[FINAL]

Eldorado – Lugo – Mohave Series Capacitor Project

Nesting Bird Management Plan

Prepared for

Southern California Edison

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Applicable agencies
Bureau of Land Management
California Public Utilities Commission

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Acronyms and Abbreviations

APM	Applicant Proposed Measure
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMP	Best Management Practices
BSA	Biological Survey Area
CAISO	California Independent System Operator
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
CPUC	California Public Utilities Commission
EA	Environmental Assessment
ESA	Environmentally Sensitive Area
FESA	Federal Endangered Species Act
FRED	Field Reporting Environmental Database
GPS	Geographical Positioning System
kV	Kilovolt
MBTA	Migratory Bird Treaty Act
NBMP	Nesting Bird Management Plan
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act
NRS	Nevada Revised Statutes
OPGW	Optical ground wire
Plan	Nesting Bird Management Plan
ROW	Right-of-Way
SCE	Southern California Edison
SCE EPM	SCE Environmental Project Manager
SPUT	USFWS Special Purpose Utility (permit)
TSP	Tubular steel pole
USFWS	U.S. Fish and Wildlife Service

1 Introduction

The proposed Eldorado – Lugo – Mohave Series Capacitor Project (the Project) includes the Eldorado-Lugo, Eldorado-Mohave, and Lugo-Mohave 500 kilovolt (kV) transmission lines in California and Nevada. The Project involves upgrades (addition of new components) and maintenance (addressing clearance discrepancies) along those transmission lines.

The purpose of this Nesting Bird Management Plan (Plan or NBMP) is to specify the Southern California Edison (SCE) strategy and specific procedures to comply with applicable federal and state regulations and permits, as well as to identify specific mitigation measures pertaining to nesting birds encountered during construction of the Project, and to obtain agency feedback on the strategy and procedures. The relevant Project-specific measures are included herein as they are committed to in SCE's Applicant Proposed Measures (APMs) and by mitigation measures provided by the California Public Utilities Commission (CPUC) and the U.S. Department of the Interior, Bureau of Land Management (BLM) and National Park Service (NPS).

This is an adaptive management plan that may be revised or modified in consultation with the CPUC, BLM, NPS, and the California Department of Fish and Wildlife (CDFW), Nevada Department of Wildlife (NDOW), and the U.S. Fish and Wildlife Service (USFWS) to address field conditions, to improve the avoidance, minimization and mitigation measures outlined in this plan, or to address changes in local, state, and federal regulations. The amendment process is described in Section 4.

This Plan includes the following:

- The definition of active and inactive nests
- Establishing species-specific default buffers for construction activities
- Establishing procedures for implementing species-specific default buffers
- Establishing communication protocol for proposed reduction in established species-specific default buffers
- Survey methodology and monitoring procedures
- Reporting contents, format, and schedule

1.1 Project Description

1.1.1 Project Purpose Statement

SCE is a public utility that provides electric service to a population of approximately 15 million people within an approximately 50,000-square-mile service area that encompasses 180 cities throughout Southern California. SCE's Project was approved by the California Independent System Operator (CAISO) following recommendations for approval as a policy-driven upgrade through the CAISO's Transmission Planning Process. As a policy-driven upgrade, the purpose of the Project is to integrate renewable generation and relieve area deliverability constraints. The capability of the existing infrastructure is limited by the existing series capacitors and terminal equipment and needs to be upgraded to meet the Project objectives by increasing the import capability of the existing transmission lines. These upgrades have been approved as CAISO policy-driven upgrades in the 2012-2013 and 2013-2014 Transmission Plans.

1.1.2 Project Overview

This Project will increase capacity and power flow between SCE's existing Eldorado, Lugo, and Mohave Substations to safely deliver renewable power to the Los Angeles Basin from the Eldorado and Mohave Substations. SCE's Proposed Project would:

- Construct 2 new 500 kV mid-line series capacitors (i.e., the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor) and associated equipment.
- Provide 2 communication paths between the series capacitor sites.
    - Install approximately 2 miles of overhead and 700 feet of underground telecommunications facilities as one path to connect the proposed series capacitors to SCE's existing communication system.
    - Install approximately 2 miles of underground telecommunications facilities as a second communication path to connect the series capacitors to SCE's existing communication system.
- Provide station light and power to the proposed series capacitors by extending and/or rerouting existing lines to create approximately 2 miles of overhead and 700 feet of underground 12 kV distribution circuits. (The new distribution poles would support overhead telecommunication facilities as well as the electric distribution lines.)
- Construct 3 new fiber optic repeater facilities (Barstow, Kelbaker, and Lanfair) within the Lugo-Mohave right-of-way (ROW).
- Install distribution lines for light and power at the 3 proposed fiber optic repeater sites.
- Install underground telecommunications facilities from existing transmission structures to the Barstow, Kelbaker, and Lanfair fiber optic repeater sites.
- Address 16 potential overhead clearance discrepancies at 14 locations by:
    - Relocating, replacing, or modifying existing transmission, subtransmission, and distribution facilities at approximately 12 locations along the Eldorado-Lugo, Eldorado-Mohave, and Lugo-Mohave 500 kV transmission lines to address 14 of the overhead clearance discrepancies. Tower modifications would include raising 9 towers up to approximately 18.5 feet by inserting new lattice-steel sections in tower bodies.
    - Performing minor grading at 2 locations along the Lugo-Mohave 500 kV transmission line to address 2 of the overhead clearance discrepancies.
- Install approximately 232 miles of optical ground wire (OPGW) (approximately 59 miles on the Eldorado-Mohave transmission line and approximately 173 miles on the Lugo-Mohave transmission line and approximately 3 miles of underground telecommunications facilities in the vicinity of the Mohave Substation).
- Modify and strengthen the ground wire peak of existing suspension towers where OPGW splices would occur. (Some of these towers would also require minor modifications to the steel in the tower body.)
- Install approximately 2,000 feet of underground telecommunications facilities within the existing Lugo, Mohave, and Eldorado substations.

- Within Lugo Substation, perform modifications on the existing series capacitors and install new terminating equipment and remove 2 existing tubular steel poles (TSP) and install 2 new TSPs on the Eldorado-Lugo and Lugo-Mohave 500 kV transmission lines.
- Within the Eldorado Substation, perform modifications on the existing series capacitors and upgrade the terminal equipment on the Eldorado-Lugo 500 kV transmission line.
- Within the Mohave Substation, replace existing series capacitors on the Lugo-Mohave 500 kV transmission line and install new terminal equipment on the Eldorado-Mohave and Lugo-Mohave 500 kV transmission lines.
- Install (if necessary) cathodic protection on approximately 60 miles of SoCalGas's natural gas pipelines parallel to SCE's Lugo-Mohave 500 kV transmission line and on other pipelines as needed.

1.1.2.1 Project Activities

Table 1, below, provides a list of typical Project construction activities, types of equipment, and their corresponding disturbance level for nesting birds (Minimal, Low, Medium, and High). The disturbance levels in Table 1 were categorized based upon the activities' disturbance to nesting birds observed on previous similar projects and analysis of the following factors:

- Duration of activity
- Type of equipment used
- Noise level associated with the activity
- Number of personnel needed
- Position of equipment used to complete activity
- Types of helicopters used

The disturbance level category for any construction activity may be revised by SCE and the agencies on a case-by-case basis to account for site-specific conditions or unforeseen circumstances (e.g., contractors may use equipment or techniques not anticipated here).

Low disturbance level activities generally produce little to no noise, utilize no machinery, create minimal fugitive dust, are short in duration, and cause minimal to no ground or vegetation disturbance. Examples of low disturbance activities are Vegetation Clearing (Hand Tools) and Bird Deterrent Installation. Some low disturbance level activities such as surveys, staking and flagging, and BMP (best management practices) installation and repairs generate very minimal levels of disturbance compared to other construction activities. These activities are classified in Table 1 as minimal disturbance level activities and do not require the typical buffers that other construction activities necessitate. However, even low and minimal disturbance level activities can negatively affect nesting birds under some circumstances, and measures presented in this Plan apply to those types of activities as appropriate. Nest surveys themselves, while not resulting in ground disturbance, can create risks to nesting birds. The Avian Biologist (see Section 3.1.2) will be responsible for ensuring that biological surveys are conducted in a way that results in minimal disturbance to nesting birds. Minimal disturbance level activities and their applicable buffers are described in greater detail in Sections 2.4.2 and 2.4.4.

Medium disturbance level activities generally produce some noise, create minimal fugitive dust, utilize light machinery that may cause noise and vibrations, and cause medium ground and vegetation disturbance; however, the activities are relatively stationary and shorter in duration than high disturbance

level activities. Light construction machinery is considered to be equipment such as or similar to power tools, small Bobcats, Ditch Witch, small skid steers, small backhoes, small excavators, boom trucks, and small bulldozers. Vegetation clearing (light machinery), foundation drilling, and grading (hand tools/light machinery) are examples of medium disturbance level activities.

High disturbance level activities generally produce high levels of noise, create fugitive dust, utilize heavy machinery that create noise and vibrations, and cause ground and vegetation disturbance. Heavy machinery is considered to be equipment such as or similar to cranes, large Bobcats, large bulldozers, large excavators, large skid steers, and motor graders. Vegetation clearing (heavy machinery), tower erection, and tower demolition are examples of high disturbance activities. These high disturbance level activities usually take place over larger areas and for longer durations.

