide EAPs is energy efficiency planning with baseline inventories of energy use and resulting GHG emissions, energy efficiency and GHG reduction measures that once implemented achieve the reduction targets. The EAPs become Energy Chapters in the City's Climate Action Plan (CAP).

City of Ontario, Municipal and Community Climate Action Plans
Ontario, San Bernardino County, California

Mr. Hendrix was technical advisor and assisted the City in the development of the municipal and community Climate Action Plans (CAPs). The CAP development process included inventories, forecasts, reduction targets, and reduction measures. The municipal CAP was completed in 2012 and the community CAP was completed in 2014. To facilitate the implementation of the community CAP, Mr. Hendrix designed a GHG development review process and associated Screening Tables to ensure that new development would be consistent with the City's CAP. Through a menu of reduction options, the Screening Tables allow flexibility in how new development implements the reduction measures. The Screening Tables allow new development projects to tier from and demonstrate consistency with the reduction target established in this CAP, thus streamlining the CEQA analysis of project-level GHG emissions as described in *CEQA Guidelines* §15183.5. The Screening Table is provided to the applicant, who then chooses from a list of GHG emissions-reducing design features that are each assigned a point value. The point values are allocated based on the effectiveness of the strategy in reducing GHG emissions. In order to demonstrate consistency with the CAP, a project that earns 100 points from the Screening Table would implement the project's fair-share portion of GHG emission reductions within the CAP.

City of Chino, Climate Action Plan
Chino, San Bernardino County, California

Michael Hendrix was the Project Manager overseeing data collection in the GHG emissions inventories for the City of Chino and the planned implementation of emission reduction measures in the CAP. The project also included a climate change risk analysis and adaption measures to address climate change impacts within the City.

The CAP provides a legally defensible document that future projects can tier from in the analysis of climate change during the CEQA process, which now streamlines project approval and implementation. Mr. Hendrix's Screening Tables facilitated project review and analysis streamlining, and allowed a flexible way for future development projects to demonstrate consistency with, and tier from, the CAP. During the 2019 update of the CAP, LSA worked with the City's IT Department and developed its CAP Monitoring Program, which works within the Permit Application (Ascentis) software and provided a CAP Monitoring dashboard that automatically updates whenever new entries are made for permit applications.

City of Oceanside, Energy Action Plan
Oceanside, San Diego County, California

Mr. Hendrix was the Project Director on this project. The energy portion of the City of Oceanside's CAP was funded by the San Diego Gas and Electric (SDG&E) Emerging Cities Program. With these funds, a thorough technical review was conducted of the City's GHG emissions inventories and forecasts that had been provided by the University of San Diego Energy Policy Initiatives Center (EPIC). Due to limited City staff resources and budget constraints, the City of Oceanside GHG reduction measures were unable to be quantified by EPIC. However, a CAP report framework was developed with placeholder text and instructional comments for sections with data gaps so the City of Oceanside could "fill in the blanks" when information became available.

City of Del Mar, Energy Action Plan
Del Mar, San Diego County, California

Mr. Hendrix was the Project Director for this project. The energy portion of the City of Del Mar's CAP was funded by the SDG&E Emerging Cities Program. With these funds, a thorough technical review was conducted of the City of Del Mar's GHG emissions inventories, forecasts, and reduction measures that had been provided by EPIC. The reduction measures were then evaluated according to cost, GHG reduction potential, stakeholder interest, and the level of City effort needed to implement them. From this analysis, a phased implementation plan was developed. In addition, the development of adaptation strategies, which addressed climate risks (e.g., sea level rise), was funded by the City of Del Mar and those strategies were incorporated into the CAP. Upon completion of this project, the City of Del Mar had a comprehensive CAP that will act as a guide for future sustainability efforts.

City of Pomona, First Street Waste Transfer Station Health Risk Assessment
Pomona, Los Angeles County, California

Mr. Hendrix served as the Project Director and was instrumental in the analysis and preparation of the Health Risk Assessment (HRA) for the First Street Waste Transfer Station in Pomona. His involvement included agency coordination and the use of ISC3 to model the potential health risks and mitigation options for operating an enclosed waste transfer station. The project focused on the potential impacts of diesel particulate matter from operations on residential and school properties adjacent to the project site.

Palm Industrial Distribution Center Health Risk Assessment
San Bernardino County, California

Mr. Hendrix served as the Project Director and conducted a Health Risk Assessment (HRA) in conjunction with an Environmental Impact Report for the construction of a distribution center in San Bernardino County. The analysis used the AERMOD dispersion model and current South Coast Air Quality Management District (SCAQMD) methodology and thresholds to determine the cancer and non-cancer risks for nearby receptors associated with the increased truck traffic anticipated from the implementation of the proposed project.

County of San Francisco, Transbay Block 11A Development Health Risk Assessment
San Francisco County, California

Mr. Hendrix served as the Project Director and conducted a Health Risk Assessment (HRA) to determine impacts from stationary and mobile sources in the vicinity of this proposed residential development. The analysis used the AERMOD dispersion model and current methodology for determining cancer and non-cancer risks and fine particulate matter ($PM_{2.5}$) impacts, and based the significance findings on compliance with Bay Area Air Quality Management District (BAAQMD) thresholds.

County of San Diego, Otay Village 9 Health Risk Assessment
San Diego County, California

Mr. Hendrix served as a Project Analyst and conducted a Health Risk Assessment (HRA) to determine impacts from mobile sources adjacent to the proposed single-family and multifamily residential development. The analysis used the AERMOD dispersion model and current methodology for determining cancer and non-cancer risk. The HRA was conducted in coordination with the San Diego County Air Pollution Control District.

PUBLIC OUTREACH

Roundtable Debate on Global Climate Change Impacts, Cable News Network (CNN)
Chicago, Cook County, Illinois

In September 2008, Mr. Hendrix participated in a roundtable debate regarding how to address global climate change impacts. Participants in the roundtable debate included environmental advocate Alexandra Cousteau (granddaughter of Jacque Cousteau); Dr. Carl Hodges, Director of the Sea Water Foundation; Dr. Rajendra Pachauri, current chair of the United Nation's Intergovernmental Panel on Climate Change (IPCC); and Stephanie Mehta, Global Editor of Fortune Magazine. The event was hosted by CNN/Time Warner Communications and Fortune Magazine at the Shedd Aquarium in Chicago, Illinois.

Climate Change Mitigation and Adaptation Strategies in the Local Planning Process, Association of Environmental Professionals
White Plains, Westchester County, New York

In May 2008, Mr. Hendrix gave a series of presentations describing how cities and counties can prepare for climate change, conduct vulnerability assessments, develop adaptation strategies and municipal inventories of GHG emissions, and determine emission reduction strategies for their jurisdictions within the land use planning and project approval process. The presentation provided examples of how this process is working in California during general plan updates and how coordination between State and local agencies can enhance the process.

PUBLICATIONS

Hendrix, M., Rich Walters, et al. "Best Practices in Climate Action Planning," AEP White Paper, June 2018.

Hendrix, M., Rich Walters, et al. "Production, Consumption, and Lifecycle Greenhouse Gas Inventories: Implications for CEQA and Climate Action Plans," AEP White Paper, August 2017.

Hendrix, M., Rich Walters, et al. "Beyond Newhall and 2020: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets in California," AEP White Paper, October 2016.

Hendrix, M., Rich Walters, et al. "Post 2020 Target Setting for Climate Action Plans," AEP White Paper, March 2015.

Hendrix, M., Rich Walters, et al. "California Supplement to the U.S. Community-wide GHG Emissions Inventory Protocols," AEP White Paper, December 2013.

Hendrix, M., Chris Gray, and Rich Walters. "SB 375 Consistency in CEQA," AEP White Paper, May 2012.

Hendrix, M., Nicole Vermilion, et al. "Forecasting and Target Setting," AEP White Paper, May 2012.

Hendrix, M. "Community-wide Greenhouse Gas Emission Inventory Protocols," AEP White Paper, March 2011.

Hendrix, M. "Addressing Global Climate Change Impacts of Projects in CEQA Documents," *California Chapter, American Planning Association Journal*, September–October 2007.

Hendrix, M., and C. Wilson. "Greenhouse Gasses and Climate Change Impact Analysis in CEQA Documents," AEP White Paper, March 2007.

AWARDS

2013 Consulting & Engineering: Energy and Carbon Management Silver Award, Climate Change Business Journal

The award recognized the Climate Action Planning Team, led by Mr. Hendrix, in its development of technology that can help in building a more sustainable economy. The Microsoft Excel-based screening tables provided a menu of options, including energy efficiency, renewable energy, waste diversion, water conservation, transportation-related emissions reductions, GHG emission reduction credits, and other measures. Businesses that develop a new project or expand an existing facility can choose from these options to meet their "fair share" of the County's GHG reduction goals. The table menus allow maximum flexibility so that businesses and developers can meet reduction allocations and reduce carbon using a business-friendly approach.

2012 Outstanding Environmental Resource Document, Escondido Climate Action Plan, Association of Environmental Professionals

This award was given to the Project Team, led by Mr. Hendrix, for the Escondido Climate Action Plan. The awards jury recognized innovations that improved climate action planning and the reduction of GHG emissions. Innovations within the Climate Action Plan included new ways of providing emission inventories that separated emission sources attributable to the jurisdiction from those of neighboring jurisdictions.

2011 Merit Award, Climate Change Document, County of San Bernardino Greenhouse Gas Emissions Screening Tables, Association of Environmental Professionals

This award was given to Mr. Hendrix for ingenuity in providing a greenhouse gas reduction measure implementation method that encouraged economic growth, while reducing emissions. The Screening Tables provided a menu of options that developers can choose from to meet their "fair share" of the County's GHG reduction goals. The table menus allow maximum flexibility so that businesses and developers can meet reduction allocations using a business-friendly approach.

2010 Professional Achievement Award, Association of Environmental Professionals

This award was given to Mr. Hendrix for his dedication in advancing climate change science through the educational programs and practitioner workshops he authored and conducted. In addition, it recognized his contribution and participation with the various California agencies in developing methods of analysis, implementation policies, and that advocated local control in developing community climate action plans for local governments throughout the State.

2007 Professional Achievement Award, Association of Environmental Professionals

This award was given to Mr. Hendrix for innovative Air Quality Mitigation Programs for projects that provided comprehensive air pollutant reduction measures throughout the life of a project. The AEP specifically recognized that "his commitment to balancing the need for industrial, commercial and residential development projects in the State with the reduction of air pollution is evident through his dedication to air quality evaluations and mitigation that significantly reduce air pollution generated by these sectors."

Scott McMillan

Senior Habitat Restoration Ecologist

Scott McMillan is a habitat restoration ecologist with 25 years' experience conducting botanical consulting in the Southern California floristic province. Mr. McMillan has conducted hundreds of vegetation and general botany surveys as well as hundreds of rare plant surveys. He has conducted surveys for almost all of the habitat types found in Southern California, including coastal sage scrub, chaparral, vernal pools, riparian, dune, saltmarsh, and oak woodland.

Education

San Diego State University
BS, Biology, 1991

Certifications

County of San Diego Certified Restoration Ecologist

Professional Affiliations

San Diego State University

Mr. McMillan conducted botanical research as part of his unfinished thesis working with Dr. Ellen Bauder, Dr. Michael Simpson, and Dr. John O'Leary at San Diego State University (SDSU). He was an instructor at San Diego State University (general biology and botany) and at the University of San Diego (botany). He has given many scientific presentations on the species and habitats in Southern California, including vernal pools and the species found in them. Mr. McMillan is coauthor of the US Fish and Wildlife Service's Vernal Pool Recovery Plan, as well as the Checklist of the Vascular Flora of San Diego County. His list of scientific publications includes the Current Distribution and Historical Extent of Vernal Pools in Southern California and Northern Baja California, Mexico (coauthored with Dr. Ellen Bauder). Mr. McMillan has extensive experience with almost all of the sensitive plant species and habitats in San Diego County. His experience includes knowledge of species identification and distribution, as well as the affinities that these species have toward habitat type, soil type, hydrological regime, and other ecological factors. Mr. McMillan has also conducted vegetation assessments and rare plant surveys in numerous areas of the Mojave Desert, in both the western and eastern portions.

In addition to conducting botanical surveys and assessments, Mr. McMillan has also conducted Quino checkerspot butterfly, fairy shrimp, and California gnatcatcher surveys. He is also responsible for authoring many biological technical reports, work plans, and restoration and management plans for projects in San Diego County. As part of these projects, he has coordinated and scheduled other biologists, equipment operators, surveyors, and landscape maintenance crews.

Mr. McMillan has experience conducting numerous restoration projects on a wide range of habitats. He has conducted restoration of mountain meadow, riparian woodland, coastal sage scrub, chaparral, and vernal pool habitats throughout the Southern California region. Mr. McMillan's experience in native habitat restoration is often associated with vernal pools and other sensitive species habitats, and associated with mitigation for impacts to sensitive species such as San Diego fairy shrimp, Riverside fairy shrimp, Otay Mesa mint, San Diego mesa mint, San Diego button-celery, spreading navarretia, California gnatcatcher, cactus wren, and Quino checkerspot butterfly. In addition, he has conducted extensive desert habitat restoration projects throughout Southern California and Nevada, including restoration of creosote scrub, ironwood and palo verde woodlands, and desert riparian habitat. Much of this desert restoration has included habitat for the desert tortoise, flat-tailed horned lizard, and desert bighorn sheep.

Relevant Previous Experience

Eldorado-Ivanpah Transmission Line Vegetation Restoration Program, Southern California Edison Company, California and Nevada. Senior restoration ecologist for the EITP project, providing guidance and oversight during restoration planning, implementation, maintenance, monitoring, and reporting. The EITP project consists of construction of a transmission line between Eldorado substation in Nevada and Ivanpah substation in California for all of the project's temporary impact areas, consisting of over 300 acres of desert habitat supporting sensitive plants and wildlife. The planning portion of the project includes the preparation of a restoration plan that outlines methods and approach, as well as success criteria to be evaluated in conjunction with SCE and the regulatory agencies. The implementation of this plan included cactus salvage and transplantation of over 10,000 plants, hand seeding and raking, mechanical imprinting, sensitive plant seed collection and propagation, weed control, qualitative and quantitative monitoring, and agency coordination. (2013-2019)

Devers-Palo Verde 2 Transmission Line Vegetation Restoration Program, Southern California Edison Company, Riverside County, California. Senior restoration ecologist for the program, providing guidance and oversight during restoration, including implementation, maintenance, monitoring, and reporting. Implementation included cactus salvage and transplantation, hand seeding and raking, imprinting, and sensitive plant seed collection and application. Maintenance primarily includes weeding and access control measures. Led the team to meet SCE's mitigation requirements for Coachella Valley Milkvetch, an endangered plant species, within the restoration program time period. The success included ongoing adaptive management, as well as seed collection, propagation, transplantation, and supplemental watering. The project is providing habitat restoration for the DPV2 line and included planning, implementation, maintenance, and monitoring services for 209 acres of native habitat at 191 sites across 153 miles, including jurisdictional areas and one special-status plant species. The team implemented the project's weed control plan, in concert with the restoration plan, across an additional 518 sites. Scott's role included the co-ordination and consultation with the U.S. Forest Service on this project. (2014-2019)

Sunrise Powerlink Restoration, San Diego Gas & Electric Company, San Diego and Imperial Counties, California. Senior restoration ecologist that assisted in pre-activity site assessments and baseline data collection; cactus salvaging and transplanting; support to construction personnel on grading and post-construction site preparation issues; preparation of site-specific habitat restoration plans and sensitive plant restoration plan; implementation of habitat restoration activities; monitoring for 5 to 10 years post-implementation; resource agency coordination and support. Providing support for upland and wetland habitat restoration as well as sensitive plant mitigation planning and implementation services for temporary impacts resulting from construction of the Sunrise project, a 117- mile, 500-kilovolt powerline from Imperial County to San Diego. Services were provided during the construction phase and post-construction restoration phase and involve over 20 sensitive habitat types, 350-plus acres, and numerous sensitive species. (2012-2019)

Cleveland National Forest - Powerline Replacement, San Diego Gas & Electric, San Diego County, California. Provided strategic leadership to SDG&E for this project replacing wood poles with steel. Provided technical support for preparation of the permits and plans, including the habitat restoration plan. Provided technical support as the construction phase progresses toward post-construction activities. Includes leadership and direction of the implementation of habitat restoration as the project moves through the various phases of construction into restoration. This includes directing the collection, processing, and storage of native seed to be used on the restoration sites following construction, as well as plant salvage and planting. Scott was also a lead on co-ordination and consultation with the U.S. Forest Service on this project. (2017-2019)

Dennery Canyon Vernal Pool and Quino Habitat Restoration Project, Caltrans, San Diego, California. Developed and implemented he Habitat Restoration Plan for vernal pool and Quino habitat restoration on Otay Mesa in San Diego County. Over 45-acres of vernal pool and vernal pool watershed habitat was restored for Caltrans as part of the mitigation for impacts from the State Route 905 roadway. Over 40 vernal pools were created/restored with over a dozen sensitive species, including 5 federally listed fairy shrimp and vernal plant species. Managed and directed all field restoration activities on the site including the monitoring and reporting. This project set a new standard for vernal pool and restoration in general in the San Diego area and has been widely recognized by the agencies as exceeding expected success standards. (2010-2016)

Vernal Pool Habitat Conservation Plan (VPHCP), City of San Diego, California. Co-developed the Vernal Pool Habitat Conservation Plan (VPHCP) for the City of San Diego. This Plan was developed to preserve and manage the vernal pool habitat in the City of San Diego, including habitat for the seven federally listed vernal pool plant and animal species (San Diego fairy shrimp, Riverside fairy shrimp, San Diego Mesa mint, Otay Mesa mint, San Diego button-celery, spreading Navarretia, and California Orcutt's grass. The Plan define the strategy for long-term conservation, management, and monitoring of vernal pools in the City of San Diego, including a cost analysis to implement the Plan over the life of the VPHCP. This Plan was approved by the wildlife agencies (USFWS and CAFW) and the City Counsel in January of 2018, and is currently in Year 1 of implementation by the City. (2013-2018)

Wright's Field San Diego Thornmint Habitat Restoration Grant, SANDAG EMP Program, Alpine, California. In partnership with the Back Country Land Trust, Scott co-authored a successful grant proposal with SANDAG's EMP program to restore habitat for the federally listed San Diego thornmint at Wright's Field in Alpine, California. Directed the implementation and monitor of the project which included access control, weed control, seed collection and bulking, seed bank establishment, and monitoring. Brought population of 14 plants to over 3,000 during the 3 year project period. (2014-2017)

State Route 125 Vernal Pool and Quino Checkerspot Butterfly Habitat Restoration, Caltrans and South-Bay Expressway, San Diego, California. Directed the implementation and restoration of this 52-acre restoration site. This award-winning project was completed and signed-off by the regulatory agencies and included vernal pools, maritime succulent scrub, native grassland, cactus wren habitat, burrowing owl artificial burrows, and Quino butterfly habitat restoration. (2004-2010)

State Route 76 Extension Biological Assessment, Caltrans, San Diego County, California. Conducted general botanical and vegetation surveys on the proposed routes for the State Route 76 extension. These surveys were conducted in coastal sage scrub, chaparral, riparian, and grassland habitats. Sensitive plant species surveys were also conducted. Primary author on the botanical portion of the BA. (2007-2008)

State Route 52 Managed Lanes Biological Assessment, Caltrans, San Diego County, California. Directed the rare plant, vegetation, and general botanical surveys. Surveys were conducted on more than 1,500 acres for rare plants in coastal sage scrub, chaparral, vernal pool, and grassland habitats. Coauthored report with surveys results and recommendations. (2007)

SANDAG EMP Grant for Vernal Pool and Quino Checkerspot Restoration and Management, City and County of San Diego, California. Conducted the fieldwork and data collection. Co-authored the report to the City, County of San Diego, regulatory agencies, and SANDAG. Report analyzed numerous vernal pool locations within San Diego for restoration and management needs. Report included recommendations for implementation at six sites, where habitat was restored for vernal pools and Quino checkerspot butterfly. Directed the implementation of weed control, seed collection, plant propagation, and monitoring. (2007-2009)

San Onofre Vernal Pool Conservation Plan, NAVFAC, California State Parks Lease Area, Marine Corps Base Camp Pendleton, California. Mr. McMillan was the senior technical advisor and co-author for the preparation of an overarching vernal pool conservation plan for the 15-acre Vernal Pool Mesa at the San Onofre State Beach Lease Area on Marine Corps Base Camp Pendleton (MCBCP). The project included vernal pool floral and mapping surveys, wet and dry season fairy shrimp surveys, a jurisdictional wetland delineation, the preparation of the Conservation Plan, and the development of a recreation scheme and interpretive signs for the Vernal Pool Mesa. Mr. McMillan provided technical oversight for the field surveys, preparation of the conservation plan, and co-ordination with NAVFAC Southwest, MCBCP, California State Parks, and U.S. Fish and Wildlife Service. (2011-2013)

Publications

Bauder, E. T., and S. McMillan. 1996. Current Distribution and Historical Extent of Vernal Pools in Southern California and Northern Baja California, Mexico. Proceedings from the 1996 conference: Ecology, Conservation, and Management of Vernal Pool Ecosystems. Sacramento. Published by the California Native Plant Society.

Bauder, E. T., A. D. Kreager, and S. McMillan. 1998. Recovery Plan for the Vernal Pools of Southern California. Written for the US Fish and Wildlife Service, Portland.

McMillan, S. 1995. Vernal Pools and the Coastal Sage Scrub Community. Presented at the 1995 seminar: Coastal Sage Scrub; A Vanishing Habitat. Quail Botanical Gardens, Encinitas.

McMillan, S. 1996. The Vernal Pools of Southern California and Northern Baja California, Mexico. Presented at the Symposium for Botanical Research in Baja California and Adjacent Areas. Universidad Autonoma de Baja California, Ensenada, Mexico.

McMillan, S. 2012. The Distribution, Ecology, and Conservation of Clay Soil Endemic Plants of Southern California and Northwest Baja California, Mexico. Presented at the 2012 Southern California Botanist Symposium: From the Ground Up: Edaphic Factors and Plant Diversity.

McMillan, S., L. Cavallaro, T. Oberbauer, and L. Spears-Lebrun. 2012. An Update on the Current Distribution, Conservation, and Restoration of Vernal Pool Habitat and Species in Southern California and Baja California, Mexico. Presented at the 2012 California Native Plant Society Conservation Conference.

McMillan S. and L. Cavallaro. 2014. Vernal Pool Restoration in Southern California: A 25-Year Perspective. Presented at the 2014 AquaAlliance Vernal Pool Conference: Vernal Pools in Changing Landscapes, from Shasta to Baja. Publication in 2015.

McMillan, S. and L. Cavallaro. 2015. Salvage, Transplant, and Restoration of San Diego Ambrosia (Ambrosia pumilla) at Jeffries Ranch for SDGE. Presented at the 2015 SERCAL Conference.

McMillan, S. L. Cavallaro, and B.Hanson. 2017. Habitat Restoration and Seed Bulking for the Endangered San Diego Thornmint at Wright's Field in Alpine, California. Presented at the SANDAG EMP Working Group Meeting in May.

