El Casco System Project

Mitigation Monitoring, Compliance and Reporting Program

FINAL REPORT

Prepared for

California Public Utilities Commission

Aspen Environmental Group

April 2014

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1. Introduction and Project Overview

This Final Construction Completion Report has been developed to summarize construction and compliance monitoring activities conducted for Southen California Edison (SCE) Company's El Casco System Project. The approved Project includes the construction of the El Casco Substation, upgrades to the existing Zanja and Banning Substations and the Mill Creek Communications Site,[1] upgrades to 15.4 miles of existing 115 kV subtransmission line and associated structures, and the installation of fiber optic cables within existing conduits in public streets and on existing SCE structures between the cities of Redlands and Banning. See map of all project components on the following page.

The California Public Utilities Commission (CPUC) is the State lead agency, responsible for compliance with the California Environmental Quality Act (CEQA). A Draft Environmental Impact Report (EIR) analyzing the El Casco System Project was published by the CPUC on December 12, 2007, in compliance with CEQA guidelines. A Final EIR was published on April 11, 2008. Prior to certification of the Final EIR, SCE provided substantial new information regarding the ambient noise levels adjacent to the existing single-circuit 115 kV subtransmission line. The CPUC revised the EIR's noise analysis and published a Recirculated Draft EIR on July 9, 2008. The Recirculated Final EIR was published on October 17, 2008. On December 18, 2008, the CPUC certified the Final EIR and approved a Permit to Construct the El Casco System Project under Decision 08-12-031. Substation construction began in late February 2009. At that time SCE had not completed final engineering for the 115 kV subtransmission line. Once engineering had been completed it was determined that the design within the 115 kV segments, specifically Segments 2 and 4 had changed substantially from the approved project. SCE filed a Petition for Modification to the approved El Casco System Project on August 29, 2011. A Supplemental EIR (SEIR) was required. The Draft SEIR was published November 30, 2011. After public review the Final SEIR was published February 17, 2012. The CPUC granted approval of SCE's Petition to Modify Decision 08-12-031 on March 22, 2012 in Decision 12-03-035.

Construction of the El Casco System Project took place between February 2009 and June 2013, and the entire system was energized by the end of summer 2013.

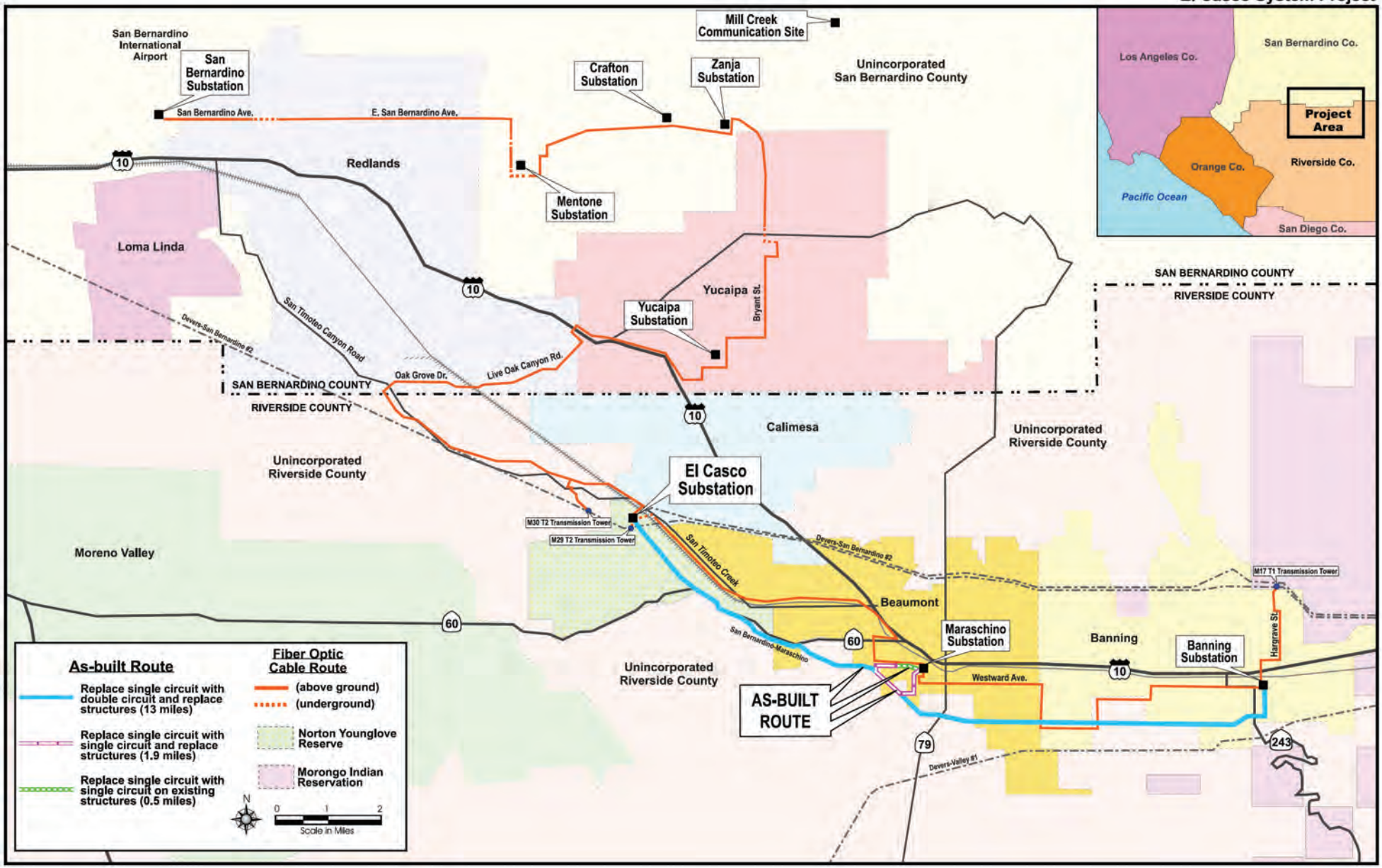
Section 1, Introduction and Project Overview, provides a brief overview of the El Casco System Project and project approvals granted by the CPUC and jurisdictional agencies. In addition, Section 1 outlines the role and responsibility undertaken by the CPUC Project Manager and by Aspen Environmental Group as the mitigation monitoring team, including pre-construction compliance review. The methods established for addressing non-compliance issues, variances, and Temporary Extra Workspace (TEWS) requests are also discussed.

The El Casco System Project consisted of four separate construction activities including the installation of a new electric substation covered in Section 2; the replacement of 15.4 miles of existing single-circuit subtransmission lines with higher capacity subtransmission lines covered in Section 3; the rebuilding of two existing electrical substations covered in Sections 4 and 5; and the installation of fiber optic cables within public streets and on existing SCE structures covered in Section 6.

Section 7 provides a comprehensive summary of post-construction requirements for the project including restoration activities, and Section 8 presents "lessons learned" and recommendations for future CEQA and mitigation monitoring efforts.

[1] SCE decided to suspend work at the Mill Creek Site indefinitely. As of January 2014, no work has been conducted.

El Casco System Project



1.1 Overview of the SCE El Casco System Project

SCE constructed a 220/115/12 kV distribution substation within the Norton Younglove Reserve in the County of Riverside and related facilities listed below, known as the El Casco System Project. The El Casco System Project was built to relieve a projected electric system deficiency in portions of Riverside and San Bernardino Counties, and ensure safe and reliable electric service to existing and approved development in those areas. The El Casco System Project Area traverses the Cities of Beaumont, Banning, Yucaipa, and Redlands, as well as Riverside and San Bernardino Counties.

As built, the El Casco System Project consists of:

- Construction of a new 220/115/12 kV distribution substation within the Norton Younglove Reserve in the County of Riverside, associated 220 kV and 115 kV interconnections, and new 12 kV distribution line connections out of the substation;
- Replacement of a total of 15.4 miles of existing single-circuit 115 kV subtransmission lines with either new, higher capacity double-circuit or new single-circuit 115 kV subtransmission lines as well as replacement (except for 0.5 miles) of existing support structures within existing SCE rights-of-way (ROW) in the Cities of Banning and Beaumont and unincorporated areas of Riverside County;
- Rebuilding 115 kV switchracks within Zanja and Banning Substations in the cities of Yucaipa and Banning, respectively; and
- Installation of fiber optic cables within public streets and on existing SCE structures between the cities of Redlands and Banning.

1.2 Role of CPUC Monitoring Team

The CPUC as the Lead Agency was responsible for ensuring that all mitigation measures were implemented throughout construction and operation of the El Casco System Project. In addition many other local, state, and federal agencies have jurisdiction over lands crossed by the Project route or resources affected by the Project. These agencies and associated Project permits are summarized in Section 1.3.

The CPUC Project Manager, Ms. Lynne Mosley, had the overall responsibility for ensuring that mitigation measures were implemented as adopted by the CPUC. Ms. Mosley issued Notices to Proceed (NTPs) for construction, as well as issued variance approvals as requested by SCE. The CPUC delegated field monitoring and reporting responsibilities to Aspen Environmental Group (Aspen), its third-party monitoring firm. Please note that Aspen also assisted the CPUC with the El Casco System Project EIR and subsequent SEIR preparations.

Aspen's Monitoring Project Manager, Vida Strong, supervised all project monitoring activities. She was responsible for direct communication with the CPUC Project Manager, including preparation of weekly reports which were distributed to numerous jurisdictional agencies. Other responsibilities included managing the field monitoring team, reviewing non-compliance documentation, over-seeing the issuance of Project Memoranda (PM) and Non-Compliance Reports (NCRs), and preparing recommendations for CPUC consideration on Project NTPs and variance requests.

Six CPUC Environmental Monitors (EMs) performed monitoring of SCE submittals and field operations for compliance with mitigation measures, plans, and agency permits and requirements during all construction activities over the 4.5-year construction effort. In the field, the CPUC EMs served as the main point of contact for SCE, as well as for a variety of federal, State, and local agencies. CPUC EMs prepared and submitted daily and weekly compliance reports to the Aspen Project Manager. The CPUC EMs also pro-

vided field input on variance requests and attended meetings held by SCE and its contractors. The CPUC EMs have been trained in a number of disciplines including environmental science, biology, chemistry, and cultural resources and are experienced in compliance monitoring.

1.3 Pre-Construction Compliance Review and Notices to Proceed

Prior to construction SCE was required to obtain several permits and jurisdictional approvals. Aspen tracked the necessary permitting requirements to ensure that all the applicable agency permits had been issued prior to construction. Jurisdictional oversight and associated permits issued for the project included:

Federal:

- U.S. Army Corps of Engineers (USACE): Nationwide or Individual Permit, Section 404 of the Clean Water Act File No. SPL-2009-00080-DPS.
- U.S. Fish and Wildlife Service (USFWS): Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Take Permit TE-088609-0, MSHCP Certificate of Inclusion for the El Casco System Project acknowledgement.