Table 1 Typical Project Activities and Their Disturbance Levels

Construction Activity Category	Construction Activity	Disturbance Level
Preconstruction	Environmental Resource Surveys*	Minimal
	Civil Survey*	Minimal
	Construction Staking and Re-staking*	Minimal
	ESA Staking and Re-staking*	Minimal
	Site Visits*	Minimal
	Utility Potholing	Medium
	Bird Deterrent Installation*	Low
Site Preparation	Vegetation Clearing (Hand Tools))	Low
	Vegetation Clearing (Light Machinery)	Medium
	Vegetation Clearing (Heavy Machinery)	High
	Grading (Hand Tools/Light Machinery)	Medium
	Grading (Heavy Machinery)	High
	BMP Installation (Hand Tools)*	Minimal
	BMP Maintenance (Hand Tools)*	Minimal
	BMP Installation (Light Machinery)	Medium
	Fence Installation	Medium
Foundation Construction	Casing/Steel Preparation	Low
	Drilling	High
	Casing/Steel Installation	Medium
	Concrete Pouring	High
	Concrete Finishing/Cleanup (Excluding Grinding)	Low
	Concrete Finishing (Grinding)	Medium
Tower Assembly	Steel Delivery (Truck)	Medium
	Steel Delivery (Helicopter)	Helicopter Buffer
	Assembly (Crane)	Medium
	Assembly (Helicopter)	Helicopter Buffer
Tower Erection	Tower Erection (Crane/Ground)	High
	Tower Erection (Helicopter)	Helicopter Buffer
	Tower Erection (Bolting Only)	Low
	QA/QC Inspection*	Minimal
Wire Stringing	Traveler Installation	Helicopter Buffer
	Remove/Install Insulators	Helicopter Buffer
	Wire Stringing (Ground Equipment)	Medium
	Wire Stringing (Helicopter)	Helicopter Buffer
	Spacer Installation	Helicopter Buffer

Table 1 Typical Project Activities and Their Disturbance Levels		
Construction Activity Category	**Construction Activity**	**Disturbance Level**
	Helicopter Transport	Helicopter Buffer
	Clipping	Medium
	Guard Structure Placement (Truck)	Low
	Guard Structure Installation	Medium
	Guard Structure Removal	Medium
Telecommunications Activities	Pole Removal	Medium
	Pole Installation	Medium
	Installation of Cross Arms	Low
	Insulator Removal/Installation	Low
	Traveler Installation/Removal	Low
	Wire Stringing	Medium
	Fiber Optic Splicing*	Low
	Resistance Testing	Low
Construction Yards	Personnel Meeting	Minimal
	Material Storage	Minimal
	Deliveries	Minimal
Tower Deconstruction	Deconstruction (Crane)	High
	Deconstruction (Helicopter)	Helicopter Buffer
	Steel Salvage	High
	Foundation Removal	High
Restoration	Site Re-contouring (Grading)	High
	Topsoil Replacement	Medium
	Hydraulic BMP/seed application	Low
	Seeding (Hand)	Low
	Seeding (Machinery)	Medium
	Watering	Low
	Herbicide Application	Low
	Weed Removal (Hand)	Low
	Weed Removal (Machinery)	Medium
Substations	Some activities will take place within existing disturbance limits. See Tower Assembly, Tower Erection, Wire Stringing for activities that may occur at locations just within the substation fence. See Preconstruction, Site Preparation, and Construction Yards for additional activities that may occur as a result of substation expansion or construction of series capacitors.	Low-High
NOTE: *See Sections 2.4.2 and 2.4.4.		

1.2 Lead, Cooperating, and Consulting Agencies

1.2.1 Lead Agencies

Lead agencies have discretionary approval over the Project and are responsible for reviewing aspects of the measures documented in this Plan. The CPUC is California's lead agency responsible for compliance with the California Environmental Quality Act (CEQA) for Project areas on non-federal lands. The CPUC issued an Initial Study/Mitigated Negative Declaration for the Project under CEQA. The BLM Desert District

Office is the federal lead agency responsible for compliance with National Environmental Policy Act for the Project areas on federal lands.

1.2.2 Cooperating Agencies

Because the Project also crosses the Mojave National Preserve, the NPS elected to participate as a cooperating agency for the environmental review of the Project. Although the existing transmission lines associated with the Project also cross lands administered by the Bureau of Reclamation and the Department of Defense, the NPS represents the only federal cooperating agency at this time.

1.2.3 Consulting Agencies

Consulting agencies are public agencies, other than the lead agencies, that may provide guidance or information needed to satisfy the requirements of the measures contained in this Plan. Consulting agencies for select mitigation measures listed in Table 2 include U.S. Fish and Wildlife Service (USFWS), CDFW, and NDOW.

1.3 Agency Roles and Responsibilities

The CPUC is the state lead agency responsible for CEQA review and compliance. The BLM is the federal lead agency responsible for National Environmental Policy Act (NEPA) review and compliance. Under CEQA and NEPA, both lead agencies must address the Project as a whole. There is no additional environmental analysis required for this Project by the Public Utility Commission of Nevada.

The BLM's NEPA responsibilities are being met through the preparation of an Environmental Assessment (EA). The CPUC's CEQA responsibilities are being met through participation in the NEPA process as a cooperating agency, and through preparation of a Mitigated Negative Declaration.

1.3.1 California Public Utilities Commission

CPUC staff have participated in development of the Plan and, upon finalization, will recommend its adoption as a condition of the CPUC's decision on the Project. In addition, CPUC will review any proposed amendments of the Plan to evaluate their consistency with the Project's Final EA. CPUC has reviewed APMs committed to by SCE and provided recommended revisions that supersede the original APMs. Those revised measures are incorporated into this Plan and the Mitigated Negative Declaration issued by CPUC.

CPUC staff reviews and approves biologists that will work on the Project. CPUC's designated avian consultant reviews nest buffer reduction notifications and requests and may confer directly with the SCE Environmental Project Manager (SCE EPM) or her representative, SCE Avian Protection Specialist, Avian Biologists, and Biological Monitors for information on bird behavior at specific nests. In addition, the CPUC monitor may confer with construction personnel, in coordination with the SCE EPM/her representative, for information about Project activities.

1.3.2 Bureau of Land Management

BLM staff provides feedback on drafts and amendments of the Plan. BLM staff provides concurrence on the final version of the Plan. In addition, BLM will review any proposed amendments of the Plan to evaluate their consistency with the Project's Final EA and Biological Opinion. BLM staff may confer directly

with the SCE EPM/her representative, SCE Avian Protection Specialist, Avian Biologists, and Biological Monitors for information on bird behavior at specific nests.

1.3.3 California Department of Fish and Wildlife

CDFW is a Trustee Agency for fish and wildlife resources (California Fish and Game Code [CFGC] Sections 711.7 and 1802; and CEQA Guidelines Section 15386), and a Responsible Agency regarding any discretionary actions taken by CDFW (CEQA Guidelines Section 15381). CDFW provides feedback on drafts and amendments and reviews and comments on the final version of the Plan, as it applies to Project activities in California. Buffer reduction requests for special-status species (see Section 2.3.3) in California are submitted to CDFW staff for final review in accordance with state and federal regulations.

1.3.4 Nevada Department of Wildlife

NDOW is the state agency responsible for wildlife management in Nevada (Nevada Revised Statutes [NRS] Title 45 – Wildlife). NDOW provides feedback on drafts and amendments and reviews and comments on the final version of the Plan, as it applies to Project activities in Nevada. Buffer reduction requests for special-status species (see Section1.4) in Nevada are submitted to NDOW staff for final review in accordance with state and federal regulations.

1.3.5 U.S. Fish and Wildlife Service

USFWS is responsible for consistency with the federal Endangered Species Act (FESA), Migratory Bird Treaty Act (MBTA), and Bald and Golden Eagle Protection Act (BGEPA). USFWS provides feedback on drafts and amendments of the Plan. USFWS staff provides concurrence on the final version of the Plan. Buffer reduction requests for FESA-listed species and golden eagles (see Section 2.3.3) are submitted to USFWS staff for final review.

1.4 Regulatory Setting

There are a number of federal and state laws that protect birds and their nesting activities. The applicable regulations and permits are summarized below along with the applicable Final EA Applicant Proposed Measures (APMs) and mitigation measures, which together provide the regulatory framework within which the Project must comply. In the event regulations impacting nesting birds are revised prior to or during implementation of the Project, the Plan may be modified to reflect these revisions. Proposed revisions to this Plan will be provided to the reviewing agencies as described in Section 4.

Certain species that are declining, sensitive, or otherwise of conservation concern (special-status species) are given additional protection by federal or state laws and policies. SCE's Proponent's Environmental Assessment for the Project defines these special-status species to be any state or federally listed (threatened, endangered, or candidate) species under California Endangered Species Act (CESA) or the FESA, California species of special concern, California "fully protected" species under CFGC, California "special animals" and "watch list" species (non-listed special-status species), species listed as sensitive by the BLM in California and Nevada, and species listed by NDOW as threatened, endangered, sensitive, or protected.

1.4.1 Federal Regulations

1.4.1.1 Federal Endangered Species Act

FESA and its subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend. FESA Section 9 lists activities that are prohibited by the act. For example, unauthorized "take" of any listed species is prohibited. FESA defines take as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. No take of federally listed endangered or threatened species is proposed in this plan. See applicable permits and consultation documents for direction on these species.

1.4.1.2 Migratory Bird Treaty Act

The MBTA makes it unlawful, except as formally permitted, to take (pursue, hunt, take, capture, or kill) migratory birds except under permits for special situations such as imminent threat to human safety or scientific research. The law currently applies to more than 1,000 species, including most native birds, and covers the destruction or removal of active nests of those species.

1.4.1.3 Bald and Golden Eagle Protection Act

Bald and golden eagles, their eggs, and their nests receive additional protection under the BGEPA (16 U.S.C. 668-668d, 54 Stat. 250 and Amendments). The BGEPA states "no person shall take, possess, sell, purchase, barter, offer for sale, transport, export, or import any bald or golden eagle alive or dead, or any part, nests or eggs, thereof without a valid permit to do so."

The BGEPA definition of take means to "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb." The BGEPA definition of disturb means to "agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

1.4.2 State of California Regulations

1.4.2.1 California Fish and Game Code

Section 2050 et seq. – California Endangered Species Act. The CESA establishes the policy of the state to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA is administered by the CDFW and prohibits the take of any species that the California Fish and Game Commission determines to be a threatened or endangered species. The CESA also mandates that "state agencies should not approve projects as proposed which would jeopardize the continued existence of any endangered species or threatened species," if reasonable and prudent alternatives are available that would avoid jeopardy. The CDFW administers the act and authorizes take through California Fish and Game Code Section 2081 Incidental Take Permits or through Section 2080.1 (for species also listed under FESA, consistency determination with Biological Opinion). No take of state-listed endangered or threatened bird species is proposed in this Plan. See the applicable permits and consultation documents for management direction on these species.

Section 3511 – Fully Protected Species. The legislature of the State of California designated certain species as "fully protected" prior to the creation of CESA. Section 3511 states that "fully protected" birds or parts thereof may not be taken or possessed at any time. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction and included fish, mammals, amphibians and reptiles, and birds. Most fully protected species have since been listed as threatened or endangered under CESA and/or FESA. The "fully protected" designation applies to several non-listed species in the Project vicinity, including golden eagle and white-tailed kite.

