IOU Joint Presentation for CPUC Nesting Bird Workshop August 30, 2012

As of August 24, 2012

Issue Statement

- Certain nesting bird management requirements on major transmission line construction projects cause significant impacts:
  - Schedule delays
    - Multiple construction starts and stops-logistically inefficient
  - Increased cost
  - Electric system reliability risk
  - Challenges to complete work during scheduled outages on CAISO-controlled electric grid

Goal/End Vision

- Consistent nesting bird strategy applicable to electric transmission projects
  - Facilitates construction in a safe, timely, cost-effective manner while complying with applicable environmental requirements
- Minimize environmental footprint
- Maintain a high level of cooperation and trust among agencies and IOUs working towards common objectives

Nesting Bird Management Challenges During Construction

- Construction of major transmission line projects "outside of breeding season" is unrealistic

- Most nesting bird species affecting projects are common and abundant with no overall impact to species due to project activities

- A disproportionate amount of resources are expended on these common species

  - Analysis of TRTP and DCR project nest data indicates nest success is better within project areas

  - Only the most objective nest success data from TRTP and DCR was used in the analysis (548 of 5,491 nests)

  - Distance from work areas had little impact on nest success

  - House finch success rates were significantly better closer to work areas

Common Issues - Project Scheduling and Planning

- Construction of major transmission line projects typically span multiple nesting seasons
- Scheduling and re-scheduling outages – challenging to complete work during scheduled outages on CAISO-controlled electric grid
- Work restrictions for protected terrestrial species conflict with avian species
- Significant seasonal impact on construction activities
- Unanticipated stop work orders at random locations

Common Issues - Nest Management Issues

- Differing CDFG and USFWS active nest management guidance
- Limited ability to deter nesting birds or to remove inactive nests
- Inconsistent interpretation of CDFG policy at the regional and project levels
- Construction delays may prolong the duration of project environmental effects
- No readily observable or measurable benefit to common species as a result of the implementation of protective measures

Ideas for Discussion– Advance Planning

- Greater visibility and collaboration in the development of mitigation measures in order to provide needed flexibility and resource protection during construction
- Use adaptive Nesting Bird Management Plans with resource agency concurrence
- Agency approved avian experts to guide development of project avian plans and measures
- Continue to plan construction to avoid highly sensitive avian areas during nesting season to the extent feasible

Ideas for Discussion – Nest Management

- Prior to construction, remove or relocate inactive nests, use nest deterrents, clear construction areas of vegetation prior to nest becoming active
- Self-manage active nest buffer reductions during construction
- Rely on utility avian biologists approved by resource agency
- Continue to plan construction to avoid highly sensitive avian areas during nesting season to the extent feasible
- Use of USFWS special purpose permits under F&G code 3513 for nest removal

Ideas for Discussion – Nesting Deterrence

- For common species, use nest deterrents to inhibit nest construction prior to nest becoming "active" (USFWS definition)
  - Develop process for relocation or removal of active nests in critical construction situations
  - Use of physical deterrents for existing inactive nests
  - Use of behavioral deterrents to encourage nesting outside work areas
  - Where deterrents are not effective, allow reduced buffers
- Consult with resource agencies for raptors and sensitive species

Ideas for Discussion - Agency Processes

- CPUC acknowledgement that management plans are adaptive and can change during construction
- CPUC deference to collaborative resource agency consultation, guideline interpretation, and reasonable recommendations
- Timely approval of Nest Management Plans when used
- Prompt process for addressing raptor and sensitive species issues in the field

Pacific Gas and Electric
Nesting Bird Management

PG&E – Agency Approval Process

- CPUC CEQA Process allows for Agency Consultation and Concurrence
- Language in CEQA Documents needs to provide flexibility and clarify intent
- Resource Agency Consultation process in the field needs to be clearly understood