State:

- CPUC: Certificate of Public Convenience and Necessity; NTPs
- California Department of Fish and Game (CDFG):[2] 1600 Lake and Streambed Alteration Agreement, CDFG Findings of Fact Natural Community Conservation Plan Permit Western Riverside County MSHCP 2835-2003-001-06, Certificate of Inclusion for El Casco System Project acknowledgement.
- California Department of Transportation (Caltrans): Transportation Permit, Encroachment Permit.
- State Water Resources Control Board (SWRCB): State Water Quality Certification, Storm Water General Permit, Storm Water Pollution Prevention Plan (SWPPP) approval, Waste Discharger Identification (WDID) Number 836C351060.

Regional:

- Regional Water Quality Control Board (RWQCB), Regions 7 and 8: Section 401 of the Clean Water Act File No. SB09005IN; In conjunction with SWRCB administered the National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Associated with Construction Activity.

Local:

- Western Riverside County Regional Conservation Authority (RCA): Western Riverside County MSHCP, Habitat Assessment & Negotiation Strategy (HANS) Process. The MSHCP was developed to provide biological impact mitigation under CEQA, and regulatory take authorization under the Federal Endangered Species Act and California Endangered Species Act. SCE was granted Participating Special Entity (PSE) status for the El Casco System Project and was issued a Certificate of Inclusion February 20, 2009.
- Riverside and San Bernardino Counties: Encroachment Permits.
- Cities of Banning, Beaumont, and Yucaipa: Encroachment Permits.

[2] Note that in 2013 the agency changed its name to California Department of Fish and Wildlife (CDFW). Because CDFG was in use during permit issuance and correspondence documentation during El Casco System Project construction, CDFG is used in the text of this document.

Based on studies conducted for the EIR and SEIR for the Project, five special-status plants and eight special-status animals could potentially be found in the Project area. Focused biological surveys for special-status plants and animals were conducted in the spring and summer of 2005 through 2008 by SCE's contracted biologists. The El Casco System Project was determined to impact smooth tarplant, Los Angeles pocket mouse, southwestern willow flycatcher, and least Bell's vireo, as well as a number of species covered by the MSHCP Federal Take and State Natural Community Conservation Plan permits.

Dozens of Environmentally Sensitive Areas (ESAs) for cultural resources were identified within the Project area. They were avoided by installing temporary ESA fencing prior to groundbreaking activities. Portions of the Project area are sensitive for paleontological resources. Numerous significant paleontological finds were reported during construction.

All employees working on the Project were required to attend an environmental training session (Worker Environmental Awareness Program or WEAP) before they could begin work. SCE's environmental representatives presented the training sessions, which covered biological, cultural and paleontological resource issues, required protective measures (erosion control, dust control, and safety), as well as State and federal laws, and associated reporting procedures.

Prior to and during construction SCE was required to submit numerous studies, surveys and plans as outlined in the El Casco System Project mitigation measure requirements. All submittals were reviewed by Aspen to ensure that appropriate environmental protection would take place. Please see below for a listing of submittals. Note that any applicable mitigation measures follow the title (i.e. Mitigation Measure B-4 would just read B-4 and Applicant Proposed Measure Bio-2 would simply read APM-Bio-2).

- Fugitive Dust Control Plan, AQ-1a, APM-Bio-5
- Exhaust Emissions Reduction Plan, AQ-1b
- Construction Notification Plan, LU-2b
- Coordination with School Districts, Emergency Service Providers, residents and Newspaper notification, LU-2a, T-4, T-5
- Biological Resources Habitat Restoration/Compensation Plan, B-1a, V-2a, V-2b
- Smooth Tarplant Habitat Mitigation and Monitoring Plan (HMMP), B-1a
- Riparian and Riverine HMMP, B-1a
- Pre-construction protocol level surveys, focused nesting surveys and monitoring for breeding birds, B-4, APM-Bio-2
- Surveys for sensitive and special management plant species, B-6, APM-Bio-1, APM Bio-11
- Sensitive reptile pre-construction surveys, B-13a, B-13b
- Surveys to avoid active burrows or nests (badger dens and woodrat middens), B-18
- El Casco System Project Active Nest Management Plan and Buffer Guidance, B-4
- Los Angeles pocket mouse pre-construction survey and avoidance map, B-19
- SCE Weed Control Memo, Vehicle washing logs, B-3a
- Noise monitoring logs for areas adjacent to the El Casco Substation riparian habitat, B-5a, APM-Bio-3
- 2006 APLIC Memo Submittal, B-9, B-10, APM-Bio-14
- San Timoteo Creek, HDD Frac-out contingency Plan, APM-Bio-8, Hyd-2b, Hyd-2c
- Pre-construction surveys for Los Angeles pocket mouse, Stephen's kangaroo rat, western burrowing owl, APM-Bio-11
- Pre-construction cultural surveys, CR-1a, APM-Cul-2, APM-Cul-4
- Cultural Resources Treatment Plan, CR-1b, APM-Cul-1
- Cultural Monitor Resumes, CR-1c

- El Casco Project Cultural Curation Agreement, CR-2, APM-Cul-3
- El Casco Project Paleontology Inventory Report, CR-3a, APM-Paleo-1
- El Casco Project Paleontology Treatment Plan, CR-3b, APM-Paleo-2, APM-Paleo-3
- El Casco Final Paleontological Report with Results of the Paleontological Resources Monitoring Plan, CR-3d, APM-Paleo-4, APM-Paleo-5, APM-Paleo-6
- Geotechnical surveys and studies for slope instability, landslides, corrosive soils, effects of ground-shaking, liquefaction and lateral spreading, active fault zones, Geo-1, Geo-2, Geo-3, Geo-4, Geo-5a, Geo-5b, Geo-6, Geo-7, APM-Geo-1, APM Geo-2, APM-Geo-3
- Spill Prevention Countermeasure and Control (SPCC) Plans, Haz-1c
- Fire Plan, Haz-8a, Haz-8b, APM-Haz-1
- Worker Environmental Awareness Program (WEAP), Haz-1a, CR-3e, APM Hydro-2b
- SWPPP, Hyd-1b, APM-Bio-9, APM Hydro-2c
- Erosion Control Plan, Hyd-1c
- Transportation Management Plan, T-1c, T-1d, T-3, T-5, T-6
- Hazardous Substance Control and Emergency Response Plan, APM Hydro-8
- El Casco Substation Screening Plan, V-3a
- El Casco Substation Lighting Plan, V-1b
  El Casco Substation Hydrology Report, Hyd-1c, Hyd-7, APM Hydro-2b
- Erosion Control and Grading Plan for the El Casco Substation, Hyd-7, APM Hydro-2a, APM Hydro-2c
- Noise Control Plan, APM Noise-2
- Reduce Visibility of Construction Activities and Equipment E-mail Report, V-1a
- Regulatory Permit Acquisition and MSHCP Compliance, B-1b, APM-Bio-4
  - MSHCP HANS Process Biologist Resumes
  - West Riverside County MSHCP Federal Take Permit June 2004
  - West Riverside County MSHCP State Permit June 2004
  - Determination of Biologically Equivalent (DBESP) Riverine Resources and Smooth Tarplant ECSP December 2008
  - DBESP Southwestern Willow Flycatcher, Least Bell's Vireo, Los Angeles Pocket Mouse ECSP December 2008
  - Public/Quasi Public (PQP) Biological Equivalency Report ECSP 1-9-09
  - Participating Special Entity (PSE) Review 1-12-09

As pre-construction work was completed, SCE submitted multiple separate NTP requests to the CPUC for construction of various types and areas. This allowed the CPUC to issue NTP authorizations for separate project components, rather than require completion of all requirements for the entire Project before issuing an NTP.

During the pre-construction process, SCE participated in conference calls and site visits with the Aspen team, CPUC, and other agencies. The purpose of the pre-construction coordination process was to discuss the status of documents and plans, document the findings of data reviews and jurisdictional agency approvals, review SDG&E submittals, and document the status of mitigation measure compliance as these applied to each NTP requested.

Ten separate NTP Requests, three NTP Modification Requests, and an NTP Addendum Request were made for different phases of construction, including vegetation clearing, fiber optic work, El Casco Substation construction, upgrades at existing substations, and 115 kV subtransmission segment work. The purpose of the pre-construction process was to ensure that all actions and submittals were completed for the

Project components and geographic area covered by each NTP Request. See Table 1 for a summary of all NTPs issued. Each NTP authorization documented the thorough evaluation of all activities covered under that NTP. The evaluation process ensured that all mitigation measures and permit conditions applicable to the location and activities covered in the NTP were implemented, as required in the CPUC's Decision.

Table 1. Notices to Proceed

NTP Number	Date Requested	Date Issued	Description of Work
#1	02/20/09	02/23/09	Vegetation clearing activities at the future El Casco Substation Site located in the Norton Younglove Reserve Area in Riverside County.
#2	05/15/09	05/22/09	Construction of the underground fiber optic elements of the El Casco System Project in the Cities of Banning and Beaumont.
#3	04/10/09	08/13/09	Banning Substation
#3 Mod #1	08/21/09	08/26/09	Modify work within Banning Substation and add work at 3 existing transmission poles located outside of the substation.
#4	03/05/09	08/27/09	Fiber optic cable installation, remaining (see NTP #2).
#4 Mod #1	09/30/09	10/02/09	Tree trimming.
#5	05/08/09	08/27/09	El Casco Substation construction.
#6	06/19/09	12/02/09	Zanja Substation
# 6 Mod #1	08/13/10	08/23/10	Replace old lattice tower with lightweight steel pole outside of Zanja Substation.
#7	12/17/09	01/05/10	115 kV Subtransmission lines replacement, Segment 3.
#8	02/26/10	07/19/10	115 kV Subtransmission lines replacement, Segments 5 through 8.
#8 Addendum	12/06/10	12/14/10	Permanent road extensions to two pole locations along subtransmission Segment 8.
#9	02/02/12	02/22/12	115 kV Subtransmission lines replacement, Segment 1.
#10	03/03/09	05/18/12	115 kV Subtransmission lines replacement, Segments 2 & 4.

1.4 Compliance Monitoring

Compliance monitoring by the CPUC EMs was intended to chronicle and document SCE's compliance with project mitigation measures, compliance plans, and permit conditions. Compliance monitoring was implemented to minimize or eliminate potential significant impacts and to protect environmental resources. A Non-Compliance was defined as "any deviation from applicable mitigation measures, applicant-proposed measures and project parameters, permit conditions or requirements, and approved plans." A Project Memorandum (PM) was a written warning of a non-compliance activity. A Non-Compliance Report (NCR) would have been issued if chronic non-compliance activity occurred or a blatant disregard for project mitigation measures, compliance plans, or permit conditions was demonstrated. No CPUC NCRs were issued on the El Casco System Project. PMs were typically issued after an initial verbal warning. The CPUC issued six PMs and recorded one incident during construction. In addition, SCE documented one internal non-compliance. The compliance record for the El Casco System Project is discussed in greater detail in Sections 2 through 6 and is summarized in Table 2 below.