McMillan, S., L. Robb, S. Prahbu, and C. Benitez. 2018. Desert Habitat Restoration on SCE's Eldorado to Ivanpah Transmission Project. Presented at the 2018 SER Southwest Conference

Brock Ortega

Principal, Senior Wildlife Biologist

EDUCATION

Humboldt State University
BS, Wildlife Biology and Management, 1991

CERTIFICATIONS

USFWS Federal 10a Survey Permit No. TE-813545-9:

- California Gnatcatcher Surveys
- Least Bell's Vireo Surveys/ Nest Monitoring
- Southwestern Willow Flycatcher Surveys
- Quino Checkerspot Butterfly Surveys
- Fairy Shrimp Surveys

USFWS List of Approved Handlers – Arroyo toad

PROFESSIONAL AFFILIATIONS

Southern California Chapter of The Wildlife Society, President

Humboldt State University Wildlife Department Alumni Association, Past Board Member

Brock Ortega has more than 30 years' experience as a wildlife biologist and project manager. He brings extensive expertise to his project teams in many areas, including permitting issues related to wetland resources and threatened or endangered species, wildlife biology and management, ecological assessment, environmental impact assessment and mitigation, habitat remediation, endangered species management plan authorship, and mitigation monitoring project and program management. Mr. Ortega has conducted over 40,000 hours of focused and general wildlife surveys during his professional career. A leader in the biological resources group, he has been instrumental in developing expertise in herpetological trapping arrays, camera-trapping sets, bat acoustic surveys, pit-tagging studies, and other techniques. Additionally, has lead Dudek's entry into the Unmanned Aerial Systems (UAS; "drones") market, having spearheaded obtaining approvals from the FAA and obtaining professional-grade UAS. In addition to holding federal 10 (a) (1)(A) permits for several species, Mr. Ortega is a recognized qualified surveyor for several other listed and rare amphibian and mammal species. He is U.S. Fish and Wildlife Service (USFWS)–authorized as an arroyo toad (*Bufo californicus*) emergency handler; USFWS and California Department of Fish and Game (CDFG)–qualified to survey San Joaquin kit fox (*Vulpes macrotis mutica*) throughout its range; and USFWS and U.S. Forest Service (USFS)–qualified to survey arroyo toad, California red-legged frog (*Rana draytonii*), mountain yellow-legged frog (*Rana muscosa*), and Coachella Valley fringe-toed lizard (*Uma inornata*) throughout their ranges.

Specifically related to amphibians and western spadefoot, Mr. Ortega has surveyed for and handled a variety of species throughout his career. He has been on the USFWS list of approved handlers for arroyo toad, was provided a special permit in 2017 to move arroyo toads found in danger during drought conditions, has participated in a variety of training classes for listed amphibians, was the lead amphibian and reptile analyst (including western spadefoot) for the Western Riverside MSHCP, was a collaborator with the USGS on their study regarding western spadefoot related to the City of Santee Subarea Plan, performed over 50 surveys for arroyo toad, was cited in the Federal Register regarding arroyo toad critical habitat, and moved over 200 arroyo toads out of harm's way in association with the Fenton Sand Mine project on the San Luis Rey River in Pala. He has performed dozens of surveys for western spadefoot in San Diego, Riverside, Orange County, and Los Angeles County using generic larval survey and audible survey techniques. He has head-started hundreds of larval spadefoot and released them. He has found one of the last spadefoot in the Los Angeles basin within an old oil site "last chance" oil catchment. He also derived a novel survey and recovery method involving nocturnal eyeshine surveys during or after rain events as early as 2002/2003 for the El Apajo project in the San Dieguito River Valley near Del Mar. This method was approved by then USFWS biologist John Stevenson to facilitate capture and relocation of arroyo toads and western spadefoot. This resulted in the successful capture and release of 112 western spadefoot and 48 western toads.

Specific to least Bell's vireo, Mr. Ortega has performed over 100 protocol-level surveys and nest monitoring studies. These have occurred throughout their range including San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Riverside, San Bernardino, Imperial, and San Diego counties for a wide array of public and private projects. In addition, Mr. Ortega has performed dozens of surveys for other riparian neo-tropical migrants and is well familiar with all riparian bird identification and behavioral ecology. Mr. Ortega has written and implemented several species and habitat management plans for the species. He has also implemented over a dozen brown-headed cowbird management programs over the last 20 years. Finally, he has provided analysis in support of several Section 7 consultations regarding least Bell's vireo.

Regarding burrowing owl, Mr. Ortega began working with owls in 1993 when he conducted an emergency relocation of burrowing owls that included excavating a burrow, capturing an owl, and transferring it to a safe location. He has conducted dozens of focused burrowing owl surveys in San Diego, Imperial, Kern, Orange, San Bernardino, Los Angeles, Riverside, and other counties – observing at least 100 owls during that time. Mr. Ortega has built and installed dozens of one-way doors and dozens of artificial burrow complexes in San Diego, Riverside, Imperial, and San Bernardino Counties. He has written several burrowing owl management plans including co-writing plans for Riverside County Flood Control and Water Conservation District and also County of San Bernardino Public Works Department. He has served in biological monitoring director for several solar and wind projects in southern California including the Ocotillo Wind, Mc Coy Solar, Blythe Solar, and Solar Gen 2 projects among others. Mr. Ortega has been responsible for coordinating with regulatory agencies when appropriate regarding special status species issues, including burrowing owl. In addition, he has attended 6 burrowing owl conferences and been a member of the Burrowing Owl Consortium.

Specific to invertebrates, Mr. Ortega was the invertebrate species (including listed fairy shrimp and Quino checkerspot) lead biologist for the Western Riverside Multiple Species Habitat Conservation Plan and has conducted numerous focused surveys and habitat assessments for Quino checkerspot, fairy shrimp and vernal pools, crotch bumble bee, and Casey's June beetle during his career. Some notable projects include the following:

- Reviewing potential Caltrans stormwater BMP sites for potential to support fairy shrimp and vernal pools. This included over 200 site across California – Humboldt to Ventura counties and to Arizona/Nevada border.
- Conducting focused positive surveys for fairy shrimp along Interstate 15 in San Diego County.
- Conducting focused positive surveys for Quino checkerspot and fairy shrimp in City of Chula Vista and southern San Diego County.
- Surveying over 200 pools in conjunction with 3,600-acre project in eastern San Diego County.
- Designing and conducting a focused survey effort for a 32-mile road project in Riverside county – required using innovative helicopter surveys to efficiently locate pools then returning to survey. Surveyed over 300 pools.
- Surveying pools on Camp Pendleton MCB to facilitate pipeline base projects.
- Conducting focused positive surveys for a City of San Diego pipeline project east of Miramar NAS.

- Conducting focused surveys for fairy shrimp and pools along the 65-mile Metropolitan Water District Pipeline No. 6 project and alternative alignments in Riverside County.

- Conducting focused Quino checkerspot surveys in Riverside, Orange, and San Diego counties.

- Surveying over 40 projects throughout their range and identifying individuals throughout their range.

- Surveying and identifying very similar checkerspots in the San Bernardino Mountains (subspecies *augustina*).

- Co-hosted and attended a "Bumble Bees of California" workshop, presented by Jaime Pawelek of Wild Bee Garden Design/Essig Museum Research Associate in November 2019. This was a one-day specialized bumble bee training which focused on the four California candidate species, Crotch bumble bee (*Bombus crotchii),* Franklin bumble bee (*Bombus franklini*), Western bumble bee (*Bombus occidentalis occidentalis*), and Suckleyi Cuckoo bumble bee (*Bombus suckleyi*). Lecture topics included classification and bee morphology; identification of species; life history and ecology and; sampling protocols. A large portion of the workshop included identification of specimens using a microscope and guidebook "Bumble Bees of the Western United States" (by Koch, Strange, and Williams). Developed and implemented a survey protocol for Crotch bumble bee for the Strauss Wind Project in Santa Barbara

- Managed Casey's June beetle ecology and genetic study grant for Palm Springs U.S. Fish and Wildlife Service field office and performed yearly surveys for them, collecting and marking up to 200 in one night.

Since approximately 1998, after receiving his 10(a)(1)(A) permit to conduct fairy shrimp surveys, Mr. Ortega has conducted numerous focused surveys for fairy shrimp. His permit covers all listed species of fairy shrimp within California. In support of receipt of the permit, he attended training sessions for fairy shrimp identification conducted by Denton Belk, author of the textbook on fairy shrimp identification and natural history and later by Mary Belk. Examples of surveys include California State University Dominquez Hills, Newhall Ranch, Caltrans I-15 widening, Mid-coast rail, Mid-county Parkway project, Otay Ranch Resort Site, St. Jerome Church site, Tejon Mountain Village, Fanita Ranch, Neighborhood 8A, and Ramona Boulevard project, among others. Mr. Ortega has worked with the resource agencies to address permitting for projects with federally listed fairy shrimp species and has prepared the documents required for Section 7 consultations, as well as restoration and mitigation plans for projects with impacts to fairy shrimp and vernal pools. Most recently, Mr. Ortega prepared a vernal pool management plan to address a vernal pool occupied by the San Diego fairy shrimp (*Branchinecta sandiegonensis*) related to the Fanita Ranch project in Santee, California. For more complex projects, Mr. Ortega has worked with the regulatory agencies to devise modified survey methods. For example, the Mid-county Parkway project included dozens of miles over multiple alternatives and properties. In order to be cost effective and minimize unnecessary access permit coordination, Mr. Ortega proposed to use helicopters to aerially survey for expressed pools, then follow up where pools existed. Where it would have taken a biologist 4 person days to survey the entire route, it only took 3 hours for a biologist in a helicopter.

In addition to wildlife management issues, Mr. Ortega has specialized in wildlife movement and connectivity studies and issues. He has attended numerous conferences related to wildlife movement and

connectivity issues and has presented at two International Conference on Ecology and Transportation conferences. He furthers his knowledge of existing crossing structures by touring locations across the west – viewing everything from tortoise and kangaroo rat barriers to elk and pronghorn barriers to differing jump-out designs. Throughout his career, Mr. Ortega has designed and implemented numerous studies to determine wildlife usage of specific sites and through regions. He has utilized nearly every technique including standard sooted track plates, guard hair sampling, scat surveys and mapping, gypsum track stations, camera stations, trail dragging track studies, and visual surveys. Mr. Ortega has built his own remote cameras, but has acquired over 300 digital game cameras to use for corridor and movement studies. He is familiar with designing studies to adequately sample a broad area, either in a stratified manner or based on species specific habitat requirements. He understands when it is best to use baited stations or when it is best to document unbiased movement. He is up to date with the latest technologies, literature, and techniques available to conduct movement studies and is trained and has implemented sophisticated GIS predictive modeling of least cost path and unionized movement of wildlife.

Additionally, Mr. Ortega is well familiar with the issues surrounding bat and avian collision issues related to wind turbines, towers, and generation and transmission lines and facilities. Further, he is up to date with the latest technologies and techniques available to conduct focused mobile avian radar based studies and deterrents (e.g., InteliFlight, GE Bat Deterrent Systems). Mr. Ortega has scoped and led numerous avian monitoring studies, including focused eagle and Bird Use Count surveys - both for eagles and raptors in general, small bird counts, transect studies, radar studies, and others. He has performed focused surveys for California condor, golden and bald eagle and other raptors throughout his career.

Selected Project Experience

Development

Fanita Ranch, HomeFed Fanita Rancho, LLC, San Diego, California. Has served as the project and client manager for over 8 years. Previously was the lead biologist for the prior iteration of the project. In total, has been involved with the project for over 20 years. Serves as biological liaison to the City of Santee and their HCP consultant with regards to the Santee Subarea Plan. Serves as the lead biologist for the project, having performed focused wet season protocol-level surveys for the federally listed endangered San Diego fairy shrimp and Riverside fairy shrimp , California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, quino checkerspot, Hermes copper butterfly, western spadefoot toad, burrowing owl, and wildlife corridor studies. Currently processing an 1,100-page document supporting the project, including resource management plans, habitat restoration plans, trail management plans, and species management plans.

El Apajo Development, San Diego County, California. Lead biologist for wildlife surveys in 2002/2003. Included developing a novel arroyo toad and western spadefoot survey methodology in coordination with USFWS biologists to facilitate detection and translocation of adult specimens within the construction zone. Method involved performing nocturnal eyeshine surveys during or after the first few major rain events of the wet season. The effort resulted in the successful detection, capture, and relocation of 112 western spadefoot and 56 western toads. Notably, over 90% of the spadefoot were captured during the first three rain events and comparative surveys outside the enclosed capture area indicated great success.

Tejon Mountain Village, Tejon Mountain Village LLC, Kern County, California. Lead biologist and phase manager for wildlife corridor, ringtail cat (*Bassariscus astutus*), sensitive reptile and amphibian (including

western spadefoot and red-legged frog), and small mammal studies. Designed and implemented study design for wildlife corridor and ringtail cat studies.

For the wildlife corridor study, reviewed 20 crossing locations under and in the vicinity of Interstate 5 along a 10-mile stretch of highway; directed review and analysis of over 16,000 camera station photographs from undercrossings; directed game trail field work; directed implementation of a project-wide geographic information systems (GIS)-based permeability modeling effort to determine preferred wildlife usage and movement across the site and estimate post-project wildlife usage and movement across the site.

For the ringtail cat study, designed, sited, and directed implementation of a baited-station camera study that used a rotating group of 20 digital infrared/motion-sensing game cameras to determine the presence/absence of ringtail cat. Over 200 stations were run across the project area for a period of 16 days each. These camera stations were successful at capturing a variety of large, medium, and small mammals, along with a variety of avian species. Performed habitat assessments for sensitive amphibian and reptile species. Was responsible for designing and implementing both studies. Performed as a project biologist for this project, conducting focused surveys for arroyo toad, California red-legged frog, southwestern willow flycatcher (*Empidonax traillii extimus*), least Bell's vireo (*Vireo bellii pusillus*), yellow-billed cuckoo (*Coccyzus americanus*), sensitive butterflies, raptors, and general wildlife.

Grapevine Project, Tejon Grapevine, LLC, Kern County, California. Served as wildlife service's task lead for the Grapevine Project, which is located in Kern County in the San Joaquin Valley floor and the Tehachapi and San Emigdio foothills. Dudek has conducted site-specific biological resources surveys on the 8,010-acre Grapevine Project site and approximately 7,000 acres adjacent to the project site on Tejon Ranch. Mr. Ortega developed survey methods and provided quality control and assurance for the numerous wildlife surveys that have been conducted including: a habitat and den/burrow assessment for San Joaquin kit, burrowing owl and American badger and small mammals include short-nosed, Tipton, and giant kangaroo rat and Tulare grasshopper mouse; habitat assessments for blunt-nosed leopard lizard, Tehachapi slender salamander, Buena Vista Lake shrew, and Nelson's Antelope squirrel; protocol surveys for valley elderberry longhorn beetle; protocol surveys for least Bell's vireo (*Vireo bellii pusillus*) and southwestern willow flycatcher (*Empidonax extimus traillii*); breeding and wintering raptor surveys; marsh nesting bird surveys; protocol surveys for California red-legged frog; habitat assessment and acoustic bat surveys for special-status bats; and wildlife movement study, including various camera studies. Additionally, Dudek is evaluating the biological function and values for wildlife species on approximately 30,000 acres of land on Tejon Ranch in the San Joaquin Valley floor adjacent to the Grapevine Project.

Master-Planned Community, Santa Barbara County, California. Supervisory biologist for environmental surveys. Conducted initial habitat assessments for vernal pools and special-status wildlife species, including least Bell's vireo, California red-legged frog and tiger salamander (*Ambystoma tigrinum)*. Developed strategy for conducting vegetation mapping, jurisdictional wetland delineation, and focused surveys for special-status plants and animals on approximately 4,000 acres of land. The master-planned community project consists of a large development with several thousand homes with associated schools, professional offices, shopping areas, and safety facilities. Dudek is assisting with multiple environmental planning services to prepare an environmentally sensitive development.

Landmark Village Project, Newhall Land and Farming Company, Los Angeles County, California. Supervisory biologist for habitat assessments and focused surveys in 2007 for least Bell's vireo, California

gnatcatcher (*Polioptila californica*), western spadefoot, and vernal pool surveys on 145 acres of land. Assisted in study design, focused surveys, and analysis.

Mission Village Project, Newhall Land and Farming Company, Los Angeles County, California. Supervisory biologist for habitat assessments and focused surveys in 2007 for least Bell's vireo, western spadefoot, vernal pool species and California gnatcatcher on 520 acres of land. Assisted in study design, focused surveys, and analysis.

High Country Project, Newhall Land and Farming Company, Los Angeles and Ventura Counties, California. Lead biologist for habitat assessments and focused wildlife surveys in 2005 for vernal pool species, large mammal usage, least Bell's vireo, California gnatcatcher, southwestern pond turtle (*Actinemys marmorata*), arroyo toad, owls, and special-status birds and reptiles on 23,000 acres of land. Determined species survey methods and biologist coverage areas, and performed analysis on the data collected.

California State University, Dominguez Hills, Los Angeles County, California. Project manager and lead biologist responsible for conducting wet and dry-season surveys of potential pools located on the campus. The goal was to identify whether there were shrimp on site, culture them if present, then hatch and identify them to species. Identification of non-listed species allow for development of infill portions of the campus.

4S Kelwood/4S Ranch, Newland Communities, San Diego County, California. Served as primary wildlife biologist for this project. Conducted habitat assessments and surveys for least Bell's vireo, California gnatcatcher, clapper rail (*Rallus longirostris*), southwestern pond turtle, and Quino checkerspot butterfly (*Euphydryas editha quino*). In addition, conducted a wildlife movement analysis across the property and monitored construction and removal of vegetation.

Pala Sand Mining Project, Hansen Aggregate Company, San Diego County, California. Served as the lead biologist for this project. The project area is located within the San Luis Rey River in San Diego County. This project was initiated around the time that the arroyo toad and southwestern willow flycatcher were listed as endangered by the FWS. Was responsible for yearly surveys for listed arroyo toad, least Bell's vireo, and southwestern willow flycatcher. In addition, conducted pit-fall trapping for amphibians and reptiles within the project area. Successfully located a large population of arroyo toads within the 1-mile survey area. Was responsible for monitoring their population during mining activities and eventually relocated approximately 250 larvae, juveniles, and adults out of the project area and back into the San Luis Rey River.

Bacara Resort Project, City of Goleta, Santa Barbara County, California. Dudek was contracted by the City of Goleta as extension of staff to prepare CEQA documents (EIR) for the expansion and rehabilitation of the Bacara Resort. One of these issues related to biological resources. Was lead biologist related to wildlife issues, including least Bell's vireo, California red-legged frog, white-tailed kite, monarch butterflies, and other raptors. Due to surrounding vegetation, novel survey techniques had to be developed to survey for California red-legged frogs. Entered creek by raft from the beach, in order to conduct survey. Located a minimum of eight frogs within the project area.

Trabuco Canyon, The Planning Center, Orange County, California. Lead wildlife biologist for preparation of biological technical reports for California Environmental Quality Act (CEQA) documentation for the Trabuco Canyon Project, which encompasses over 1,110 acres. Managed and conducted a 2.5-year

wildlife corridor study program, focused surveys for least Bell's vireo and southwestern willow flycatcher, focused surveys for arroyo toad, habitat assessments and focused surveys for burrowing owl (*Athene cunicularia*), focused California gnatcatcher surveys, nesting raptor surveys, California red-legged frog surveys, and fairy shrimp surveys.

Retrofit Project, Palm Springs Aerial Tramway, Riverside County, California. Managed the biological resources portion of this project, which proposed to install new larger trams. The new tram cars required rock and tree removal adjacent to the tram alignment to ensure safe usage. Initial tasks included conducting focused surveys for least Bell's vireo, mountain yellow-legged frog and golden eagle (*Aquila chrysaetos*), vegetation mapping, reporting, and coordination with the resource agencies. Was later responsible for determining the best way to convey peninsular bighorn sheep (*Ovis canadensis cremnobates*) across the Tram Road and onto the adjacent alluvial fan. This required interviewing numerous state, federal, academic, and field bighorn sheep biologists, devising alternative methods to avoid impacts to sheep, determining likely sheep crossing points, determining potential habitat bridge locations, and submitting a synopsis report.

Yokohl Ranch, Yokohl Ranch LLC, Tulare County, California. Served as a lead wildlife biologist for the project to perform initial habitat assessments for pond turtles, ringtail cats, wildlife movement, and mammals. Dudek is preparing biological resources reports and an environmental impact report (EIR) for an approximately 4,800-acre site that will be developed within the 36,000-acre Yokohl Ranch located in Tulare County. The planned development area lies within valley, foothill, and Sierra Nevada mountain habitats.

Resource Management

Casey's June Beetle Range-wide Study, USFWS, Palm Desert, California. Serves as the CDFA Grant holder and participant in a USFWS-led study. The Casey's June Beetle Dietary and Subsoil Use Study, began in 2015 and will conclude in 2020. The study includes investigating optimal soil conditions, dietary needs, life span, genetic testing, mark-recapture to determine movement patterns, and test telemetry options for the critically endangered beetle.

Stephens' Kangaroo Rat Habitat and Fire Management Plan, Riverside County Habitat Conservation Agency, Riverside County, California. Project manager responsible for preparing a Stephens' kangaroo rat Habitat and Fire Management Plan for the Riverside County Habitat Conservation Agency reserves in Lake Mathews and Steele Peak. Conducted interviews of habitat managers, species experts, and wildlife agency personnel. Coordinated expected fire behavior modeling for the reserve in order to develop a fire protection strategy and brush management plan. Established a suite of monitoring protocols and measures to track population levels and contributed habitat statistics to use for future management decisions. Conducted live-trapping in eleven 90-meter by 90-meter grids that included 49 traps per grid. Established a series of stratified grids across the reserve and field-verified the sites. Tested surrogate burrow count methodologies and sampled vegetation using a modified relevé method.

Baseline Biological Surveys of the Otay Ranch Preserve – Salt Creek and San Ysidro Mountain Parcels, County of San Diego, California. Served as project manager and lead biologist, staffed the project and attended preserve owner/manager meetings as needed. Provided direction on wildlife survey design and directed staff with regard to survey locations and various wildlife studies, including butterfly surveys, avian point-count stations, herp arrays, game camera locations, and small-mammal trapping, within an approximately 1,350-acre area located in Chula Vista, California.

Environmental Surveys of Simon and Mount Gower Preserves, County of San Diego, California. Served as senior wildlife biologist. Provided direction on wildlife survey design and directed staff with regard to survey locations and various wildlife studies, including avian point-count stations, herp arrays, game camera locations, and small mammal trapping, within the 617-acre Simon Preserve and the 1,522-acre Mount Gower Preserve located in Ramona, California.

LaBorde Canyon Off-Highway Vehicle Park Study, Riverside County, California. Served as the project manager and lead biologist for the 2,600-acre study. Was responsible for scheduling ten biologists and one subconsultant to conduct habitat mapping, sensitive plant surveys, Stephens' kangaroo rat (*Dipodomys stephensi*) and San Bernardino kangaroo rat (*Dipodomys merriami parvus*) habitat assessments and trapping, installation and implementation of 20 reptile trap arrays, raptor nest surveys, and general wildlife surveys.

As-Needed Biological and Cultural Resources Surveys and Monitoring, Department of Parks and Recreation, County of San Diego, California. Served as project manager and principal biologist, providing as-needed consulting services for biological and cultural resources. Services included conducting Phase I cultural resources surveys; baseline biological surveys; habitat, wildlife corridor, and sensitive plant and animal species monitoring; and habitat restoration. Prepared technical reports, developed vegetation management plans, and developed public access plans providing analysis and recommendations for potential multiple-use trails and staging areas. Responsible for oversight, wildlife survey design, and staffing for the following projects:

- Baseline Biodiversity and Cultural Survey for the Pascoe, Helix-Lambron, and Cielo Azul Parcel Additions to the Del Dios Highlands Preserve. This project included preparation of a vegetation management plan for the approximately 313-acre area in Escondido, California.
- Baseline Biodiversity and Cultural Survey for the Escondido Creek Preserve. This project included preparation of a vegetation management plan for the approximately 346-acre site in the Elfin Forest.
- Baseline Biodiversity and Cultural Survey for the San Luis Rey River Park. This project included preparation of a trails assessment and vegetation management plan for the approximately 460-acre site in the northern San Diego County area.
- Tijuana River Valley Regional Park Habitat Restoration Project. This 33-acre site is located in southern San Diego County.
- Lusardi Creek Perennial Invasive Vegetation Control and Coastal Sage Scrub Seed Imprinting Project. This project included preconstruction surveys for nesting birds. This approximately 2-acre site is located in the San Dieguito River Valley.
- Santa Ysabel West Perennial Invasive Vegetation Control Project. This approximately 0.26-acre area is a mitigation site in eastern San Diego County.
- Baseline Biodiversity and Cultural Survey for the Sycamore South and Hagey Portions of the Sycamore Canyon and Goodan Ranch Preserves. This project included preparation of a vegetation management plan for the entire preserve (2,300 acres) and an access plan. The survey site encompasses approximately 263 acres in the Santee/Poway area.
- Baseline Biodiversity and Cultural Survey for the Stoneridge Preserve. This project included preparation of a vegetation management plan and was conducted over an approximately 244-acre area in the South San Diego County area. This work is still in progress.
- Baseline Biodiversity and Cultural Survey for the Potrero/Mason Properties. This project included preparation of a vegetation management plan and access plan. The survey was conducted over an approximately 505-acre area in the Barratt Junction area.