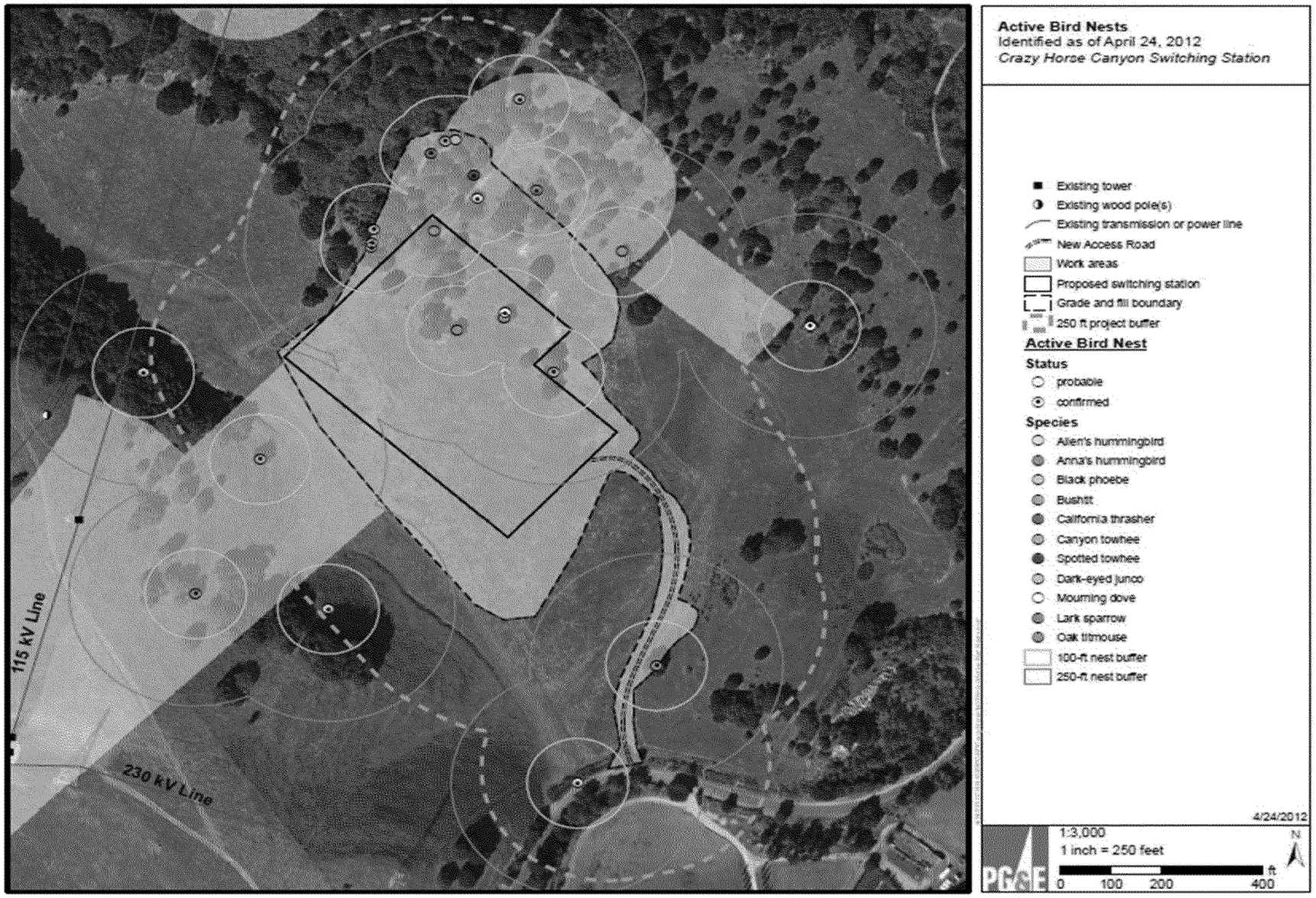
Project Planning

- Exercising FWS Utility Special Purpose Permit and F&G Code 3513 may provide a tool for proactively managing nests
- Use our qualified utility biologists

Construction Management

- Let us manage our work
- We need to provide flexibility in the field with timely agency consultations, where needed
- Complex construction projects have multiple conflicting constraints
- Pre through Post Construction Monitoring – successes in the field