Table 2. Non-Compliance, Project Memoranda, and Other Incidents

Type	Date Issued	Description
CPUC PM #1	03/16/09	Failure to comply with Mitigation Measure B-18 before, during and after vegetation clearing at the El Casco Substation site. Construction equipment went outside of approved Project boundaries.
SCE NC	08/21/09	A SCE internal noncompliance at the Banning Substation was issued for mobilization of the site before environmental training and biological pre-construction sweep were conducted.
CPUC PM #2	08/27/09	The initiation of construction activity before CPUC authorization and validation of the biological survey at the site of the NTP #3, MOD #1 pole work in Banning.
CPUC PM #3	01/14/10	Use of an unapproved area for staging and parking at the Zanja Substation site.
CPUC PM #4	03/16/10	Riparian work during nesting bird season along El Casco Substation access road.
CPUC PM #5	04/16/10	Installation of a section of Fiber Optic Cable without CPUC Notification of Route Change or Prior Biological Survey
Incident	06/21/10	SCE O&M grading on restricted access road.
CPUC PM #6	08/11/10	Construction activity without a Biological Monitor present within 500 ft. of the riparian corridor, and no noise monitoring.

1.5 Coordination and Communications

In field communications were conducted by the CPUC EMs with SCE's Monitors and other project personnel. Verbal warnings and written communications (PMs) were utilized to notify SCE and its contractors of non-compliance activities. Field observations were logged daily by the CPUC EMs. Weekly reports were submitted to the CPUC and other agencies documenting compliance, project changes requested by SCE, construction progress, and interactions with other agencies.

1.6 Variance Requests

Variance requests were submitted by SCE to the CPUC for changes in the approved project description, including changes in construction technique, additional long term extra workspace needs, or adjustments to mitigation requirements. Each variance request submitted by SCE was first reviewed by Aspen for completeness. If incomplete, a request for information was prepared by Aspen and sent to SCE. When complete, each request was analyzed, including field verification and resource/local agency consultation, to determine if new impacts or an increase in significant impacts would result. After analyzing the request, Aspen prepared a written recommendation of approval or denial for the CPUC. As appropriate, mitigation measures or other agency conditions were required by the CPUC to avoid, or reduce to a less than significant level, any impacts identified for each variance requested. Twenty-one Variance Requests and one Variance Request Modification were submitted for the El Casco System Project (see Table 3 below). These requests are discussed in Sections 2 through 6.

Table 3. Variance Requests

Variance Number	Date Requested	Date Issued	Description of Request
#1	04/01/09	04/16/09	Usage of an empty fenced lot immediately south of SCE's existing Maraschino Substation, Beaumont, Riverside County, as a laydown yard to support Project construction.
#2	10/01/09	10/09/09	Placement of two water tanks and above ground pipe for water needs at the El Casco Substation site.

Table 3. Variance Requests

Variance Number	Date Requested	Date Issued	Description of Request
#3	09/30/09	10/15/09	Fiber Optic Cable Temporary Circuitry: Banning and Calimesa Shoo Flies.
#4	09/30/09	10/15/09	Alternate Access to the Banning Substation from John Street.
#5	09/22/09	10/23/09	SCE asserted within the variance request that several Geo & Hydro Mitigation Measures should not be required for the 115 kV Subtransmission Line Element. The Variance was partially approved with conditions.
#6	10/23/09	10/27/09	Installation of a portable fuel tank at the El Casco Substation site.
#7	10/27/09	10/29/09	Project description change from underground to overhead installation for fiber optics circuitry along Colton Avenue in the vicinity of the Mentone Substation.
#8	10/29/09	10/29/09	Removal of five Fremont cottonwood trees that are impacted by the construction of the access road to the El Casco Substation site.
#9	01/11/10	01/12/10	Sunday work on FOC shoo-fly segment during scheduled line outage.
#10	01/14/10	01/19/10	Use of the area east of the Zanja Substation fence line for parking and staging purposes.
#11	06/24/10	06/25/10	Sunday work on the FOC installation across Interstate 10 during minimum freeway traffic hours.
#12	07/22/10	07/23/10	Sunday work on the FOC installation across Highway 60 and Western Knolls Avenue during minimum freeway traffic hours.
#13	08/05/10	08/06/10	Nighttime deliveries of 220/115 kV transformer banks on 8/13/10 and 8/17/10.
#14	09/08/10	09/13/10	Extended work hours to conduct the transfer of 50,000 gallons of oil into two 220/115 kV transformer banks at El Casco Substation.
MOD #14	10/07/10	10/08/10	Extended work hours to conduct the transfer of oil into two additional 220/115 kV transformer banks at El Casco Substation.
#15	11/12/10	11/16/10	Extended work hours to conduct telecom splicing work and well pump testing at El Casco Substation.
#16	02/09/11	02/10/11	Extended work hours to continue work on the v-ditch at El Casco Substation.
#17	02/25/11	02/25/11	Sunday work on Segment 7, subtransmission line element, requested. Variance approved with conditions, SCE chose to stop work and to not proceed with approval.
#18	09/23/11	10/07/11	Four additional extra workspace areas located in Segments 7 and 8, subtransmission lines element.
#19	10/28/11	11/02/11	Nighttime installation of five new tubular steel poles within Segment 8, subtransmission line element.
#20	09/05/12	09/07/12	Installation of two temporary poles in Segment 2, subtransmission line element, to meet biological and regulated water permits schedule requirements.
#21	05/17/13	05/29/13	Leave improvements in place at Maraschino Yard.

1.7 Temporary Extra Work Space Requests

A Temporary Extra Work Space (TEWS) was defined as a workspace that could be used by SCE during construction for a period of up to 60 days. SCE had to demonstrate that the TEWS was located in a previously disturbed area with no sensitive resources or land uses onsite or adjacent to the proposed workspace, no grading or excavation would occur, SCE had permission from the landowner to use the workspace, and that use of the TEWS would not result in any significant environmental impacts. Requests were submitted by SCE to the CPUC EM in the field. After field review the CPUC EM could approve a TEWS. Four TEWS Requests were submitted for the SCE El Casco System Project. TEWS are discussed in Sections 2 through 6 and are summarized in Table 4 below.

Table 4. Temporary Extra Work Space (TEWS) Requests

TEWS Number	Date Requested	Date Issued	Description of Request
#1	04/17/09	08/23/09	Fiber optic material storage at the pre-existing Zanja Substation, Yucaipa, San Bernardino County.
#2	07/20/09	07/24/09	Staging area in a vacant lot north of First Street and west of Highland Springs Road, Beaumont.
#3	02/04/10	02/05/10	Distribution line crew access through an adjacent privately owned field to set equipment on existing poles.
#4	Retroactive	03/03/10	Temporary access through a dirt lot adjacent to the Banning Substation on West Lincoln Street. Access enabled the installation of a swale on the edge of the Banning Substation site.

2. El Casco 220/115 kV Substation

2.1 Description of El Casco Substation

The El Casco Substation was built on a 28-acre site within the Norton Younglove Preserve in San Timoteo Canyon in Riverside County. The completed substation is within an approximately 14-acre area inside a perimeter fence. The remaining acreage consists mostly of areas disturbed during construction. The Norton Younglove Preserve is managed by Riverside County as a natural preserve. The substation site and its 0.6-mile access road are adjacent to San Timoteo Creek, Burlington Northern Santa Fe (BNSF) Railroad, and San Timoteo Canyon Road. The nearest neighboring facilities consist of a fishing resort one mile to the northwest and a housing development one-quarter mile to the southeast.

Figure 1 — Pre-construction location of the El Casco Substation within the Norton Younglove Preserve. Geologists identified a layer of clay within the hillside. Removal of the toe of the slope increased the likelihood of slippage. Therefore, a tension cable anchor system was installed during construction.

The substation incorporates low-profile design features, which limit the height of electrical equipment and structures. The substation is equipped with one 220 kV switchrack, two 280 MVA 220/115 kV transformers, one 115 kV switchrack, one 45 MVAR 115 kV capacitor bank, two 28 MVA 115/12 kV transformers, one 12 kV switchrack, and two 4.8 MVAR 12 kV capacitor banks. Two Mechanical and Electrical Equipment Rooms (MEER) house control and relay panels, batteries and battery chargers, and telecommunications equipment. The substation is equipped with a Substation Automation System (SAS), which provides remote control and monitoring of all equipment at the site. Therefore the substation is usually unmanned. The tallest elements of the substation are the 49-foot tall dead-end structures that support the 220 kV lines.

The four transformers are filled with mineral oil. A spill basin was installed to contain spills in the event of an oil release.

All structures are painted in neutral tones. Operation lighting is directed downward and shielded to reduce glare outside the substation. Operation lights are controlled by a manual switch and are normally in the off position.

2.2 Construction of El Casco Substation

The NTP for brush clearing at El Casco Substation site was issued on February 23, 2009. Brush and other vegetation were cleared during the last week of February 2009, in order to avoid the bird nesting season.

NTP #5 for El Casco Substation construction was issued on August 27, 2009. Construction began the week of September 14, 2009. During the remainder of September, a parking area was created at the entrance and a security building erected. Populations of special status plant species such as smooth tarplant and California walnut were protected with exclusion fencing. Cultural historical resources were known to be present on the substation and access road sites; therefore, excavations were conducted in accordance with Cultural Resources Treatment Plan protocol. An unanticipated historical discovery was made during the controlled cultural resource excavation.

Figure 2 — Exclusion fencing placed around smooth tarplant populations adjacent to planned culvert installation on the El Casco Substation access Route. The photograph faces east toward the substation site.

Figure 3 — Beginning terracing work in stair step fashion. There were eventually four terraces on the ridge in view. The photograph faces north.

During the first week of October 2009, terracing of the hillside behind the substation site began. Fourteen terraces were constructed in stair step fashion on two prominent ridges of the hillside. Ten terraces were placed on one ridge, and four on the other. The construction of the terraces proceeded as follows. The face of each terrace was fitted with a tie-back wall structure that provided an anchor for an approximately 120-foot-long cable placed in an oblique bore dug into the hill. Each bore contained a concrete caisson at the bottom for the lower cable anchor. The cable was tightened to create tension between the upper wall and the lower caisson. The terracing was required because the substation placement involved cutting into the toe of the slopes. The sedimentary layers of the slopes were considered to be potentially unstable without tie-back terracing.

During October 2009, the top terrace on each of the two ridges was completed. A concrete wash-out was established on top of the hill above the terraces in order for the concrete trucks to clean out quickly. Grading of the new access road began. Under Variance #8 the CPUC approved the removal of five cottonwood trees for the building of the access road; concurrence from Riverside County Regional Parks and Open Space District was also obtained. An aboveground water pipeline for dust control and compaction was installed for one-half mile along the edge of San Timoteo Canyon Road from a nearby fishing resort to the newly installed water tower near the site entrance as approved under CPUC Variance #2. An equipment and material storage yard and vehicle parking area was established. Dewatering of groundwater at the base of the hill at the substation site began. Preparation of the pad for the El Casco Substation then began.