U.S. Fish and Wildlife Service San Diego National Wildlife Refuge Game Management Study, County of San Diego, California. Served as project manager and lead wildlife biologist for a game management study at the Refuge. Researched appropriate project design, sampling, and statistical analysis techniques to conduct study. Successfully implemented the study along with a crew of biologists to obtain an index of the relative abundance of proposed game species including mule deer, rabbit, quail, and mourning doves. Relied on a number of methods including point count stations, linear transects, and others. Conducted research, analyzed data, and turned report around in less than a year.

San Jacinto Wildlife Area, County of Riverside, California. Served as lead wildlife biologist and assistant project manager for preparation of a Land Management Plan (LMP) and associated CEQA and NEPA documentation for a 21,000-acre open space area owned and managed by the CDFG. The contract was administered by the California Wildlife Foundation and funded by the Wildlife Conservation Board. Dudek was involved in establishing existing and long-term management goals, identifying measurable and meaningful project benchmarks, and exploring desired outreach efforts. Mr. Ortega provided review of literature/document compilation and management plans, land use policies, and relevant technical reports to address CEQA Initial Study Checklist (and possible NEPA) issues. Mr. Ortega conducted interviews of staff and participated in public outreach programs, conducted biological reconnaissance surveys, and assisted with the preparation of the LMP, which addressed the conservation and management of soil types, vegetation, wildlife habitats, sensitive species, farmlands, hydrology, total maximum daily loads of water quality constituents, invasive weeds, fire management, existing utilities and infrastructure, erosion and sedimentation, hazardous materials, public access and recreation, vehicular access, and visitor interpretation and education facilities.

Western Riverside County Multiple Species Habitat Conservation Plan (MSCHP), Riverside County Transportation and Land Management Agency, Riverside County, California. Served as one of the primary biologists for the Western Riverside MSHCP. Responsible for writing species accounts, coverage assessments, and impact assessments for all of the covered reptiles, amphibians, insects, and crustaceans within the planning area. Also responsible for analyzing various wildlife crossing and corridor issues and determining potential methods for safely conveying wildlife across planned roadways. This involved extensive review of current state-of-the-art wildlife underpasses and overpasses within California, nationally, and globally. This also included visiting various sites, such as the Interstate 80 underpasses east of Sacramento. Was responsible for developing the MSHCP-specific burrowing owl protocol. Also participated in implementation of the MSHCP, reviewing proposed projects for consistency with the MSHCP.

Municipal

As-Needed Environmental Services, Helix Water District, San Diego County, California. Project manager for environmental services contract. Tasks completed under this contract included: the Lake Cuyamaca management evaluation and analysis; Diverting dam analysis and acquisition of Streambed Alteration Agreement from the California Department of Fish and Wildlife to allow for maintenance; two years of diverting dam maintenance monitoring; Chet Harrit Dam coordination with US Fish and Wildlife Service to allow for clearing of California gnatcatcher occupied habitat on the dam face to address California Division of Safety of Dam concerns; monitoring of work associated with the clearing; assessment of cactus wren occupation and environmental risk at Lake Jennings, and; focused arroyo toad monitoring along the upper reaches of the San Diego River in 2017.

North City Project: Pure Water Program, City of San Diego Public Utilities Department, California. Served as the primary biologist for a joint project EIR and EIS for the City of San Diego Public Utilities Department and the U.S. Bureau of Reclamation. The North City Project is the first phase of the San

Diego Pure Water Program for reservoir augmentation with recycled water. The joint EIR/Environmental Impact Statement analyzed two alternatives at an equal level and spanned multiple cities and unincorporated areas of the county. Biological issues included California gnatcatcher, quino checkerspot, pond turtle, fairy shrimp, jurisdictional resources, rare plants, and evaluation of non-native fisheries to address California Department of Fish and Wildlife concerns.

San Luis Rey Bike Path, City of Oceanside, San Diego County, California. Served as project manager and primary wildlife biologist. This project was located at the western end of the San Luis Rey River, near Interstate 5. Conducted vegetation mapping and focused surveys for least Bell's vireo, California gnatcatcher and a variety of sensitive plant species. Processed environmental studies in support of the City of Oceanside's Mitigated Negative Declaration and wrote the habitat restoration plans for the project.

Annual Gnatcatcher Surveys, Trump National Golf Club, City of Rancho Palos Verdes, California. Conducted gnatcatcher surveys for eight years over approximately 100 acres of restored coastal sage scrub and coastal bluff scrub habitat within and surrounding the golf course on the Palos Verdes Peninsula. The goal of the surveys was to determine the breeding status of paired birds, territory number, size and location, breeding success, and cowbird predation in accordance with the Ocean Trails Habitat Conservation Plan. Prepared annual monitoring reports that summarized population dynamics and identified threats to gnatcatchers.

Western Riverside County Multiple Species Habitat Conservation Plan (MSCHP), Riverside County Transportation and Land Management Agency, Riverside County, California. Served as one of the primary biologists for the Western Riverside MSHCP. Responsible for writing species accounts and coverage assessments for all of the covered reptiles, amphibians, insects, and crustaceans within the planning area. Also responsible for analyzing various wildlife crossing and corridor issues and determining potential methods for safely conveying wildlife across planned roadways. This involved extensive review of current state-of-the-art wildlife underpasses and overpasses within California, nationally, and globally. This also included visiting various sites, such as the Interstate 80 underpasses east of Sacramento. Also participated in implementation of the MSHCP, reviewing proposed projects for consistency with the MSHCP.

West Coyote Hills Field Closure and Development Project, Chevron USA Production Company and Chevron Pacific Coast Homes, City of Fullerton, Orange County, California. Served as project manager and principal biologist. Assisted Chevron in obtaining a federal Section 4(d) permit to allow closure of the approximately 600-acre oil field. This field was home to between 46 to 80 pairs of California gnatcatchers. Managed environmental compliance regarding endangered species issues and included regular coordination with the USFWS, CDFG, U.S. Army Corps of Engineers, and California Division of Oil and Gas. Served as long-term 4(d) compliance monitor and coordinator for the field closure. Managed and conducted construction worker training seminars, and provided other training materials to educate workers regarding biological resources. Obtained regulatory agency approval of several project changes, including extension of work seasons and impact variances. Prepared and managed implementation of habitat restoration activities benefiting the California gnatcatcher. Prepared, and regularly coordinated with the regulatory agencies regarding, a federal Section 7 Biological Assessment to be included within the USFWS Biological Opinion regarding development of approximately half of the site. Acceptance of this assessment was reliant upon defensible analysis that through project modifications, project configuration, habitat restoration, and long-term management regimes, no net loss of California gnatcatchers would occur. Currently overseeing continued agency

coordination, remapping of vegetation communities, and remapping of California gnatcatcher territories. Captured one of the last known or mapped western spadefoot in the Los Angeles basin.

Transportation

Stormwater Best Management Practice (BMP) Pilot Study and Statewide Wet Basin Projects, California Department of Transportation (Caltrans), Statewide, California. Served as project manager for this BMP pilot study that began in 1999 to account for potential endangered species issues related to implementation of BMPs in San Diego and Los Angeles counties. Initially evaluated all proposed structures to determine which had the potential to become attractive nuisances to sensitive wildlife species. Potentially sensitive BMPs were then monitored over a 2-year period to determine their true impact on sensitive species including least Bell's vireo, burrowing owl, and western spadefoot. During this timeframe, Worked with Caltrans, project engineers, scientists, regulatory agencies, and local conservation groups to modify maintenance and facility management regimes to avoid impacts to a wide variety of sensitive species. As a result of this project, it was determined that one type of BMP was at greater risk of becoming an attractive nuisance to threatened and endangered species. At Caltrans' request, formulated a project strategy and initiated discussions with the regulatory agencies to determine a strategy to permit installation of the BMPs on a statewide level. It was determined that the best method would be to employ the Safe Harbors Act or possibly pursue a habitat conservation plan under Section 7 or 10 of the Endangered Species Act. Mr. Ortega evaluated all major highway networks in the state for potential listed species issues. This included a review of existing or proposed wildlife crossings including Highways 50 and 80.

As-Needed Environmental Services, SANDAG, San Diego County, California. Program manager for environmental services on-call contract. Contract is worth up to $30+ million. Serves as project manager and contract manager for the contract. To date, Dudek has been authorized for four of eight competitive tasks including the Regional Sea Level Rise Adaptation Guidance, San Diego Regional TerraCount Assessment, Adaption and Transportation Resilience Toolkit, and the San Elijo Lagoon Restoration Bio Monitoring scoping task.

Washington DC to Baltimore Loop Tunnel Project, The Boring Company, San Diego County, California. Primary biologist writing section of NEPA Environmental Assessment for the project. The Washington DC to Baltimore Loop Tunnel Project would consist of the construction of a set of parallel, twin underground tunnels running from Washington, D.C. to Baltimore, known as the Main Artery Tunnels. The proposed twin tunnels would be separated by approximately 14 feet and would run in parallel for approximately 35.3 miles beneath public right-of-way. Was responsible for habitat assessments, coordination with local regulatory agencies, and analysis of impacts.

State Route 62 – Morongo Basin Connectivity Study, Caltrans District 8, Riverside and San Bernardino Counties, California. Project manager and lead biologist for a two-year wildlife connectivity study. In advance of future modifications to the highway system, Caltrans is interested in the current use by large mammals (primarily desert bighorn sheep, mule deer, black bear, mountain lion, coyote, and bobcat) and desert tortoise, current movement constraints, and potential solutions analysis. This project includes a variety of studies including game camera, tracking, roadkill monitoring, literature search, modeling, outreach, and design. In addition, the team is performing light and noise analysis on crossing locations and a game trail analysis using precision drone photography. Mr. Ortega assembled an expert team that includes researchers from UC Davis, UCLA, UC Riverside, and a crossing designer who is well known at Arizona DOT and internationally.

Construction Package (CP) 2-3 of the California High-Speed Rail Project, Dragados-Flatiron Joint Venture (DFJV), Fresno, Tulare, Fresno, and Kings Counties, California. Mr. Ortega serves as a lead biologist related to San Joaquin kit fox and wildlife movement issues for construction of the CP 2-3 segment of the California High-Speed Rail Project. Mr. Ortega works closely with the DFJV to ensure project requirements and permit conditions are implemented and adhered to, while also keeping the construction teams moving along the alignment. CP 2-3 of the California High-Speed Rail Project is a civil trackway design-build project that is approximately 65 miles long, located in the Counties of Fresno, Tulare, and Kings; and the Cities of Hanford, Corcoran, and Allensworth. As sub consultant to the DFJV, Dudek is serving as the DFJV's primary environmental consultant for the CP 2-3 project. Working closely with the DFJV's environmental compliance manager, the Authority, rail delivery partners, the project and construction management team, and the Federal Rail Authority, the Dudek team is responsible for meeting all of the environmental commitments contained within the CP 2-3's contracting documents that cover pre-construction environmental activities.

Oceanside to Escondido Rail Project, North County Transit District (NCTD), Cities of Oceanside, Vista, San Marcos, and Escondido and County of San Diego, California. Served as the primary wildlife biologist for the project, conducting habitat assessments and focused surveys for California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, and arroyo toad along the entire project alignment. Wrote the least Bell's vireo and brown-headed cowbird (*Molothrus ater*) management plans for the project. Additionally, implemented and managed the brown-headed cowbird trapping program.

Mid-County Parkway, Riverside County Integrated Project, Riverside County, California. Served as the lead biologist responsible for managing and conducting focused sensitive plant, burrowing owl, least Bell's vireo, southwestern willow flycatcher, and fairy shrimp surveys within the Mid-County Parkway study area, which includes a number of alternatives and ranges from approximately 1.7 kilometer (1.1 mile) to 6.5 kilometers (4 miles) in width and is approximately 52 kilometers (32 miles) in length. In addition, was responsible for devising a cost-effective helicopter survey method for potential fairy-shrimp-occupied pools after rain events, reducing potential survey time from days to 3 hours. Was also responsible for siting and design of at least 15 major and minor wildlife undercrossings and 3 wildlife overcrossings to accommodate reserves in western Riverside County and listed species movement through the reserve.

Rancho Santa Fe Road Widening and Bridge Replacement Project, City of Carlsbad Public Works Department, San Diego County, California. Served as a primary wildlife biologist for the project and conducted focused surveys for California gnatcatcher.

Water/Wastewater

Environmental and Biological Stormwater Maintenance Program, City of Poway Public Works Department, San Diego County, California. Since 2014. Serves as the Project Manager for the current biological monitoring contract supporting Poway's concrete and earthen channel stormwater maintenance program. The City has a well-functioning long-term maintenance program with established monitoring protocols. Tasks performed under this contract include yearly monitoring of up to 45 concrete channel sections and 26 earthen channel sections, provision of yearly monitoring reports, review and consultation services related to their current program and new waters regulations from ACOE and CDFW, and provision of on-call biological and permitting services for the Public Works Department, including permitting recommendations, site assessment, nesting bird review, and other services.

North City Project: Pure Water Program, City of San Diego Public Utilities Department, California. Served as the primary biologist for a joint project EIR and EIS for the City of San Diego Public Utilities Department and the U.S. Bureau of Reclamation. The North City Project is the first phase of the San Diego Pure Water Program for reservoir augmentation with recycled water and involves several pump stations, expanded water treatment facilities, a new advanced water treatment facility, water, wastewater, and brine pipelines, a landfill gas pipeline, and renewable energy facility. The joint EIR/Environmental Impact Statement analyzed two alternatives at an equal level and spanned multiple cities and unincorporated areas of the county. Biological issues included California gnatcatcher, quino checkerspot, pond turtle, fairy shrimp, jurisdictional resources, rare plants, and evaluation of non-native fisheries to address California Department of Fish and Wildlife concerns.

Arroyo Toad Monitoring for the City of San Diego Water Transfers, Watershed & Resource Protection Long-Range Planning and Water Resources Division City of San Diego Public Utilities Department , San Diego County, California. Performed arroyo toad surveys, monitoring, and analysis related to better understanding the effects of City of San Diego Public Utilities Department water transfers (drafting) between the Sutherland and San Vicente reservoirs (Sutherland draft) and Barrett and Lower Otay reservoirs (Barrett draft). Focused surveys, photo documentation, as well as water flow monitoring occurred along open stream segments within the transfer areas due to known or suspected potential presence of the federally listed endangered arroyo toad (*Anaxyrus californicus*). The objective of this effort was to observe arroyo toad use of these areas, prepare an assessment regarding potential effects of the water drafting on this species, and provide recommendations regarding future monitoring and drafting. Mr. Ortega served as the primary biologist and project manager for this effort.

State Water Project As-Needed Services, California Department of Water Resources, California. Period of service from August 2019 to current. Serves as the lead wildlife biologist evaluating survey needs and coordinating surveys, methodology, scoping, and data collection strategy for advanced mitigation planning and permitting in conjunction with two HCPs and a Dam retrofit project at San Luis Reservoir that Dudek is preparing for this statewide facility. Also, a participant in agency coordination regarding methods and permitting strategy for this effort. Responsible for biological survey strategy and methodology for several other smaller tasks.

As-Needed Contract, City of San Diego Engineering and Capital Projects Department and Water Utilities Department, San Diego County, California. Completed environmental impact studies for several sewer and storm drain projects under the City of San Diego as-needed contract. Wrote several mitigation monitoring plans and processed documentation for CEQA compliance. Personally managed approximately 8 of the 80 projects.

As-Needed Biological Services 2000–2005, San Diego Metropolitan Wastewater Department, City of San Diego, California. Served as primary biologist. Responsibilities included conducting habitat assessments and focused surveys for arroyo toad, California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, fairy shrimp, and other species.

San Diego Pipeline No. 6, Metropolitan Water District (MWD) of Southern California, Riverside and San Diego Counties, California. The project consisted of a 30-mile-long, 9-foot-diameter water conveyance pipeline. Began work on this project as a project monitor, with responsibilities including conducting habitat assessments for at least 10 federally and state-listed plant and wildlife species,

conducting biological studies, coordinating monitoring activities, and monitoring site investigations for the early project activities. Transitioned into project manager for the approximately $1.5-million contract, and was responsible for providing environmental support services to the MWD necessary to support revised environmental documents for the pipeline. All tasks for this contract met aggressive scheduling requirements and were within budget.

Tributary Areas 3 and 8 Environmental Monitoring, U.S. Marine Corps Base Camp Pendleton, San Diego County, California. Served as project manager and primary biologist. Implemented categorical exclusion permit requirements supporting installation of an upgraded sewer system over a portion of the base. This required writing a monitoring and compliance plan; initiating habitat assessments over portions of the system which had the potential to affect least Bell's vireo, California gnatcatcher, and arroyo toad; and monitoring activities on a regular basis in accordance with the monitoring plan.

Non-Potable Water Distribution System, Yucaipa Valley Water District, San Bernardino and Riverside Counties, California. Served as lead biologist for wildlife studies within San Timoteo Canyon. Responsibilities included scheduling personnel and conducting focused surveys for arroyo toad, least Bell's vireo, and southwestern willow flycatcher. Overall, 39 person-days were required to complete these focused surveys along the approximately 7-mile alignment.

As-Needed Contract, Eastern Municipal Water District, Riverside County, California. Served as monitoring biologist and primary biologist. These projects required Stephens' kangaroo rat, Quino checkerspot, and California gnatcatcher surveys and monitoring. These projects were situated throughout western Riverside County.

Multiple Projects, Riverside County Flood Control and Water Conservation District, Riverside County, California. Served as project manager and lead biologist for multiple projects. The projects ranged from multiple-acre detention basins to long and linear conveyance projects. Responsible for conducting biological studies, reporting, mitigation and monitoring plan writing, and wetland permitting. Recently completed two projects that involved widening existing channels in the Salt Creek and Perris Valley areas: 4- and 2-mile-long study areas, respectively. These projects involved conducting biological studies (i.e., vegetation mapping, wetland delineations, and focused surveys for California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, arroyo toad, Quino checkerspot, and sensitive plants), relocating burrowing owls, reporting, and assisting with resource agency permitting as required. Many of the projects required coordination with resource agencies. Most recently, co-wrote their Burrowing Owl Management documents and training session materials.

Energy

Hazard Tree Removal Project, Southern California Edison (SCE), San Bernardino and San Jacinto Mountains, Riverside and San Bernardino Counties, California. Project manager responsible for SCE's Hazard Tree Removal Project in the San Bernardino National Forest and surroundings. Dudek was under contract to SCE to provide biological consulting services on an as-needed basis in support of the Transmission and Distribution or other business units pertaining to the Hazard Tree Removal Project, as requested by the Environmental Affairs Division of SCE's Regulatory Policy and Affairs Department from 2003 to 2013. Dudek was the primary biological team responsible for SCE's Hazard Tree Removal Project occurring in the San Bernardino National Forest and surrounding areas. Dudek was responsible for conducting biological surveys along all SCE circuits within the San Bernardino and San Jacinto Mountains prior to removal of bark beetle infested trees, drought-stressed trees, and other damaged trees from the vicinity of its

poles, lines, and other facilities. The project area encompassed 106 square miles, an estimated 62,000 acres of tree removal, 22,000+ power poles and 538 linear miles of utility lines. All areas required biological clearance before removal. A primary focus of the biological surveys was to avoid impacts to listed, proposed, and candidate species under the federal Endangered Species Act and other federal, state, and local sensitive species, including least Bell's vireo, southwestern willow flycatcher, California red-legged frog, arroyo toad, mountain yellow-legged frog, and various plant species. Because of the enormous size and the logistical complexities of the project, several key steps were implemented to ensure a successful project.

Work plan approval and authorization by USFS: Key to the success of the effort was development of a work plan and advance authorization by USFS. The work plan incorporated avoidance and minimization measures to the satisfaction of USFS, while at the same time allowing tree clearing work to proceed. Authorization was obtained at the district level from three ranger districts – Mountain Top, San Jacinto, and Front Country.

Up-front organization, communications, and mobilization plan: Preparation for the project required data retrieval from multiple sources and over 70 data layers had to be compiled, evaluated, and combined into a comprehensive digital data set accessible via an ArcIMS website to USFS, SCE, and Dudek team members. A grid system was developed by Dudek to facilitate communication between team members and to organize and coordinate both logging and biological monitoring and survey efforts. This systematic approach was essential for such a large and complex project with simultaneous field activities among logging contractors and biological monitors in multiple locations.

Initial constraints analysis to maintain project schedule: Based on the assembled digital data set, Dudek completed an initial biological resources constraints analysis using a three-tiered system identifying areas as: (1) clear (area not constrained as long as typical avoidance and minimization measures are employed); (2) avoidance and minimization; and (3) additional study required. This tiering system allowed logging contractors to immediately begin work in the clear areas while additional field studies and BEs/BAs were simultaneously underway in the other sensitive resource areas.

Ranking and criteria for public and private land: Work on USFS lands required consideration of the extensive sensitive species list being addressed in the Southern California Conservation Strategy while a narrower species list was developed for private lands. Dudek's comprehensive digital database allowed us to create issues maps customized to the specific areas being logged.

Customized field mapping, monitoring and documentation methods, and long-term monitoring: Field maps were prepared for each grid for logging contractors and biologists identifying areas free of sensitive species and sensitive species potentially present in constrained areas. These field maps were an essential tool to communicate with logging contractors and to document and resolve issues as they arise in the field.

Pole and Utilities Replacement Project, SCE, Riverside and San Bernardino Counties, California. Served as project manager and primary wildlife biologist. Responsibilities included conducting habitat assessments for sensitive wildlife species at multiple locations in Riverside and San Bernardino counties. These locations range from the Santa Ana Mountains and western valleys of Riverside County to San Jacinto Mountain, Palm Springs, Coachella Valley, the southern slopes of San Bernardino County, San Bernardino Mountains, and Apple Valley region of San Bernardino County.

Devers to Palo Verde 2 Transmission Project, Southern California Edison, Riverside County, California. Project manager and lead biologist for ongoing studies related to this 250+ mile transmission project which runs from western Riverside County into Arizona. Dudek was responsible for all analysis surveys including least Bell's vireo, southwestern willow flycatcher, California gnatcatcher, bats, rare and listed reptiles, special-status plants, desert kit fox, Peninsular bighorn sheep, vegetation mapping, and jurisdictional delineation. Was also responsible for preparation of Section 7 consultation materials related to listed species – coordinating between the U.S. Fish and Wildlife Service, U.S. Forest Service, Bureau of Land Management, and U.S. Army Corps of Engineers.

Confidential Wind Project - Swainson's Hawk Incidental Take Permit, Confidential Client, Solano County, California. Currently serving as the lead biologist on project to secure an Incidental Take Permit for existing take of Swainson's hawk from the California Department of Fish and Wildlife. Project includes coordinating with local CDFW office, writing the permit package, developing appropriate mitigations, negotiations, and obtaining subsequent permit approvals. Sub-tasks included performing updated surveys for Swainson's hawk and eagles in the area.

Ellis Solar Project, 174 Power Global, Midlothian, Texas. Serving as the primary biologist for the 700-acre project. Is responsible for special-status and listed species assessments of the project area. Also responsible for coordination and communications with the U.S. Fish and Wildlife Service and Texas Parks and Wildlife Department regarding Texas horned lizard, American peregrine falcon, timber snake, least tern, piping plover, red knot, and whooping crane. Will be addressing avian use pursuant to federal guidelines.

Midland Solar Project, Pecos County, Texas. Served as the primary biologist for the 1,525-acre project. Was responsible for performance of pre-construction clearance surveys for protected species, including Texas horned lizard and Trans-Pecos black-headed snake. Additionally, training of staff was required with development of a training program and physical training.