Example – Nesting Season Constraints



Example – Resource Constraint Calendar

	January	February	March	April	May	June	July	August	September	October	November	December
Golden Eagle		NO NEST DISRUPTING ACTIVITIES WITHIN 1,000 FEET OF ACTIVE NEST FEBRUARY 1 – AUGUST 31										
White-tailed kite		NO NEST DISRUPTING ACTIVITIES WITHIN 500 FEET OF ACTIVE NEST FEBRUARY 1 – AUGUST 31										
Burrowing owl		BREEDING PERIOD: NO DISTURBANCE WITHIN 250 FEET OF OCCUPIED BURROW FEBRUARY 1 – AUGUST 31							NONBREEDING SEASON: NO DISTURBANCE WITHIN 160 FEET OF OCCUPIED BURROW; PASSIVE RELOCATION WITH CDFG APPROVAL SEPTEMBER 1 – JANUARY 31			
Nesting birds - raptors		NO NEST DISRUPTING ACTIVITIES WITHIN 500-FEET OF ACTIVE RAPTOR NEST FEBRUARY 1 – AUGUST 15										
Nesting birds - non-raptors		NO NEST DISRUPTING ACTIVITIES WITHIN 250-FEET OF ACTIVE NON-RAPTOR NEST FEBRUARY 1 – AUGUST 15										
Bat species			BREEDING SEASON - NO REMOVAL OF TREES CONTAINING MATERNAL COLONIES MARCH 1 – AUGUST 31									
Pajaro manzanita	OK; DOES NOT AFFECT SWITCHING STATION (TOWER LINE ONLY)								PRUNING OF MANZANITA ALLOWED AFTER SEED DISPERSAL AND PRIOR TO BLOOMING LATE SUMMER/FALL – DECEMBER (TYPICALLY)			OK
California red legged frog/ California tiger salamander	OK, IF APPROVED BY CDFG AND CPUC				GROUND DISTURBING ACTIVITIES WITHIN 600 FEET OF SUITABLE AQUATIC HABITAT ALLOWED MAY 1 - OCT 15				OK, IF APPROVED BY CDFG AND CPUC			
Other non-listed species	ADDITIONAL PROTECTION MEASURES MAY BE REQUIRED YEAR-ROUND FOR OTHER NON-LISTED SPECIES TO AVOID AND MINIMIZE IMPACTS											
MND CONSTRUCTION SCHEDULE	OK	FEB-AUGUST: NO WORK UNLESS NESTS ARE CLEARED AND/OR VACANT							OK			
PROJECT CONSTRUCTION SCHEDULE	WET WEATHER OK TO INSTALL EQUIPMENT IN GRADED STATIOND				STATION GRADING					WET WEATHER OK TO INSTALL EQUIPMENT IN GRADED STATION		

RESTRICTIVE ACTION | PERMITTED ACTION | CHECK PERMIT DOCUMENTS FOR FURTHER INFORMATION | CONSTRUCTION ALLOWED | CONSTRUCTION NOT ALLOWED UNTIL NESTS ARE CLEARED AND/OR VACANT