Sections 3503, 3503.5, 3505, 3513 — Birds. These California Fish and Game Code sections protect all birds, birds of prey, and all nongame birds, as well as their eggs and nests, for species that are not already listed as fully protected and that occur naturally within the state. Sections 3503 and 3503.5 of the CFGC stipulate the following regarding eggs and nests: Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by CFGC or any regulation made pursuant thereto; and Section 3503.5 states that is it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by CFGC or any regulation adopted pursuant thereto. Section 3513 states that it is unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

CDFW Special Animals List. "Special Animals" is a broad term used to refer to all the animal taxa tracked by the CDFW's California Natural Diversity Database, regardless of their legal or protection status. This list is also referred to as the list of "species at risk" or "special-status species." CDFW considers the taxa on this list to be those of greatest conservation need. The "special-status species" designation applies to several non-listed bird species in the Project vicinity, such as loggerhead shrikes.

In most cases, issues that will arise during construction will be associated with species protection under the MBTA and the California Fish and Game Code sections pertaining to native birds. Therefore, the management strategies presented in this Plan focus on those species protected under these regulations.

1.4.3 State of Nevada Regulations

1.4.3.1 Nevada Revised Statutes

Chapter 503 (Hunting, Fishing and Trapping; Miscellaneous Protective Measures)

NRS 503.584 provides for the creation of a list of threatened, endangered, and protected species, and requires permits for take of these species.

NRS 503.610 affirms in state law the protections provided under the federal BGEPA for bald and golden eagles, including their parts, eggs, and nests, and provides for permits to address nuisance eagles consistent with federal law.

NRS 503.620 affirms in state law the protections provided under the federal MBTA for migratory birds, including their parts, eggs, and nests.

1.4.3.2 Nevada Administrative Code

Chapter 503 (Hunting, Fishing and Trapping; Miscellaneous Protective Measures)

Nevada Administrative Code (NAC) 503.050 defines all birds protected under the MBTA and BGEPA as protected in Nevada and lists endangered bird species.

NAC 503.055 specifies introduced species of birds that are not protected under state law in Nevada.

1.5 Measures and Conditions from Environmental Documents

The Project's approval under environmental permitting documents listed below is conditioned on the implementation of mitigation measures (MMs), Avoidance and Minimization Measures (AMMs), and regulatory requirements imposed by federal and state agencies. The measures addressed in this Plan are listed in Table 2.

- Project Proponent Environmental Assessment (SCE, May 2, 2018)
- Mitigated Negative Declaration (CPUC, November 2019)
- Project Environmental Assessment (BLM/NPS, July 2020)
- Lake or Streamed Alteration Agreement (September 2020)

Table 2 Mitigation Measures

Measure	Text of Measure
CPUC BR-10	**Prepare and implement a Nesting Bird Management Plan.** [Supersedes APM BIO-06.] SCE will prepare and implement a Nesting Bird Management Plan (NBMP) in coordination with CPUC, BLM, CDFW, and USFWS. The NBMP will describe methods to minimize potential project effects to nesting birds and avoid any potential for unauthorized take. Where scheduling allows SCE will endeavor to conduct clearing of any vegetation, site preparation in open or barren areas, or other project-related activities that may adversely affect breeding birds outside the nesting season. Project-related disturbance including construction and pre-construction activities will not proceed within 300 feet of active nests of common bird species or 500 feet of active nests of raptors or special-status bird species (except for golden eagle) until approval of the NBMP by CPUC and BLM in consultation with CDFW and USFWS. **NBMP Content.** The NBMP will include: (1) definitions of default nest avoidance buffers for each species or group of species, depending on characteristics and conservation status for each species and the nature of planned Project activities in the vicinity; (2) a notification procedure for buffer distance reductions should they become necessary; (4) a pre-construction survey protocol (surveys no longer than 7 days prior to starting work activity at any site); (5) a monitoring protocol, to be implemented until adjacent construction activities are completed or the nest is no longer active, including qualifications of monitors, monitoring schedule, and field methods, to ensure that any project-related effects to nesting birds will be minimized; and (6) a protocol for documenting and reporting any inadvertent contact with or effects to birds or nests. The NBMP will be applicable throughout the nesting season (beginning January 1 for raptors, February 1 for most other birds, and continuing through the end of August). **Golden eagles.** SCE will review all available USFWS data to identify known golden eagle nest sites or territories in the vicinity of the Project route. SCE will either assume that known nest sites are occupied or at its discretion conduct nesting season surveys within a 1 mile radius of the portions of the project area where suitable nesting habitat may exist and where work will occur during the breeding season (December 1 through July 31). If a potentially occupied nest

Table 2 Mitigation Measures	
Measure	**Text of Measure**
	(based either on assumption or field data) is detected within 1 mile of the project, SCE will implement a one-mile line-of-sight and one-half mile no line-of-sight buffer to ensure that project construction activities do not result in injury or disturbance to golden eagles. **Nest deterrents.** The NBMP will describe any proposed measures or deterrents to prevent or reduce bird nesting activity on project equipment or facilities, such as buoys, visual or auditory hazing devices, bird repellents, securing of materials, and netting of materials, vehicles, and equipment. It will also include timing for installation of nest deterrents and field confirmation to prevent effects to any active nest; guidance for the contractor to install, maintain, and remove nest deterrents according to product specifications; and periodic monitoring of nest deterrents to ensure proper installation and functioning and prevent injury or entrapment of birds or other animals. In the event that an active nest is located on project facilities, materials or equipment, SCE will avoid disturbance or use of the facilities, materials or equipment (e.g., by red-tag) until the nest is no longer active. **Communication.** The NBMP will specify the responsibilities of construction monitors with regard to nests and nest issues and specify a direct communication protocol to ensure that nest information and potential adverse impacts to nesting birds can be promptly communi-cated from nest monitors to construction monitors, so that any needed actions can be taken immediately. The NBMP will specify a procedure to be implemented following accidental disturbance of nests, including wildlife rehabilitation options. It also will describe any proposed measures, and applicable circumstances, to prevent take of precocial young of ground-nesting birds such as killdeer or quail. For example, chick fences may be used to prevent them from entering work areas and access roads. Finally, the NBMP will specify a procedure for removal of inactive nests, including verification that the nest is inactive and a notification/approval process. **Reporting.** Throughout the construction phase of the project, nest locations, project activities in the vicinity of nests (including helicopter traces), and any adjustments to buffer areas will be updated and available to CPUC monitors on a daily basis. All buffer reduction notifications and prompt notifications of nest-related non-compliance and corrective actions will be made via email to CPUC monitors. The draft NBMP will include a proposed format for daily and weekly reporting (e.g., spreadsheet available online, tracking each nest). In addition, the NBMP will specify the format and content of nest data to be provided in regular monitoring and compliance reports. At the end of each year's nest season, SCE will submit an annual NBMP report to the CPUC, BLM, CDFW, and USFWS. Specific contents and format of the annual report will be reviewed and approved by the CPUC and BLM in consultation with CDFW and USFWS.
BLM BR-9	A Nesting Bird Management Plan will be prepared and implemented.
BLM BR-10	To reduce avian impacts, SCE will conduct pre-construction nesting bird surveys and implement no-work buffers as needed, and monitor active nests if nesting birds are located. Temporarily disturbed nesting habit will be revegetated to pre-construction conditions. SCE will conduct protocol surveys in suitable Least Bell's Vireo habitat during the avian nesting season prior to the start of construction. If an active vireo nest is located, SCE will notify the California Department of Fish and Wildlife and the US Fish and Wildlife Service to establish a no-work buffer. SCE will notify resource agencies if a nesting golden eagle is located.
NPS (unnumbered)	**Nesting Birds.** To prevent undue harm to nesting birds, construction activity disturbance and habitat-altering activities or portions of activities should be scheduled outside bird breeding season. In upland desert habitats and ephemeral washes containing upland species, the season generally occurs between March 15th August 1st. If an activity that may disturb breeding activity or alter any breeding habitat must occur during the breeding season, a

Table 2 Mitigation Measures	
Measure	**Text of Measure**
	qualified biologist must survey the area for nests prior to commencement of such construction activities. This shall include burrowing and ground nesting species in addition to those nesting in vegetation and human infrastructure. If any active nests (containing eggs or young) are found, an appropriately-sized buffer area (up to 300 feet for passerine species or up to 500 feet for owls and raptors) must be avoided until the young birds fledge.
NPS (unnumbered)	**Raptors.** Red-tailed hawks and ravens, both known to nest on transmission towers in Mojave National Preserve, must be protected according to the provisions of the Migratory Bird Treaty Act.

1.6 Measures/Conditions and Project Phases

The measures described in this Plan are applicable for the following periods of the Project, as shown in Table 3.

Table 3 Timing of Mitigation Measures and Applicability			
Measure	**Period**		
	Preconstruction (Mobilization)	**During Construction (Active)**	**Post-construction (Restoration)[1]**
CPUC BR-10	☒	☒	☒
BLM BR-9	☒	☒	☒
BLM BR-10	☒	☒	☒
NPS (unnumbered) Nesting Birds	☒	☒	☒
NPS (unnumbered) Raptors	☒	☒	☒
NOTE: [1]Restoration and Maintenance will be conducted in accordance with all applicable rules and regulations.			

2 Management for Nesting Birds

2.1 Management Summary

When practicable, Project activities will be conducted outside of the nesting season in the Project area. However, this Plan focuses on managing nesting birds and nests both outside of and during the nesting season. Management of nesting birds means avoiding or minimizing Project activities that have the potential to cause active nest failures as well as to minimize or avoid construction delays. Protecting active nests involves establishing construction disturbance-free buffers within which construction activities are restricted. Establishing and maintaining buffers is designed to prevent the take of active nests, eggs, nestlings, or nesting birds as a result of construction activities. Tolerance to disturbance can vary from one bird species to another. Therefore, it is feasible to establish species-specific, or family/group-specific, variances to default buffers that would allow successful nesting of these groups, while reducing constraints on construction activities. This Plan details buffers by species or family/group (see Table 4).

Nest buffers for avian species listed under CESA and FESA as specified in the Final EA are not addressed in this Plan. Nest management for these listed species will conform to any applicable conditions or requirements adopted by the lead agencies or permitting agencies, including conditions of the CPUC's Decision, BLM's Record of Decision, Biological Opinion, and Incidental Take Permit.

This section describes the definition of an active nest, determination, and implementation of reduced species-specific or family/group-specific default buffers, implementation of nest buffers, nesting bird deterrent methodologies, and the removal of inactive nests.

2.1.1 Management Roles and Responsibilities

The following describes the roles and responsibilities of the persons discussed in this Plan in determining active nests and implementing the appropriate default buffers or buffer reductions. These roles and responsibilities, depending on the timing and complexity of construction and subject to individual qualifications for each role, may be fulfilled by a single individual, shared by multiple individuals, or allow for single individuals to fulfill multiple roles. Figure 1 presents the flow of information between roles on this Project. SCE's qualifications for Avian Biologist and Biological Monitor described in this Plan are included in Section 3.1.2, below.