Dodge Flat Solar Project, Washoe County, Nevada. Served as primary biologist. Performed habitat assessments, vegetation mapping, big game use evaluations, and avian use assessments. Coordinated with U.S. Fish and Wildlife Service and Nevada Department of Wildlife regarding special-status species including sage grouse, eagles, and pronghorn. Performed an intensive survey of surrounding waterbodies within 50 miles of the subject site to evaluate potential for core waterbird concentrations that might be affected by the project during movements or migration.

McCoy Solar Energy Project Environmental and Construction Compliance Monitoring Program, NextEra Energy Resources, Blythe, California. Serving as the Designated Biologist and agency liaison for implementation of the environmental compliance monitoring and reporting program. Overseeing a field team of 20+ environmental monitors during day-to-day with regard to biological issues. Also responsible for coordinating with the CDFW, USFWS, and BLM to work out issues as they arise. Was responsible for kit fox management, closure of burrow complexes, and installation of novel effective exit devices (e.g., one-way doors, jump-outs). Built a good working relationship with CDFW State Veterinarian as part of the project.

Blythe Solar Power Project Unit 1 Environmental and Construction Compliance Monitoring Program, NextEra Energy Resources, Blythe, California. Serving as the Designated Biologist and agency liaison for implementation of the environmental compliance monitoring and reporting program for gen-tie, access road, and project. Overseeing a field team of 20+ environmental monitors during day-to-day with regard to biological issues. Also responsible for coordinating with the CDFW, USFWS, and BLM to work out issues as they arise. Was responsible for kit fox management, closure of burrow complexes, and installation of novel

effective exit devices (e.g., one-way doors, jump-outs). Built a good working relationship with CDFW State Veterinarian as part of the project.

Blythe Solar Power Project Unit 2 Environmental and Construction Compliance Monitoring Program, NextEra Energy Resources, Blythe, California. Serving as the Designated Biologist and agency liaison for implementation of the environmental compliance monitoring and reporting program for gen-tie, access road, and project. Overseeing a field team of 20+ environmental monitors during day-to-day with regard to biological issues. Also responsible for coordinating with the CDFW, USFWS, and BLM to work out issues as they arise. Was responsible for kit fox management, closure of burrow complexes, and installation of novel effective exit devices (e.g., one-way doors, jump-outs). Built a good working relationship with CDFW State Veterinarian as part of the project.

315 MW Ocotillo Wind Energy Express Project, BLM, Imperial County, California. Served as principal biologist for implementation of the construction compliance for a 315 MW wind energy project in Imperial County, California. Was responsible for oversight of 3rd-party compliance monitoring related to biological issues. Focal species included burrowing owl, flat-tailed horned lizard, golden eagle, peninsular bighorn sheep, and desert kit fox. Responsibilities included reviewing daily reports, directing monitoring staff if issues arose, conducting periodic site visits, and coordinating with regulatory agencies as necessary.

SDG&E East County Substation Project, SDG&E, Jacumba, California. Served as lead biologist related to third-party environmental compliance representing lead state agency California Public Utilities Commission (CPUC). The project consisted of construction of the San Diego Gas & Electric (SDG&E) 500/230/138-kilovolt (kV) substation and 138 kV transmission line through backcountry chaparral, woodland, and high desert communities. Focal species included burrowing owl, quino checkerspot, special-status plants, and bats. Other issues included observance of state and federal permits as required by California and national environmental policies, including habitat restoration, noxious weed abatement (Bureau of Land Management), avian monitoring plan (U.S. Fish and Wildlife Service), and jurisdictional waterway protection (U.S. Army Corps of Engineers). Responsibilities included reviewing daily reports, directing monitoring staff if issues arose, conducting periodic site visits, and coordinating with regulatory agencies as necessary.

Solar Gen 2 Project, First Solar Inc., Imperial Valley, California. Served as the Designated Biologist, approved by the California Department of Fish and Wildlife (CDFW) and representative for a 150-megawatt photovoltaic solar power project. Was responsible for coordinating monitoring activities related to burrowing owl, reviewing daily reports, developing appropriate on-the-fly measures to protect burrowing owl, and coordinating with the CDFW and U.S. Fish and Wildlife Service when issues arose. The project included passive relocation of 4 burrowing owl burrows, installation of two 4-burrow complexes, monitoring artificial burrows, weekly biological surveys for 28+ burrows, and ensuring agency-compliant project implementation and observance of burrowing owl mitigation measures (such as buffers, passive relocation

Tierra Del Sol Solar Project, Tierra Del Sol Farm Solar LLC, San Diego County, California. Served as principal biologist. Conducted vegetation mapping, raptor surveys, and Quino checkerspot (*Euphydryas editha quino*) surveys for the 420-acre solar development site located within an unincorporated section of San Diego County. Prepared the biological resources technical report in accordance with the County of San Diego's guidelines; and attended public outreach meetings.

Pole and Utilities Replacement Project, SCE, Riverside and San Bernardino Counties, California. Served as project manager and primary biologist. Responsibilities included conducting habitat assessments

for sensitive wildlife species at multiple locations in Riverside and San Bernardino counties. These locations range from the Santa Ana Mountains and western valleys of Riverside County to San Jacinto Mountain, Palm Springs, Coachella Valley, the southern slopes of San Bernardino County, San Bernardino Mountains, and Apple Valley region of San Bernardino County.

Daggett Ridge Wind Farm EIR/EIS, AES Wind Generation (Daggett Ridge Wind Farm LLC), San Bernardino, California. Served as the lead biologist for the Daggett Ridge Wind Farm project responsible for coordination with the Bureau of Land Management (BLM) and survey design and reporting. Dudek was contracted by Daggett Ridge Wind Farm LLC, a subsidiary company of AES Wind Generation, to prepare required CEQA and National Environmental Policy Act (NEPA) documentation associated with the proposed Daggett Ridge Wind Farm located on public (BLM) and private land in San Bernardino County, California. Dudek initially worked with the County of San Bernardino (California lead agency) staff and the BLM (federal lead agency) to prepare a project management plan to produce a detailed project task schedule, detailed outline of the draft environmental impact report/environmental impact statement (EIR/EIS), a public outreach plan, and a mechanism for regular project updates. Dudek then prepared a combined Environmental Assessment/Initial Study (EA/IS) to focus the environmental analysis required for the EIR/EIS to critical resource areas.

Desert Renewables Energy Conservation Plan, California Energy Commission, Southern California. Served as a project biologist, providing analysis and coordination with species experts. Dudek was selected by the California Energy Commission and the California Natural Resources Agency (California Department of Fish and Game) to prepare the Natural Community Conservation Plan (NCCP) for the Desert Renewables Energy Conservation Plan (DRECP). The DRECP was established by Governor Schwarzenegger's Executive Order S-14-08, which identifies targets for increasing California's renewable energy portfolio. The DRECP, when completed, is expected to further these objectives and accelerate the processing of renewable projects in the California desert (Mojave and Colorado deserts), encompassing parts of six counties. The DRECP is an NCCP that will help provide for effective protection and conservation of desert ecosystems while allowing for the appropriate development of renewable energy projects. It will provide long-term endangered species permit assurances to renewable energy developers and provide a process for conservation funding to implement the DRECP. It will also serve as the basis for one or more habitat conservation plans under the federal Endangered Species Act.

San Diego Gas & Electric Cleveland National Forest Electric Safety and Reliability Project, California Public Utilities Commission, San Diego County, California. Serves as the lead biologist for the project. Responsible for coordination with the USFS, determination of species impacts, study design, and monitor management. Dudek was contracted by the California Public Utilities Commission (CPUC) to prepare environmental documents pursuant to CEQA and NEPA for the San Diego Gas & Electric (SDG&E) Cleveland National Forest Electric Safety and Reliability Project. SDG&E proposed to submit an application to the USFS for a Master Special Use Permit, which combined approximately 70 special-use permits and other approvals for various electric transmission and distribution facilities located throughout the Cleveland National Forest (CNF) into one master permit under one 20-year authorization. The project also proposed activities on non-CNF lands, including private lands that are near the CNF and fall under the jurisdiction of the CPUC and other federal lands not under the jurisdiction of the USFS. For activities on private lands, SDG&E submitted an application for a Permit to Construct in accordance with CPUC General Order 131-D.

The project will also include maintenance, replacement or relocation, and operation of existing, active 69-kilovolt (kV) transmission and 12 kV distribution lines; installation or removal of 12 kV distribution lines;

maintenance, relocation, or construction of access roads; and maintenance or widening of existing rights-of-way (ROWs) or acquisition of ROWs. The power lines included in the project traverse CNF land, BLM land, California State Parks land, County of San Diego land, tribal land, and private land holdings.

Mountain View IV Wind Energy EIR/EIS Project, City of Palm Springs/Bureau of Land Management, Riverside, California. Served as lead project biologist for the project. Dudek prepared a joint EIR/EIS for the City of Palm Springs and the BLM. The project consists of two development options for a 1,659-acre site. The first development option consists of 49 1,000-kilowatt (kW) turbines. The second includes 58 850 kW turbines. Both alternatives involve the installation of support facilities, including gravel-surfaced access roads, an electrical substation, and an electrical transmission line to connect the turbines to the substation. The project also included a compatibility analysis with the recently adopted Coachella Valley Multi-Species Conservation Plan.

The project site is within the City of Palm Springs corporate boundaries; however, the western half of the project site is composed of BLM land, and the eastern half is private land under the management of the Coachella Valley Water District (CVWD). Consultation and coordination with both lead agencies (City of Palm Springs and BLM) and CVWD played a vital role in the planning process and ultimate certification of the EIR/EIS. The Final EIR/EIS was ultimately certified and adopted by the lead agencies in December 2008.

Borrego Solar Project Characterization Study, Confidential Client, San Diego, California. Served as lead project biologist for analysis. Dudek was contracted to provide environmental services for the 187-acre Borrego Springs Solar Project in San Diego County, California. Located on former agricultural lands, the project would include an interconnection to a 69 kV Borrego Substation located 1.3 miles away, along Borrego Valley Road.

The characterization study will be used to determine site constraints, affecting schedule and possible delays associated with development and environmental permitting. The study was presented showing methods used to determine site constraints, findings that discuss both engineering and environmental constraints, and a site constraints map using geographic information systems (GIS) mapping.

Solar Siting Studies and As-Needed Extension of Staff Services, Confidential Client, San Diego County, California. Lead project biologist for analysis. A solar developer contracted with Dudek to provide as-needed environmental services to assist in identifying sites for solar energy development throughout Southern California. An interactive process with the solar developer staff, the goal was to ensure that all potential environmental constraints were identified when selecting potential development sites based on siting parameters developed by the solar developer. Dudek's studies targeted identifying sites that met the selection criteria to secure options for solar development.

Solar Farm Initial Site Constraints and Fatal Flaw Analysis, Concentrix Solar Inc., San Diego County, California. Served as lead project biologist for analysis. Dudek was contracted by Concentrix Solar Inc. to conduct an initial site constraints analysis for a proposed solar renewable energy development within the County of San Diego, near the unincorporated community of Boulevard. In addition to conducting a regulatory/environmental constraints survey for this project, Dudek's environmental scientists provided a comprehensive "fatal-flaw" environmental analysis that will allow Concentrix Solar to better make key decisions about developing other solar energy sites within the County of San Diego. To date, these projects include nearly 1,000 acres in San Diego County and involve a variety of resource issues.

Southern California Edison Demolition of Mohave Generating Station, Destrier Inc., Laughlin, Nevada. Served as project manager and lead biologist for project. Dudek subcontracted to Destrier Inc., of Irvine, California, to assist in the demolition process (i.e., providing quality assurance and technical support) for the demolition of Southern California Edison's (SCE's) Mohave Generating Station, located in Laughlin, Nevada, near the Colorado River. Dudek initially assisted Destrier Inc. in the Demolition Bid Review process, reviewing contractor bids regarding responsiveness, completeness, and technical approach. The review included bid compliance with state, federal, and local permits and regulations related to asbestos abatement, hazardous materials waste transportation and disposal, soil and samplings. Later, Dudek provided biological coordination regarding a variety of federally listed threatened and endangered species and other special-status species issues including least Bell's vireo, desert tortoise (*Goperus agassizii*), Yuma clapper rail, bald eagle (*Haliaeetus leucocephalus*), golden eagle, burrowing owl, relict leopard frog (*Lithobates onca)*, gila monster (*Heloderma suspectum)*, razorback sucker (*Xyrauchen texanus)*, bonytail chub (*Gila elegans)* and desert kit fox. Dudek was requested to provide recommendations to avoid attractive nuisance habitat on site, to identify potential nesting issues related to the structure, and to coordinate with the USFWS regarding listed species – obtaining a Section 10 concurrence letter from the local USFWS office in less than 2 months.

Southern California Edison Pole and Utilities Replacement and Maintenance Projects, Entire Southern California Edison Service Area, California/Arizona. Served as project manager and primary wildlife biologist for over 200 separate projects within the SCE service area. Other projects included development of an Operations and Maintenance HCP and a member of the forward planning team for SCE related to over 300 planned transmission line and substation projects.

Tule Wind Project As-Needed Environmental Services, Iberdrola Renewables Inc; San Diego County, California. Serves as principal biologist and task manager. Dudek was initially contracted to conduct a habitat assessment for Quino checkerspot butterfly at the Tule project site in McCain Valley, in southeastern San Diego County. According to USFWS guidelines, habitat assessments are required to identify suitable vegetation structure and determine the presence/absence of suitable host and nectar plant species used by the Quino. Areas identified as suitable habitat then required focused surveys, according to USFWS protocol, by Dudek's USFWS-permitted biologists. Dudek conducted Quino surveys within the Cuyapaipe, BLM, and state lands along approximately a 10-mile, 1,000-foot-wide corridor of proposed wind turbines and access roads, as well as two, 10-acre substation sites and a 100-foot-wide corridor for 10 miles in McCain Valley, proposed for overhead transmission lines. The survey results mapped and characterized the vegetation communities using GIS technology, and all suitable Quino habitat was mapped, identified, and described in a project report. The Quino survey work was later expanded to include approximately 400 additional acres located on Rough Acres Ranch north of McCain Road, and an additional 1,000-foot-wide corridor designated as an anticipated "action area" for wind turbine projects.

Tierra del Sol Project Biological Surveys, Invenergy Wind Development LLC, San Diego County, California. Served as lead biologist and task manager. Dudek was contracted to conduct a biological constraints-level survey of the 150-acre Tierra del Sol parcel located in San Diego County. Vegetation communities were mapped in accordance to Holland nomenclature and County of San Diego requirements. A general inventory of plant and animal species was compiled as well as a determination of potential special-status species that could occur on the site. All data were compiled in GIS digital format and added to a Biological Resources Map. Also, specifically, a Quino checkerspot butterfly survey was conducted on the site, and Dudek biologists assessed the suitability of the site as habitat for this protected

species. In general, Dudek's initial work on the project identified potential biological issues before the client submits any applications to proceed on the project to the County of San Diego.

Ocotillo Wells Solar Project, The Gildred Companies, Borrego Springs, California. Serves as project manager and lead biologist for a solar project in Borrego Springs. Project was successfully approved by San Diego County. Project issues included burrowing, flat-tailed horned lizard, peninsular bighorn sheep, jurisdictional areas, and compliance with California State Parks and DRECP. Currently, is spearheading the review and coordination of mitigation land acquisition for the project.

Solar Power at Santee Lakes Recreational Preserve, Padre Dam Municipal Water District, San Diego County, California. Served as lead project biologist. The Padre Dam Municipal Water District (District) used an innovative approach to incorporate solar paneling into their Santee Lakes Recreational Preserve park. The District proposed to construct recreation vehicle (RV) ports over three RV parking areas to support solar paneling.

A feasibility study was conducted that indicated that solar panels would be cost effective through a "Power Purchase Agreement" and would benefit the District, park users, and the surrounding community by providing clean energy to the power grid. Dudek prepared an IS that determined that a negative declaration would be the appropriate environmental document for this project. A key factor of the project was that it would provide the District with renewable, clean energy into the power grid, which would help reduce the District's overall carbon emissions at the preserve. A key issue analyzed and determined to be less than significant was the visual charter and light and glare for the neighboring residences from the structures and solar paneling.

South Bay Substation Relocation Project, California Public Utilities Commission (CPUC), San Diego County, California. Currently serving as the third-party lead biologist for implementation of the mitigation monitoring and compliance reporting program (MMCRP) for construction of the new Bay Boulevard 230/69/12-kilovolt (kV) substation, demolition of the existing South Bay 138/69kV substation, and other ancillary facilities. Worked with the developer, CPUC staff, and compliance director on specific biological issues as they arise.

Transmission Line 637 Wood-to-Steel Project, CPUC, San Diego County, California. Served as the third-party lead biologist for implementation of the MMCRP for replacing (fire hardening) 14 miles of a 69kV wood pole power line with steel poles. Worked with the developer and CPUC staff on implementing a MMCRP to ensure environmental conditions included in the CPUC Record of Decision and EIR were implemented during construction.

153-Megawatt (MW) Alta East Wind Energy Project, Bureau of Land Management (BLM), Kern County, California. Served as the third-party lead biologist for implementation of the environmental compliance and construction monitoring program (ECCMP) during construction of 48 wind turbines, roads, and ancillary facilities on approximately 59-acres of public lands. Worked with the developer and BLM staff on implementing an ECCMP to ensure environmental conditions included in the BLM Record of Decision and environmental impact statement (EIS) were implemented during construction.

Silver State South Solar Project, First Solar, Primm, Nevada. Serves as on-call biologist, providing technical biological support and advice for this large-scale renewable energy project in Primm, Nevada. Worked closely with the governing document expert, First Solar regional compliance manager, and the site compliance manager to ensure that the adopted mitigation measures and project governing documents were adhered to

Imperial Solar Energy Center (ISEC) West, Tenaska, Imperial County, California. Serves as Designated biologist on this project. Provided day-to-day biological oversight for construction of the ISEC West project in Imperial County, California. Oversaw on-site biological monitors, and worked closely with other Dudek staff and Tenaska personnel to ensure the adopted mitigation measures and project governing documents, including the California Department of Fish and Wildlife (CDFW) flat-tailed horned lizard (*Phrynosoma mcallii*) Incidental Take Permit (ITP), were adhered to. Directed flat-tailed horned lizard relocations and burrowing owl management. Developed a BBCS for the project and is the principal biologist for implementation of the BBCS.

Imperial Solar Energy Center (ISEC) South, Tenaska, Imperial County, California. Serves as Designated biologist on this project. Provided day-to-day biological oversight for construction of the ISEC South project in Imperial County, California. Oversaw on-site biological monitors, and worked closely with other Dudek staff and Tenaska personnel to ensure the adopted mitigation measures and project governing documents, including the California Department of Fish and Wildlife (CDFW) flat-tailed horned lizard (*Phrynosoma mcallii*) Incidental Take Permit (ITP), were adhered to. Directed flat-tailed horned lizard relocations and burrowing owl management.

Stateline Solar Farm Project, First Solar, Nipton, California. Serves as on-call biologist, providing technical biological support and advice for this large-scale renewable energy project in Primm, Nevada. Worked closely with the governing document expert, First Solar regional compliance manager, and the site compliance manager to ensure that the adopted mitigation measures and project governing documents were adhered to

Campo Wind Project with Boulder Brush Facilities, Terra-Gen, LLC, San Diego County. As principal biologist, directed all biological studies for proposed wind farm on 2,000 acres in accordance with CEQA and NEPA including those for Peninsular bighorn sheep, quino checkerspot butterfly, least Bell's vireo, rare plants, vegetation mapping, jurisdictional delineations, and others; designed and managed extensive avian and eagle studies in support of future wind operations; coordinated with the USFWS eagle coordinator and state counterparts regarding avian and bat studies and analysis; prepared separate technical reports for the BIA and County of San Diego; wrote BBCS and prepared an eagle analysis; used USGS data to create a novel eagle analysis package; assisted both lead agencies with Section 7 Endangered Species Act consultation including preparation of a Biological Assessment and mitigation site coordination; assisting in ongoing USFWS avian and eagle consultations.

Torrey Wind Project, Terra-Gen, LLC, San Diego County, California. As principal biologist, directed all biological studies for proposed wind farm on 2,000 acres in accordance with CEQA and County requirements including those for Peninsular bighorn sheep, quino checkerspot butterfly, least Bell's vireo, rare plants, vegetation mapping, jurisdictional delineations, and others; designed and managed extensive avian and eagle studies in support of future wind operations; coordinated with the USFWS eagle coordinator and state counterparts regarding avian and bat studies and analysis; prepared technical reports for the County of San Diego; prepared an eagle analysis; used USGS data to create a novel eagle analysis package; assisting in ongoing USFWS avian and eagle consultations.

Campo Wind Project with Boulder Brush Facilities, Terra-Gen, LLC, San Diego County. As principal biologist, directed all biological studies for proposed wind farm on 2,000 acres in accordance with CEQA and NEPA including those for Peninsular bighorn sheep, quino checkerspot butterfly, least Bell's vireo, rare plants, vegetation mapping, jurisdictional delineations, and others; designed and managed extensive avian and eagle studies in support of future wind operations; coordinated with the USFWS eagle coordinator

and state counterparts regarding avian and bat studies and analysis; prepared separate technical reports for the BIA and County of San Diego; wrote BBCS and prepared an eagle analysis; used USGS data to create a novel eagle analysis package; assisted both lead agencies with Section 7 Endangered Species Act consultation including preparation of a Biological Assessment and mitigation site coordination; assisting in ongoing USFWS avian and eagle consultations.

EDUCATION

M.A., Anthropology, San Diego State University, 2016

B.A., Anthropology, San Diego State University, 2010

B.A., History, San Diego State University, 2010

CERTIFICATIONS/ REGISTRATIONS

Registered Professional Archaeologist (ID# 43670278)

Field Director, California Bureau of Land Management statewide FLPMA permit (CA-15-27) (2018-2021)

EXPERIENCE

Archaeologist and Project Manager, Rincon Consultants, Inc. (2015 – present)

Graduate Assistant and Researcher, Environmental Anthropology and Archaeology Laboratory, San Diego State University, California (2012 - 2015)

Archaeologist, ASM Affiliates, Inc. (2012- 2015)

YEARS IN FIELD

8

Breana K. Campbell-King, M.A., RPA

SENIOR ARCHAEOLOGIST

Breana Campbell-King is an Archaeologist and Field Director at Rincon Consultants, Inc. with more than seven years of cultural resources management experience in California. Ms. Campbell- King received her Masters of Liberal Arts and Sciences in Anthropology from San Diego State University in 2016. Ms. Campbell- King's archaeological knowledge is supplemented by her experience conducting cultural resources investigation projects in compliance with Section 106 of the National Historic Preservation Act, the National Environmental Policy Act, and the California Environmental Quality Act as they pertain to cultural resources. Ms. Campbell-King has worked extensively throughout San Diego County, and has led Phase II and Phase III investigations in support of large development projects in coordination with stake holders including lead agencies and local tribal governments.

SELECTED PROJECT EXPERIENCE

Senior Archaeologist/Project Manager, Fanita Ranch Development Project, Santee, San Diego County, CA

As the Senior Archaeologist, designed and implemented a Phase II testing program for 13 archaeological sites located in the development footprint for the Fanita Ranch project. Ms. Campbell-King supervised the field staff and coordinated with the Native American monitors to ensure the proper treatment and scientific excavation of cultural materials to provide eligibility recommendations for the sites. Ms. Campbell-King oversaw the analysis of the recovered cultural material and was the lead author of the report prepared for the project in compliance with CEQA. Ms. Campbell-King assisted the City with compliance for Assembly Bill 52 and Senate Bill 18 and has participated in the consultation efforts for the project. Client: City of Santee (2018-2020).