Southern California Edison
Nesting Bird Management

SCE Nesting Bird Overview

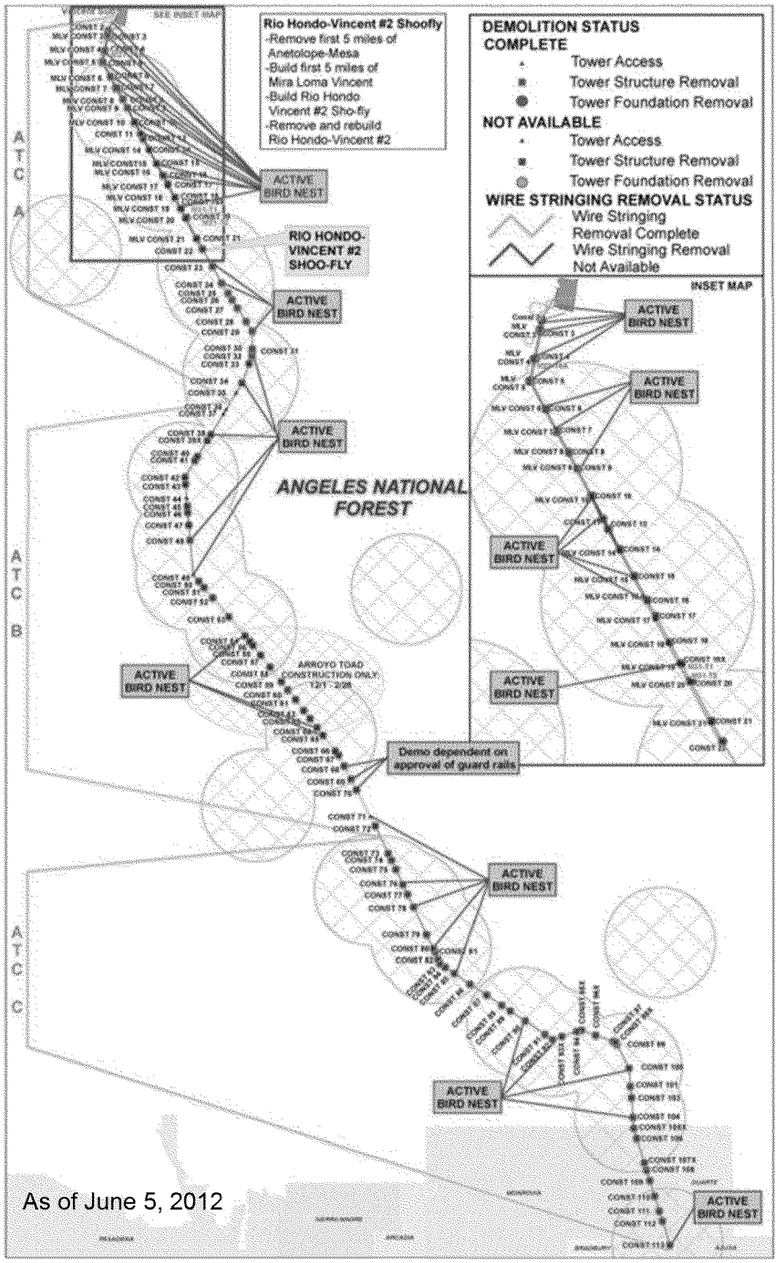
- Existing projects needed to meet state and federal renewable goals, and LGIA and PPA contractual requirements
  - DCR (NextEra, Solar Trust of America) – November 2013
  - EITP (BrightSource) – July 2013
  - TRTP (Various Tehachapi Wind Resource Area generators) – Operating Dates vary by Segment
- Future major projects needed to meet reliability and renewable requirements
  - Alberhill (Reliability) – 2014
  - San Joaquin Cross Valley Loop (Reliability) – 2014
  - South of Kramer (Abengoa Mohave Solar) – 2018
  - West of Devers (NextEra, Solar Trust of America) – 2018

Summary of SCE Nesting Bird Issue Examples & Impacts

Project	Potential Schedule Impact
TRTP Segments 4 & 5	~ 8 months
TRTP Segment 6 (Angeles Forest)	~ 5 months
DCR (Devers-Valley)	~ 3 months
Eldorado-Ivanpah (OPGW)	~ 6 months

- Delays attributed to nesting birds can significantly reduce available construction windows, e.g., scheduled transmission line outages
- Cost impacts range in the millions to tens of millions of dollars per project

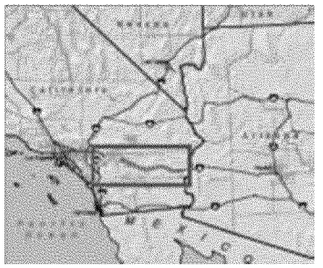
Tehachapi Renewable Transmission Project (TRTP)



- Widespread nesting activity on proposed Segment 6 work
  - ~Five-month delay compounded to ~11 months due to other environmental issues