During November 2009, terrace construction continued with the second and third terrace on each ridge being completed. The substation pad was over-excavated to ensure stable substrate. Two areas at the site were dug-out to replace unstable soil. Dewatering was ongoing at the over-excavation pits. The spoils from over-excavation were used to raise the access roadbed. Initial access road grading was completed during the month. Trailers were hauled in and readied for occupancy at the substation. Utility supply for the substation was under construction. The second source of water for the Project was connected by pipeline from the housing development located approximately one-fourth mile to the southeast. Both off-site sources of Project water were in use. Fossils were discovered in the hillside being terraced, and were processed according to the Project Paleontological Treatment Plan protocol.

During December, multiple rain events limited construction work. However, all four terraces on the eastern ridge were completed, and work continued on the western ridge terraces. Installation of the utility line for supply to the field station was completed. SWPPP measures were installed, inspected and repaired

throughout the month. However, installed controls were at times overrun due to the volume of rainwater. Fossil monitoring, discovery, and processing continued.

During the first three months of 2010, most aspects of the substation project leading up to the actual construction of the substation were completed. The hillside terracing was completed. Also the over-excavation, dewatering and fill-in necessary at the site of the substation pad was completed. Grading of the toe of the slope at the back of the substation below the terraces was begun and completed. Several drainage V-ditches and culverts were built. The grading of and placement of base on the access road was completed. The box culvert under the road was completed. Fossil monitoring, discovery, and processing were completed during this period. All fencing, including sound wall and shading, was completed. The storage yard was completed and fenced.

Figure 4 — A tie-back wailer under construction on the face of one of the terraces. After completion of the wailer, the 120-foot cable anchors were placed under tension.

April 2010 was a period of transition from Cattrac Construction Inc., the contractor for terracing, grading, access road and V-ditch construction, to Professional Electric Construction Services, the builder of the substation. Professional Electric Construction Services mobilized and began trenching for the ground wire grid and for underground conduit.

During May 2010, construction of foundations for structures on the substation pad began. Construction of the ground wire grid system and underground conduit continued. Work began on the 220 kV structures and the 220 kV MEER.

Figure 5 — The partially completed box culvert at the El Casco Substation access road was inundated with stormwater, which then poured into San Timoteo Creek. The photograph faces southeast.

Figure 6 — View of the completed terraced slope at El Casco Substation. Note the newly installed V-ditches. The photograph faces southeast.

Figure 7 — View of completed box culvert inlet near El Casco Substation entrance. The photograph faces north.

During June 2010, construction continued on the ground wire grid system and underground conduit placement. Building foundation construction and construction of the steel structures for the 220 kV portion occurred. Work continued on the 220 kV MEER and began on the 12 kV MEER. Construction of the perimeter wall around the substation pad began. The transformer pad was poured. The lower pad for the three transmission towers next to the substation began to be prepared for tower construction. The tower furthest from riparian habitat along San Timoteo Creek was constructed first.

During July, August, and September 2010 most of the structural construction of the substation was completed. The two transformer banks were night-delivered during August in accordance with Variance #13. In September, the two new transformers were filled with a total of 50,000 gallons of oil in accordance with Variance #14. Please note that temporary SPCC containment was in place. The foundations for the three towers on the lower pad were completed in September and construction on the towers began on September 20, after the end of nesting season. Underground fiber optic cable installation began on the terraced slope behind the substation in late September. The Frac-out Plan for the horizontal directional drilling (HDD) work for the conduit placement between San Timoteo Canyon Road and the substation was approved on September 17.

Figure 8 — At the El Casco Substation site, crews worked on foundations for the AA banks for the 220 kV switchracks. The photograph faces south.

Figure 9 — At the El Casco Substation site, a second 220 kV transformer was delivered on August 17.

During October 2010, the HDD work under San Timoteo Creek began, as permitted under the CDFG Streambed Alteration Agreement. Sensitive riparian vegetation was removed prior to boring operations. At the substation site oil transfer into four more transformers occurred. The construction of the three transmission towers on the lower pad was completed. The fiber optic cable installation on the terraced hill behind the substation was completed. Paving of the new access road began.

Electrical testing began in November 2010 and continued through December 2010. The HDD bore work was completed during the month and conduit pulling commenced. Paving and concrete curb work on the access road continued. The 220 kV portion of the substation was energized December 2010.

During January and February 2011, electrical testing of the 115 kV and 12 kV portions of the substation was mostly completed. Security measures for energization were implemented, including the perimeter fence. All paving of access and substation roads was completed. The new access road was opened for use. The pulling of HHD cable between the vaults on San Timoteo Canyon Road and the substation neared completion. The installation of the irrigation system for temporarily disturbed areas began. The 115 kV and 12 kV portions of the substation were energized by May 2011.

Figure 10 — Along San Timoteo Canyon Road, the drilling rig at the bore entry side.

During the remainder of 2011, work activity at the substation consisted of landscaping and revegetation activity, minor repairs and removal of construction-related materials, such as silt fencing. Manned security was discontinued by October 2011. The substation was considered completed by the end of 2011, except for revegetation activities. Sheep grazing had affected the restoration areas in 2012 and 2013. Please see Section 7.0 for details.

Variances and TEWS

SCE requested seven Variances and a Variance Modification for El Casco Substation associated construction. All requests were approved by the CPUC. Variances #2 and #6 approved the installation of a portable fuel tank and two water tanks with above ground pipe at the El Casco Substation. Variance #8 approved the removal of five Fremont cottonwood trees impacted by the construction of the El Casco Substation access road. Variances #13, #14, #14 Modification, #15 and #16 approved afterhours work at the substation including nighttime transformer delivery, transformer oil filling operations, telecom spicing work, well pump testing and v-ditch construction.

No TEWS were requested for the El Casco Substation work.

2.3 Environmental Compliance during El Casco Substation Construction

WEAP trainings were held for new workers to the Project site and sign-in sheets were maintained onsite by SCE. Monitors representing SCE were on site during all construction activities. Depending on the area and associated site resource issues, biological, cultural resource, and paleontological monitors were present. Equipment was continually checked for air pollution control compliance and fluid spill prevention and cleanup. Dust control was maintained throughout the site, including the access road and hilltop areas above the terracing activity. Two pipelines delivered water from off-site sources to several water tanks. Concrete wash-out basins were established in several locations as needed. Throughout most of the construction activity, security guards were on duty seven days per week, twenty-four hours per day.

SCE Monitors conducted biological survey sweeps prior to construction beginning each day and throughout the day. Several special status species were observed. A patch-nosed snake was killed during excavation in an area deemed unsafe for the Biological Monitor to be present during construction. The incident was reported to CDFG. Up to thirteen least Bell's vireo pairs were documented to have nested in the riparian habitat adjacent to the substation. These territories were monitored during each nesting season in a cooperative effort by SCE Biologists and the Santa Ana Watershed Association (SAWA) Biologist

Figure 11 — View of installed wildlife culverts under the main El Casco Substation access road. The photograph faces east.

present. Noise monitoring also was conducted by SCE and was reported to CPUC during the nesting seasons. Smooth tarplant existed within the footprint of the substation. Mitigation for the permanently disturbed populations is being conducted in accordance with the approved Project Smooth Tarplant Habitat Mitigation and Monitoring Plan (HMMP). Existing populations not disturbed were fenced off for exclusion. A small cluster of California walnut was fenced off for exclusion. Riparian habitat along San Timoteo Creek was protected from construction activity. Several other species noted regularly in the area were coyotes, wild pig, and many bird species. A few species became trapped in project V-ditches, including Pacific tree frogs, western toad, mice and Southern Pacific rattlesnakes. These V-ditches were checked on a daily basis. Trapped animals were relocated. The design of the permanent V-ditches was altered to prevent entrapment. In addition, wildlife culverts under the El Casco Substation access road were added. Nesting attempts by some bird species, especially house finch, in construction structures was discouraged. Partially completed and non-active nests were removed.

Erosion controls and wildlife exclusion fencing (when required by USFWS permits) were in place during construction activities and were maintained on a regular basis. Watering of the access road and work areas was done on a regular basis for dust control during dry periods. Speed limits were monitored and maintained at 10 mph. Spill kits were kept on site and all spills were reported, cleaned-up, and disposed of properly. New equipment arriving on site was inspected for leaks and staged in the laydown yard or substation area. Refueling of equipment was conducted in a designated area within the substation and secondary containment was used. Signs were posted designating the refueling area and spill kits and spill materials were also staged next to the refueling area. Concrete washout basins were utilized and maintained.

Previously known and new historical sites and artifacts were handled according to Cultural Resources Treatment Plan protocol. Cultural Resource Monitors were present during all ground disturbances.

Major paleontological discoveries were made during excavation between November 2010 and April 2011. A wide variety of plant, mammal, bird and invertebrate material was recovered and processed by SCE Paleontologists. The fossils were found during excavation in the eastern over-excavation pit, within excavation at the toe of the eastern ridge, and in some of the hillside terraces. The fossils were in the San Timoteo Formation and thought to be between 0.9 and 6.1 million years old. This formation is known to be rich in significant fossil resources from the medial Pleistocene and Pliocene epochs. A field laboratory was set up on site to process the discoveries and dirt samples from the sites as required by Paleontology Treatment Plan protocol. Paleontological Monitors were present during all ground disturbances. The contractor cooperated by shifting excavation activity to other areas while Paleontologists recovered material.

Figure 12 — Most fossils were found in the easternmost over-excavation pit at the toe of the eastern ridge terrace. The photograph faces south.

Figure 13 — When fossils were discovered, construction activity was temporarily diverted to other areas while paleontologists packaged and removed the fossils, in this case a large mammal bone fragment.

Figure 14 — Samples were collected from all areas where fossils have been discovered. The samples were processed by wet screening to uncover small and difficult to detect fossil material.

Figure 15 — The fossilized skull of a prehistoric ground sloth which was discovered, processed, and recovered from excavation at the El Casco Substation site.

Project Compliance Documentation

Two Project Memoranda (PMs) were issued for El Casco Substation–related work. On March 16, 2009, PM #1 was issued for failure to comply with Mitigation Measure B-18 during vegetation clearing at the El Casco Substation site. Several woodrat middens at the El Casco Substation site were placed in an adjacent field of the Norton Younglove Reserve by heavy equipment. In addition, construction equipment went outside of approved Project boundaries. PM #4 was issued March 16, 2010, when construction activity occurred within riparian habitat during nesting bird season along the El Casco Substation access road.

In addition, an incident was documented June 21, 2010 at the El Casco Substation when grading occurred on a restricted access road.