- **Environmental Coordinator (EC):** The Environmental Coordinator (EC) is responsible for managing the overall environmental compliance monitoring aspects of the Project, coordinating all environmental compliance activities, operations, and reporting, and managing the mitigation compliance for the Project, among other responsibilities. The EC reports to the Project Manager, directs the work of the Project Environmental Compliance Field Team, and communicates with all members of the Project Environmental Compliance Monitoring Team.
- **Lead Avian Biologist:** Evaluates and approves Bird Nest Events (i.e., nest records) in the Field Reporting Environmental Database (FRED), default buffers and contractor-initiated buffer reduction requests for special-status species to be implemented per this Plan; will be primary point of contact with CDFW, USFWS, CPUC, and BLM regarding active nests, default buffers, and reduced buffers; regularly reviews and critiques FRED nesting bird database (i.e., Bird Nest Events) and submits reports to CDFW, USFWS, CPUC, and BLM. Reviews and approves the Avian Biologist's conservation recommendations and directs the contractor to implement them; confers directly with agency staff regarding Project activities, bird behavior, and nest locations.
- **Avian Biologist:** Searches for and identifies active bird nests; documents behavior to evaluate appropriate default buffer (for species such as red-tailed hawk with more than one default buffer); recommends buffer reduction distances as appropriate and communicates these to the Lead Avian Biologist. The avian biologist may also recommend indirect impact reductions, such as establishing no parking/stopping/loitering zones or chick fencing for ground-nesting precocial species; approves buffers larger than standard buffers; determines when a nest is active or no longer active based on personal observations or those of the Biological Monitor (including all nests located at any time during Project survey efforts); tracks and updates the Bird Nest Events in FRED. May also erect any required Environmentally Sensitive Area (ESA) staking and fencing around an active nest. Confers directly with agency staff regarding bird behavior at specific nest locations.
- **Biological Monitor:** Responsible for monitoring compliance during construction activities, documenting non-compliances and wildlife species observations. Establishes any required ESA staking and fencing around an active nest following guidance provided by the Avian Biologist; assists with monitoring nests and adjacent construction activities under supervision of the Avian Biologist; conducts regular sweeps to search for and identify additional nests; communicates regularly with the Avian Biologist about any nesting bird behaviors observed; reports observations and recommendations of nest activity and inactivity; and creates new and updates

existing Bird Nest Events in FRED. Confers directly with agency staff regarding bird behavior at specific nest locations.

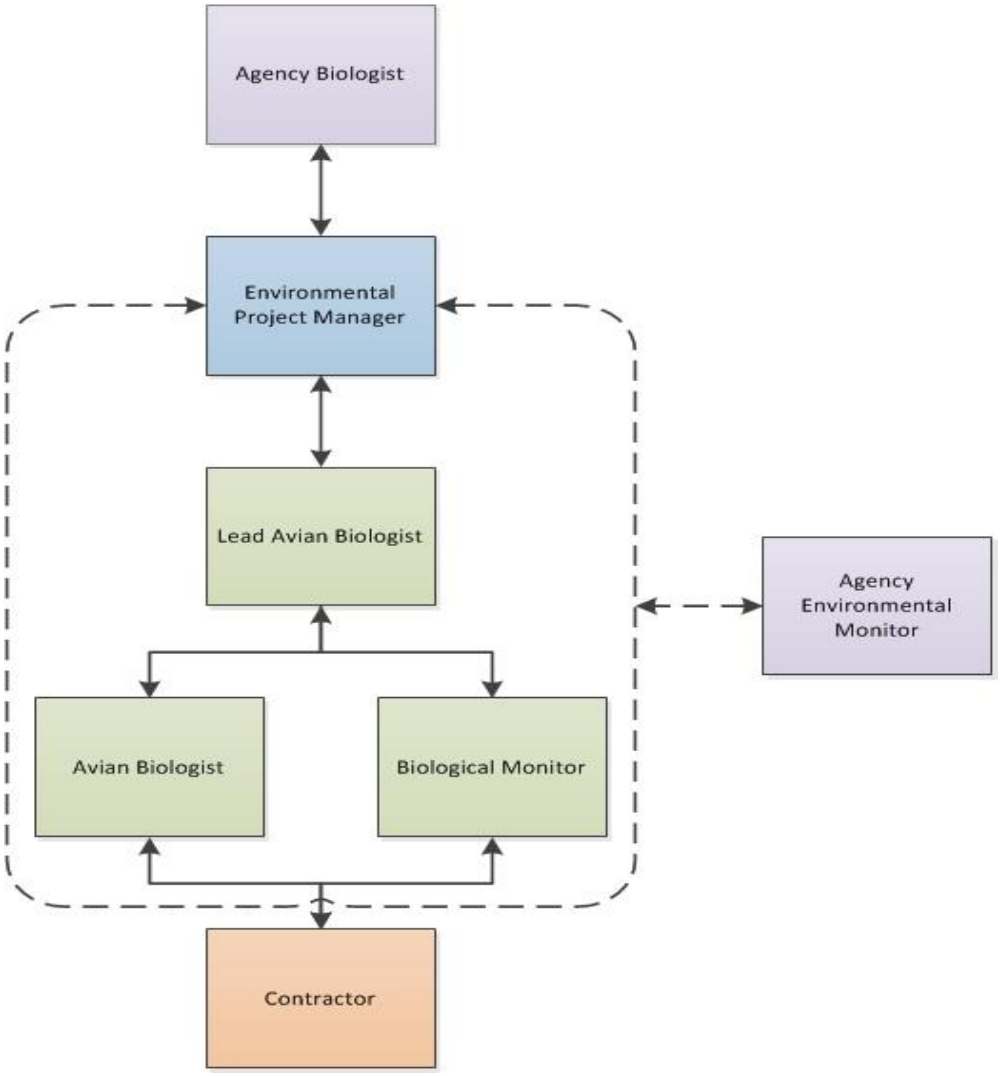


Figure 1 Avian Monitoring Communication Flow

2.2 Nest Definitions

2.2.1 Active Nest

Birds and their nests are protected in the state of California by both state and federal law. At the federal level, the MBTA states:

> *It shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, any part, nest, or eggs of any such bird, or any product,*

whether or not manufactured, which consists, or is composed in whole or part, of any such bird or any part, nest, or egg thereof.

At the state level, California Fish and Game Code Section 3503 states:

It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.

California Fish and Game Code Section 3503.5 states:

It is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.

While the MBTA does not clearly define what an active (or inactive) nest is, the USFWS (USFWS 2003) has clarified that the federal regulations do not pertain to the destruction of nests alone (without birds or eggs), provided that possession of the nests does not occur and the activities do not otherwise result in take of migratory birds covered by the MBTA. CDFW has not provided clarification on the regulations pertaining to nesting birds. California Fish and Game Code 3503 provides protection of nests and eggs from "needless" destruction. Therefore, for purposes of this Plan, non-raptor, non-special-status species nests without eggs or chicks are considered inactive. For raptors and special-status species, a nest is considered active upon initiation of construction or when raptors exhibit "nest decorating" behavior. The initiation of nest construction will be determined by an Avian Biologist based upon field observations of the activity at each nest.

Because a moderate number of avian species never "build" nests, special attention will be provided to potential nests, known old nests, and the behavior of adults of any member of the orders Strigiformes (owls), Caprimulgiformes (nightjars), Cathartidae (new world vultures) or families in the order Falconiformes (diurnal birds of prey) including Falconidae (falcons), and Accipitridae (eagles, hawks, and kites), and some ground-nesting species (e.g., killdeer). Some dove and pigeon species (Columbiformes) may either nest on the ground with minimal nest structure, or invest minimal effort constructing a stick nest that may appear incomplete to a casual observer. The determination of an active nest will be made by the Avian Biologist with a minimum observation time as described below.

2.2.2 Inactive Nest

For the purpose of implementing this Plan, non-raptor and non-special-status species nests that are under construction will be considered inactive until eggs are present within the nest. Raptor and special-status species nests will be considered active during the nest building phase.

A previously active nest becomes inactive when it no longer contains viable eggs and/or living young and is not being used by a bird as part of the reproductive cycle (eggs, young, fledging young still dependent upon nest). Egg inviability will be inferred if eggs are present or believed present, but the adult birds have stopped brooding the eggs or abandoned the nest, based upon repeated observations of inactivity at the nest location when required. In some cases, a nest can be abandoned by the bird constructing it and become inactive prior to egg laying. In such cases, determination that the nest is inactive is made on a case-by-case basis based on consistent observations and the determination of an Avian Biologist.

2.3 Active Nest Avoidance and Documentation

During construction of the Project, the Avian Biologists, Biological Monitors and the SCE construction team will work together to avoid or minimize impacts to active nests. The principal means of avoiding or minimizing impacts will be to establish designated areas ("buffers") surrounding each nest, where Project activities will not be authorized without further review. When work activities are required adjacent to an active nest, the SCE construction team will work with the SCE biology team and the agencies to determine whether the following default buffer distances may be modified to minimize impacts to the nest while allowing work to proceed.

2.3.1 Determination of Species-Specific or Avian Group/Family-Specific Buffers

The recommended default buffers around active nests for the various groups of birds depicted in Table 4 are the recommended distances at which construction activities can occur without disturbing the nest, adults, and/or young to the point of potential nest failure. The default buffers established in Table 4 will be applied, unless a specific change is approved by the Avian Biologist to increase or decrease the buffer on a case by case determination based on the behavior of the bird and planned Project activities. The procedures for buffer reductions (i.e., decreased distances) are described in this section below and in Section 2.3.3.

It is important to emphasize that species-specific buffers are measured from the nest to the site of the construction activity outwards (horizontally for ground or helicopter activities) or upwards (vertically for helicopter activities), as appropriate, and accounts for the nest's location, including the height of the nest (see Figure 2, Figure 3, Figure 4, and Figure 5). Upon discovery of an active nest the Biological Monitor shall mark the cylinder-shaped buffer area by ESA signage or markings on the work site, based on horizontal distance from the nest location. The buffer distances in the figures are for illustration purposes only; please see Table 4 for species specific default buffers.