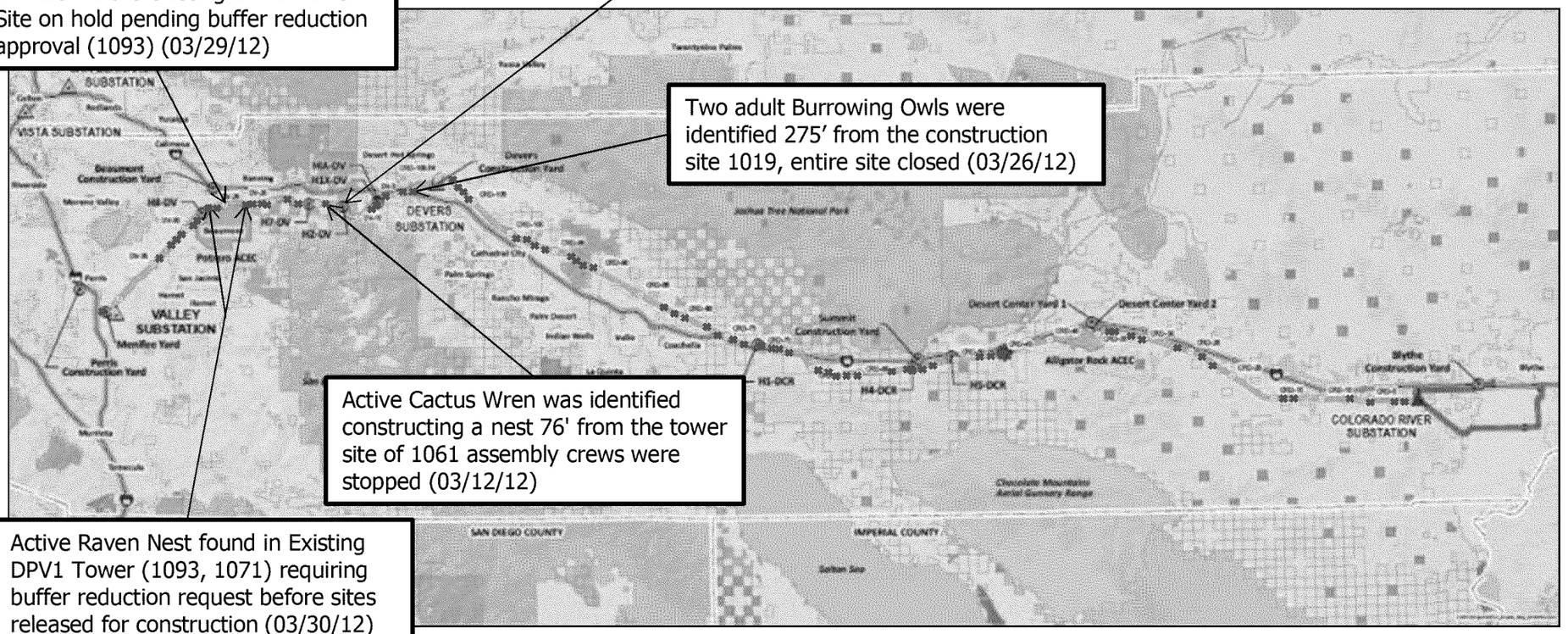
Devers-Colorado River (DCR)

- Widespread nesting activity on Devers-Valley T/L resulted in suspension of work at multiple construction locations and efforts to demobilize/remobilize to other work locations



Eight active cactus wren nests near DPV2 Tower site 1051 and helicopter landing zone H2 required crews to move pending buffer reduction request (10 days) (03/24/12)

Active Red-Tailed Hawk nest identified on M23-T1 the existing DPV1 Tower. Site on hold pending buffer reduction approval (1093) (03/29/12)