Figure 16 — Woodrat middens at the El Casco Substation site were placed in adjacent fields by equipment within the Norton Younglove Reserve. The photograph faces southeast.

2.4 Final Inspection of El Casco Substation Activities

The CPUC EM conducted the final inspection of El Casco Substation construction and compliance activities on April 23, 2013, at which time all construction and crew demobilization had been completed. No outstanding construction related compliance issues were identified. Work on the habitat restoration of temporarily disturbed areas continues. Sheep grazing around the substation which had been problematic appeared to be under control at that time. Exclusion fencing was in place to prevent sheep access to the restoration areas. Please see Section 7.0 for a summary of restoration activities.

Figure 17 — View of El Casco Substation. The photograph faces north.

3. 115 kV Subtransmission Line Replacement

3.1 Description of 115 kV Subtransmission Line Replacement

Modifications and additions to the pre-existing 115 kV subtransmission lines in the vicinity of the El Casco System Project were necessary. Two existing 115 kV subtransmission lines were rebuilt (El Casco–Maraschino and Banning-Garnet-Maraschino-Windfarm) and one new 115 kV subtransmission line was built (El Casco–Banning).

With the exception of the steel poles installed within the substation site, all new steel poles (approximately 225) were installed within existing 115 kV ROW or along public street ROW. The new steel poles are either bolted-based tubular steel poles (TSPs) or direct-buried lightweight steel (LWS) poles. A total of 15.4 miles of new line was installed.

During construction, subtransmission line replacement was organized into eight geographic segments:

- The new 115 kV subtransmission line involved Segments 1, 2, 3, 4, 5, 7 and 8 from the Banning Substation to the El Casco Substation.
- The rebuilding of the Banning-Garnet-Maraschino-Windfarm subtransmission line involved Segments 1, 2, 3, 4 and 6 (Maraschino Loop South), in the Cities of Beaumont and Banning, with the eastern end at the Banning Substation.
- The rebuilding of the El Casco Maraschino subtransmission line involved Segments 6 (Maraschino Loop West portion), 7, and 8 between El Casco Substation and the City of Beaumont.

3.2 Construction of 115 kV Subtransmission Line Replacement

The NTPs for the 115 kV subtransmission line replacements were requested and issued segment by segment.

NTP #7 for Segment 3 (Sun Lakes Development, Banning) was issued on January 5, 2010. The NTPs for the rest of the line were put on hold pending finalization of engineering design of Segments 1, 2 and 4, and updated descriptions of Segments 5–8.

Construction on Segment 3 began on March 22, 2010 at the east end of Sun Lakes Development. Steel poles were installed to replace wooden poles. Segment 3 was completed by May 2010.

NTP #8 for Segments 5, 6, 7, and 8 was issued on July 19, 2010. Work on Segment 8 (starting from El Casco Substation) began on October 26, 2010. An addendum to NTP #8 for permanent road extensions to two pole locations along Segment 8 was issued on December 14, 2010. Pole installations in Segment 8 were completed by July 2012.

Figure 18 — View of crews installing new pole foundations for Segment 3 of the subtransmission line through the Sun Lakes development. The photograph faces northwest.

Work on Segment 7 began in late February 2011. Work on some poles was delayed until after bird nesting season. Segment 6 installation began in March 2011.

Figure 19 — View of tubular steel poles being installed just south of the El Casco Substation. The photograph faces southwest.

Figure 20 — View of crews installing conductor along Segment 7 adjacent to Highway 60. The photograph faces west.

Subtransmission work proceeded intermittently through the rest of 2011 and 2012. The NTP for Segment 1 was issued in February 2012. NTP #10 for Segments 2 and 4 was issued in March 2012 after the CPUC prepared the Supplemental EIR and approved SCE's Petition for Modification which were a result of the great increase in pole installations along these two segments.

By March 2013, all installation of Segments 1, 2, 4, 5, 6, and 7 was completed. All subtransmission line replacement for the El Casco System Project was completed.

Variances and TEWS

SCE requested seven variances for subtransmission associated construction. All requests were approved by the CPUC. Variance #1 approved use of the Maraschino Yard. Note that the yard was also used for staging of other Project components including the FOC work. Variance #21 approved leaving in place improvements made to the Maraschino Yard. Variance #18 approved extra workspace for staging. Variances #17 and #19 approved Sunday and nighttime work, respectively. Variance #20 approved the installation of two temporary poles in Segment 2. SCE asserted in its Variance #5 Request that several geotechnical and hydrological mitigation measures should not be required for the 115 kV subtransmission line work. The variance was approved for specific areas and with conditions.

One TEWS was requested for the subtransmission work. TEWS #2 approved a temporary staging area north of First Street in the City of Beaumont.

3.3 Environmental Compliance during 115 kV Subtransmission Line Replacement

Resident noticing was conducted and WEAP trainings were held for new workers to the Project with sign-in sheets maintained by SCE. Monitors representing SCE were on site during all construction activities. Depending on the resource issues involved, biological, cultural and/or paleontological resource monitors were present. Equipment was continually checked for air pollution control compliance and fluid spill prevention and cleanup. Dust control was maintained where appropriate.

SCE Monitors conducted biological survey sweeps prior to construction beginning each day and throughout the day. Several pole locations were avoided during the 2011 and 2012 nesting bird season. These delays involved Segments 5, 6 and 7. In Segment 2, a population of Los Angeles pocket mouse was avoided by the location of a new pole. During the removal of the old wooden pole at this location, three individ-

uals of this special status species were trapped and relocated. The CPUC approved Variance #20 on September 7, 2012 for the installation of two temporary poles near this location to facilitate the pole work within Los Angeles pocket mouse habitat.

Erosion controls were established at several hillside locations, particularly on Segment 8.

Previously known and new historical sites and artifacts were handled according to Cultural Resources Treatment Plan protocol. Cultural Resource Monitors were present during all ground disturbances.

Figure 21 — View of crews removing an old wooden pole from Segment 2 and rerouting the old conductor to the new steel pole. The photograph faces west.

Figure 22 — Newly installed fiber rolls at a foundation site.

Project Compliance Documentation

One compliance incident occurred March 5, 2011 on Segment 7. A survey crew with the El Casco System Project cut riparian vegetation prior to authorization of work near Pole 207, and sage brush scrub near Pole 205 was cleared after the start of the nesting season. Action was taken by SCE, including conducting additional biological surveys and reminding crew members of Project requirements to prevent a reoccurrence of these types of events.

3.4 Final Inspection of 115 kV Subtransmission Line Replacement

The CPUC EM conducted the final inspection on April 23, 2013, at which time all construction work and crew demobilization had been completed. The only outstanding work was the final 115 kV cut-over at the El Casco Substation which was completed in June 2013. No outstanding compliance issues were noted.

4. Rebuilding of Zanja Substation

4.1 Description of Zanja Substation Rebuilding

As a part of the El Casco System Project, the existing 115/33 kV Zanja Substation was transferred to the El Casco 115 kV System. The pre-existing 115 kV switchrack was replaced with a new switchrack, configured as a four-element 115 kV bus to implement necessary protection and switching for self-restoring loop (SRL) operation. The switchrack was built within the existing 0.6-acre fenced substation. An additional MEER was installed on a new foundation. Construction involved temporary disturbance of approximately 1.3 acres on the eastern edge of the substation.

4.2 Zanja Substation Rebuilding Construction

NTP #6 was issued by the CPUC December 2, 2009, for Zanja Substation related work. In December 2009, the pre-NTP biological resources report was accepted by CPUC EM. Excavation of the berm on the eastern side of the substation occurred.

Figure 23 — Expansion and upgrading of the Zanja Substation. The slope east of the substation was removed and spread on adjacent SCE land. The photograph faces west.

In January 2010, the temporary mobile transformer was installed within the substation. Construction for new structures began. A new power pole was installed. Construction on drainage V-ditches began.

In March 2010, construction of the MEER building was completed. Work on electrical components occurred.

By the end of June 2010, most construction work was completed, including the paving of the access road, and installation of more power poles.

By the end of September 2010, all construction activity was completed, including the removal of the temporary mobile transformer and the installation of a new steel tower outside the substation as a replacement for an older one.

Work after September 2010 involved several hydroseeded habitat restoration efforts. See Section 7.2 for further details.

Variances and TEWS

SCE requested one variance for Zanja Substation associated construction. The request was approved by the CPUC. Variance #10 approved use of the area east of the substation for staging purposes.

No TEWS were requested for Zanja Substation associated construction.

4.3 Environmental Compliance during Zanja Substation Rebuilding Construction

WEAP trainings were held for new workers to the Project site and sign-in sheets were maintained by SCE. Monitors representing SCE were on site as needed during construction activities. Depending on the resource issues involved, biological and cultural resource monitors were present. Equipment was continually checked for air pollution control compliance and fluid spill prevention and cleanup. Dust control was maintained throughout the site.

Several storm events occurred in early 2010. SWPPP measures and previously installed permanent V-ditches prevented most erosion. The erosion that did occur was managed with appropriate BMPs.

Once it was determined that the temporarily disturbed area east of the substation approved under Variance #10 was greater than 1 acre, SCE submitted a SWPPP to SWRCB and received a WDID number.

During the 2010 bird nesting season, several nesting attempts occurred in structures within the substation. SCE Biological Monitors removed these nests before they were completed or occupied. Most of these nests were created by house finches.

By October 2010, all construction work at the site was completed. Monitoring activity was then limited to the habitat restoration efforts.

Figure 24 — Erosion control devices mostly prevented siltation into a nearby watercourse during storms at Zanja Substation. The photograph faces west.

Project Compliance Documentation

One PM, PM #3, was issued by CPUC on January 14, 2010 for SCE's use of an unapproved area for staging and parking on the east side of the substation. SCE subsequently submitted Variance Request #10 to request approval to use the subject area. The variance request was approved by CPUC. SCE also submitted a SWPPP to SWRCB and received a WDID number.

4.4 Final Inspection of Zanja Substation Activities

The CPUC EM conducted the final inspection of the Zanja Substation on April 23, 2013 at which time all construction work and crew demobilization had been completed. No outstanding compliance issues were identified. Monitoring of the habitat restoration of temporarily disturbed areas continues. Please see Section 7 for restorations activities.

5. Rebuilding of Banning Substation

5.1 Description of Banning Substation Rebuilding

As a part of the El Casco System Project, the existing 115/33 kV Banning Substation was transferred to the El Casco 115 kV System. The pre-existing 115 kV switchrack was replaced with a new switchrack, configured as an operating and transfer bus to implement necessary protection and switching for SRL operation. The switchrack was built within the existing fenced-in substation. Three pre-existing 115/33 kV transformers and one 33 kV capacitor bank were relocated within the existing substation fence. Two new transformer racks were constructed for the relocated transformers. One of the pre-existing 33 kV capacitor banks was replaced with a new capacitor bank located within the substation fence. An additional MEER was installed on a new foundation within the perimeter fence.