Senior Archaeologist, CH2M Hill/Jacobs Caltrans District 7 (Central) On-Call, Caltrans District 7, SR-1 Woolsey Fire 1XK10 and 1XK30 Monitoring, Malibu, CA
Breana Campbell-King provided project management support for the emergency repair and replacement project that was initiated to address fire damage to highway facilities on the State Highway System along State Route 23 (SR-23/Decker Road) from State Route 1 (SR-1) to Country Ranch Road (post mile 8.4) in Los Angeles County, CA, and along SR-1 Decker Road/SR-23. Rincon provided archaeological monitoring on an as-needed basis within the duration of this task order. Ms. Campbell-King was the lead author of the monitoring reports prepared for Caltrans; the reports were accepted in 2020. Client: Caltrans District 8 (2019-2020)

Senior Archaeologist/ Project Manager, Santee School Site Project, Santee, San Diego County, CA
Ms. Campbell-King assisted with the completion of a due diligence study for the project and identified a multi-component resource on the project site. Ms. Campbell-King prepared a Phase II testing and evaluation plan for the cultural resources found on the project site and oversaw the fieldwork related to the resources. Ms. Campbell-King co-authored the Phase II testing and evaluation report submitted to the South Coastal Information Center. Client: J. Whalen Associates (2019)

PROJECT RELATED EXPERIENCE CONT'D

Archaeologist, Paradise Cove Heritage Recovery Project, Malibu, CA

Breana Campbell-King assisted in the planning and recovery of a Chumash cemetery where 22 burials were recovered for the installation of utility lines. Ms. Campbell assisted in the development of the recovery plan, recovery methods, Native American consultation, recovery of human remains, in-field artifact identification and analysis, and project reporting. Ms. Campbell's expertise in Chumash archaeology assisted with shell identification in the field as well as dating of the site based on the artifact assemblage. Client: Kissel Corporation (2018-2020)

Senior Archaeologist/ Project Manager, Mission 316 West Cultural Resources Phase II Testing and Evaluation, San Marcos, San Diego County, CA

As the Senior Archaeologist, Ms. Campbell-King designed and implemented a Phase II testing program for a multi-component site located in the development footprint for the project. Ms. Campbell-King supervised the field staff and coordinated with the Native American monitors to ensure the proper treatment and scientific excavation of cultural materials to provide eligibility recommendations for the sites. Ms. Campbell-King was the lead author of the report prepared for the project in compliance with CEQA. Ms. Campbell-King assisted the City with compliance for Assembly Bill 52 and has participated in the consultation efforts for the project. Client: KB Home Coastal (2018-2019).

Senior Archaeologist, Metropolitan Water District of Southern California, On-Call Environmental Services, Various Counties, CA
An overview of active and recent projects associated with this On-Call is provided below.

Prestressed Concrete Cylinder Pipeline Project. Ms. Campbell-King is currently overseeing the preparation of technical documents as they pertain to cultural resources in support of CEQA and providing oversight for cultural resources monitoring for the project. (Active)

Perris Valley Pipeline Project. Ms. Campbell-King managed the cultural resources technical analysis for the project including preparation of a Cultural Resources Assessment in preparation of a CEQA addendum. (2019-2020)

Palos Verdes Reservoir Upgrades Project. Ms. Campbell-King provided oversight of cultural resources monitoring and assisted with the preparation of documentation for the project. Cultural resource CA-LAN-281 is located partially within the project site and monitoring was conducted to assist with avoidance of impacts to the resource. As part of the project documentation, a monitoring memorandum and Department of Parks and Recreation Series 523 form were prepared. (2018)

Dennis Underwood Conservation Area Project. Ms. Campbell-King managed the cultural resources survey efforts and co-authored the cultural resources technical study prepared for the project. (2018)

Rincon Project Manager, Eastern Municipal Water District - On-Call Environmental Services (Subconsultant to K.S. Dunbar and Associates, Inc.), County of Riverside, CA
Ms. Campbell-King served as Rincon's project manager for task orders issued to Rincon by K.S. Dunbar and Associates, Inc. on behalf of the Eastern Municipal Water District. An overview of recent projects associated with this On-Call is provided below.

Temecula Valley Recycled Water Pipeline Project. Ms. Campbell-King provided project management for the cultural resources assessment and extended phase I testing and co-authored the cultural resources assessment for the project. In the course of providing cultural resources services Rincon identified a prehistoric resource within the limits of the project and assisted Eastern Municipal Water District with Native American consultation and the testing program completed to determine the subsurface limits of the site. Rincon worked with local tribal groups and Eastern Municipal Water District to limit cultural resources monitoring to areas of known sensitivity and provided a Workers Environmental Awareness Program for the project which was completed in 2019.

San Jacinto Valley Water Banking Project. Ms. Campbell-King managed the cultural resources monitoring effort for the project including preparation of a Workers Environmental Awareness Program and Cultural Resources Monitoring and

Treatment Plan and provided oversight of monitoring efforts. Ms. Campbell-King prepared and submitted a Negative Findings Monitoring Report for the project completed in 2019.

Pala Force Main Project. Ms. Campbell-King conducted a Phase I pedestrian survey, performed the cultural resources records search, and prepared the technical report for this project. This project was completed in compliance with CEQA and CEQA-Plus.

Field Director, Sanchez Adobe Testing Project, Pacifica, San Mateo County, CA
Rincon Consultants, Inc. was retained by the County of San Mateo to conduct archaeological testing at the Sanchez Adobe site (CA-SMA-71/H) located in Pacifica, California. The project included the mechanical excavation of trenches, feature identification and recovery, and the exposure, protection, and preservation in place of a Native American burial. As Field Director, Ms. Campbell-King worked with the project manager from the County of San Mateo to execute the fieldwork, assist with Native American/MLD consultation, develop and execute a Human Remains Treatment Plan, and prepared the technical report. Ms. Campbell-King worked directly with the onsite Native American consultant and the MLD to ensure the respectful and dignified treatment of human remains discovered during the testing phase of the project. Client: San Mateo County (2017)

Field Director, Santa Rosa Main Ranch House Testing Project, Santa Rosa Island, Santa Barbara County
Ms. Campbell-King designed and led a Phase II testing and Phase III data recovery project for the Channel Islands National Park Service under the direction of Todd Braje. Ms. Campbell-King coordinated with field staff, park personnel, and the Native American monitor to assess the context and significance of a Terminal Pleistocene/ early Holocene archaeological site. Ms. Campbell-King was responsible for the handling of all artifacts and participated in the identification of human and non-human remains. Client: Channel Islands National Park (2017)

Field Director River Village Development project (Braverman Drive) Archaeological Data Recovery and Monitoring, Santee, San Diego County, CA
As Field Director, Ms. Campbell-King designed and managed data recovery mitigation of a significant prehistoric habitation site located along the San Diego River in Santee. Ms. Campbell-King worked with fellow Rincon staff to prepare a mitigation plan, scheduled and coordinated with field staff, obtained and managed heavy equipment operator, and worked with the field crew to build field equipment and process approximately 3,150 cubic meters of soil from the archaeological site and recover cultural materials for repatriation. Ms. Campbell-King coordinated with members of the Kumeyaay to provide Native American monitoring and coordination during all field work and laboratory studies. She oversaw the recovery of over 75,000 artifacts during the Phase III excavation and managed their processing, analysis, cataloging, and curation. Ms. Campbell-King also coordinated with the Medical Examiner to analyze large mammal bone recovered from the site and worked directly with the MLD to repatriate all items recovered during the Phase II, Phase III, and heritage recovery phases of the project. Ms. Campbell-King was the lead author of the technical report prepared for the project which is on file at the South Coastal Information Center..
Client: KB Homes (2016)

Archaeologist/ Project Manager: 21st Street Drainage to Pipe Conversion Project.
Conducted a survey of the APE, conducted local and Native American outreach, completed a cultural resources records search, and prepared a report documenting the findings. Client: Michael Baker International (2017).

Field Director, Class III Archaeological Survey of BLM Lands for the Upgrade and Maintenance of Southern California Gas Pipeline Line 3000, near Needles, San Bernardino County, CA
As Field Director, led a 1,127-acre survey along an existing natural gas line situated along Kelbaker Road in the Mojave Desert. The work was performed for compliance with the FLPMA and Section 106 of the NHPA. Prepared and submitted a Fieldwork Authorization Request to the Bureau of Land Management (BLM) to conduct fieldwork. Obtained a records search from SoCalGas. Coordinated with field staff to complete the survey along 62 miles of the pipeline. Coordinated with BLM to obtain additional project information, a Fieldwork Authorization, and prepared the technical report and site documentation. More than 70 resources were identified and recorded. Prepared eligibility evaluations based upon surface components of the sites. Prepared two separate ARMR-format reports for BLM review. Client: Southern California Gas Company (2016-2017)

Principal Archaeologist, Post 310 Cultural Resources Assessment, San Diego, CA
As Principal Archaeologist, completed the records search, Native American scoping and informal consultation, conducted survey, and prepared the technical report to summarize the results. The work was performed to comply with HUD requirements for Section 106 of the National Historic Preservation Act. *Client: Hitzke Development* (2016)

Principal Investigator, Scarlet Solar Archaeological Survey, Fresno County, CA
As Principal Investigator, prepared a technical report to summarize the results of a 4,000-acre survey of agricultural lands located in Fresno County. Coordinated with Field Director to ensure project documentation was adequately prepared. Client: Recurrent Energy (2016)

Archaeologist, The Block Project, San Diego, CA
Ms. Campbell-King conducted the intensive pedestrian survey and assisted in the completion of the technical memorandum. Client: City of San Diego (2015)

Archaeologist, SDG&E Pole Clearing Project, San Diego County, CA
Ms. Campbell-King was responsible for surveying and monitoring all construction activities. Client: San Diego Gas & Electric (2014)

Archaeologist, SDG&E Wood to Steel Pole Project, San Diego County, CA.
Ms. Campbell-King was responsible for monitoring all construction activities. Client: San Diego Gas & Electric (2014)

Archaeologist, Village of Ystagua Excavation and Analysis, San Diego County, CA
Ms. Campbell-King was responsible for identifying and sorting all artifacts from the excavated material recovered from the prehistoric village, Ystagua. Client: SANDAG (2013)

Assistant Field Director Defining the Historic Landscape on Eastern Santa Rosa Island, Santa Barbara County
Archaeological Investigations at Qshiwqshiw, Santa Barbara County, CA. Ms. Campbell-King acted as crew chief during a Phase II data recovery project of an ethnohistoric village, Qshiwqshiw, located on Santa Rosa Island. Ms. Campbell-King participated with the development of the research design and testing plan and participated in all field work. Ms. Campbell-King was responsible for managing all data recovered from the testing program and for the analysis of artifacts and ecofacts. The project resulted in the development of a protection plan for eroding sites and a peer reviewed journal. Client: Channel Islands National Park (2012)

Christopher A. Duran

PRINCIPAL INVESTIGATOR/PROGRAM MANAGER

Christopher Duran is a Principal Investigator and Project Manager at Rincon Consultants, Inc. Mr. Duran has 11 years of professional experience and has worked extensively in CA and the Great Basin. Mr. Duran has more professional experience procuring, conducting, and managing cultural resources investigation projects in compliance with Sections 106 and 110 of the National Historic Preservation Act, the National Environmental Policy Act, and the CA Environmental Quality Act as they pertain to cultural resources. His research and professional experience include hunter-gatherer societies, Great Basin archaeology, Mojave Desert archaeology, CA archaeology, GIS, quantitative analysis, ruins preservation, and cultural resources management. He has authored a variety of cultural resources studies including archaeological survey, archaeological testing and eligibility evaluation, data recovery, mitigation monitoring plans and reports, and peer reviews.

EDUCATION

MA, Anthropology, Northern Arizona University (2009)

BS, Anthropology-Cultural Resources Management, CA State Polytechnic University, Pomona (2007)

AFFILIATIONS

Registered Professional Archaeologist (ID# 415730)

Section 106 Compliance (2010)

Advanced Section 106 (2013)

Society for American Archaeology

Society for CA Archeology

DETAILED PROJECT EXPERIENCE

DEVELOPMENT

Archaeologist – The Marsh Creek Dam Improvement Project, Contra Costa County
Mr. Duran analyzed impacts, provided recommendations, and contributed to the Phase I investigation report.

Archaeologist - Sloan Canyon Residential Project, Los Angeles County
Mr. Duran conducted a Phase I pedestrian survey and contributed to the Phase I investigation report.

Archaeologist - Marine Corps Logistics Base, Barstow, Troop Training Expansion Environmental Assessment, Naval Facilities Engineering Command, Barstow
Mr. Duran conducted a cultural resources investigation in support of NEPA compliance for the expansion of MCLB Barstow.

Field Director - Stuart Mesa West Phase II Archaeological Investigation, Camp Pendleton, San Diego County
Mr. Duran managed field crews for test excavations in San Diego County. Mr. Duran also analyzed data, provided NRHP eligibility recommendations for multiple sites, managed collections, and prepared the technical report.

Principal Investigator - Sanchez Adobe Interpretive Center Project, County of San Mateo
Mr. Duran served as the Principal Investigator for the development of the interpretive center located at the Sanchez Adobe. The effort included ground penetrating radar studies, archaeological trenching, and archaeological testing. The project resulted in the discovery of human remains which prompted some project redesigns with the information provided by Rincon. Mr. Duran oversaw the preparation of project reports, quality control, and client communication

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Field Director - Archaeological Survey of 200 Geothermal Drill Points, NAS Fallon and BLM Administered Lands, U.S. Navy, Churchill County, Nevada
The project included the archaeological survey of 200 drill locations for geothermal energy exploration on lands owned and administered by the Navy and BLM in the Dixie Valley area of Churchill County, Nevada. Mr. Duran conducted and directed all field related activities and prepared technical documents related to cultural resources.

Principal Investigator - Sanchez Adobe Interpretive Center Project, County of San Mateo
Mr. Duran served as the Principal Investigator for the development of the interpretive center located at the Sanchez Adobe. The effort included ground penetrating radar studies, archaeological trenching, and archaeological testing. The project resulted in the discovery of human remains which prompted some project redesigns with the information provided by Rincon. Mr. Duran oversaw the preparation of project reports, quality control, and client communication.

Project Manager - Bodie Hills FY12 Cultural Resources Investigation, Mono County
The project included the archaeological survey of 10,000 acres of lands administered by the Bureau of Land Management. The project identified more than 300 archaeological sites and included an update of the Bodie Hills obsidian quarry. Mr. Duran conducted and directed all field related activities and prepared technical documents including the Phase I investigation report and site records.

Bodie Hills FY 12 Cultural Resources Survey, Bureau of Land Management, Inyo and Mono Counties
Managed the survey of 10,000 acres of land, prepared technical report, maintained client contacts.

Blake Stone Quarry Cultural Resources Investigation, Blake Wholesale Stone, Inc., Kern County
CEQA compliance cultural resources survey. Managed the field investigation and prepared the technical report.

WATER PROJECTS

001B Turn-out Structure and Basin No. 2 Inlet/Turn-out Structure Projects Monitoring Services; Water Replenishment District, City of Pico Rivera, Los Angeles County

Rincon is currently providing Biological and Cultural Monitoring services for the Water Replenishment District's 001B Turn-out Structure and Basin No. 2 Inlet/Turn-out Structure Projects in the City of Pico Rivera. Mr. Duran is currently providing

Archaeologist - Sharon Heights Satellite Treatment Facility Project, RMC Water Environment, San Mateo County
Mr. Duran served as the lead archaeologist for a CEQA+ project in San Mateo County involving the installation of recycled water pipes to serve the Sharon Heights Satellite Treatment Facility. During the course of the project, it was found that a prehistoric Native American village site with intact burials was recorded just outside the area of potential effects. Rincon, led by Mr. Duran worked with the lead agency and local tribe to develop a testing program to ensure that the burials did not extend into the current project site. The final document was accepted by the State Historic Preservation Officer to complete the federal documentation requirements included in the CEQA+ process during pipeline installation for the Goleta Storage Project. Managed subcontractor performance tracked and managed invoicing, reviewed project deliverables, and scheduled qualified staff to perform the work.

Archaeologist - Woodland Hills Country Club Recycled Waterline System Extension Project, RMC Water and Environment, Los Angeles County
As Lead Archaeologist, Mr. Duran managed technical studies to support the extension of the recycled water system to the Woodland Hills Country Club. Mr. Duran supervised the technical staff conducting cultural services including: a records search, Native American search, local historical group consultation, a paleontological resources assessment, field surveys, preparation of a cultural resources technical report, and preparation of a report to comply with Section 106 report of the NHPA.

Archaeologist - Milpitas Recycled Water Pipeline Extension Project, Santa Clara County
Mr. Duran served as the lead archaeologist for a CEQA+ project in Santa Clara County involving the installation of recycled water pipes to serve the City of Milpitas. During the course of the project, one historic-aged adobe structure was noted in the project corridor. Rincon provided mitigation measures to the City for the avoidance of adverse effects to the resource as a result of the project.

Principal Investigator - Sharon Heights Satellite Treatment Facility Project, RMC Water and Environment , San Mateo County
Mr. Duran served as the Principal Investigator and assisted with preparation of a cultural resources technical study for the West Bay Sanitary District's proposed Sharon Heights Satellite Treatment Facility Project primarily located within the City of Menlo Park. The study was prepared for CEQA compliance, but also in accordance with CEQA Plus, in the event that Clean Water State Revolving Fund (CWSRF) monies were used. The project site consisted of a less than one-acre treatment facility site, a less than one acre pump station site, and approximately 12,400 linear feet of proposed pipeline. The cultural resources study included preparation of an Area of Potential Effects (APE) map, a cultural resources records search, Native American and local government consultation, intensive pedestrian survey, paleontological sensitivity analysis, and preparation of a technical report.

Principal Investigator - Waste Water Recovery Facility Project, City of San Luis Obispo , San Luis Obispo County
Mr. Duran served as the Cultural Resources Principal Investigator for the Water Resource Recovery Facility (WRRF) project. The WRRF treats municipal wastewater collected from the City, California Polytechnic State University, and the San Luis Obispo County Airport. The City is proposing a number of improvements/upgrades to the existing 55-acre facility including new equipment installation, demolition of several components, roadway improvements, and new building construction. Mr. Duran completed a cultural resources study for the project. The study included a review and evaluation of existing infrastructure within the facility which were to be upgraded or demolished. He served as the Principal Investigator and evaluated the CRHR eligibility of archaeological sites to ensure that impacts to historical resources would not be adverse.

Principal Investigator - Jensen Water Treatment Plant Solar Project, Metropolitan Water District, Los Angeles County
Mr. Duran served as the Principal Investigator for the cultural resources investigation for the installation of solar energy panels at the Jensen Water Treatment Plant located in Los Angeles County. Mr. Duran conducted the field survey, reporting, and client coordination for the cultural resources study.

Principal Investigator - Water Replenishment District - Groundwater Reliability Improvement Program (GRIP) Advanced Water Treatment Facility, Los Angeles County
Mr. Duran was the Cultural Resources Principal Investigator and Monitor for this project involving demolition of existing structures and the rough grading of a 5.2 acre site on which the Advanced Water Treatment Facility is to be built.

WATER INFRASTRUCTURE PROJECTS

Principal Investigator - Water System Construction Project, Water Replenishment District Maywood Mutual No. 2 Water System Construction Project, Los Angeles County
Rincon Consultants provided CEQA+ documentation for a recycled water pipeline installation in Los Angeles County. Mr. Duran served as the Principal Investigator overseeing the cultural resources survey, Native American consultation, and project reporting.

Principal Investigator - Water Replenishment District Sativa Well 5 Project, WRD
Mr. Duran served as a principal investigator for the Sativa Well project assisting WRD with the tribal consultation efforts between WRD and local Gabrielino tribes. Mr. Duran provided guidance for WRD on what to expect and how to proceed with tribal consultation efforts.

Principal Investigator - United Water Piru Spreading Grounds 2.5 MW Solar Project, Piru, Ventura County
Mr. Duran served as the Principal Investigator for a cultural resources study for the installation of solar panels within the Piru spreading grounds in unincorporated Ventura County. Mr. Duran conducted the project survey, Native American outreach, and reporting.

Principal Investigator - Sharon Heights Satellite Treatment Facility Project, San Mateo County
Rincon Consultants provided CEQA+ documentation for a water pipeline installation in San Mateo County. Mr. Duran served as the Principal Investigator overseeing the cultural resources survey, Native American consultation, and

project reporting. Mr. Duran also worked with the local lead agency to finalize project mitigation that later involved cultural resources testing and monitoring.

LINEAR/TRANSPORTATION PROJECTS

Principal Investigator - Vine Transit Bus Maintenance Facility Environmental Due Diligence, Conceptual Design, and CEQA/NEPA, Napa

Mr. Duran is the Senior Principal Investigator responsible for preparing the cultural resources documents and providing quality assurance/quality control (QA/QC) for the reports. Rincon is assisting the Napa Valley Transportation Authority (NVTA) with environmental studies, conceptual design and CEQA and NEPA compliance for a proposed new bus maintenance, washing and storage facility designed to accommodate approximately 93 Vine Transit buses. The first phases of our work program included managing conceptual design of the facility (performed by PGA Design as a subconsultant to Rincon) and environmental studies of the site to support the agency's determination of site constraints and feasibility. These studies addressed biological and cultural resources and included a Natural Environmental Study per Caltrans District 4 protocol as well as historic, archaeological and paleontological resources assessments.

Principal Investigator - Templeton-Atascadero Connector Project, SLOCOG, Atascadero

Mr. Duran is the Senior Principal Investigator responsible for preparing the cultural resources documents and providing quality assurance/quality control (QA/QC) for the reports. The Templeton-Atascadero Connector project assists the County of San Luis Obispo with the permitting and design of a multi-use pathway that extends from southern Templeton, starting along Main Street at Vineyard Drive, to northern Atascadero, ending at Paso Robles Creek. The project is seeking federal funding assistance through the Federal Highway Administration (FHWA) and therefore must comply with NEPA and Section 106 of the National Historic Preservation Act. Rincon is currently preparing cultural and biological resources studies in conformance with Caltrans' District 5 standards and formats, as Caltrans administers FHWA projects in California. Cultural resources efforts to date have included a preparation of an Area of Potential Effects (APE) map, cultural resources records search, Native American scoping, pedestrian archaeological survey, and preparation of a draft Archaeological Survey Report and draft Historic Property Survey Report. Rincon currently awaits Caltrans comments.

Principal Investigator - 14th Street Safe Route Through the City Project, City of Oakland

Mr. Duran served as the PI for a Caltrans format study for the development of a bike lane along 14th Street through the City of Oakland. Mr. Duran was responsible for project oversight and document quality control. The project resulted in no impacts to cultural resources.

Principal Investigator - Black Road/SR 166 Interchange Improvement Project Cultural Resources Investigation, Santa Barbara County

The project included the survey and documentation of a roadway interchange. Mr. Duran led the field survey effort, document production, and recommendations for the project.

Principal Investigator - Hollister Avenue Road Widening Project Cultural Resources Investigation, Cities of Goleta and Santa Barbara, Santa Barbara County

The project included the survey and documentation of a roadway interchange. Mr. Duran led the field survey effort, document production, and recommendations for the project.

Principal Investigator- Guadalupe Intersection Improvement Project Cultural Resources Investigation, Santa Barbara County

Mr. Duran was responsible for document production and recommendations for the project.

Project Manager - La Posta Reservation Road Construction Cultural Resources Inventory, La Posta Indian Reservation, San Diego County

Mr. Duran managed field crews, budgeting, and maintained contact and coordination with primary contractor, Bureau of Indian Affairs, and Tribal Government.

Project Manager - Ewiiaapaayp Reservation Road Construction Cultural Resources Inventory, Ewiiaapaayp Indian Reservation, San Diego County

Mr. Duran managed field crews, budgeting, and maintained contact and coordination with primary contractor, Bureau of Indian Affairs, and Tribal Government.

Project Manager - Yerba Buena Guard Rails Project Archaeological Study, County of Ventura, Ventura County
Mr. Duran is serving as the project manager on the preparation of the technical memorandum, Historic Property Survey Report (HPSR), and upon approval from the County of Ventura, an Archaeological Survey Report (ASR) in support of the Yerba Buena Road Guardrail Project. The proposed project is a Local Assistance Project with oversight by Caltrans District 7; therefore, compliance with Section 106 of the NHPA will be carried out in accordance with the Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the Caltrans P.A.; January 2014. The study will be prepared in general conformance with the current Caltrans' Standard Environmental Reference (SER) guidelines, Volume 2, Cultural Resources, which provides guidance for the identification and assessment of all cultural resources including archaeological resources.