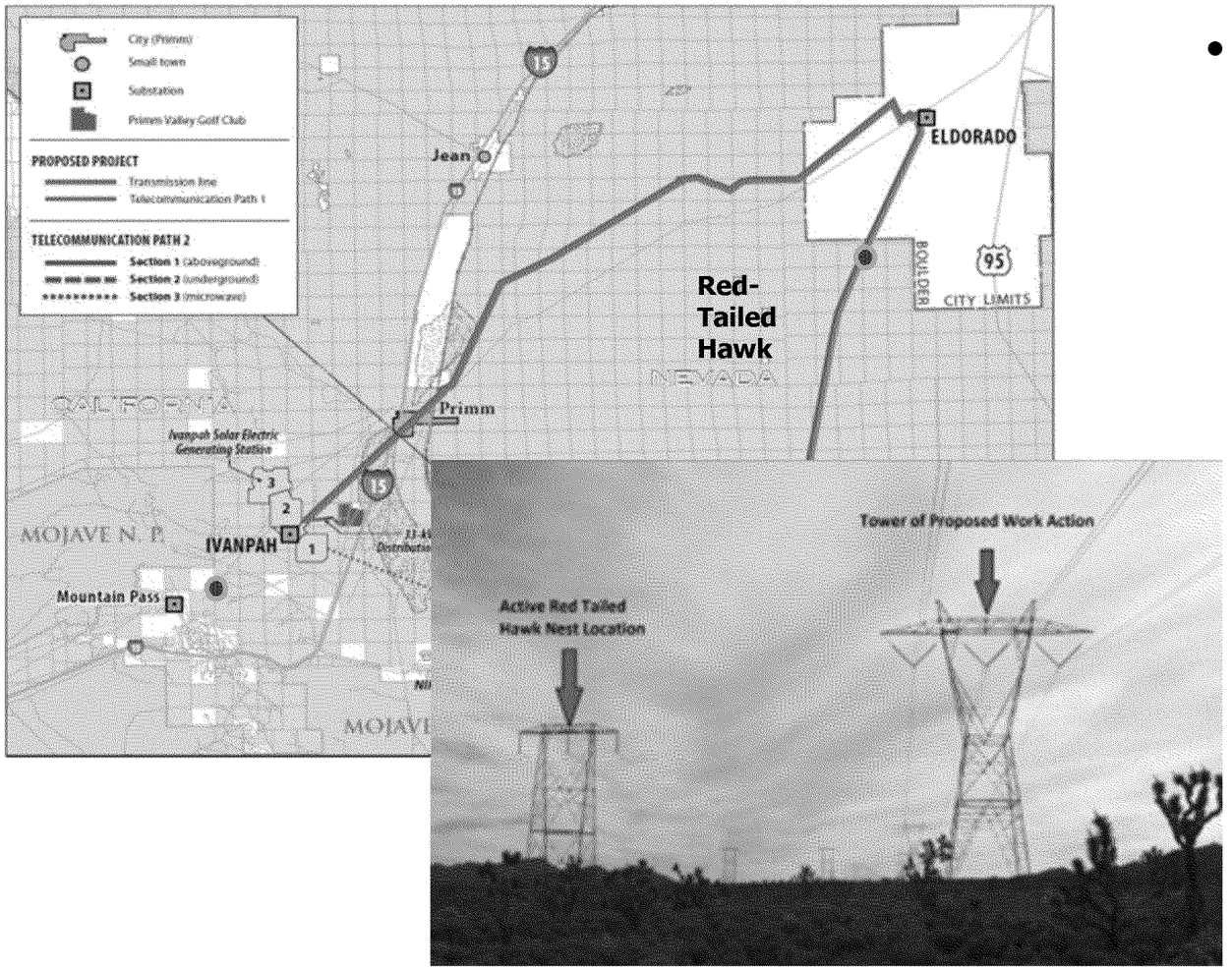
Two adult Burrowing Owls were identified 275' from the construction site 1019, entire site closed (03/26/12)

Active Cactus Wren was identified constructing a nest 76' from the tower site of 1061 assembly crews were stopped (03/12/12)

Active Raven Nest found in Existing DPV1 Tower (1093, 1071) requiring buffer reduction request before sites released for construction (03/30/12)