5.2 Banning Substation Rebuilding Construction

NTP #3 was issued by CPUC on August 13, 2009. On August 21, 2009, SCE requested MOD #1 of NTP #3 for modifications to three poles outside the substation. This request was approved on August 26, 2009.

Figure 25 — Circuit breakers and other electrical equipment were installed in the northern portion of the Banning Substation site. The photograph faces south.

By August 27, 2009, work had already begun on the pole modifications, before completion of the required biological clearances. This work was completed within a few days.

Work on the rebuilding of the Banning Substation began in October 2009 with grading at the north end of the enclosed perimeter of the substation. Grading, fill, trenching and placement of underground electrical wiring continued through January 2010.

Electrical installation began in January 2010. Electrical, structural and civil work continued through April 2010 along with work on the new MEER

By June 2010, electrical testing and movement of transformers began. All work within the substation was completed in August 2010. Crews were demobilized.

Variances and TEWS

SCE requested one Variance for Banning Substation associated construction. The request was approved by the CPUC. Variance #4 allowed alternative access to the substation from John Street.

A retroactive TEWS, TEWS #4, was requested for temporary access through a dirt lot adjacent to the Banning Substation on West Lincoln Street to enable the installation of a swale on the edge of the Banning Substation site.

5.3 Environmental Compliance during Banning Substation Rebuilding Construction

WEAP trainings were held for the Banning Substation crew in August 2009. Monitors representing SCE were not required on this site because all construction activities other than the initial refurbishing of three poles occurred within the perimeter fence of the existing substation.

Several storm events occurred in early 2010. Installed SWPPP BMPs prevented erosion on site.

Project Compliance Documentation

On August 21, 2009, an SCE internal noncompliance was issued for mobilization of the rebuilding at the Banning Substation before environmental training and biological pre-construction surveys were conducted.

On August 27, 2009, PM #2 was issued by CPUC for the initiation of construction activity before CPUC authorization and validation of the biological survey at the site of the NTP #3, MOD #1, pole work outside the substation within the City of Banning. No biological resources were negatively affected.

5.4 Final Inspection of Banning Substation Activities

The CPUC EM conducted the final inspection on April 23, 2013 at which time all construction work and crew demobilization had been completed. All work, other than the initial refurbishing of three poles, was conducted inside the existing perimeter fence of the substation. No outstanding compliance issues were identified.

6. Installation of Fiber Optic Cables

6.1 Description of Fiber Optic Cable Installation

Construction of five new fiber optic circuits was required to provide the necessary communication paths for control and protection of the 220 kV transmission lines and 115 subtransmission lines, as well as the various substations in the area. Pathways were designed to be diversely routed in order to provide adequate redundancy to mitigate for abnormal events.

The five circuits are described below:

1. **El Casco–Mentone** was installed between El Casco and Mentone Substations, and included taps into and out of Yucaipa and Zanja Substations. Most of the cables were constructed overhead on existing subtransmission and distribution wood and steel pole structures. Portions of this circuit were placed underground.
2. **El Casco–Banning** was installed between El Casco and Banning Substations, and included a tap into and out of Maraschino Substation in Beaumont. Most of the cables were constructed overhead on existing subtransmission and distribution wood and steel pole structures. Portions of this circuit were placed underground.
3. **El Casco–M29 T2** was installed between El Casco Substation and the existing transmission tower numbered 'M29 T2' on the Devers-Vista 220 kV transmission line ROW, located directly south of the El Casco Substation. The entire length was placed underground.

Figure 26 — FOC installation work between Mentone and Zanja Substations. Linemen climbed the poles in areas too remote for a bucket truck to approach.

4. **El Casco–M30 T3** was installed between El Casco Substation and the existing transmission tower numbered 'M30 T3' on the Devers-Vista 220 kV transmission line. The cable came from this tower along an existing transmission access road supported on approximately six new wood poles, connected to an existing 12 kV distribution line at the Fisherman's Retreat recreational community, then continued north on the existing poles to San Timoteo Canyon Road, where the cable turned east on the 12 kV distribution pole line along San Timoteo Canyon Road until it connected to the underground duct bank (discussed in Section 2.2 as HDD activity) turning into the El Casco Substation.
5. **Banning–M17 T1** was installed between Banning Substation and the existing transmission tower numbered 'M17 T1' on the Devers-Vista 220 kV transmission line ROW, located just north of the City of Banning. Most of the cables were constructed overhead on existing pole structures. Portions of this circuit were placed underground.

6.2 Fiber Optic Cable Installation Construction

NTP #2 for the installation of the underground fiber optic cable in the Sun Lakes Development in Banning was issued on May 22, 2009, in order to facilitate construction prior to the planned City road work in the area. That construction started in June and was completed in August 2009.

NTP #4 for the remainder of the fiber optic cable installation was issued on August 27, 2009. Construction of the Mentone Substation to Zanja Substation segment began on September 17, 2009. Steps involved in the

overhead installation included tree-trimming, where necessary, installation of framing arms and pulling rope, and finally cable pulling. The Zanja shoo-fly installation began on September 26, 2009. The installation of the overhead portion of the Mentone to Zanja segment and the Zanja shoo-fly were completed in October 2009.

During trenching near Mentone Substation for an underground portion of the segment, an unmarked abandoned pipe with oil-contaminated water was discovered. The portion of underground fiber optic cable parallel to the discovered pipe on Colton Avenue was changed by Variance #7 to overhead installation on October 29, 2009.

Tree-trimming occurred throughout the remainder of the fiber optic circuits and was completed during November 2009. Underground cable installation occurred sporadically throughout the Project and was completed by August 2010.

Overhead installation continued from Zanja Substation south through Yucaipa and was completed to Yucaipa Substation by January 2010. Work also began on the Maraschino Substation (Beaumont) to Banning Substation in December 2009, and was completed by April 2010.

Overhead installation on the Yucaipa Substation to El Casco Substation segment began in January 2010. Some sections of this segment were bypassed until the end of the 2010 bird nesting season and not completed until December 2010.

Installation of the El Casco Substation to Maraschino Substation segment began in July 2010 and was completed by December 2010.

Three short fiber optic circuits were installed to connect the longer new circuits, El Casco–Mentone and El Casco–Banning to the Devers-Vista 220 kV transmission line ROW. The El Casco–M30 T3 circuit was installed by February 2010. The Banning–M17 T1 circuit was installed by April 2010. The El Casco–M29 T2 circuit was installed during fall 2010.

Three temporary shoo-fly circuits were required during construction. The Zanja shoo-fly just northeast of Zanja Substation was installed beginning in September 2009. It was dismantled by May 2010. The Calimesa and Banning shoo-flies began to be constructed in October 2009. They both were dismantled in 2010 after their function ended.

Variances and TEWS

SCE requested five Variances for fiber optic cable associated construction. All requests were approved by the CPUC. Variance #3 approved the temporary Banning to Calimesa shoo-fly circuitry. Variance #7 approved a Project description change from underground to overhead along Colton Avenue near the Mentone Substation. Variances #9, #11, and #12 approved Sunday work on fiber shoo-fly, Interstate 10, and State Highway 60 related construction.

Two TEWS were requested for the fiber optic cable work. Project TEWS #1 was approved for fiber material staging at the Zanja Substation. TEWS #3 approved access through a privately owned field for a distribution line crew to set equipment on existing poles.

6.3 Environmental Compliance during Fiber Optic Cable Installation

WEAP trainings were held for new workers to the Project site with sign-in sheets maintained by SCE. Monitors, especially Biological Monitors, representing SCE were on site during all construction activities. Equipment was continually checked for air pollution control compliance and fluid spill prevention and cleanup. Dust control was maintained where appropriate. Traffic control was also implemented.

Figure 27 — Proper signage, demarcation of the work limits, and traffic control at the Sun Lakes Blvd FOC installation. Steel plates protect the road surface and cover open trench.

SCE Biological Monitors conducted pre-construction surveys for each installation segment prior to beginning of work. Reports of these surveys were given to the CPUC EM who conducted validation site visits.

Several new sensitive biological resources and bird nests were located during the pre-construction surveys. These were flagged and avoided during construction.

An unmarked abandoned pipe with oil contaminated water was discovered during trenching near Mentone Substation. All appropriate authorities were notified, and the contaminated soil and water was collected and removed according to protocol.

A nesting red-tailed hawk pair along the Yucaipa to El Casco circuit was avoided until the young fledged and left the area. Also, work along a portion of San Timoteo Canyon Road next to riparian habitat was delayed until end of nesting season.

Project Compliance Documentation

On April 16, 2010, PM #5 was issued by the CPUC for installation of a section of overhead fiber optic cable without CPUC notification of a route change and without submittal of a pre-construction biological survey. This occurred within the City of Banning north of Banning Substation. No biological resources appeared to be negatively affected.

6.4 Final Inspection of Fiber Optic Cable Installation

The CPUC EM conducted the final inspection on April 23, 2013 at which time all construction work and crew demobilization had been completed. No compliance issues were identified.

7. Post-Construction Requirements and Restoration

7.1 Post Construction Mitigation Requirements and Reporting

Several El Casco System Project mitigation measures require action post construction. Please see Table 5 below for applicable mitigation requirements and status.

Table 5. Post Construction Mitigation Requirements==

Mitigation Measure	Requirement*	Status
AQ-3	SCE to submit an annual Sulfur Hexafluoride Emissions Report annually	SCE has supplied companywide sulfur hexafluoride emissions documentation.
B-1a	Implementation of a habitat restoration/compensation plan	A detailed summary is provided below in Section 7.2.
B-5c, V-3b	Use of shielded lighting and daytime maintenance at the El Casco Substation.	Shielded lights were installed during construction
C-3d	Paleontological resource recovery, curation and post-construction reporting	Paleontological resource recovery and curation has been conducted. El Casco Final Paleontological Report with Results of the Paleontological Resources Monitoring Plan was submitted.
Haz-1b	SCE was required to verify proper disposal of construction waste	Waste disposal verified.
Haz-8a	The Project Fire Management Plan will continue to be implemented during operations and maintenance	Fire Management Plan continues to be implemented.
Haz-9b	SCE is required to resolve all radio/television/ equipment interference complaints	To date, SCE reports that no interference complaints have occurred.
V-2b, V-3, V-10	5-year success criteria for visual vegetative screening of key viewpoints	Criteria reporting shall be submitted at the appropriate time.

*Requirements shown are excerpted and/or paraphrased from the full measure language

7.2 El Casco System Project Restoration

Mitigation Measure B-1a requires the implementation of a Habitat Restoration/Compensation Plan during and after Project construction for a 5-year maintenance and monitoring period or as needed. The Smooth Tarplant HMMP and Riparian and Riverine HMMP were developed as part of the Habitat Restoration/ Compensation Plan and are also being implemented. The Smooth Tarplant HMMP requires mitigation of disturbed tarplant habitat at 1:1 ratio, and within that mitigation area, mitigation of smooth tarplant individuals at 2:1 ratio. A total of 200 plants were disturbed by construction within 1.22 acres. For three (not necessarily consecutive) years of the 5-year monitoring period, 400 plants covering 1.22 acres of the mitigation area would need to be present to meet the HMMP standards.