UTILITIES PROJECTS

Field Director - Southern California Edison Downs 60-Mile Fiber Optic Line Installation Cultural Resources Survey, Kern and San Bernardino Counties
Designed and managed fieldwork authored and managed the preparation of a technical report to describe cultural resources in the project area.

Principal Investigator - Class III Archaeological Survey of BLM Lands for the Upgrade and Maintenance of Southern California Gas Pipeline Line 3000, near Needles, San Bernardino County
1127-acre survey along an existing natural gas line situated along Kelbaker Road in the Mojave Desert. The work was performed for compliance with the FLPMA and Section 106 of the NHPA. Coordinated with Project Manager to ensure the survey was completed along 62 miles of the pipeline.

Project Manager - On-Call Cultural Resource Studies, Southern California Utility Company
As Project Manager, Mr. Duran prepared scopes of work, cost estimates, and requests for service for archaeological studies throughout utility companies jurisdiction. To date, studies managed include emergency monitoring projects on Bureau of Land Management (BLM) lands during evaluation of the integrity of utility lines that required coordination between the client, BLM and a qualified subcontractor that performed the work. Additional undertakings performed under this contract include monitoring at Mission Santa Barbara, survey of two deep well anodes in the Mojave Desert, archaeological monitoring during wetland delineation on Burton Mesa (Santa Barbara County), and monitoring during infrastructure installation. Managed subcontractor performance tracked and managed invoicing, reviewed project deliverables, and scheduled qualified staff to perform the work

Project Manager - Southern California Edison Downs 60-Mile Fiber Optic Installation Project, San Bernardino and Kern Counties
The project included a 60-mile cultural resources survey of electrical transmission lines between Trona and Inyokern, California. The project area included federal (BLM) and county lands requiring compliance with federal and state regulations including the NHPA and CEQA. As the Project Manager, Mr. Duran conducted and directed all field related activities and prepared all technical documents related to cultural resources.

Project Manager - Natural and Cultural Resources Survey and Monitoring of the Casa Diablo Transmission Line, Southern California Edison, Natural Inyo and Mono Counties
The project included the replacement of more than 200 utility poles along the Casa Diablo transmission line through Inyo and Mono counties of eastern California. Tasks included preconstruction surveys for natural and cultural resources. Coordinated schedules between construction crews and environmental staff. Mr. Duran prepared the cultural resources technical report and provided QA/QC for natural resources reports.

Project Manager - JCIF Fiber Optic Line Data Recovery Project, NAWS China Lake, Naval Air Warfare Center Weapons Division, China Lake
Mr. Duran managed data recovery efforts for sites impacted by utility line installations. Mr. Duran was responsible for

field staff, technical documents, artifact analysis, and client contact.

Project Manager - FY12 Fiber Optic Line Maintenance Archaeological Survey, Kern, Inyo, and San Bernardino Counties, Naval Air Warfare Center Weapons Division, China Lake
Mr. Duran Managed field staff, prepared technical documents, conducted artifact analysis, and maintained client contact.

Project Manager - Three Pole Replacement on Private Lands near Bishop, California, Southern California Edison, Inyo County
Mr. Duran conducted a CEQA compliance cultural resources survey, managed field staff, prepared the technical report, and maintained client contact.

Project Manager - TD575283 Deteriorated Pole Replacement Heritage Resources Survey Project, Inyo National Forest, Southern California Edison, Inyo County
Mr. Duran managed staff, scheduling, budgeting, prepared technical reports, and maintained client contact.

Project Manager - Southern California Edison TD575283 Deteriorated Pole Replacement Heritage Resources Survey Project, Inyo National Forest, Inyo County
Managed staff, scheduling, budgeting, prepared technical report, and maintained client contact.

Project Manager - Southern California Edison Casa Diablo Transmission Line Heritage Resource Monitoring, Inyo National Forest, Inyo and Mono Counties
Managed staff, scheduling, budgeting, prepared technical report, and maintained client contact.

Principal Investigator, Line 33-37 Coupon Extraction Project Cultural Resources Study, Santa Monica Mountains National Recreation Area, Los Angeles County
The project involved the excavation and pipeline removal of a gas line within the Santa Monica Mountains National Recreation Area. Mr. Duran procured a cultural resource use permit (CRUP) from the National Park Service and served as the principal investigator for the cultural resources survey and follow on cultural resources monitoring. Mr. Duran was responsible for overseeing the fieldwork, reporting, and coordination with the National Park Service in accordance with the CRUP.

Principal Investigator, Paradise Cove Utility Upgrade Project Cultural Resources Study, City of Malibu, Los Angeles County, CA
The Paradise Cove Heritage Recovery Project involved the recovery of a Chumash cemetery identified during a utility upgrade. Mr. Duran served as the Principal Investigator developing the recovery methods for the identified inhumations. Additionally, Mr. Duran coordinated with tribal representatives for the dignified and respectful treatment of the human remains.

Project Manager - Replacement of Two Power Poles near Weldon, California, Southern California Edison, Kern County
CEQA compliance cultural resources survey. Managed field staff, prepared technical report, and maintained client contact.

Project Manager/Principal Investigator - On-Call Cultural Resource Studies for Southern California Gas Company, Southern California
Prepared scopes of work, cost estimates, and requests for service for archaeological studies throughout Southern California Gas Company's (SoCalGas) jurisdiction.

Project Manager - Call Cultural Resource, Southern California Gas Company Studies, Southern California
As Project Manager, Mr. Duran prepared scopes of work, cost estimates, and requests for service for archaeological studies throughout Southern California Gas Company's (SoCalGas) jurisdiction. To date, studies managed for SoCalGas include emergency monitoring projects on Bureau of Land Management (BLM) lands during evaluation of the integrity of Lines 2000 and 3000 that required coordination between SoCalGas, BLM and a qualified subcontractor that performed the work. Additional undertakings performed under this contract include monitoring at Mission Santa

Barbara, survey of two deep well anodes in the Mojave Desert, archaeological monitoring during wetland delineation on Burton Mesa (Santa Barbara County), and monitoring

Scott Eckardt, RPF

Project Manager, Licensed Forester

Scott Eckardt is a project manager, licensed forester, and certified wildland fire manager with 18 years' professional experience in the natural resource management field. He specializes in fire protection planning, fire hazard assessment, and forest/woodland management in open space and wildland urban interface (WUI) areas throughout California. Project experience includes assessment of fire and fuel hazard conditions; WUI inspections for local fire departments; preparation of fire protection plans (FPPs), community wildfire protection plans (CWPPs), and vegetation management plans (VMPs); modeling fire hazard and fire behavior; global positioning system (GPS) mapping; environmental monitoring; and preparation of assessment reports, forest and fuel management plans, and California Environmental Quality Act (CEQA) technical documents. In addition, he routinely uses geographic information system (GIS) to analyze resource data, prepare project plans, develop project maps, conduct project impact analyses, evaluate mitigation opportunities, and model fire behavior and wildfire hazard conditions. Mr. Eckardt previously worked for the California Department of Forestry and Fire Protection (CAL FIRE) in South Lake Tahoe, where he conducted fuel reduction, vegetation thinning, and forest rehabilitation projects

Education

California State University, Long Beach
MA, Geography

California Polytechnic State University, San Luis Obispo
BS, Forestry and Natural Resources Management

Certifications

Registered Professional Forester, License No. 2835

International Society of Arboriculture (ISA) Certified Arborist, Cert. No. WE-5914A

Association for Fire Ecology Certified Wildland Fire Manager

Wildland Fire Control Certification

Professional Affiliations

Association of Environmental Professionals

Association for Fire Ecology

International Society of Arboriculture

Cal Poly Natural Resources Management and Environmental Sciences Department Advisory Council

Project Experience

Wildland Fire Evacuation Procedures Analysis, City of Santa Barbara, California. Mr. Eckardt served as the GIS and fire behavior modeling technical lead for the Wildland Fire Evacuation Procedures Analysis Project for the City of Santa Barbara Fire Department. The project involved identification of constraints associated with evacuation during a wildfire event and incorporated fire behavior and network modeling. The project involved the creation of a fuels data set for the analysis area, use of terrain and weather data, development of a GIS-based fire behavior modeling database, analyzing weather data using FireFamily Plus, and modeling of fire behavior scenarios using FlamMap and FARSITE software. The modeling results were used to identify potential management actions to be undertaken by the City, and all base files were provided to the City of Santa Barbara for future modeling efforts.

Community Wildfire Protection Plan (CWPP) and Unit Fire Plan Update, San Luis Obispo County Fire Department/CAL FIRE, San Luis Obispo County, California. Served as the project manager and prepared the countywide unit fire plan and CWPP document for San Luis Obispo County. This project is the first effort in the state to integrate CAL FIRE unit planning and CWPP efforts with the intent of creating a community-focused fire planning document. The plan used CalMapper data sets to evaluate fire hazard and prioritize fuel reduction efforts to minimize wildfire risk. The plan is dynamic and will allow for integration of priorities from local, state, and federal agencies and serve as a mechanism for acquiring federal funding for hazardous fuel reduction projects.

Vegetation Management Plan, City of Oakland, California. Currently preparing a Vegetation Management Plan (VMP) for the City of Oakland Fire Department. Scope of the VMP covers nearly 2,000 acres of City-owned land, along with over 300 miles of roadside treatment areas in the City's designated Very High Fire Hazard Severity Zone. The VMP will outline vegetation management techniques and standards to reduce the likelihood of extreme fire behavior and promote public and firefighter safety. The management recommendations included in the VMP draw on field data, research, principles of vegetation/fuels management, and the results of GIS-based fire behavior modeling using Flam Map software. Prioritization of vegetation treatment areas will consider these variables as well as the size, physical characteristics, and spatial distribution of City-owned parcels throughout the VMP area.

Wildland Fire Management Plan, Nature Reserve of Orange County (NROC), Orange County, California. Served as a technical expert and assisted in preparation of the Wildland Fire Management Plan for the 36,000-acre Nature Reserve of Orange County. The project included extensive information review; field, GIS, and fire hazard analysis; stakeholder outreach and consensus building; and preparation of a three-volume report. Analysis involved fire behavior modeling using GIS-based software applications (FlamMap) across the entire Reserve, along with an analysis of weather data using FireFamily Plus software. An extensive hazard analysis within 56 fire management units was also conducted via extensive GIS analysis of fire history, ignition sources, modeled fire behavior, and sensitive resources, augmented with field evaluations. The final plan included management recommendations, a tactical response plan, and a resource management plan component.

WUI Inspections, City of Newport Beach, California. Responsible for inspecting, mapping, and documenting hazardous fuel conditions within the WUI protection area of the City of Newport Beach. This is an ongoing annual project initiating in 2002, which involves determining property compliance with City fuel management codes. Existing native and non-native vegetation conditions—including species, density, and continuity—are evaluated based on currently adopted fire codes, and prescriptions are made for required corrective actions. Field mapping efforts are enhanced by utilization of GIS, digital aerial photography, and GPS technology to capture site-specific resource data. Data are also prepared for integration into the city's GIS by linking field condition descriptions with geographic reference information, allowing access to relevant site information. Follow-up inspections are also conduced as a part of the annual inspection cycle to verify whether fuel reduction efforts have or have not been completed.

Vegetation Management Plans, County of San Diego Department of Parks and Recreation, San Diego County, California. Served as a technical expert and prepared the fire management components for six different open space preserve Vegetation Management Plans (VMP) in San Diego County. The fire management component of the VMPs identified fire risk to sensitive resources, identified appropriate mitigation/fuel reduction goals and recommendations, and outlined procedures for pre-, during, and post-fire management. Analysis involved extensive mapping and fire behavior modeling using GIS-based software applications (FlamMap). Additionally, preparation of the plans was conducted in coordination with the local fire agencies and includes response maps intended to guide firefighting personnel in wildland fire response scenarios with the intent of protecting sensitive resources and preserve management objectives.

Technical Consulting and Plan Check Services, Orange County Fire Authority (OCFA), Orange County, California. Served as project manager and third-party technical consultant for OCFA. Project tasks included third-party review of proposed fuel modification plans and formulation of recommendations for plan revisions to provide for improved fire protection capabilities. Additionally, one task involved preparation of a technical memorandum addressing the issues and constraints associated with passive and active fire protection systems for homes in WUI areas of Orange County.

Fire Protection Plan (FPP) for the Malibu Conservation and Recreation Authority (MRCA) Public Access Enhancement Plan, Malibu, California. Served as a technical expert, performed tabular and GIS-based fire behavior modeling, and drafted portions of the FPP, which served as a component of the project EIR. The project involved the development of facilities to enhance public access to open space within the Santa Monica Mountains, including parking areas, campsites, and trails. The FPP analyzed fire risk components associated with increased public access into wildland areas and developed measures to mitigate risk. Technical analysis of risk included assessment of fire history, fire behavior modeling, access constraints, and proximity to firefighting resources. Fire behavior modeling involved the use of both tabular (BehavePlus) and GIS-based (FlamMap) fire behavior modeling software and was an integral component of the fire planning process. The FPP served as a component of the project final EIR, which was approved by the MRCA board and the California Coastal Commission.

Crest Canyon Wildfire Hazard Reduction Project, City of Del Mar, California. Served as a technical expert and conducted an assessment of existing fuel hazard conditions along the WUI adjacent to Crest Canyon in the City of Del Mar. Project tasks included field assessments and detailed fuel hazard mapping, GIS-based fire behavior modeling, GIS data analysis and mapping, and the development of prescriptions for reducing fuel loads within the WUI. Further, fuel reduction contractor specifications were prepared, and the selected contractor was monitored for the duration of the project. The overall project goal was to reduce wildfire hazard and increase defensible space through on-the-ground rating of existing conditions, high-level modeling and analysis, and generation of justifications for conducting fuel-reduction projects. Project was implemented and completed with a successful reduction in hazardous fuels in the WUI.

Wildfire Hazard Reduction Project, City of Encinitas Fire Department, Encinitas, California. Served as a technical expert and conducted detailed GIS mapping and field documentation of wildfire hazards in the Saxony Canyon and Val Sereno areas in the City of Encinitas. The project involved compilation and analysis of available spatial data and conducting fuel loading and hazard analysis inspections in the WUI in the city. The resulting data were synthesized and lot-specific fuel treatment prescriptions developed in order to reduce wildfire hazards within the city. Project data were ultimately used by the city to apply for grant funding for project implementation.

Fuel Modification Zone Assessment, NBFD, Newport Beach, California. This project involved assessing and documenting fire hazard conditions within existing fuel modification zones in an area that was to be annexed by the City of Newport Beach. Assessments involved evaluating existing vegetation conditions, using GPS and GIS in field mapping, data analysis, and data presentation efforts. Site conditions were evaluated based on existing adopted fire and fuel modification zone guidelines, and prescriptions were made for corrective treatments. Data were prepared in the form of tables and maps that linked field condition descriptions with geographic reference information, allowing the NBFD to access relevant site and hazard information. This information was then used in successfully bringing many properties into compliance with existing fire codes.

Community Wildfire Protection Plan, San Benito Fire Safe Council, San Benito County, California. Served as project manager and prepared a County-wide CWPP consistent with the 2003 Healthy Forest Restoration Act. The CWPP identifies communities at risk from wildfire and integrates a community-based approach to project identification, fuel treatment, and community prioritization. The project also involved significant GIS-based mapping and analysis of fuel loads, as well as coordination among community stakeholders, including representatives from the BLM, CAL FIRE, the National Park Service, and local County government. The CWPP will ultimately serve as a mechanism for acquiring federal funding for hazardous fuel reduction projects and was finalized, approved, and signed by CAL FIRE and the San Benito County Board of Supervisors.

Community Wildfire Protection Plan, Monterey Fire Safe Council, Monterey County, California. Served as project manager and completed a county-wide CWPP for Monterey County. This planning-level document identified communities at risk from wildfire and relied on significant public involvement in developing fuel treatment options and refining the WUI boundary for Monterey County. Significant GIS-based mapping and analysis tools were used to evaluate fuel loads, hazard areas, and potential fuel treatment locations.

Community Wildfire Protection Plan, Santa Clara County Fire Safe Council, Santa Clara County, California. This project involved assisting the Santa Clara County Fire Safe Council in preparation of two CWPPs by providing technical expertise for fire hazard reduction planning. Primary task included compilation of GIS data and development of a GIS-based fire hazard overlay map that accounted for terrain, fuel type, fire history, and proximity to fire stations. The map was used to identify and prioritize fuel reduction projects. Additional project tasks involved field evaluations and drafting defensible space management and maintenance recommendations.

FPP for Tejon Mountain Village, DMB Associates, Lebec, California. Served as a technical expert, performed fuel loading and vegetation distribution analyses, and performed GIS-based fire behavior modeling in support of the FPP for the Tejon Mountain Village Environmental Impact Report (EIR). Detailed vegetation, topographic, and climate data were collected or retrieved and processed in developing GIS-based data files for inclusion in FlamMap fire behavior modeling efforts for the FPP. The resulting data were incorporated into the FPP and were critical in determining appropriate defensible space setback distances for proposed project improvements. Further, the fire behavior modeling results were critical in determining appropriate fire protection standards for buildings to be included as a component of the project. The project was approved by the Kern County Board of Supervisors.

FPP for Undisclosed Project, Laguna Beach, California. Served as a technical expert, performed fuel loading and vegetation distribution analyses, and performed GIS-based fire behavior modeling in support of the FPP for a redevelopment project in Laguna Beach. The project involved modeling wildfire behavior in the vicinity of the project site, including static (FlamMap) and temporal (FARSITE) modeling applications. Detailed vegetation, topographic, and climate data were collected or retrieved and processed in developing these GIS-based modeling efforts. The FlamMap analysis allowed for an evaluation of wildfire potential at the project location, while the FARSITE analysis allowed for calculations of fire progression rates in order to inform the evacuation planning component of the FPP. Modeling results were incorporated into the FPP and were critical in determining appropriate defensible space setback distances for proposed project improvements. Further, the fire behavior modeling results were critical in determining appropriate fire protection standards for buildings to be included as a component of the project.

Professional Presentations

- ”Fire Response and Station Location”, March 17, 2016, Fire Prevention Officers Annual Conference, Buellton, California.
- “GIS-based Fire Behavior Modeling Basics (FlamMap and FARSITE)”, April 23, 2015, Southern California Fire Prevention Officers Defensible Space Inspector Training, Cambria, California.
- “Addressing Wildland Fire Risk in California”, March 25, 2014, 2014 Association of Environmental Professionals State Conference, Huntington Beach, California.
- "GIS-based Fire Behavior Modeling Basics (FlamMap and FARSITE)", October 3, 2011, Southern California Fire Prevention Officers Workshop, Camarillo, California.
- "Fire Behavior and Response Modeling in Wildfire Protection Planning in Southern California", April 19, 2010, 2010 CalGIS Conference, Huntington Beach, California.
- "Wildfire in Southern California's Wildland Urban Interface (WUI)", February 28, 2008, Laguna Greenbelt, Inc., Annual Meeting, Laguna Beach, California.
- "GIS-Based Fire Behavior Modeling Applications for Managing the Wildland Urban Interface (WUI)", August 22, 2007, URISA National Conference, Washington DC.

Michael Huff, RCA

Principal

Michael Huff is founder and manager of Dudek's Urban Forestry/Fire Protection Planning team with 27 years' experience as a forester and fire protection planner. Mr. Huff specializes in management of community-wide and project-specific fire protection plans (FPPs), wildland–urban interface (WUI) fire management plans, wildfire hazard reduction projects, California Environmental Quality Act (CEQA) supporting technical documents, Oak Woodland impact and mitigation plans, urban and community forest management plans, forest and tree inventories, impact analysis studies, and tree hazard evaluations. Mr. Huff possesses considerable project issue resolution experience and focuses on working within the regulations to provide creative, cost-saving solutions to his clients. He also serves as a speaker/trainer at the annual Fire Prevention Officer's Institute.

Education

Northern Arizona University
BS, Forest Management, 1992

Certifications

Registered Consulting Arborist (RCA)

Certified Arborist, No. WE-4276A

San Diego County Department of Planning and Land Use (DPLU)-Approved Fire Protection Planner

Laguna Beach Fire Department-Approved Fire Protection Planner

Certified Wildland Fire Ecologist

Professional Affiliations

American Society of Consulting Arborists

National Fire Protection Association – International

California Fire Chief's Association – Fire Prevention Officers

Project Experience

Project Specific Fire Protection Plans, California. Mr. Huff has been primary author and project manager for over 65 project specific fire protection plans in various California fire authority jurisdictions. The projects range from 25 to 10,000 residential units and include a variety of project locations, typically within wildland urban interface and very high fire hazard severit zone locations. The fire protection plans have commonly evaluated fire hazards and risk at each site, developed appropriate fire protection features, and proposed customized protection for unique site characteristics and constraints. Each of the prepared fire protection plans has been accepted by the local fire authority having jurisdiction.

Wildland Fire Response Plan/Evacuation Plan, Santa Barbara, California. Managed this evacuation planning project for the Santa Barbara Fire Department which evaluated three wildfire scenarios and provided recommended actions and potential measures to improve evacuation efficiency. Dudek provided a framework for future wildfire spread modeling so the City can consider other wildfire scenarios as part of its overall evacuation approach.

Wildland Fire Management Plan for the Nature Reservie of Orange County (now called Natural Communities Coalition), Orange County, California. Mr. Huff managed and was lead author of this wildland fire management plan for the 26,000 acre nature reserve of Orange County. The plan focuses on evaluating the wildfire environment, identifying assets at risk, providing short and long term strategies for reducing wildfire and protecting assets. This document included working with over 35 stakeholder organizations and achieving concensus on the recommended approach, mitigating measures, and overall framework.

Post-Wildfire Landscape Assessments, AIG Insurance, Santa Barbara, Poway and Rancho Santa Fe, California. Managed several projects involving the post-wildfire landscape assessments and loss valuations. The projects included landscape inventory with GPS technology, assessments of plant material for damage level and anticipated recovery, and appraised loss value calculations.

Community Wildfire Protection Plans, Santa Clara County FireSafe Council, Santa Clara County, California. Project manager for preparation of community wildfire protection plans for the Santa Clara County FireSafe Council. The plans focus on two areas, the east foothills area and the Croy fire area. Responsible for interfacing with approximately 20 different fire personnel, along with community groups throughout Santa Clara County. Managed and participated in site fuel assessments, fire behavior modeling, risk assessments, and preparation of several chapters of the final plan.

Fuel Management in Wildland–Urban Interface (WUI) Areas, NBFD, Newport Beach, California. Worked with the City of Newport Beach Fire Department to assess compliance with fuel modification zones in the WUI areas prone to wildfire. Vegetation type, spacing, and conditions were evaluated for compliance with established fuel modification zone ordinances. Oversaw database creation for use by Fire Chief and staff and managed a related project to inspect fuel modification zones annually.

Wildfire Hazard Reduction Project, Crest Canyon, City of Del Mar Fire Department, Del Mar, California. Managed this project for the Del Mar/Solana Beach Fire Department. The project included parcel by parcel inspection and assessment of 65 parcels within or directly adjacent Crest Canyon. Dudek recommended fuel reduction treatments for each parcel, prepared specifications for contractor bid, and monitored contractor work for this project. Dudek also provided community education and outreach due to highly emotional ties to flammable trees and vegetation requiring removal. In all, 134 tons of fuels were treated with all but 15 tons remaining on site as chipped ground cover.

Wildfire Hazard Reduction Project, Saxony Canyon and Lake Val Sereno, City of Encinitas Fire Department, Encinitas California. Dudek was contracted by the City of Encinitas Fire Department to perform a prioritization analysis and then focused fire hazard reduction projects in the City's WUI. Dudek performed lot-by-lot analysis for some 300 parcels, ran fire behavior models for each site, and prepared lot-by-lot treatment specifications. Dudek worked with in-house biologists and restoration specialists to ensure that fuel reduction work was being completed within governing regulations.

PETCO Headquarters Wildfire Risk Assessment, PETCO, San Diego, California. Performed a site assessment of the headquarters' grounds to determine the potential wildfire vulnerability and provide recommendations to reduce the potential threat. Among the recommendations were active maintenance of unmaintained fuels on slopes, enforcement of smoking policies and use of butt receptacles, and regular maintenance of palm tree petticoats throughout the site.