Table 4 Buffers for Horizontal and Vertical Ground and Helicopter Construction

Avian Group (nest type/ location)	Species Potentially Nesting within Project Limits and Survey Area[1]	Minimum Buffers for Ground Construction Per Disturbance Level (feet)	Horizontal Buffer for Helicopter Construction (feet)	Vertical Buffer for Helicopter Construction (feet)[2]
Quail	California quail, Gambel's quail	150	200	150
Birds of prey (category 1)	American kestrel, barn owl, western screech-owl	300	200	150
Birds of prey (Category 2)	Osprey, Cooper's hawk, red-tailed hawk (2); some urban/suburban), red-shouldered hawk, great horned owl	300	300	200
Birds of prey (Category 3)	Turkey vulture, red-tailed hawk (2; some rural/remote), white-tailed kite, northern harrier, long-eared owl	500	500	300
	Peregrine falcon, prairie falcon	Consult CDFW & USFWS	Consult CDFW & USFWS	Consult CDFW & USFWS
Eagles	Golden eagle[4]	5,280	5,280	5,280
Shorebirds	Killdeer	200	200	200
Pigeons	Band-tailed pigeon	150	200	200

Table 4 Buffers for Horizontal and Vertical Ground and Helicopter Construction				
Avian Group (nest type/ location)	**Species Potentially Nesting within Project Limits and Survey Area[1]**	**Minimum Buffers for Ground Construction Per Disturbance Level (feet)**	**Horizontal Buffer for Helicopter Construction (feet)**	**Vertical Buffer for Helicopter Construction (feet)[2]**
Doves	Mourning dove, white-winged dove, common ground-dove	150	200	150
Roadrunners	Greater roadrunner	300	200	150
Nightjars	Lesser nighthawk, common poorwill	150	200	150
Swifts	White-throated swift	200	200	150
Hummingbirds	Black-chinned hummingbird, Anna's hummingbird, Costa's hummingbird, Allen's hummingbird	100	200	150
Woodpeckers	Acorn woodpecker, ladder-backed woodpecker, Nuttall's woodpecker, downy woodpecker, northern flicker	150	200	150
Passerines (cavity and crevice nesters)	Say's phoebe, ash-throated flycatcher, brown-crested flycatcher, tree swallow, rock wren, canyon wren, house wren, Bewick's wren (2), mountain chickadee, oak titmouse, western bluebird	100	150	100
Passerines (bridge, culvert, and building nesters)	Black phoebe, Say's phoebe, northern rough-winged swallow, cliff swallow, barn swallow, house finch (3)	100	150	100
Passerines (ground nesters, open habitats)	Horned lark, rock wren, western meadowlark, orange-crowned warbler, lark sparrow, grasshopper sparrow	150	200	150
Passerines (understory and thicket nesters)	Bushtit, Bewick's wren (2), blue-gray gnatcatcher (2), black-throated gray warbler, yellow-breasted chat, spotted towhee, black-chinned sparrow, sage sparrow, song sparrow, black-headed grosbeak, blue grosbeak, lazuli bunting, American goldfinch	150	200	150

Table 4 Buffers for Horizontal and Vertical Ground and Helicopter Construction				
Avian Group (nest type/ location)	**Species Potentially Nesting within Project Limits and Survey Area[1]**	**Minimum Buffers for Ground Construction Per Disturbance Level (feet)**	**Horizontal Buffer for Helicopter Construction (feet)**	**Vertical Buffer for Helicopter Construction (feet)[2]**
Passerines (shrub and tree nesters)	Pacific-slope flycatcher, Cassin's kingbird, western kingbird (2), loggerhead shrike (2),* Hutton's vireo, western scrub-jay, American crow, common raven, verdin, bushtit, black-tailed gnatcatcher, blue-gray gnatcatcher (2), cactus wren (2),* American robin, northern mockingbird, Le Conte's thrasher, phainopepla, yellow warbler, black-throated gray warbler, yellow-breasted chat, California towhee, black-throated sparrow, song sparrow, summer tanager, great-tailed grackle, hooded oriole, Bullock's oriole, house finch (3), Lawrence's goldfinch, lesser goldfinch	150 (300 for species marked with an *)	200	150
Passerines (open scrub nesters)	Loggerhead shrike (2),* verdin, cactus wren (2),* black-tailed gnatcatcher, wrentit, northern mock-ingbird, California thrasher, Le Conte's thrasher, Phainopepla, orange-crowned warbler, southern rufous-crowned sparrow, California towhee, black-throated sparrow, Brewer's blackbird, lesser goldfinch	150 (300 for species marked with an *)	200	150
Passerines (tower nesters)	Western kingbird (2), common raven, house finch (3)	150	200	150
Species not covered under MBTA.	Domestic waterfowl, including domesticated mallards, feral (rock) pigeon, ring-necked pheasant, chukar, Eurasian collared-dove, spotted dove, parrots, parakeets, European starling, house sparrow	NA	NA	NA

Table 4 Buffers for Horizontal and Vertical Ground and Helicopter Construction				
Avian Group (nest type/ location)	**Species Potentially Nesting within Project Limits and Survey Area[1]**	**Minimum Buffers for Ground Construction Per Disturbance Level (feet)**	**Horizontal Buffer for Helicopter Construction (feet)**	**Vertical Buffer for Helicopter Construction (feet)[2]**

FOOTNOTES:

[1]For species listed under two or more categories, the number of categories is indicated in parentheses, e.g., "red-tailed hawk (2)."

[2]Standard distances applicable only to small helicopters, which typically cause a downdraft of 15 to 18 miles per hour at up to 150 feet, operating in nest vicinity for up to 3 minutes once or twice per day, with a minimum of 4 hours between helicopter activities. Larger helicopters or longer work periods will require additional agency review.

[4]The USFWS recommends a uniform 1-mile buffer around golden eagle nests, which is greater than the CPUC recommendation. The 1-mile uniform buffer will be implemented.

NOTE:

Burrowing owl buffers will be specified in a separate Burrowing Owl Management and Passive Relocation Plan, as the land management agencies have varying requirements.

2.3.1.1 Ground-Based Construction Activities

A cylinder-shaped default buffer (Figure 2 and Figure 3) will be established around active nests prior to the initiation of ground-based construction activities or upon discovery of a new active nest by the Biological Monitor or Avian Biologist. The default buffer distance established around each active nest will be species-specific, according to the established buffer distances in Table 4.

2.3.1.2 Helicopter-Based Construction Activities

Helicopter activities typically include moving crews, moving equipment, moving materials, construction activities, and wire stringing/removal. The duration of helicopter use varies based on activity, type of construction, and terrain.

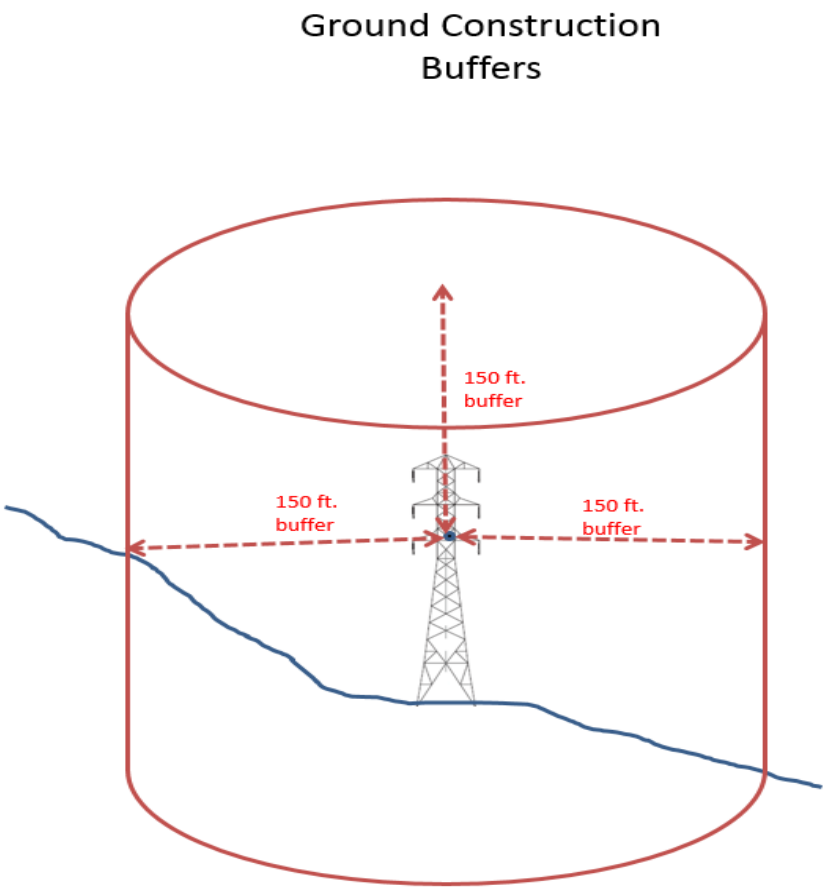


Figure 2 Example of Cylindrical Ground Construction Buffers for Nest in a Structure

Ground Construction
Buffers

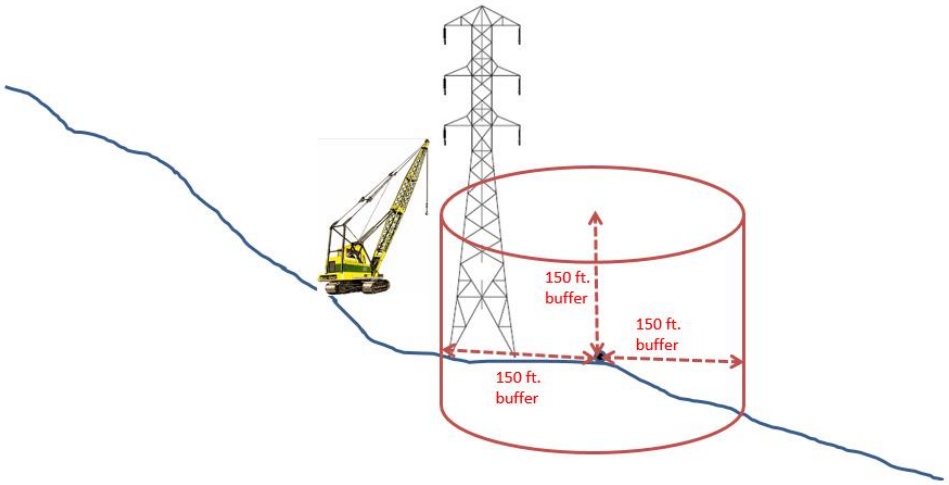


Figure 3 Example of Cylindrical Ground Construction Buffers for a Nest Nearby Construction Activities