SCE has conducted restoration activities and compiled a 2011/2012 El Casco System Project Annual Restoration Report, dated April 8, 2013 and a 2013 El Casco System Project Annual Restoration Report, dated February 24, 2014 which have been distributed to concerned agencies including the CPUC, RCA, CDFG, and USFWS. All restoration sites were visited by Aspen Biologist/EM, Justin Wood, on March 12 and 18, 2014. Restoration site locations include the following:

- 6.37 acres at the El Casco Substation,
- 0.24 acres of alkali meadow vegetation and a small area of riparian vegetation at the San Timoteo Creek HDD site,
- 1.3 acres at the Zanja Substation,
- Subtransmission restoration site areas adjacent to six disturbed pole locations, and
- 1.24 acres[3] smooth tarplant HMMP sites.

A summary of the status of the restoration efforts at the noted sites is provided below:

7.2.1 El Casco Substation

The building of the El Casco Substation impacted 6.37 acres of vegetation on slopes and flatlands, including chaparral, non-native grassland, and riparian woody vegetation. Restoration efforts have been divided into distinct segments which include manufactured slopes above and below the substation; temporarily disturbed work areas including the laydown yard, field trailer location, and edges of the access road; and small riparian areas next to two culvert construction sites. For the purpose of this discussion, substation restoration has been segregated into three subsections, including culvert riparian areas, non-irrigated areas, and slope areas which require container planting and irrigation.

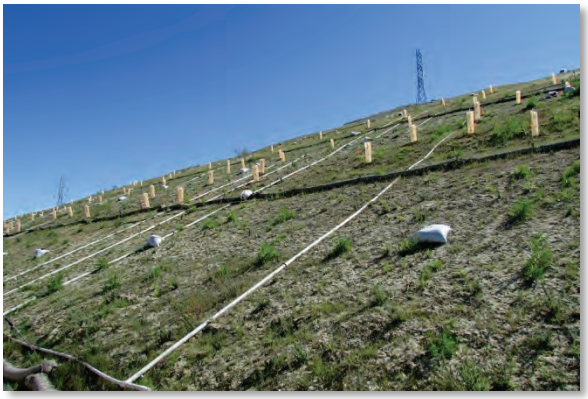


Figure 28 — Engineered slope behind the El Casco Substation. Note the tubes are covering the new container plants. March 12, 2014.

El Casco Substation Riparian Areas

Riparian vegetation installation at two culvert areas near the El Casco Substation was initiated in March 2011 with the planting of 24 willow cuttings and hydroseed application. In 2012 several of the dead plantings were replaced. As reported by SCE in its 2013 El Casco System Project Annual Restoration Report, willow and mulefat cuttings contributed to 34 percent native cover at the riparian restoration sites. These sites have not met the nonnative cover criteria of less than 5 percent cover. Weed abatement and continued monitoring is needed to stay on track toward meeting the 5-year success criteria.

El Casco Substation Non-Irrigated Areas

The non-irrigated areas were hydroseeded in December 2011. As reported by SCE in their 2013 El Casco System Project Annual Restoration Report, hydroseed applied to non-irrigated flat areas continues to show dense growth. These areas have exceeded the year 2 performance criteria and have already exceeded the 5-year performance criteria of 80 percent plant cover. Continued weeding and monitoring is recommended to prevent invasive plant colonization.

[3] Combined the smooth tarplant HMMP 2.9 acre primary site and 2.4 acre secondary site total 5.3 acres; however, much of the primary site has been abandon and portions of the secondary site do not contain smooth tarplant individuals. The 2013 El Casco System Project Annual Restoration Report dated February, 2014 provided monitoring year two results. As reported by SCE, 50 smooth tarplant individuals occupied 0.53 acres on the primary site and 354 individuals occupied 0.71 acres on the secondary site totaling 404 individuals on 1.24 acres.

El Casco Substation Planted and Irrigated Areas

At the El Casco Substation temporary disturbance areas, planting and seeding activities were put on hold from October through December 2011 due to problems with the irrigation system well pump. SCE reported that the well had been fixed in January 2012. Initial hydroseeding and container planting were completed in December 2011 and January 2012. Approximately 1,128 container plants including oaks were planted. The irrigated areas showed little hydroseed growth and most of the container plants had died in 2012 which may be attributed to the initial inconsistent watering and elevated pH due to continued technical problems with the irrigation system.

In December 2012 and early 2013 the well was again repaired and the container plants were replanted. Throughout most of 2013, the El Casco Substation irrigation system continued to have numerous operational issues that prevented the planted slopes from receiving irrigation with proper timing, volume, and pH. This has greatly hindered the growth and increased the mortality of seeds and container plants. As of February 2014, the well pump and chemical feed pump were repaired and tested, and were functioning properly according to SCE.

As reported by SCE in their 2013 El Casco System Project Annual Restoration Report, the irrigated chaparral slopes showed high cover of annuals, which exceeded the 2-year performance criteria; however, it had very few perennials or shrubs present. An additional 2.02 acres of hydroseed is planned, as well as regular monitoring of the irrigation system to ensure that it is functioning properly and has proper pH levels. Continued weed abatement and monitoring is also recommended. Container plants on the slopes exhibited only 21 percent survivorship. Approximately 759 additional container plants, primarily scrub oaks were installed in early 2014. Continued monitoring of the container plants and irrigation system are recommended.

At the El Casco Substation it had also been noted as early as July 2012 that sheep grazing around the substation was becoming a problem. Bruno Farms was granted permission by the County of Riverside to graze sheep on the County-owned properties surrounding the substation site. However, the sheep had invaded all of the restoration sites including the smooth tarplant HMMP locations discussed below. SCE conducted numerous discussions with applicable groups to get the problem under control. The issue persisted into early 2013. Bruno Farms has agreed to install temporary fencing where their sheep have the potential to encroach onto the restoration sites. Initially only the smooth tarplant locations were temporarily fenced, but by April 2013 all of the restoration areas were temporarily fenced. The sheep caused no major damage and the temporary fencing seemed to have solved the problem. However, there are no assurances that SCE will be made aware of future grazing activities in advance of their occurrences, nor does SCE have control over what types of permits the County may issue in the future that could further affect restoration success.

7.2.2 San Timoteo Creek HDD Site

Subtransmission lines running north from the El Casco Substation were routed under San Timoteo Creek, Burlington Northern Santa Fe (BNSF) Railroad, and San Timoteo Canyon Road using a HDD to a location just north of the road. Temporary disturbance of 0.24 acres of alkali meadow vegetation occurred at the northeastern end of this activity, adjacent to San Timoteo Canyon Road. In addition, restoration of an unauthorized “joyride” area is being conducted where temporary impacts to wetland vegetation located approximately 300 feet northeast of the HDD restoration area occurred.

Hydroseeding was conducted November 2011 through January 2012. Willow planting occurred January 31, 2011. No irrigation was applied at this site during 2012.

Figure 29 — View of the HDD restoration area. March 12, 2014.

The site was hydroseeded for the second time in February 2013 following poor growth in 2012. In an effort to prevent the seeds from being washed away by sheet flow, straw wattles were installed along the access road, upslope edges, and spaced throughout the site to prevent water sheeting across the HDD restoration area. In addition, small container plants were planted within the site to help establish the native vegetation cover. Bermuda grass which had covered most of the site was repeatedly removed in 2012. In 2013, the container plants were provided supplemental hand watering as needed to ensure their survival.

As provided by SCE in their 2013 El Casco System Project Annual Restoration Report, the HDD restoration site has native cover that exceeds the 2-year and 5-year performance criteria. The site however has extensive non-native cover comprised primarily of Bermuda grass that is higher than the performance criteria which requires less than 5 percent non-native cover. There is also some sweet clover growing around the container plants that is being weeded by SCE. Recommendations include re-application of hydroseed, continued weeding, and continued monitoring.

Figure 30 — View of the temporary impact area just east of the Zanja Substation. Note the dense growth of native vegetation. March 12, 2014.

7.2.3 Zanja Substation

Construction work at Zanja Substation temporarily impacted 1.3 acres of non-native grassland to the east of the substation. Hydroseeding first occurred in September 2010. Because of poor germination, a second application was made in February 2011, and finally a third application in December 2011. By order of the San Bernardino County Fire Department, the area was mowed during the spring of 2012. Following the mowing, the native cover has increased extensively. As reported by SCE in their 2013 El Casco System Project Annual Restoration Report, the Zanja Substation restoration area exceeded the 2-year and 5-year performance criteria. Native shrub cover is high and non-native cover is low. No additional monitoring or maintenance is required.

7.2.4 Subtransmission Restoration Sites

Each pole location along the 115 kV subtransmission route was allowed a 50x50-foot temporary disturbance area. Most of these areas are in bare ground or ruderal and non-native grassland vegetation and have been allowed to naturally return to existing conditions.

Six subtransmission tower adjacent sites are undergoing restoration activities and or monitoring.

At two pole sites, #207 and #208, willows were planted as restoration for trimmed willow trees in an area of approximately 200 square feet. As reported by SCE in their 2013 El Casco System Project Annual Restoration Report, locations #207 and #208 continue to show good cover of willow cuttings, with native cover at 75 percent. Continued monitoring is recommended to stay on track with the 5-year success criteria.

At four tower sites approved under Variance #18, various sized disturbance areas are being restored and or monitored:

- Location #216: Work included removal of a 25x2-foot area along the road edge of mostly ruderal vegetation, a few native annuals, and two subshrubs. This site also included a staging area consisting of disturbed ground with non-native grasses and ruderal vegetation that was approximately 15x30 feet. The area was being allowed to recolonize without hydroseeding. As reported by SCE in their 2013 El Casco System Project Annual Restoration Report, the area showed growth of similar non-native grassland species. However during the site tour conducted by Aspen almost no native plant growth and some cover of non-natives were noted. SCE has confirmed plans to hydroseed the area in the spring of 2014.
- Location #29: Work included removal of 1,215 square feet of non-native grassland and 150 square feet of sage scrub vegetation to widen the existing spur road. The area received hydroseeding. However, as reported by SCE in their 2013 El Casco System Project Annual Restoration Report, the area shows almost no native plant growth and will be reseeded in early 2014.
- Location #35: Work included cutting two small notches into the low bank on the side of the spur road for a total removal of 70 square feet of non-native grassland. The area was being allowed to recolonize without hydroseeding. As reported by SCE in their 2013 El Casco System Project Annual Restoration Report, the area showed growth of similar non-native grassland species. However during the site tour conducted by Aspen almost no native plant growth and some cover of non-natives were noted. SCE has confirmed plans to hydroseed the area in the spring of 2014.
- Location #36: Work included removal of approximately 1,520 square feet of sage scrub/chaparral mixed vegetation to widen the existing spur road. One scrub oak was removed. The area received hydroseeding. However, as reported by SCE in its 2013 El Casco System Project Annual Restoration Report, the area shows almost no native plant growth and will be reseeded in early 2014. SCE also plans to plant 3 or 4 oaks in the spring of 2014.