Post-Burn Oak Tree Assessments, Proposed Development Project, Trabuco Canyon, Orange County, California. Conducted a post-wildfire oak tree evaluation for approximately 200 oak trees occurring within a proposed project site. The oak trees were damaged by the Trabuco wildfire and varied from completely killed to minimally scorched. Dudek provided a narrative and photographic summary of the site as well as recommendations for recovery of some of the trees and potential restoration for areas most severely damaged.

Wildfire Hazard Assessment and Community Wildfire Protection Plan, Rancho Santa Fe Association and Fairbanks Ranch, Rancho Santa Fe, California. Provided assessment and recommendations for a 100-acre area that was previously burned in the Witch wildfire. Several homes were lost and that prompted the associations to assess the hazard and develop recommendations to reduce the hazard. Dudek conducted fire behavior modeling using Flammap to graphically display the priority areas and provided recommendations to reduce the hazard. Dudek also prepared a community wildfire protection plan for the area that was accepted by the FireSafe Council. This plan has been submitted with a grant application for fuel reduction funding.

Michael Scott

Urban Forester

Michael Scott is an urban forester with 35 years' experience as a municipal, state, and federal forester and firefighter. Mr. Scott's forestry project experience includes urban forest management plans, inventory and assessment of woodlands and coniferous forests, tree hazard evaluations, insect and disease diagnosis, Oak Woodland impact and mitigation plans, and forest timber practices and reforestation monitoring. His fire expertise has been utilized in developing community-wide and project-specific fire protection plans, fuels hazard reduction projects, and natural resources management plans. Most of Mr. Scott's projects have occurred in high risk communities within the wildland-urban interface (WUI).

Additionally, Mr. Scott has been trained as a fire building plans examiner and fire inspector. He has developed and enforced WUI fire codes and has been instrumental in the planning and designing of shelter-in-place developments as a community risk reduction strategy. He manages and coordinates a variety of urban forestry and arboriculture projects, in addition to focusing on fire protection planning.

Michael Scott

Education

Oregon State University

BS, Forest Management, 1980

Certifications

University of Florida/Urban Forestry Institute, Urban Forestry Certification

Certified Arborist, No. WC-1771A

ICC Fire Inspector II, Sustainable Forest Management Plans Examiner

Wildfire Behavior Specialist/ Wildfire Field Observer

Professional Affiliations

International Society of Arboriculture

Project Experience

Urban Forester, Rancho Santa Fe Fire Protection District, San Diego, California. Managed the development and coordination of the vegetation management and urban forestry programs for the 38-square-mile fire district. Reviewed and approved community wildland fire protection plans, resource management plans, and CEQA documents for compliance with applicable codes or standards. Assisted writing state, county, and local fire codes and standards. Conducted numerous fire inspections and plan reviews of residential and commercial building construction, fire protection systems, landscaping, and fuels reduction. Coordinated and conducted fire code interpretation and design review meetings with consultants, contractors, engineers, architects, public agency representatives, community leaders, and homeowners' association boards. (1999-2012)

Urban Forester/Fire Management Specialist, David Evans and Associates, Laguna Hills, California. Served as project manager and senior arborist for over 25 community forestry and WUI wildfire planning projects for developers and all levels of government. Selected and oversaw project team activities and ensured work was performed to contract specifications, on schedule, and within budget. Established the Wildfire Hazard Assessment Program for the City of Newport Beach. (1997-1999)

Naval Air Station Miramar Natural Resources Manager, U.S. Navy, Miramar, California. Directed the development of plans and programs to manage biological, cultural, and physical resources of 23,185 acres. Accountable for administering $1.2 million budget and maintain effective cost controls. Managed a staff of nine biologists and

geographic information system (GIS) personnel. Coordinated the preparation and review of 15 environmental documents in accordance with the National Environmental Protection Agency (NEPA). Established the Tree City USA program for west coast naval bases. (1988-1997)

Environmental Protection Specialist, Marine Corp Base (MCB), Camp Pendleton, California. Educated and advised all levels of the U.S. Marine Corps chain-of-command on matters relating to fuels management, air quality management, water quality management, and protection and restoration of natural resources for MCB Camp Pendleton (125,000 acres) and the Mountain Warfare Training Center, Bridgeport, California (1,000 acres). (1985-1988)

Firefighter/Driver Operator, MCB Camp Pendleton, California. Responded to alarms for emergencies relating to structural, chemical, and wildland fires; aircraft crashes; vehicle accidents; and medical aid and rescue operations. Conducted annual controlled, prescribed fire on 7,000 acres. (1982-1985)

Forest Technician/Firefighter USFS, Region 6, Oregon and Washington. Served as a firefighter on a 20-member prescribed fire and wildfire suppression crew in the Pacific Northwest. Served as lead forester on timber inventory, stand exam, reforestation survey, and timber sale preparation crews for six national forests. (1979-1982)

Natural Resources Management

- Managed sensitive and endangered species habitat restoration and mitigation projects (e.g., oak woodlands, vernal pools, and gnatcatcher habitat).
- Oversaw oak tree management and mitigation during building construction.
- Conducted eucalyptus tree windrow inventory and internal decay analyses.
- Completed municipal/city street tree inventories and hazard tree assessments.
- Oversaw timber/forest management and tree removal.
- Conducted forest stand inventories and tree health analyses.
- Completed urban forest insect and disease assessments.

Fire Protection Planning

- Collaborated with and advised homeowners associations and WUI neighborhoods on pre-wildfire community planning and fire risk assessments.
- Created wildland fuels and fire behavior modeling using BehavePlus, FlamMap, and Farsite.
- Developed and implemented prescribed fire and fuels management projects.
- Oversaw National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) document review and preparation.
- Developed Rancho Santa Fe Fire District's Multi-Hazard Mitigation Plan for Countywide Risk Assessment Plan for the Federal Emergency Management Act (FEMA).
- Technical Advisor for San Diego County Wildfire Risk Assessment Project.
- Shelter-in-place communities design, implementation, and enforcement.
- Ignition resistant construction materials evaluation and product testing protocols.
- Coordinated GIS study for Emergency Response Drive-time Analysis.
- Community Wildfire Protection Plans (CWPP), Resource Management Plans, Vegetation Management Plans, and Fire Protection Plans preparation and compliance review.
- CalFire State Responsibility Area/Local Responsibility Area (SRA-LRA) Mapping Committee for San Diego County.

Wildland Resources Compliance

- Developed and enforced California, San Diego County, and local fire codes.

- Resolved air quality and smoke management compliance issues.
- Served as a member of the Wildland Fire Policy Development–WUI committee code interface working group.
- Ensured compliance with forest timber practices regulation and monitoring.

Wildfire Team Assignments

- Served as a firefighter on numerous vegetation fires in the western United States.
- Served as Federal Type 2 Incident Management Team: Fire Behavior Analyst and Field Observer.
- Assessed post-fire conditions in order to recommend treatments and monitoring for soil erosion issues due to loss of vegetation.
- Conducted Fire Damage Assessments for structures "lost" and "saved" during California's mega wildfires (CY 2003–2007).

Training

- National Fire Academy Leadership Training, 2009–2011
- Fire Prevention and Advanced Wildland Fire Behavior, California State Fire Marshal, 1988–2011

Awards

Secretary of the Navy Natural Resources Conservation Individual Award, 1990 and 1994, highest honor bestowed upon a civilian employee in the United States Navy.

Noah Stamm

Urban Forestry Analyst

Noah Stamm is an urban forestry analyst with 10 years' experience in fire prevention, wildland fire and fuels management, wildland-urban interface (WUI) fire protection, urban forestry consulting, make-ready engineering, and geographic information system (GIS). Mr. Stamm has participated in numerous projects throughout California dealing primarily with fuel hazard reduction in the WUI communities. He also has experience with consulting utility forestry, impact analysis studies, tree hazard evaluations, and on-site tree monitoring and protection .These projects include assessment and inspections of hazardous fuel reduction modifications to communities within the WUI, inventory of oak woodlands, monitoring of native oaks and other trees on development sites, GPS mapping, data analysis, and preparation of assessment preservation plans. In addition, he routinely used GIS, including Microstation, Pole Foreman, ArcMap, and ArcGIS to perform make-ready engineering to utility poles.

Education

California Polytechnic State University, San Luis Obispo

BS, Forestry and Natural Resources (Wildland Fire and Fuels Management concentration), 2009

Certifications

Oxnard College Regional Firefighter Academy, Firefighter 1

Professional Affiliations

International Society of Arboriculture

Project Experience

Resource Management

Rancho Santa Fe Covenant Forest Analysis, Rancho Santa Fe Association, San Diego County, California. Wrote Notices of Violation for non-compliant properties in accordance with Public Resources Code 4291 and Rancho Santa Fe Fire Protection District International Code Council-Wildland Urban Interface Code, 2008 Edition. Provided daily and weekly home/community inspections and re-inspections of hazardous fuel reduction modifications for those who do not comply with department codes and regulations. Created a Homeowners Firescape Landscape Guide. Reviewed, commented on, and inspected landscape plans and fuel modifications.

Hollywood Terrace Monitoring Project, Universal City Studios LLC, Los Angeles, California. Served as urban forester for Universal Studios monitoring project. Protected California live oaks (*Quercus agrifolia*) near various project sites on the studio's back lot. Tasks included inspecting overall health of trees, including looking for new growth from previous rains and inspecting the root or trunk damage.

Starway Expansion Project, Universal City Studios LLC, Los Angeles, California. Served as urban Forester and inspected the protected California live oaks near the construction job site. Tasks included inspecting overall health of trees, making sure fencing surrounded the tree protection zone, and providing clients with tree protection measures and recommendations.

Area 71 Oak Tree Support Project, Universal City Studios LLC, Los Angeles, California. Served as urban forester and monitored the protected California live oaks near the Area 71 job site, which is located on the back lot of Universal Studios. Inspected overall health of trees, including looking for new growth from previous rains and inspecting the root or trunk damage.

Universal Drive and Fung Lum Oak Monitoring Project, Universal City Studios LLC, Los Angeles, California. Served as urban forester. Monitored the protected California live oaks near the old Fung Lum job site along Universal Drive outside of Universal Studios. Tasks included inspecting overall health of trees, including looking for new growth from previous rains and inspecting the root or trunk damage.

Eucalyptus Internal Decay Evaluations, Irvine Community Development Company, California. Served as urban forester. Performed inventory and inspection for internal rot and decay of the eucalyptus trees throughout the Orchard Hill developments. Tasks included the use of Resistograph to determine the health of the eucalyptus trees by drilling into the trees' trunk 3, 6, and 9 inches from the ground, looking for cavities and rot.

WUI Site Inspections, City of Newport Beach Fire Department, California. Served as urban forester and performed site visits and inspections of vegetation within 100 feet of homes located within the WUI. If vegetation that is found to be highly flammable or on the list of non-compliance, recommendations were made to remove such vegetation.

Relevant Previous Experience

Consumer's Energy Make-Ready Engineering, Michigan. Served as a make-ready engineer. Analyzed power/utility poles in their current state, making sure the poles were not overloaded with the current equipment. Performed make-ready engineering using Microstation and ArcMap to allow new applicant to attach their fiber optic cable to the pole without adding stress to the pole.

Specialized Training

- GIS (ArcMap, Microstation, and ArcGIS)
- Basic Wildland Firefighter Training (S130/S190)

Lesley Terry

GIS Analyst/CADD Specialist

Lesley Terry is a geographic information system (GIS) analyst and computer-aided design (CAD) specialist with 35 years' experience in research, design, data collection, computer applications, and graphic arts in the land development field. Ms. Terry's primary responsibilities include research, transposition of field data to topographic maps, creation and manipulation of GIS data layers, and document preparation for various public agency submittals, with an emphasis on the use of AutoCAD, Autodesk Map, ArcView, ArcMap, CorelDraw, and Adobe Photoshop. She provides highest level of expertise to accurately and clearly depict the distribution of environmental resources, create and maintain databases, and anaylze impacts, as well as prepare plans for landscape and irrigation projects.

Education

Northern Arizona University
BFA, Fine Arts

Palomar College

Drafting Technologies
Graphic Communications

Professional Affiliations

San Diego ArcInfo Users' Group

Urban and Regional Information Systems Association, San Diego Section

Women's Environmental Council, San Diego Chapter

Project Experience

Development

Lowe's Retail Store, Lowe's, Inc., Santee, California. Developed and analyzed GIS databases of impacts to non-tidal wetlands. Produced analytical summaries and graphics for support documentation.

Creekside Marketplace, Planning Department, City of San Marcos, California. Developed and analyzed GIS databases for commercial shopping center adjacent to San Marcos Creek. Prepared biological resources technical report figures in support of a California Environmental Quality Act (CEQA) document.

University Commons Development Project, Brookfield Homes, San Marcos, California. Created and analyzed GIS databases from field data of existing vegetation, wetlands, and special-status species; quantified existing conditions acreages and proposed impact acreages to project. Produced analytical summaries and graphics for the environmental impact report (EIR), Biological Resources Report, Joint Permit Application (JPA), Conceptual Wetlands Mitigation Plan, and focused surveys for thread-leaved brodiaea and Orcutt's brodiaea.

Cupertino Project, Ryland Homes, Vista, California. Developed and analyzed GIS databases for the 64-unit residential development. Prepared wetland mitigation plan for on-site mitigation.

High Meadow Ranch Residential Development Project, Vicar Ventures, LLC, Community of Lakeside, San Diego County, California. Developed and analyzed GIS databases for 800-acre development project. Prepared support maps for wetlands delineation and conceptual mitigation plan.

Blossom Valley Residential Development Project, Sierra Sun, San Diego County, California. Developed and analyzed GIS databases for 65-acre development project. Prepared support maps for biological resource and wetlands delineation plans.

Otay Ranch Village 11 Residential Development Project, Brookfield Homes, San Diego County, California. Developed and analyzed GIS databases of existing vegetation, wetlands, and special-status species; quantified

existing conditions acreages and proposed impact acreages of 1,200-acre development project. Prepared support maps for biological resources report, wetlands delineation, Quino checkerspot butterfly–focused surveys, and conceptual mitigation plan.

Merriam Residential Development Project, Stonegate Development, San Diego County, California. Developed and analyzed GIS databases for existing vegetation, wetlands, and special-status species; quantified existing conditions acreages and proposed impact acreages of the 2,327-acre development project. Prepared support exhibits for San Diego County Resource Protection Ordinance (RPO) and Jurisdictional Delineation Map.

East Grove, Lyon Homes, Inc., Escondido, California. Prepared conceptual wetland mitigation plan for on-site mitigation.

Planning Area 1, The Irvine Company, Orange County, California. Created and analyzed GIS databases of existing vegetation, wetlands, and special-status species; quantified existing conditions acreages and proposed impact acreages of 4,200 acres, within which the northern half (approximately) would be permanent open space as part of a larger natural resources preserve, and the southern half (approximately) would be developed as a new community that includes residential, commercial, institutional (i.e., schools), agricultural, and open space uses. Prepared maps for Biological Resources Report, Jurisdictional Delineation, Rare Plant Surveys, and Focus Surveys.

Planning Area 3, 5B, 6, 8A, and 9, The Irvine Company, Orange County, California. Created and analyzed GIS databases of existing wetlands and quantified existing conditions acreages and proposed impact acreages for Planning Area 6. Prepared maps for Jurisdictional Delineation.

Dos Pueblos Golf Links, CPH Dos Pueblos, LLC, Santa Barbara County, California. Developed GIS databases of biological resources for the 202-acre project site, including vegetation, wetlands, special-status plant species, and native grassland areas. Produced tabular summaries and large-scale display maps.

Cardiff Glen (Rossini Parkside Development) Residential Development, Brandywine Development, Encinitas, California. Prepared detailed revegetation construction documents for 2 acres of wetland revegetation and enhancement areas along Rossini Creek, as well as the slope revegetation and ornamental streetscape landscaping within the 26-lot Cardiff Glen subdivision project in Encinitas.

Education

Campus Master Plan 2000, San Diego State University (SDSU), San Diego, California. Preparation of graphics for visual quality/aesthetics and water quality/hydrology technical reports for EIR. The project included additions to existing campus parking facilities and additions of new academic buildings.

Aztec Walk Campus Master Plan, San Diego State University, San Diego, California. Preparation of graphics for visual quality/aesthetics and water quality/hydrology technical reports for the project EIR. The project involved the redevelopment of SDSU's recreation facilities as well as parking and residence hall expansions and improvements. Major issues addressed in the visual quality/aesthetics analysis included significant viewsheds, sensitive public receptors, and alteration of existing community character.

Sunset Continuation High School, San Dieguito Unified High School District, Encinitas, California. Prepared mitigated negative declaration (MND) graphics for the expansion of parking and the construction of nine new classrooms for existing school site.

The Academy High School, San Dieguito Unified High School District, Encinitas, California. Prepared MND graphics for the proposed improvements to the existing high school. Improvements include expansion of parking, reconfiguration of the campus layout, and construction of a purchasing and receiving facility.

Site Number 3 – Foothill Project, Vista Unified School District, Vista, California. Created and analyzed GIS databases from field data and quantified existing conditions and proposed impacts. Prepared biological resources report graphics in support of CEQA documentation.

Site Number 8 – Huntalas Project, Vista Unified School District, Vista, California. Created and analyzed GIS databases from field data and quantified existing conditions and proposed impacts. Prepared biological resources report graphics in support of CEQA documentation.

Site Number 10 – Stacco Project, Vista Unified School District, Vista, California. Created and analyzed GIS databases from field data and quantified existing conditions. Prepared biological resources report graphics in support of CEQA documentation.

Energy

AT&T/PF.Net Fiber-Optic Alignment – Camp Pendleton, Foster-Wheeler Environmental Corporation, San Diego County, California. Developed and analyzed GIS databases and produced graphics for focused surveys for California gnatcatcher, southwestern willow flycatcher, and least Bell's vireo for the approximately 18-mile-long segment of the AT&T/PF.Net fiber-optic alignment proposed to traverse U.S. Marine Corps, Camp Pendleton.

SDG&E Substations, California Public Utilities Commission, San Diego County, California. Responsible for preparation of necessary MND graphics for Friars, Garfield, Pala, Pico, and Valley Center Substations.

Municipal

Carlsbad Fire Station No. 6 Project, City of Carlsbad, California. Created and analyzed GIS databases from field data and quantified existing conditions. Prepared biological resources report graphics.

Ocean Trails Park, City of Rancho Palos Verdes, California. Prepared construction drawings for the Ocean Trails Park in the City of Rancho Palos Verdes. The 5-acre public park overlooks the Pacific Ocean and incorporates native landscaping with passive play and picnic areas. The park incorporates a variety of paved plazas, grass terraces with rock retaining walls, a wedding pavilion, pedestrian and bicycle paths and trails, picnic areas, and scenic overlooks.

Poway Creek Silt Removal and Access Ramp Project, City of Poway, California. Developed and analyzed GIS databases, produced analytical summaries, and produced graphics for JPA and conceptual wetland mitigation plan.

San Marcos Creek Roadway Improvements and Flood Protection Project, City of San Marcos, California. Developed and analyzed GIS databases of existing vegetation, wetlands, and special-status species, quantified existing conditions acreages, proposed impact acreages, and produced graphics for roadway construction and flood control project. Provided support graphics for wetlands delineation and biological resources and conceptual wetlands mitigation reports.

Multiple Habitat Conservation Plan, City of San Marcos, California. Generated and quantified multiple-scenario GIS databases of Conservation Areas for the Focus Planning Area within the City of San Marcos Subarea Plan, a component of the Multiple Habitat Conservation Plan. Prepared map graphics for the Natural Communities Conservation Plan for the City of San Marcos.

Resource Management

Old Mission Dam Project, Parks and Recreation Division, City of San Diego, California. Developed and analyzed GIS databases and produced graphics for wetlands delineation and vegetation map upstream of the historic Old Mission Dam. Prepared biological resources report graphics for CEQA documentation.

Buena Vista Creek Channel Maintenance Project, Engineering Division, Cities of Carlsbad and Oceanside, California. Developed and analyzed GIS databases for preparation of technical reports for CEQA documentation, wetlands permitting, and exotics removal plan.

Kern Valley Sanitary Landfill Closure and Embankment and Scour Protection, Waste Management Division, Kern County, California. Developed and analyzed GIS databases for impacts to non-tidal adjacent wetlands. Produced analytical summaries and graphics for JPA and Conceptual Wetlands Mitigation and Monitoring Plan.

State Route 125 South Quino Checkerspot Butterfly Habitat Restoration Project, California Transportation Ventures, City and County of San Diego, California. Prepared the grading design for a 40-acre Quino checkerspot butterfly mitigation site for SR 125 South on Otay Mesa. The project design considers the specific habitat requirements of Quino including host plants, nectar sources, topography that facilitates a prolonged life cycle for the host plant, *Plantago erecta*, and associated bare-ground areas for butterfly thermoregulation.

Fanita Ranch, Wetland Mitigation Program, Terrabrook Communities, Santee, California. Prepared off-site mitigation plan for Fanita Ranch; created GIS databases from GPS field data of existing vegetation; quantified existing conditions acreages.

University Commons and Rancho Santa Fe Road Widening Wetland Mitigation Programs, Brookfield Homes and City of Carlsbad, San Marcos, California. Prepared conceptual wetland mitigation plans for over 13 acres of wetland revegetation and enhancement for two adjacent projects along San Marcos Creek in San Marcos associated with project development and road improvements.

4S Ranch Wetland Mitigation Programs (Artesian and Lusardi Creeks), 4S Kelwood/ Newland Communities, Rancho Bernardo, California. Prepared conceptual wetland mitigation plans and final revegetation construction documents for mitigation programs associated with impacts to wetlands within two creek systems as part of the 2,891-acre 4S Ranch development within the County of San Diego.

Cuyamaca Rancho State Park, Green Valley Campground, ADA Campground Improvements, State of California, Department of Parks and Recreation, Southern Service Center, Cuyamaca, California. Prepared construction documents for rehabilitation of campsites within the Sweetwater Loop of the Green Valley Campground within Cuyamaca Rancho State Park.

Salton Sea State Recreation Area (SRA), Visitor Center Plaza, Capital Outlay Restoration and Rehabilitation Project, State of California, Department of Parks and Recreation, Southern Service Center, Salton Sea, California. Prepared construction documents for redesign, restoration, and rehabilitation of the existing Visitors' Center building, removal of deteriorated concrete paving, and replacement of outdated site amenities.

San Luis Rey River Recreation Trail, City of Oceanside, California. Prepared a conceptual wetland mitigation plan and detailed revegetation construction documents for implementation of approximately 1.28 acres of wetland creation and enhancement, as well as upland coastal sage scrub (CSS) transitional buffer habitat along the San Luis Rey River, in association with the city's recreation trail.

Transportation

Oceanside to Escondido Rail Project, North County Transit District (NCTD), Cities of Oceanside, Vista, San Marcos, and Escondido and County of San Diego, California. Created and analyzed GIS databases from field data of existing vegetation, wetlands, and special-status species and quantified existing conditions acreages and proposed impact acreages for 22-mile rail project. Produced analytical summaries and graphics for Biological Resources Report, Conceptual Wetlands Mitigation Plan, Exotics Removal Plan, Uplands Mitigation Plan, Brown-Headed Cowbird Trapping Plan, and a California gnatcatcher and least Bell's vireo Habitat Management and Monitoring Plan.

Oceanside to Escondido Bikeway Project, Cities of Oceanside, Vista, San Marcos, and Escondido, California. Analyzed bikeway wetland impacts and prepared support maps for amendments to the permits following issuance due to project changes and construction monitoring services.

Union Valley Parkway Project, City of Santa Maria and County of Santa Barbara, California. Created and analyzed GIS databases from field data, quantified existing conditions, and proposed impact acreages for 8,500-foot-long roadway project. Prepared biological resources report graphics in support of CEQA documentation.