Helicopter Buffers

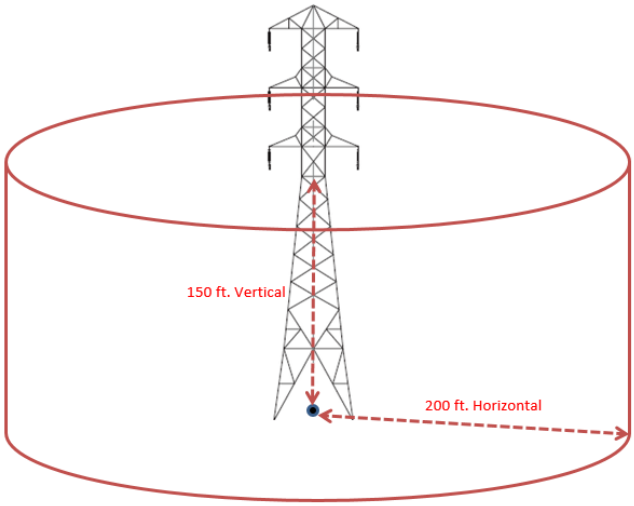


Figure 4 Example of Helicopter Buffer When Nest is on the Ground

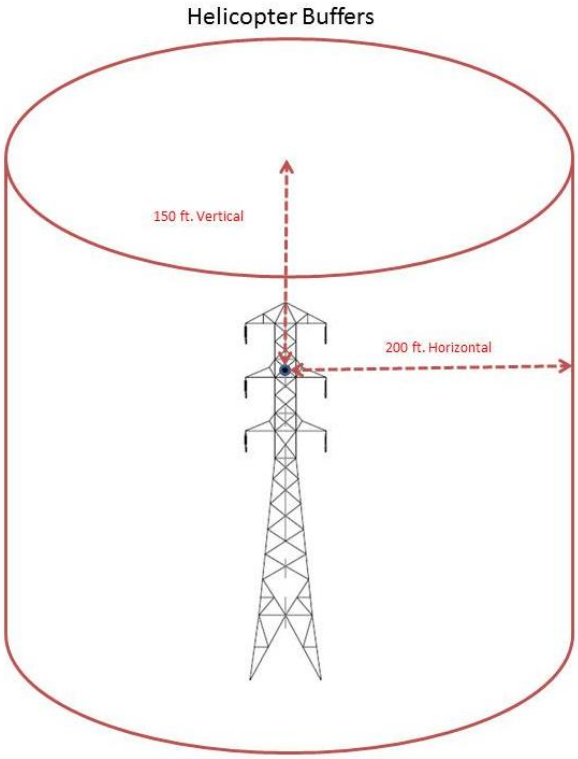


Figure 5 Example of Helicopter Buffers when a Nest is Located within the Tower

Cylinder-shaped horizontal and vertical default buffer distances will be established for helicopter construction activities according to the distances established in Table 4 due to the limitations of the Geographical Positioning System (GPS) units on the helicopter. Project Team members shall monitor the helicopter tracks (flight patterns and durations) daily to ensure compliance with established helicopter buffers and document any non-compliances. SCE shall retain helicopter track data and provide the agencies with these tracks when requested.

In many respects, helicopter construction work is similar to heavy ground-based construction activity. Therefore, the horizontal species-specific default buffers established for helicopter construction activity are greater than those for light ground-based construction activity (see Table 4, Column 4). The only exception is for raptors in Category 3, for which a 300-foot species-specific default buffer is adequate under most circumstances for both ground-based and helicopter construction activities.

Vertical species-specific default buffers established for helicopter work are also greater than for ground-based construction work in most cases (Table 4), although generally not as great as the horizontal helicopter species-specific default buffers. The species-specific default buffers provided in this Plan may need to be adjusted based on site-specific and nest-specific observations in the field. The vertical species-specific default buffers take into account the effects of rotor wash from the types of helicopters proposed for use on the Project, which typically cause a down-draft of 15 to 18 miles per hour at up to 150 feet. Larger-sized helicopters with greater rotor wash could require larger buffers. For exposed nests, vertical default buffers will be modified accordingly, based on site-specific conditions recorded in FRED.

The duration and frequency of activity in the vicinity of a nest should also be taken into consideration when evaluating whether or not the buffer requirement is met. The default buffers were established

based on construction activities that are temporary or infrequent in nature. If a construction crew will be working in the vicinity of an active nest for an extended period depending on the nature of the work (an extended period can be defined as a few minutes for heavy construction or helicopter work to an hour or more for light construction), then the Avian Biologist may determine that the species-specific default buffer is insufficient for the nest and adjust the distance appropriately. The helicopter species-specific buffers assume that the helicopter will only be present in the area for a brief period adjacent to the nest, typically less than a minute, and that it will only visit the site once in a day, or once in the early morning and again in the late afternoon. This time frame is consistent with most types of anticipated helicopter use on the Project. Helicopter flight track data will be reviewed by Project team members as described above, to confirm helicopter activity periods near nests.

The vertical helicopter buffers are projected on the GPS displays in all helicopters based upon the elevation from sea level. The elevation of each nest is taken during the initial determination of "active nest." The location of the nest in relation to the biologist taking the GPS coordinates is also added to the buffer prior to the nesting data being pushed to the helicopters daily. For example, a vertical species-specific default buffer of 100 feet for a nest that is 100 feet off the ground in a tower arm will appear in the GPS as a 200-foot buffer from the ground elevation.

In Table 4, some species fall into more than one category and may therefore have more than one species-specific buffer associated with them. A blue-gray gnatcatcher (*Polioptila caerulea*) nesting in a thicket or understory, for example, is less likely to be disturbed than one nesting in a more exposed location in a shrub or small tree even though both nests are the same distance from the construction activity. Likewise, a red-tailed hawk (*Buteo jamaicensis*) that has acclimated to human activities is less likely to be disturbed at its nest (and thus placed in Birds of Prey Category 2) than one that is not accustomed to human activity (placed in Birds of Prey Category 3).

The category for each nest will be determined by the Avian Biologist based upon location of the nest relative to surrounding commercial, residential areas, or other activities, as well as the bird's documented tolerance to human activity observed during field observations. For specific construction activities, sound monitoring information may be used during analysis of potential impacts from construction-related activity. For similar reasons, birds assigned to a category based on their nesting habits are not all likely to have similar thresholds of disturbance. In these instances, a range of species-specific buffers is indicated in Table 4.

Default buffers consider species tolerances for disturbance, if known. Larger default buffers are used for large avian species and for species that are not tolerant of disturbance. Smaller default buffers are generally used for smaller avian species and also species that have a high tolerance for disturbance, such as those that are commonly found nesting close to development. Several species have been identified as common species that use the electric power transmission structures (Lattice Steel Towers) or build nests in or on equipment that is stored at a site. These include some red-tailed hawks, common ravens, western kingbirds, Cassin's kingbirds, and house finches.

Appendix A provides relevant natural history information for species with the potential to nest in the Project area. Appendix A also notes special-status species. However, species status can change, and the Avian Biologist will ensure that current species status is considered when determining species-specific buffers. Biological Monitors will have this Plan in their possession to refer to individual species to assist in determining appropriate buffers in the field for specific construction activities. There may be instances

where a bird may be showing signs of agitation and the buffer may need to be increased. The Avian Biologist will approve increases to buffer sizes as needed.

2.3.2 Implementation of Species-Specific Buffers

This section describes the process of implementing species-specific default buffers for active nests. Species-specific nesting buffer implementation during construction will be designed to avoid take of an active nest. Buffers implemented for each particular nest may be greater than the buffers detailed in this Plan (Table 4) if deemed necessary by the Avian Biologist. Implemented buffers for non-special-status species may be reduced to smaller buffers than detailed in the Plan (Table 4), on a case-by-case basis as determined by an Avian Biologist as described in Section 2.3.3.1, below.

When an active nest is discovered during a preconstruction survey, a Biological Monitor will delineate the buffer area and restrict construction as necessary per the species-specific default buffer (Table 4). A Biological Monitor will document the individual behavior of the bird; the stage of the reproductive cycle; and the site conditions. Section 3 provides survey methods for identifying nests within the Project area.

In the event an active nest is detected by a Biological Monitor during construction activities at a specific work site during a work day, construction activities will be suspended, and the species-specific default disturbance-free buffer will be established around the active nests. Demobilization activities, for work that was occurring inside the disturbance free buffer prior to the identification of the active nest, will be allowed within the buffer in order for field personnel and equipment to vacate the affected work site utilizing approved access roads and maintain vehicle speeds under 15 miles per hour, in a timely manner once the site has been secured and can be left safely. Monitoring of the nest will continue to track the status and stage of the nest site. The Avian Monitor or Biological Monitor will observe and record the work suspension and demobilization activities.

For ground-based construction activities, vertical separation of the nest from the construction area may be considered when selecting the appropriate horizontal buffer. Some species build their nests very high in trees and structures. For example, a common raven nest 150 feet off the ground in an existing structure is less likely to be affected by ground work occurring directly below than a nest 50 feet off the ground. The horizontal and vertical buffers will be implemented using the guidelines as described in Section 2.3 of this Plan.

For species such as red-tailed hawk with two or more default buffer distances, the default distance will be determined by site-specific conditions. For these species, the habitat and infrastructure surrounding a nest location will be evaluated for its ability to provide a visual and/or acoustic barrier to construction. This information will be used to help determine the appropriate avian group from Table 4 for implementation of the default buffer.

The observed behavior of an individual bird during the nest search process and consequent nest monitoring will help determine the appropriate buffer distance. For example, an incubating adult that appears more skittish and is readily disturbed could receive a larger buffer than an incubating adult that sits tight and appears more acclimated to disturbance.

Generally, nesting birds are most susceptible to failure early in the nesting cycle when fewer resources have been invested towards the nest. Therefore, it is more important to reduce disturbances during egg laying rather than later in the nesting cycle, which could result in the determination of a larger buffer being necessary early on, then reducing its size later in the nesting season.

Extreme weather events may produce conditions that would increase the likelihood of nest failure. Combined with the stress of nearby construction activity, a nest might fail that would otherwise succeed. On unseasonably hot, cold, or windy days, species-specific buffers may need to be temporarily increased.

Information will be maintained in FRED for all nests identified within active Project construction areas. At a minimum, for each nest, the following information will be documented:

- Status (active or inactive)
- Species
- Nest location including nest height
- Behavioral observations
- Site conditions
- Nest exposure
- Estimated date of nest establishment
- Estimated fledge date
- Buffer size implemented

To avoid take of active nests whose buffer areas overlap active construction areas or access roads, an Avian Biologist or Biological Monitor will implement and maintain the established default ESA buffer, monitor adjacent construction activities, and document the nesting birds' behavior observations and active nest status. SCE will ensure that the construction contractor is made aware of the ESA buffers through the use of construction maps outlining environmental and biological constraint areas; flagging, staking, and signage; and direct communication in the field. Nest monitoring will be discussed in more detail in Section 3.4 below.