* Denotes bird nest event

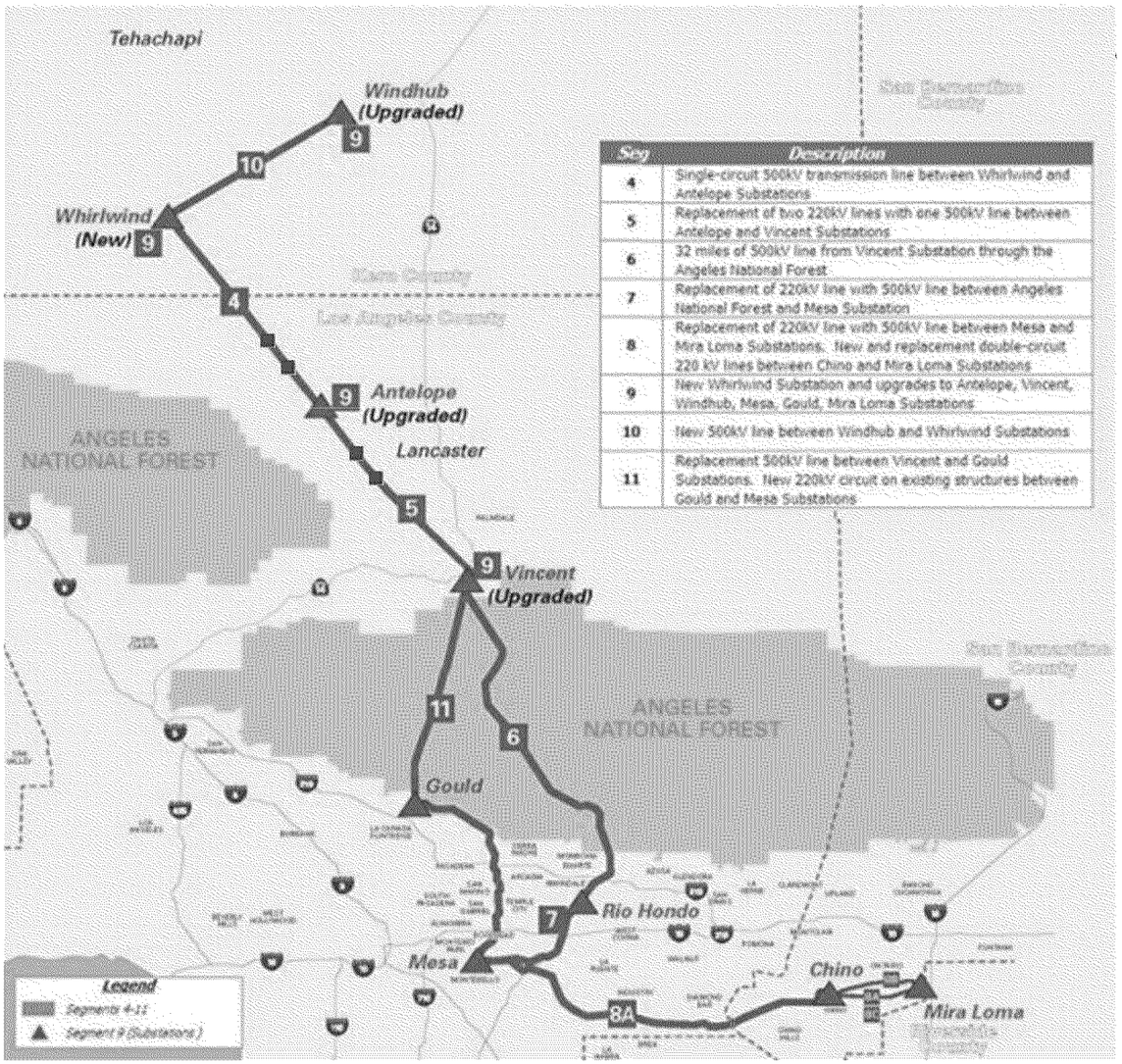
Eldorado-Ivanpah Transmission Project (EITP)



Southerly view of Eldorado-Lugo corridor

- Construction of needed electric system telecommunication line (OPGW) on existing Eldorado-Lugo 500kV T/L was suspended midway during construction following Red-tailed hawk nest discovery on adjacent existing structure
  - Operating capability of Eldorado-Lugo 500kV T/L reduced during nesting bird event

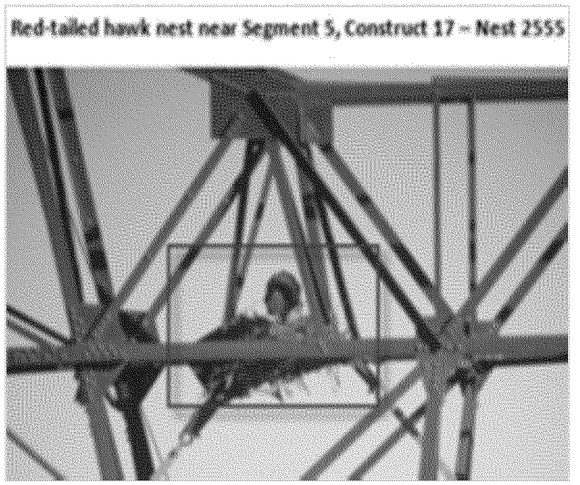
Tehachapi Renewable Transmission Project (TRTP)



Seg	Description
4	Single-circuit 500kV transmission line between Whirlwind and Antelope Substations
5	Replacement of two 220kV lines with one 500kV line between Antelope and Vincent Substations
6	32 miles of 500kV line from Vincent Substation through the Angeles National Forest
7	Replacement of 220kV line with 500kV line between Angeles National Forest and Mesa Substation
8	Replacement of 220kV line with 500kV line between Mesa and Mira Loma Substations. New and replacement double-circuit 220 kV lines between Chino and Mira Loma Substations
9	New Whirlwind Substation and upgrades to Antelope, Vincent, Windhub, Mesa, Gould, Mira Loma Substations
10	New 500kV line between Windhub and Whirlwind Substations
11	Replacement 500kV line between Vincent and Gould Substations. New 220kV circuit on existing structures between Gould and Mesa Substations

Red-tailed hawk nesting activity on Segments 4 & 5

- Operating capability of critical CAISO T/L (Path 26) significantly placed at risk during nesting bird event