SR 56 Wetland Mitigation Project, City of San Diego, California. Prepared the conceptual grading design, irrigation, and planting plans for State Route 56 Phases I & II, creating approximately 6 acres of wetlands and enhancing an additional 18 acres of existing degraded wetlands in Peñasquitos Canyon Preserve.

Water/Wastewater

Aliso Creek Emergency Sewer Line Relocation and Park Improvements, Moulton Niguel Water District, Orange County, California. Created and analyzed GIS databases of existing vegetation, wetlands, and special-status species and provided analytical summaries for sewer pipeline relocation and trail relocation. Prepared biological resources technical, wetlands delineation, and wetland revegetation report graphics.

Moreno–Lakeside Pipeline, San Diego County Water Authority, San Diego County, California. Developed and analyzed GIS databases and produced graphics for the EIR, biological technical studies, and focused surveys for special-status species for 8-mile water distribution pipeline project.

Encina Water Pollution Control Facility Phase V Expansion, Encina Wastewater Authority, Carlsbad, California. Responsible for preparation of environmental graphics for MND for the Phase V expansion project.

City Engineering and Capital Projects Department and Water Utilities Department, City of San Diego, California. Developed and analyzed GIS databases for several sewer and storm drain impacts under the city as-needed contract. Products included analytical tables, report graphics, and large-scale maps.

City of San Diego Metropolitan Wastewater Department As-Needed Biological Services Contracts, City of San Diego, California. Developed and analyzed GIS databases for ongoing emergency sewer repair impacts. Produced analytical summaries and graphics for biological technical studies and conceptual mitigation and monitoring reports.

San Joaquin Reservoir Project, Irvine Ranch Water District, Orange County, California. Responsible for preparing EIR graphics for the conversion of the 3,000-acre-foot potable-water reservoir to a reclaimed water storage reservoir.

Santa Ana Well Basin, Laguna Beach County Water District, Orange County, California. Responsible for preparing EIR graphics for this groundwater production project, which included a 9-mile water conveyance pipeline in the cities of Fountain Valley, Santa Ana, Tustin, and Irvine, California.

Yucaipa Non-Potable Water Distribution System, Yucaipa Valley Water District, Riverside and San Bernardino Counties, California. Created and analyzed GIS databases for distribution system and San Timoteo Creek. Prepared biological resources, wetlands delineation, and focused surveys for special-status species graphics for production of EIR and biological technical studies.

North Agua Hedionda Lagoon Interceptor Sewer Maintenance Access Road, Public Works Department, City of Carlsbad, California. Developed and analyzed GIS databases of existing vegetation, wetlands, and special-status species and quantified existing conditions acreages and proposed impact acreages for 2,500-linear-foot sewer pipeline and access road protection project. Produced analytical summaries and graphics for the EIR, JPA, Coastal Develop Permit (CDP), and Conceptual Habitat Revegetation Plan.

La Costa Greens, Leucadia County Water District, Carlsbad, California. Developed GIS databases for MND of the construction of 5,800 feet of new pipeline at the La Costa Resort and Spa and prepared supporting report graphics.

Sewer Pump Station Upgrade, Leucadia County Water District, Carlsbad, California. Created and analyzed GIS databases for vegetation and wetlands delineation along Batiquitos Lagoon. Produced analytical summaries and graphics for U.S. Army Corps of Engineers (ACOE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW) permits for wetland impacts associated with the upgrade of the pump station, construction of a vehicle turnaround area, and relocation of the access road.

Water and Sewer Capital Improvement and Emergency Projects, Rainbow Municipal Water District, San Diego, California. Developed and analyzed GIS databases for as-needed biological constraints analysis. Produced analytical summaries and graphics for biological technical studies.

Perris Valley Channel Lateral "B" State 2 Project, Riverside County Flood Control and Water Conservation District, Riverside, California. Developed and analyzed GIS databases, produced analytical summaries, and produced graphics for wetlands delineation of Perris Valley 2-mile-long study area.

Specialized Training

- ESRI, Coursework: Migrating from ArcView 3.x to ArcView 8
- Creating, Editing and Managing Geodatabases
- Creating and Editing Geodatabase Topology (ArcEditor and ArcInfo)
- Penn State Edition: Cartographic Design
- Autodesk Coursework: AutoCAD 2002 Update

Sharon Toland

NOISE SPECIALIST

Sharon Toland serves as the project manager and noise technical specialist for a variety of California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) documents and technical reports. Her expertise includes technical air quality, greenhouse gas, noise, and general CEQA/NEPA projects. Sharon's extensive experience in the preparation of CEQA/NEPA documents includes general and master planning, education and institutional, mixed-use, residential, coastal and marina, pipeline, and industrial projects. Sharon has conducted noise analyses using survey equipment, including ANSI Type I and Type II noise level meters, and the Federal Highway Administration (FHWA) Highway Noise Prediction Model (FHWA-RD-77-108), FHWA Traffic Noise Model (TNM), and Roadway Construction Noise Model noise models.

RELEVANT EXPERIENCE

HARRIS & ASSOCIATES

- **University of California San Diego,** *University of California (UC) San Diego Hillcrest 2019 Long Range Development Plan (LRDP) EIR.* Noise Specialist. Harris prepared an EIR for the proposed 2019 LRDP for the Hillcrest campus. Sharon prepared the noise technical report in support of the EIR. The 2019 LRDP aims to redevelop approximately 34 acres of the 62-acre campus resulting in removal of a vast majority of the 35 existing buildings, including replacement of the 11-story hospital. In order for the existing hospital to remain open until the proposed replacement hospital becomes operational, the project would require a total of six phases of construction lasting 15 years. The EIR and technical reports provide a detailed project-level analysis of the six project phases, as opposed to a program-level analysis that is typically prepared for a long range planning document. The noise technical report identified impacts by phase, and included interim scenarios when construction would occur simultaneous with previous phase operation.
- **San Diego County,** *Property Specific Request (PSR) General Plan Amendment (GPA) EIR.* Noise Technical Specialist. The County prepared a GPA to change the land use designation for 48 specific areas in the unincorporated county. These areas are referred to as PSRs, which were made by property owners who expressed concerns and are seeking a change with the land use designations that were applied to their property by the County's General Plan Update. To ensure the proposed GPA for the 44 PSRs comply with CEQA, the SEIR evaluated the environmental impacts and mitigation measures associated with the PSRs. The PSRs and their associated study areas consist of over 1,200 parcels totaling over 13,000 acres throughout the unincorporated county. Sharon prepared the Noise Technical Report for the project in accordance with the County's design and content requirements. The noise report utilized data from the noise report for the General Plan Update to the extent feasible, but required coordination with the County and project traffic consultant to update traffic noise modeling and General Plan noise contour maps. Impacts were identified for specific PSRs or specific community where feasible.
- **City of Escondido,** *City of Escondido Touchstone Communities Development Project Technical Analyses Memorandums (AQ, GHG, Noise), Escondido, CA.* Technical Specialist. Sharon prepared the air quality, GHG, and noise technical memorandums for these two proposed developments in downtown Escondido. The Aspire project proposed to construct a 6-story mixed-use building that includes 131 residential units for rent, including 11 units reserved for Very Low Income Households, 4,289

EDUCATION

BS, Environmental Studies

Coursework (No Degree), Extension CEQA Course

CERTIFICATIONS

County of San Diego, Certified CEQA Consultant – Noise, Air Quality

TRAINING

Association of Environmental Professionals, Advanced CEQA Workshop, San Diego, 2013

Bowlby & Associates, FHWA Traffic Noise Model 2.5 32-Hour Course

square feet (sf) of commercial space, underground parking, an outdoor common area with pool, and other amenities on a 1.04-acre site. The Ivy project proposed to construct a five-story mixed-use building that includes 127 residential units for rent including 11 units for Very Low Income Households, 1,175 square feet of commercial space, underground parking, an outdoor common area with pool, and other amenities on a 1.002-acre site. Noise project design features were developed to minimize construction noise and vibration, and operational noise from HVAC units and trash collection.

- **Guajome Schools, LLC,** *Guajome Park Academy Expansion Project IS/MND*. $30,645. 2016 to 2017. Technical Specialist. The Harris team prepared an Initial Study/Mitigation Negative Declaration (IS/MND) for the proposed project in Vista, California. The proposed project seeks approval of an amendment to a Special Use Permit to allow the Guajome Park Academy kindergarten through 5th grade Elementary Charter School to share an existing 36,408 square foot building with a church that currently uses the building. Sharon prepared the air quality, GHG, and noise technical analyses in support of the IS/MND. Noise compatibility was a key issue for the project because the site was located in an existing industrial park.
- **Santa Cruz County Regional Transportation Commission (RTC),** *North Coast Rail Trail Project EIR*. Technical Specialist. The North Coast Rail Trail Project (Project) would be a new multi-use trail to be shared by bicyclists and pedestrians. It would extend approximately 7.5 miles along the rail line from the Wilder Ranch State Park parking lot on the south to the Davenport Beach parking area on the north. The Project would include a paved path with striping, parallel unpaved path and/or shoulder, fencing, and parking improvements with trail connections at three locations along the alignment. Sharon prepared the air quality, GHG, and noise technical analyses for the EIR.

OTHER EXPERIENCE

- **City of Chula Vista,** *Second-Tier EIR for the Otay Ranch Village 8 West Sectional Planning Area (SPA) Plan, Chula Vista, CA*. Project Manager and Air Quality and Noise Technical Report Preparer. The Otay Ranch Village 8 West project is part of an approximately 23,000-acre Otay Ranch General Development Plan (GDP) that includes a broad range of residential, commercial, retail, civic, industrial development, and an open space preserve system. The Otay Ranch Village 8 West project proposed the development of 320 acres of land including a mixed-use town center, a community park and other parkland, a junior high school, an elementary school, and a total of 2,050 multi- and single-family residential units. Environmental issues of importance to the project included biology, as the Otay Ranch Village 8 West area includes 15.6 acres of the city of Chula Vista's Multiple Species Conservation Plan (MSCP) area, as well as issues related to traffic, public services, and utilities, land use, and noise. Sharon took ambient noise measurements using an ANSI Type II noise level meter. A key issue related to noise was potential noise impacts to proposed residences along new roadways as a result of project traffic. The FHWA Traffic Noise Model (TNM) was used to determine noise contours for the proposed roadways, identify affected residences, and propose the necessary noise attenuation structures to reduce impacts to a less than significant level. Mitigation included identification of buildings that would require additional design features to provide acceptable interior noise and a list of design feature options.
- **City of Chula Vista,** *Second-Tier EIR for the Otay Ranch Village 9 SPA Plan, Chula Vista, CA*. Sharon assisted in the preparation of the second-tier EIR for the Otay Ranch Village 9. Project Manager and Air Quality and Noise Technical Report Preparer. The Otay Ranch Village 9 is part of the approximately 23,000-acre Otay Ranch GDP that includes a broad range of residential, commercial, retail, civic, industrial development, and an open space preserve system. The Otay Ranch Village 9 project proposed the development of 273 acres of land including a mixed-use urban center and town center, mixed-use residential development, parks and recreational facilities, an elementary school site, and a total of 4,000 multi- and single-family residential units. Environmental issues of importance included biology, as the proposed project area includes 4.2 acres of the city of Chula Vista's MSCP area. Sharon took ambient noise measurements using an ANSI Type II noise level meter. A key issue related to noise was potential noise impacts to proposed residences along new roadways as a result of project traffic. The FHWA Traffic Noise Model (TNM) was used to determine noise contours for the proposed roadways, identify affected residences, and propose the necessary noise attenuation structures to reduce impacts to a less than significant level.
- **San Diego Unified Port District,** *San Diego Marriott Hotel & Marina Facilities Improvement Project IS/MND and EIR, San Diego, CA*. Sharon assisted in the preparation of the IS/MND and EIR for this project in the Port of San Diego's jurisdiction in downtown San Diego, including preparation of the noise, air quality, and GHG emissions studies. The project proposed several upgrades and features intended to modernize the hotel facility. Project improvements included demolition of the existing Marriott Hall and construction of a new and expanded ballroom and exhibit hall, construction of an outdoor event

area, and construction of public access corridor improvements to improve public access to the San Diego Bayfront. Key issues included the loss of parking as a result on project implementation and aesthetic impacts to views of the bayfront. Due to public response related to these key issues during the public review for the IS/MND, it was determined that an EIR was the appropriate document to prepare for the project. Preparation of the EIR carefully and thoroughly addressed the public concerns raised during the IS/MND public review period.

Sharon conducted ambient noise measurements for the project using an ANSI Type 1 noise level meter. The measurements were used to determine the noise level generated by the on-site cooling towers, a stationary noise source that would be expanded as part of the proposed project. Technical information provided by the manufacturers of the proposed construction equipment was used to determine the potential noise impacts related to pile driving during construction. The URBEMIS model, the California Climate Action Registry's General Reporting Protocol, Version 3.1, and the EPA's State Workbook: Methodologies for Estimating Greenhouse Gas Emissions were used to estimate the emissions of criteria air pollutants and GHG emissions that would result from construction and operation of the proposed project.

- **City of Vista,** *Downtown Vista Specific Plan Update Program EIR*. Preparer. Sharon assisted in the preparation of the noise technical report to support the EIR for the Downtown Vista Specific Plan Update. The noise technical report for the EIR assessed the potential operations and construction-related noise and vibration impacts that could affect the Specific Plan, as well as land uses in the plan area. The plan area encompassed approximately 317 gross acres located generally in the center of the city. A total of 1,270 new dwelling units and 1,866,737 additional square feet of development were proposed for the SPA. Key noise issues included traffic noise, operation of the SPRINTER commuter railroad, and impacts to noise-sensitive land uses in mixed-use developments. The FTA CREATE Noise and Vibration Model was used to determine potential impacts of the SPRINTER light rail system.
- **California State University San Marcos,** *Campus Master Plan Update Environmental Impact Report*. Preparer. This project involved the preparation of the EIR, Noise Technical Report. This programmatic EIR analyzed environmental impacts for the physical development of the campus from 2009 through campus buildout (approximately 2030). This EIR addressed a full range of issues including aesthetics, air quality and health risk assessment, biological resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, population and housing, public services, recreation, transportation, traffic and parking, and utilities, service systems, and energy. Sharon assisted in the preparation of the noise technical report that included background information on noise standards and conditions within the campus and surrounding city of San Marcos, and an analysis of the potential noise related impacts associated with implementation of the proposed Campus Master Plan Update. Noise generated from transportation, operation, and construction was examined in terms of potential direct and cumulative noise impacts. The FHWA Highway Noise Prediction Model was used to determine the traffic noise impacts. Potential impacts associated with groundborne vibration primarily resulting from construction and railroad operations were also included. Key noise issues included the Sprinter light-rail line and operation of two utilities plants on campus near residences and academic buildings.
- **County of San Diego,** *County of San Diego General Plan Update EIR, Global Climate Change Analysis, and Noise Technical Report, San Diego County, CA*. Sharon assisted in the preparation of the Noise Technical Report in support of the EIR for the County of San Diego General Plan Update EIR. The County of San Diego consists of 3,572 square miles of unincorporated area, 23 communities, and a population more than 481,000 people. The program EIR addressed the potential environmental impacts of the county's future growth accommodated under the updated General Plan. The noise technical report for this project included background information on noise standards and conditions within the County, and an analysis of the potential noise related impacts associated with implementation of the proposed General Plan Update. Noise generated from transportation, operation, construction, and nuisance noise was examined in terms of potential direct and cumulative noise impacts. Potential impacts associated with groundborne vibration primarily resulting from construction and railroad operations were also included.
- **Palomar Community College District,** *San Marcos Campus Facilities Master Plan Environmental Impact Report*. Environmental Scientist/Contributing Author. Sharon was responsible for the EIR and Noise Technical Report for this project, which analyzed the environmental impacts of future physical improvements on the San Marcos Campus to accommodate the year 2022 maximum enrollment of 25,000 students. Key environmental issues included biological resources, noise, and transportation/traffic. The project included infrastructure improvements; demolition of older, single-story buildings; construction of new multi-story buildings; replacement of inadequate temporary space with permanent facilities; modernization of the majority of existing buildings to remain; consolidation of instructional space to

minimize land development and create more open space; and facilities' planning that is sensitive to environmentally-sensitive areas and topography. The noise technical report included an assessment of the potential noise and vibration impacts associated with the implementation of the PCCD San Marcos Campus Master Plan Update from vehicular traffic, stationary noise sources, and construction activity.

- **City of Escondido,** *General Plan Update, Climate Action Plan, and Downtown Specific Plan Update Environmental Impact Report*. Air Quality and Noise Technical Specialist. Sharon assisted in the preparation of the air quality technical report, noise technical report, and EIR for this project. The EIR addressed 17 environmental topics including aesthetics; agriculture and forestry resources; air quality; biological resources; cultural resources; geology and soils; GHG emissions; hazards and hazardous materials; hydrology and water quality; land use and planning; mineral resources; noise; population and housing; public services; recreation; transportation and traffic; and utilities, service systems, and energy. The EIR focused on 15 study areas where changes to land use and development intensities were concentrated under the proposed plan. Sharon assisted in the preparation of the noise technical report for this project, which provided background information on noise standards and conditions within the City and its Sphere of Influence and an analysis of the potential noise-related impacts associated with implementation of the proposed General Plan Update. Noise generated from transportation, operation, construction, and nuisance noise was examined in association with potential direct and cumulative noise impacts. Potential impacts associated with groundborne vibration and noise, primarily resulting from construction and railroad operations, was also included.
- **New Urban West,** *Amanda Estates Development Project IS/MND, Escondido, CA*. Assistant Project Manager and Noise Technical Report Preparer. Sharon assisted in the management of preparation of the IS/MND, visual analysis, and noise technical report for this residential project. The project proposed 21 new single-family residences and roadway improvements in an area of unincorporated San Diego County that would be annexed into the city of Escondido as part of the proposed project. Construction noise was a key issue for the proposed project due to the site's location in a semi-rural neighborhood, adjacent to existing homes. Sharon developed a mitigation plan for construction noise that protected existing homes in accordance with the Escondido Noise Ordinance while allowing flexibility for the construction manager. Visual impacts were also a key concern for the City due the site's location along a ridgeline.
- **New Urban West/City of Escondido,** *Oak Creek Residential Noise Technical Report*. Noise Technical Report Preparer. Sharon prepared the noise technical report for this 65-unit single-family residential project located in the City's Sphere of Influence. Key issues included potential vibration impacts during construction based the City's General Plan thresholds and the location of residences adjacent to I-15. The FHWA Traffic Noise Model was utilized to model potential on-site noise as a result of I-15, taking into account differences in topography and an existing natural berm between the proposed lots and the freeway. Modeling also determined the noise barrier location and height required to reduce impacts to a less-than-significant level.
- **University of California San Diego,** *Gilman Drive Bridge Project Air Quality and Noise Technical Reports*. Noise Technical Report Preparer. Sharon prepared the Noise Study Report and Noise Abatement Decision Report and air quality reports for this project in accordance with Caltrans guidelines and templates. The FHWA Traffic Noise Model was used to model changes in traffic noise exposure at campus residences near the proposed bridge location. Although the project itself was not anticipated to generate new traffic noise, FHWA regulations required comprehensive analysis of exposure of sensitive receptors to existing and future noise from I-5, the primary traffic noise source in the area. Because it was determined that future I-5 conditions would have the potential to substantially increase noise levels at the modeled receptors, the Noise Abatement Decision Report was prepared to evaluate feasibility of a noise wall. The Traffic Noise Model was used to determine the barrier location and height. Sharon coordinated directed with Caltrans to obtain cost data to evaluate the feasibility of the wall based on FHWA criteria and worked closely with Caltrans' technical specialists to confirm modeling assumptions were consistent with the Caltrans North Coast Corridor project. The FHWA NEPA analysis excluded certain CEQA issues, requiring Sharon to provide supplemental analysis of direct and cumulative project impacts to UCSD for use in CEQA documentation.

RESUME

JOHN BOARMAN, P.E.
PRINCIPAL

PROFESSIONAL REGISTRATION
Civil Engineer, California (C 50033)
Traffic Engineer, California (TR 1855)

EDUCATION
Purdue University, Master of Science in Civil Engineering

PROFESSIONAL EXPERIENCE
Transportation Engineer: Linscott, Law & Greenspan (1990 to Present)

PROFESSIONAL MEMBERSHIPS
Institute of Transportation Engineers, Associate Member
Association of Environmental Professionals, Member

AREAS OF PROFESSIONAL COMPETENCE
Traffic Sections of Environmental Impact Studies and Reports
Traffic Impact Studies
Parking Studies
Transportation Planning

REPRESENTATIVE ASSIGNMENTS

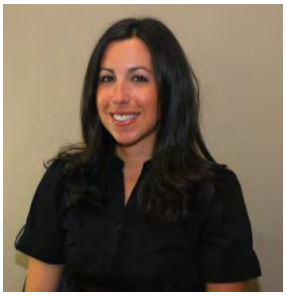
Mr. Boarman has personally prepared, participated in or directed the preparation of several hundred traffic impact studies and reports and their subsequent integration into Environmental Impact Reports, Statements and Assessments (EIR, EIS, EIA). His work has included not only traffic impact studies but studies of parking impact and sufficiency, site access and circulation, and internal auto, pedestrian and public transit traffic circulation.

Mr. Boarman has worked closely with other professionals in the preparation and presentation of environmental documentation to citizens groups, local government engineers and planners, Transportation Commissions, Planning Commissions, and City Councils. He has also made presentations to the California Coastal Commission.

Mr. Boarman has managed traffic studies for several high profile projects including the Carlsbad Costco, the San Vicente Dam Raise Project, the North Embarcadero Visionary Plan, the South Embarcadero Urban Development Plan, the City of Santee General Plan, the Imperial County General Plan Update, the San Diego Convention Center Expansion, the Hotel Del Coronado Expansion, the Qualcomm Stadium Expansion, the Imperial Valley Mall, Fanita Ranch, The Del Mar Fairgrounds Master Plan, the I-805/Mira Mesa Blvd. PSR, and the 2,700 home Merriam Mountains project. He has managed numerous 4S Ranch traffic studies including the 4S Ranch Speed Surveys, 4S Ranch Traffic Calming, 4S Ranch Stop Sign Study, and the 4S Ranch Stop Sign Warrants. He has also managed traffic access/ studies for several affordable housing projects, including the Iris at San Ysidro, 517 West San Ysidro, and Nestor Seniors.

RESUME

Cara Hilgesen
Senior Transportation Planner



PROFESSIONAL EXPERIENCE
Transportation Planner: Linscott, Law & Greenspan
(January 2007 to present)

EDUCATION
San Diego State University, Master of City Planning
San Diego State University, Bachelor of Science in Business Administration, Real Estate Finance

PROFESSIONAL MEMBERSHIPS
Association of Environmental Professionals, Chapter Treasurer (October 2008 to December 2014)

AREAS OF PROFESSIONAL COMPETENCE
Transportation Planning

- Transportation Demand Management (TDM) Plans
- Vehicle Miles Traveled (VMT) Analyses
- Environmental Impact Report (EIR) Traffic Sections
- Traffic Impact Studies (TIS)
- Complete Streets Assessments

Parking Studies
Transportation Analysis Software
Geographic Information Systems (GIS)

REPRESENTATIVE ASSIGNMENTS
Ms. Hilgesen has personally prepared and participated in the preparation of several traffic impact studies and reports and their subsequent integration into Environmental Impact Reports, Statements and Assessments (EIR). Her work has also included parking demand studies, site and circulation studies, VMT analyses, and the use of GIS in the field of transportation and land use. She has assisted in the preparation of TDM Plans for local and out-of-state regional agencies.

Ms. Hilgesen has managed, prepared or assisted in preparing transportation studies for projects such as the Fanita Ranch Specific Plan, Escondido General Plan Update, El Cajon Downtown Specific Plan, Chula Vista General Plan and General Development Plan Amendment, Downtown Marriott Hall Expansion, and various other projects. Ms. Hilgesen is also a practice leader for VMT analyses within the San Diego Office, having developed the regional methodology in conjunction with SANDAG. The methodology was published into a white paper through the San Diego Chapter of the Institute of Transportation Engineers (ITE) in June 2013. She is also involved with the SB 743 ITE Task Force developing various criteria for assessing VMT impacts in the region.