Figure 31 — View of subtransmission restoration site 36. Note the lack of plant cover and container plants. March 12, 2014.

7.2.5 Smooth Tarplant HMMP Sites

The smooth tarplant HMMP requires mitigation of disturbed tarplant habitat at 1:1 ratio, and within that mitigation area, mitigation of smooth tarplant individuals at 2:1 ratio. A total of 200 plants were disturbed by construction within 1.22 acres. For three (not necessarily consecutive) years of the 5-year monitoring period, 400 plants covering 1.22 acres of the mitigation area would need to be present to meet the HMMP standards. The smooth tarplant mitigation sites consist of the original primary mitigation site and a secondary site which was added in order to meet mitigation goals for smooth tarplant.

Primary Site: The primary 2.9-acre smooth Tarplant HMMP site was chosen by the County Parks Department prior to construction. In 2011 and 2012 it was determined that the majority of the site was dominated by non-native annual plant species and that the site's soil was more wet than predicted and is not optimal for smooth tarplant. Weeding, herbicide application, and light soil compaction on the primary site provided only temporary suitable conditions for smooth tarplant and ultimately the site produced very few tarplants. To supplement the smooth tarplant count, seed was collected during the months of September through December 2013 and sown across select areas of the primary site in November and December 2013. Because limited smooth tarplant individuals are surviving at the primary site, continued seeding and maintenance of only select portions of the site continued during 2013 and are planned throughout the restoration effort

Figure 32 — View of a portion of the secondary smooth tarplant HMMP area. March 12, 2014.

Secondary Site: The secondary 2.4-acre site is located on the old dirt access road and adjacent vegetation parallel to San Timoteo Creek that was abandoned for the new paved El Casco Substation access road. A large portion of the area was hydroseeded in 2011 as part of the El Casco Substation access road restoration. The seed mix did not contain smooth tarplant, yet smooth tarplant sprouted up voluntarily at the location and were surviving well. Undisturbed areas consisted of ruderal areas dominated by Russian thistle and non-native grassland. SCE proposed the site for mitigation use to the RCA and the County Parks Department in late 2011 and met no objection. Information regarding the second smooth tarplant mitigation site was included in the 2011-2012 Annual Report which was provided to all interested agencies including USFWS and CDFW. No comments or concerns were expressed.

In 2013, weeding and restoration efforts were mostly focused on the new secondary tarplant mitigation site. Natures Image was contracted to mow and selectively hand weed the secondary site throughout 2013 to maintain a more open grassland community for smooth tarplant. Weeding was conducted on three separate visits in May, June, and October of 2013. Much of the weeding focused on removing Russian thistle, yellow star-thistle, and dense non-native grasses. Spot spraying with herbicide was used sparingly to eliminate large mats of sprouting Russian thistle. To supplement the smooth tarplant count, seed was collected during the months of September through December 2013 and sown across the secondary site in November and December 2013.

As noted in Section 7.2.1, as early as July 2012, sheep had invaded all of the El Casco Substation restoration sites and the smooth tarplant HMMP locations. Sheep grazing continued again in 2013 adjacent to both the primary and secondary smooth tarplant sites. Temporary fencing was erected to keep the sheep outside of the established mitigation sites. No sheep grazing occurred on either site although it was noted that Russian thistle grew back in greater density once the surrounding area was heavily grazed.

December 2013 Status: As reported by SCE in their 2013 El Casco System Project Annual Restoration Report (and accompany appendixes), smooth tarplant was inventoried at both the primary and secondary mitigation areas in 2013 and a total of 404 plants were observed occupying an area 1.24 acres in size. If accurate, the number of plants observed and the size of occupied area would exceed the performance criteria established in the HMMP (400 plants in 1.22 acres). Additional weeding, seeding, and monitoring are recommended to maintain the success criteria.

During the validation survey conducted by Aspen in March 2014 it was difficult to verify that the number of plants and area of occupancy were accurate. A follow-up visit was conducted with NRC biologists who provided photos of some of the smooth tarplant that grew in 2013 and also helped relocate a few of the dead plants in the field from the previous year. Heavy rainfall was blamed for scouring out some portion of the secondary mitigation area, which is the primary reason the plants were not easily relocated. It appears that weeds are under control in the secondary mitigation area, but the primary mitigation area appears to have largely been abandoned because of high cover of non-natives in the area. During the survey several dead plants were relocated, as well as several clusters of dead plants that were scoured.

Figure 33 — Some smooth tarplant remnants from 2013 which appear to have been pushed over by scouring flows. March 18, 2014.

It should be noted that tarplant is a very challenging species to monitor over a 5-year period. Annuals like tarplant may come up in large numbers one year and be absent from a site the next. It is very dependent on rainfall, which was very low during the 2013/2014 rainy season. Although SCE reported that the success criteria were met in 2013, it seems unlikely that the success criteria will be met in 2014, based on observation made during the recent site visit. The success criteria of the HMMP are written in a way that addresses this problem by requiring that success criteria be met three out of the five years. Because only one of the two reporting years was reported as successful, and 2014 will likely be unsuccessful, the focus should be on achieving adequate numbers of plants in 2015, and 2016. If the number of plants in 2015 does not achieve the success criteria, then consultation with the agencies at that time is recommended.

7.2.6 Summary of Restoration Efforts

After review of the 2013 El Casco Systems Project Restoration Report, all restoration sites were visited by Aspen Biologist/EM Justin Wood on March 12 and 18, 2014. Some areas had met seed mix plant cover and/or plantings survivorship goals including the non-irrigated areas around the El Casco Substation, the Zanja Substation, and the smooth tarplant HMMP sites although Aspen was unable to verify the tarplant data supplied by SCE in the 2013 Report. Other areas had not met restoration success criteria including the irrigated slopes around the El Casco Substation, the two riparian areas at the El Casco Substation, the San Timoteo Creek HDD site and the subtransmission restoration areas. SCE supplied future planned restoration activities and monitoring in order to facilitate meeting restoration goals.

The potential for future sheep grazing at/near the El Casco Substation and smooth tarplant restoration sites remains. It is recommended that SCE continue monitoring and coordination efforts to ensure protective fencing installations.

Mitigation Measure B-1b requires that the creation or restoration of all habitats shall be monitored for five years after initial planting or until established success criteria are met. The 2013 El Casco Systems Project Restoration Report marked year two of five in reporting. However it is important to note that long term issues with the El Casco Substation irrigation system and delays in initial container planting and hydroseeding at certain subtransmission restoration areas mean that some aspects of the restoration program have been effectively initiated in the beginning of year three of five.

Future field validation surveys are recommended to ensure that success and performance criteria are being met.

8. Lessons Learned and Recommendations for Future Mitigation Monitoring Plan

The intent of this section is to identify shortcomings of mitigation and permit requirements approved for the El Casco System Project and present lessons learned for future projects.

Mitigation Requirement Disputes: During the pre-construction compliance review process SCE repeatedly put forth that mitigation measure requirements did not or should not apply to certain aspects of construction even though the EIR analyses had stipulated when and where mitigation should be applied. SCE eventually conceded and provided most of the documentation as outlined. At the request of CPUC, SCE did submit a formal variance request, Variance #5 which called out specific geotechnical and hydrological reporting requirements which they believed should not be applied to the 115 kV subtransmission element. CPUC utilized issue area experts to review the request. The CPUC conditionally approved the request allowing the lessening of some, but not all reporting requirements depending on established site features.

> *LESSON LEARNED:* It is understandable that once the pre-construction phase of a project begins the applicant/utility will discover that they would like minor fine tuning regarding where measures should apply given site resources etc. However, in the case of the El Casco System Project, the sheer volume of SCE complaints about the requirements during the pre-construction phase was inappropriate and proved very time consuming. Instead, SCE should have voiced their concerns during the CEQA document preparation process and not immediately preceding construction. Once the environmental documents are certified, it should be made clear to the applicant that changes to mitigation implementation should be pursued with a formal Variance Request or Petition for Modification.

Project Planning and Final Engineering Discrepancies: It is common practice for utilities to refine and conduct final engineering after CEQA document publication; however, in the case of the El Casco System Project, SCE notified Aspen representatives during a construction site tour that the number of 115 kV subtransmission poles had nearly doubled on certain segments. This points to a considerable lack of planning and/or internal SCE coordination, and resulted in SCE's ultimate submittal of a Petition for Modification and SEIR.

> *LESSON LEARNED:* It should be made clear to the applicant that any and all Project changes which could result in additional impacts or impact level would require full CEQA review. Therefore, better planning with awareness of final engineering outcomes should be presented in the PEA.

Post Construction Reporting: Numerous mitigation measures and Project plans contain reporting requirements which continue post construction. On the El Casco Systems Project, as well as other like projects, it has been found that shortfalls have occurred in post construction reporting which have resulted in the CPUC having to run down documents and make numerous requests. For example, on the El Casco System Project under Mitigation Measure AQ-3, SCE is required to submit an annual Sulfur Hexafluoride Emissions Report for the El Casco Substation annually to the CPUC. No reporting was made by SCE until directly requested by Aspen representing the CPUC. The El Casco Project Paleontology Treatment Plan and Mitigation Measures CR-3b, CR-3d APM-Paleo-2, APM-Paleo-3, APM-Paleo-4, APM-Paleo-5 and APM-Paleo-6 require final paleontological discovery reporting to the CPUC. The El Casco Final Paleontological Report with Results of the Paleontological Resources Monitoring Plan was only submitted to the CPUC after a direct request.

> *LESSON LEARNED:* It is apparent that without direct requests for specific required post construction reporting that some reporting would most likely never be made. It would be very helpful for the utility to put together a matrix of all post construction reporting requirements in order to stay on task.

Nesting Bird Buffer Protocols: Project Mitigation Measure B-4 requires that if an active bird nest is found a Biological Monitor shall establish a 300-foot buffer around the nest and no activities will be allowed within the buffer until the young have fledged from the nest or the nest has failed. The 300-foot buffer may be adjusted to accommodate environmental conditions (background noise, existing level of disturbance, nest location) with the approval of the CPUC and the CDFG. During construction a lot of time went into the review of buffer reductions and led to the composition of the El Casco System Project Active Nest Management Plan and Buffer Guidance under consultation with the CDFG.

LESSON LEARNED: The need for bird nest buffer reductions tends to be a universal issue on linear utility projects like the El Casco System Project. Because CDFG (now CDFW) may no longer be able to review buffer reduction requests on a case by case basis, a plan such as the Active Nest Management Plan and Buffer Guidance should be developed not only before nesting season, but prior to the onset of construction.