■ Denotes approximate locations of bird nest events for Segments 4 and 5

SDGE

A Sempra Energy company

Sunrise Powerlink

Nesting Bird Management

SUNRISE POWERLINK℠

The Nesting Bird Management and Monitoring Plan (NBMMP) was developed in conjunction with the agencies

- The Sunrise MMCRP contained no specific mitigation measure requiring a NBMMP
- After consultation with the resource agencies on-site avian biologists were given the authority to assess impacts to individual nests given specific field conditions and proposed project work.
- The following provisions, which both protected the resources while allowing work to continue, were permitted under the NBMMP after avian biologist review.

- Adjust nest buffers
- Remove unoccupied nests
- Limited vegetation removal during the breeding season
- Vehicle use within nest buffers on existing roads

Adjusting Nest Buffers

- Avian biologists' qualifications were vetted by the agencies and the agencies gave their approval in advance of the season
- Avian biologists provided detailed rationales for nest buffer modifications to the agencies; rarely did the agencies disagree with their recommendations
- Species-specific buffers were developed prior to the season, so this reduced the number of nest buffer modification requests

Example:

A nest buffer modification was approved that allowed helicopter work and micropile foundation drilling on a tower pad 150 feet from a great horned owl nest. The modification request recommended installation of a sound wall, specific helicopter approach paths, long lining requirements, and nest monitoring during work activities. The nest fledged successfully after almost two months of intermittent construction.

Removing Unoccupied Nests

- SDG&E documented and determined the need to remove a nest attempt. Nest attempts continued despite on going construction activities. Responsibility was on SDG&E to determine "need" and to confirm the nest did not contain eggs or young.
- Nest removals often allowed the birds to rebuild their nest in a safer location and successfully fledge nestlings.
- If avian biologists felt that a buffer could be reduced without impacting nesting success, such reduction often occurred in lieu of removal.

Example:

Multiple nest removals were simplified in some instances. For instance, after requesting and receiving approval to remove three nesting attempts by a western kingbird on Tower EP54-1, we were allowed to proceed with subsequent nest removals without prior approval under the following conditions: provide a photograph of the nest attempt to the agency's consultant prior to the removal and provide an email to the consultant after the removal with information on nest stage and contents. There were a total of 8 nest attempts by this pair.

Trimming Vegetation During Nesting Season

- SDG&E and agencies came to an agreement on trimming vegetation via several variances, with conditions.
- These conditions included a strict protocol for nest surveys that evolved over time and increased the number of avian biologists during each survey, increased the time spent during each survey, reduced the pre-construction survey window, increased the number of surveys prior to construction, and added an analysis of the vegetation present in the area surveyed for nesting birds.
- The ultimate resolution between SDG&E and the agencies was that the avian biologists are qualified professionals, were approved by the agencies, and would have had the skills to detect nesting birds during their surveys.

Vehicle Use Within Nest Buffers on Existing Roads

- An exemption was provided for vehicle use within nest buffers on existing roads provided that:
- Traffic levels would remain the same as when the nest was originally established.
- Traffic could not stop or idle or perform any work activities in the buffer.
- Construction personnel would not traverse or loiter within the buffer.
- Nests would be monitored by avian biologists to determine that they are not being adversely impacted.
- Buffer signage would be adequate to insure compliance.

Recommendations

- *Allow SDG&E to implement nest buffer modifications without advance agency concurrence.*

  Rationale:

  - *Agency-approved avian biologists are responsible for evaluating the modifications.*
  - *Field buffer determinations by Wildlife Agency-approved biologists should be appropriate and satisfactory to comply with regulations.*
  - *Very few modification requests were denied (7 out of 1163 in 2012), thus the agency review process did not lead to more conservative buffers.*
  - *The end result is that the buffer distance would have been roughly the same with or without agency approval.*

Recommendations

- *Allow SDG&E to remove unoccupied nests of non-threatened/endangered avian species without advance agency concurrence.*

  Rationale:

  - *Agency-approved avian biologists are responsible for evaluating and documenting the nest status to determine if appropriate for removal.*
  - *The majority of nest removals involved common and abundant avian species such as house finch and common raven.*
  - *None of the nest removal requests in 2012 were denied, so the end result (the nest removal) would have been roughly the same with or without agency approval.*