2.3.3 Buffer Reductions

For Project activities of any disturbance level that are inconsistent with established buffer distances, the SCE EPM/her representative and Avian Biologists will evaluate the proposed activity on a case by case basis. Where appropriate, they may work with the construction team to revise a buffer reduction request to minimize potential impacts to nesting birds. A reduced buffer distance, as outlined below, may be implemented if recommended by the Avian Biologist and approved by the SCE EPM/her representative. For common species, SCE will notify the agencies of each buffer reduction and modifications to existing buffer reductions. For special-status species, SCE will submit a request for agency review of any proposed buffer reduction. This Plan does not include a buffer reduction procedure for listed threatened or endangered species.

For each proposed buffer reduction, an Avian Biologist will be consulted and will determine whether the default species-specific buffers (Table 4) may be reduced for the specific activity and duration associated with the active nest. An Avian Biologist will make this determination based on the information provided by a Biological Monitor, the species' natural history, and its known tolerances including those observed during SCE nesting bird management on the Project. If a reduced species-specific buffer can be implemented, the SCE EPM/her representative will be consulted prior to the reduction of the default buffer. Buffer reductions will take place only after consideration of site-specific conditions such as distance to construction, type of disturbance activity, anticipated duration of the disturbance, microhabitat at the location of the nest that may provide visual and acoustic barriers, behavior of the pair, and its reproductive stage.

2.3.3.1 Common Species Buffer Reductions

For common species, buffers listed in Table 4 may be reduced to smaller buffers through the following notification process:

1. The Construction Contractor will file a buffer reduction request to the SCE EPM/her representative, describing the proposed work activity within the default buffer area, reason the activity must be completed while the nest remains active, and total period of proposed buffer reduction.

2. Once a request for a buffer reduction is received from the Construction Contractor, the SCE EPM/her representative will review the nest status and the need for the reductions with the contractor or construction manager. Potential avoidance of the buffer reduction will be evaluated (e.g., by staging equipment in a different location). Wherever feasible, proposed work activities and locations will be adjusted to avoid or minimize incursion into the default buffer area.

3. The SCE EPM/her representative, Construction team, and Avian Biologist will evaluate the request and determine whether a reduced buffer can be applied. The decision will be based on the documented nest information and site-specific conditions such as distance to construction, type of disturbance activity, anticipated duration of disturbance, microhabitat at the nest location that may provide visual and acoustic barriers, behavior of the pair, its reproductive stage, the species' natural history, species' known tolerances to human presence and activities, proposed buffer reduction distance and start and end dates, and anticipated work activities and durations. If determined to be acceptable by the SCE team, the SCE EPM/her representative will submit a buffer reduction notification to the CPUC, BLM or NPS, USFWS, and CDFW or NDOW. The following will be included in the notification:

    - Complete description of activities proposed within the reduced buffer, including types of equipment, duration, and start date
    - Description of Project activity in the vicinity of the nest within the last 30 days
    - Identification of the current and reduced buffers
    - Map showing current and reduced buffers
    - Nest activity, location, topography, or other features that may shield the nest from the work area,[1] the pair's response to the biologist, and photos
    - Assessment made by the Avian Biologist
    - Description of monitoring if different from the monitoring protocol described within the Plan
    - Statement regarding returning to the established default buffer after work has been completed in the reduced buffer area.

4. The SCE EPM/her representative will notify the Avian Biologist and the Biological Monitor. The Biological Monitor will modify the ESA markers to the new buffer distance. The SCE EPM/her representative will modify the buffer distance, upload the notification information, and document the notification and concurrence (if applicable) dates in FRED.

[1]Throughout this NBMP, "work area," "active work area," "construction area," or "active construction area" refer to the construction work limits as approved by the CPUC and BLM.

5. As the work activity is initiated, the Avian Biologist will monitor the nest long enough to determine how the nesting pair is responding to the disturbance activity. If necessary, the avian biologist will adjust the buffer accordingly to minimize disturbance at the nest.

6. If the activities described in the notification do not begin within seven calendar days or if Project activities change to a higher level of disturbance, the nest will be re-evaluated, and an updated buffer reduction notification will be submitted for the proposed activities.

Once the Project activity is complete, the buffer will revert back to the original established buffer. The Biological Monitor will adjust the ESA markers and will update the nest record in FRED.

2.3.3.2 Special-Status Species Buffer Reductions

Buffers listed in Table 4 for special-status species may be reduced to smaller buffers through consultation with the appropriate resource and land management agencies. This NBMP does not address buffers or buffer reductions for listed threatened or endangered species. Project activities that may affect those species will be regulated according to conditions of the Project's Biological Opinion, Streambed Alteration Agreement and Incidental Take Permit. If a buffer for a special-status species nest impedes Project activities, a reduced buffer may be implemented according to the following process:

1. The Construction Contractor will file a buffer reduction request to the SCE EPM/her representative, describing the proposed work activity within the default buffer area, reason the activity must be completed while the nest remains active, and total period of proposed buffer reduction.

2. Once a request for a buffer reduction is received from the Construction Contractor, the SCE EPM/her representative will review the nest status and the need for the reduction with the contractor or construction manager. Potential avoidance of the buffer reduction will be evaluated (e.g., by staging equipment in a different location). Wherever feasible, proposed work activities and locations will be adjusted to avoid or minimize incursion into the buffer area.

3. The SCE EPM/her representative, SCE Construction team, and Avian Biologist will evaluate the request and determine whether a reduced buffer can be applied. The decision will be based on the documented nest information and site-specific conditions such as distance to construction, type and anticipated duration of construction, microhabitat at the nest location that may provide visual and acoustic barriers, behavior of the pair, its reproductive stage, the species' natural history, species' known tolerances to human presence and activities, proposed buffer reduction distance and start and end dates, and anticipated work activities and durations. If determined to be acceptable, the SCE EPM/her representative will submit a buffer reduction request notification to the agency(s) with jurisdiction over that portion of the Project (e.g., CPUC, BLM, or NPS). Notification will be provided a minimum of one business day prior to implementation of the reduced buffer. If no objections are received within one business day, the buffer reduction may be implemented at the discretion of the Lead Avian Biologist and Avian Biologist. Once a buffer reduction receives no objection from the relevant agency(s), the SCE EPM/her representative will notify the Avian Biologist and the Biological Monitor. The Biological Monitor will modify the ESA markers to the new buffer distance. The SCE EPM/her representative will modify the buffer distance, upload the approval information, and document the request and approval dates in FRED. If objections are communicated, the SCE Biologist and Avian Biologist will cooperate with the concerned agency(s) to resolve the issue.

5. As the work activity is initiated, the Avian Biologist will monitor the nest long enough to determine how the nesting pair is responding to the disturbance activity. If necessary, the Avian Biologist will adjust the buffer accordingly to minimize disturbance at the nest.
6. If the activities described in the request do not begin within seven calendar days or if Project activities change to a higher level of disturbance, the nest will be re-evaluated, and an updated buffer reduction request shall be submitted for the proposed activities.

Once the Project activity is complete, the buffer will revert back to the original established buffer. The Biological Monitor will adjust the ESA markers and will update the nest record in FRED.

2.3.4 Accidental Disturbance of Active Nests

In the event Project activities cause abandonment of a nest with eggs or chicks or damage to eggs, chicks, or the nest resulting in a low chance of survival, the eggs or chicks will be transported by a Biological Monitor to the closest wildlife rehabilitation facility able to accept the eggs or chicks, and the CPUC, USFWS, BLM, and CDFW or NDOW will be immediately notified (within 24 hours). See Appendix B for a list of permitted wildlife rehabilitation facilities. The final disposition of the eggs or chicks will be reported in FRED as well as by the SCE EPM/her representative directly to the CPUC, USFWS, and CDFW or NDOW via email. SCE will cover the cost of the care by the wildlife rehabilitation facility. When incidents like this occur, they will be documented as non-compliances and provided to the agencies and included within daily incident email summaries and weekly reports.

2.4 Exceptions to Notification Requirements

The following sections describe construction activities that do not follow the buffer implementation and reduction procedures in Sections 2.3.2 and 2.3.3. In each of the scenarios below, every effort will be taken to avoid take of active nests. These activities are not exempt from nest protection but are either necessary to ensure public health and safety or are considered such low impact as to be unlikely to cause nest failures. Crews or personnel performing these activities will be made aware of nest locations to avoid impacting these nests.

2.4.1 Critical Construction Activities

Some critical construction activities must be completed to ensure public health and safety, and structural integrity. When an active nest that had not been documented prior to beginning the activity is identified during performance of a critical construction activity, the construction team may complete the necessary task to ensure public health and safety or structural integrity is not compromised. SCE will provide a valid USFWS Special Purpose Utility (SPUT) permit allowing management of nests in emergency circumstances, or if the permit has expired, will provide the expired SPUT and USFWS confirmation that the expired permit remains valid until issuance of a new or renewed permit. The SCE EPM/her representative will follow the process for notification of USFWS and CDFW or NDOW required by the permit and will also notify CPUC and BLM.

The Avian Biologist or Biological Monitor will monitor the nest throughout the continuing activity and will work with the construction crew during the activity and demobilization to take action as feasible to minimize impacts to the nest. These actions may include repositioning equipment to take advantage of visual or sound barriers, shutting down unneeded equipment, or minimizing work activities in some portions of the site. Following completion of the activity, the work area will be promptly demobilized, and

the default buffer distance will be put into place. The list of critical construction activities is included in Appendix C. When incidents like this result in a nest failure, it will be documented as a non-compliance, provided to the agencies, and included within a daily incident email summary, weekly report, and annual report.

2.4.2 Buffer Distances for Access Roads

Substations, material storage yards, helicopter landing zones, assembly and support yards, contractor yards, and construction areas associated with the Project may be accessed by a single ingress/egress point. These access roads into construction areas are frequently located adjacent to vegetation (e.g., shrubs and trees) or other habitat, including vegetation planted to screen substation facilities, which provide suitable nesting habitat for birds. Implementing buffers for active nests that become established along access roads may restrict access to and construction activities within substations and yards.

In the event of an active nest located less than the default buffer distance from the ingress/egress point, ingress/egress to the Project work areas will be managed by the SCE EPM/her representative working with the Avian Biologist to avoid take of an active nest while allowing use of these roads for construction activities. Take of an active nest from vehicular travel along Project access roads can be avoided through the implementation of the following management practices:

- The areas along access roads will be surveyed up to 100 feet on either side by the Avian Biologist to document locations of active nests and to assess buffers
- The speed limit on all Project access roads will be restricted to 15 miles per hour or less
- Vehicles will not stop or idle along Project access roads within an active nest buffer. If an access road gate lies within an active nest buffer, then a brief stop will be allowed for gate opening/closing
- Avian Biologists or Biological Monitors will place no parking/idling/stopping signs and ESA staking along the road at the limits of nest buffers to avoid impacts
- Construction personnel will not loiter through or within an active nest buffer
- Watering of access roads for dust control will be limited to prevent direct watering of an active nest within active nest buffers

2.4.3 Active Substations and Yards

Once construction or clearance of vegetation for a yard or substation is complete and the yard or substation is established and is in active operation, buffers for non-special-status species' nests found inside or adjacent to the yard or substation will be determined by an Avian Biologist. The distance will generally be smaller than the default buffer for a given species, in consideration of the Project-related disturbance present as the nest was being built. Reduced buffers for nests inside of yards and substations are acceptable for non-special-status species due to acclimation to the regular construction activities. Indirect impacts to the individual nests are not anticipated as work will occur within the yard or substation only.

If the activity occurring in the yard may cause accidental nest damage due to the nest location or the nest was built on equipment or materials in the yard, then ESA signage will be erected to restrict workers from accidentally disturbing the nest or causing nest failure. However, if a major change in the activity level or activity type within the yard or substation will occur, there may be situations where appropriate nest buffers will be implemented within the yard or substation specific to that activity. Examples may include helicopter use or mobilization of a large piece of equipment, where the Avian Biologist determines it is

not reasonable to assume the individual birds are acclimated to the activity. In these situations, these types of activities may occur within the yard or substation but outside the nest buffer. The CPUC, BLM, CDFW or NDOW, and USFWS will be notified of planned buffer changes and related activity.

2.4.4 Minimal Disturbance Activities

Certain minimal disturbance construction activities that would not require establishing a staked-off nest buffer (e.g., staking activities) are listed below and in Table 1. During these minimal impact activities, the crews and supplies would be transported to the construction site via pickup truck. Where feasible, the truck will be parked outside the species-specific default buffers in Table 4. However, if necessary, crews would access the site on foot. All staking, creation or repair of divots, and removal or replacement of wattles or BMP fencing would be performed by hand using non-power hand tools if necessary.

In some cases, these activities include some level of habitat disturbance (e.g., hand vegetation clearing). For those activities, an Avian Biologist will be present and record observations in the monitoring log. These activities include installation or repair of water quality BMPs, tower QA/QC site finalization activities, fiber optic splicing at tower splice boxes, installation of tower nest deterrents, and resistance testing. Other activities have no ground disturbance or vegetation disturbance. For those activities, a Biological Monitor will be present and record observations in the monitoring log. These activities include environmental resource studies, civil engineering surveys, site visits, site staking or flagging, and re-staking or re-flagging. For all minimal disturbance activities, ongoing nest surveys would occur to update nests and identify new nests within and adjacent to these construction areas (see Section 3.3).

Although a buffer reduction request would not be required for minimal disturbance activities within a default buffer, the Biological Monitor or Avian Biologist would recommend case-specific measures to ensure that disturbance to the nest does not occur.

2.4.4.1 Environmental Resource Surveys

Environmental resource surveys include biologists walking transects in the field to collect biological resource information such as special-status plant and wildlife species, vegetation mapping, jurisdictional water mapping, and surveys for other environmental resources within the Project area.

- A pickup truck will deliver supplies and the crew to the site, or access will be by foot.
- Where feasible, the truck will be parked outside of the species-specific default (Table 4) nest buffer.

2.4.4.2 Civil Engineering Surveys

Civil Engineering Surveys include marking engineering features in the field by a civil surveying crew. Crews may use GPS devices to mark out these features will wooden stakes.

- A pickup truck will deliver supplies and the crew to the site, or access will be by foot.
- Where feasible, the truck will be parked outside of the species-specific default (Table 4) nest buffer.
- The work will be performed using non-power hand tools.

2.4.4.3 Site Visits

Site visits from SCE and agency personnel may occur for various reasons.

- A pickup truck will deliver supplies and the crew to the site, or access will be by foot.
- Where feasible, the truck will be parked outside of the species-specific default (Table 4) nest buffer.

2.4.4.4 Site Staking/Flagging and Re-Staking/Re-Flagging

Site staking and re-staking consist of marking with wooden stakes the limits of an area and maintaining this staking over time. This includes staking of approved work sites, ESAs, and other areas where staking is required. In addition to stakes, this activity may consist of placing or replacing flags, signs, and rope as needed to indicate the boundary of an area that is not to be entered.

- A pickup truck will deliver supplies and the crew to the site, or access will be by foot.
- Where feasible, the truck will be parked outside of the species-specific default (Table 4) buffer.
- The work will be performed using non-power hand tools.

2.4.4.5 Installation and Repair of Damaged Straw Wattles and BMP Fencing

Following installation, straw wattles (or similar product) and BMP fencing (e.g., silt fencing) around construction sites may require repair or replacement from time to time. This activity consists of installing, realigning, replacing, or re-staking wattles or BMP fencing as necessary.

- A pickup truck will deliver supplies and the crew to the site, or access will be by foot.
- Where feasible, the truck will be parked outside of any established buffers.
- Installation, staking, creating or repairing divots, and removal/replacement of wattles or BMP fencing will be performed using non-power hand tools.

2.4.4.6 Fiber Splicing

Following OPGW installation, the loose ends of OPGW are required to be spliced together to create an optical joint. Fiber splicing activities includes joining of two fiber optic cables in the cable array until all cables are spliced within a splice box located on the tower. A two-man team will utilize the bucket of the splice truck to access the strands of the OPGW. The OPGW will be brought to the ground and will be spliced in an enclosed area of the truck. Following the splicing, the OPGW will be transferred back to the lower body of the tower and enclosed within the splice box. This activity will take approximately three hours per tower site. Typical personnel/equipment include:

- A 2-person crew
- Splicing truck with bucket for transport and splicing
- Activity Duration: Typically, 3 to 4 hours

2.4.4.7 Tower Nesting Deterrent/Mooring Ball (Marine Buoy) Installation in Inactive Nests

Mooring balls will be installed in transmission towers to discourage or preclude bird nesting in potential nesting locations or in existing inactive stick nests. Mooring balls will only be installed inside the cup of an inactive nest after it is confirmed to be inactive by the Avian Biologist (See Section 3.3.1) or at locations

on the tower where there are no nests but have the potential to support nests. In some cases, the inactive nests or potential nest sites may be within the default buffer distance of a different, active nest. In these cases, nesting deterrent installation will be monitored by an Avian Biologist.

- A pick-up truck will deliver supplies and the crew to the site, or access will be by foot.
- Where feasible, the truck will be parked outside of the species-specific default (Table 4) nest buffer.
- A crew member will climb the tower and install the buoy(s).
- Photographs will be taken of inactive nest status prior to and after buoy installation.

2.4.4.8 Tower QA/QC Finalization Activities

For purposes of this Plan, tower QA/QC consists of visually inspecting towers, installing missing tower leg steps bolts, installing missing signs on towers, and fastening brass tags to the concrete foundations. Replacement of missing or damaged steel or reinstallation of improperly installed steel shall occur only where there are no active bird nests on a tower or within default buffer distance of the tower; otherwise a nest buffer reduction notification for the specific situation will be made.

- A pick-up truck will deliver supplies and the crew to the site, or access will be by foot.
- Where feasible, the truck will be parked outside of the species-specific default (Table 4) nest buffer.
- The work will be performed using manually or battery-operated hand tools; electric or pneumatic tools requiring a generator or compressor will not be used.

2.4.4.9 Resistance Testing

Following tower assembly and erection but prior to conductor installation, each tower requires resistance testing. Resistance testing involves the use of a low-voltage hand held resistance tester to measure a towers resistance given the underlying soil conditions. Two small wires are spread out by a two-man team on foot to a distance of 150 feet and 105 feet from each tower leg (Legs A,B,C,D), staying inside the approved work limits. Each wire is then attached to grounding probes that are inserted into the ground by hand using a hammer. Following the test, crews will remove the probe and wire and leave the site. This activity will take one hour or less per tower site. The test will determine the need for counterpoise installation, which requires the use of a skid steer with a trenching device or a mini excavator. A separate buffer reduction notification will be submitted for counterpoise installation where needed. Typical personnel/equipment include:

- A 2-person crew
- Pickup truck for transport
- A low-voltage hand-held resistance tester to measure soil resistance. Thin probes are driven into the ground using a hammer and removed after the test is complete.
- Activity Duration: Typically, 30 minutes at the base of a tower.

The activities described above are intended to capture typical, representative activities to be performed in areas near active nests. In the event a BMP repair/installation activity requiring significantly different methods (e.g., power tools) or greater work duration within an active buffer, a normal nest buffer reduction notification would be submitted.

2.5 Nesting Bird Deterrent Methods

This section details nesting bird deterrent methods and examples that can be used for the Project. These methods are considered already noticed to the agencies and only new deterrents not used before or netting on vegetation would need to be notified. SCE's Nesting Bird Management Plan includes methods that may deter nesting within and adjacent to (i.e., within 300 feet; only for mooring balls or similar rubber or plastic balls) active construction areas, including substations and yards. Implementation of deterrent methods within and adjacent (in the case of mooring balls on adjacent structures) to active construction areas may reduce the potential for an active nest to restrict Project construction activities. Effective nesting bird deterrent methods within active construction areas will reduce the likelihood that construction will result in take of an active nest. Installation and maintenance of exclusionary devices by the construction team will be conducted following approval by SCE in accordance with this Plan.

SCE will implement the following types of nesting bird deterrents, as needed:

- Removal of vegetation from areas that would be directly disturbed by construction prior to the nesting season;
- Creating disturbance by removing or moving equipment, vehicles, and materials on a daily basis within an active construction area;
- Use of mooring balls placed in inactive nests, directly on structures, or in other potential nest locations;
- Installation of appropriate-sized mesh netting on construction equipment and materials in staging areas, helicopter assembly and support areas, and construction yards, or other Project facilities or work areas;
- Use of wire spikes placed on towers, substations, or other facilities to discourage birds from perching and nesting on these structures;
- Installation of visual deterrents such as tangle guard bird repellent ribbon in active construction areas, yards, substations, and on materials and equipment;
- Covering straw wattle and other potential nesting materials in active construction areas, yards, and substations;
- Wrapping, stuffing, or covering ends of pipes or other materials within which birds could nest;
- Use of colored gravel, such as red or white, in active construction areas, yards, and substations to discourage ground-nesting species;
- Installation of chick fencing;
- Managing construction yard trash in a manner to reduce potential point food sources in active construction areas, yards, and substations; and/or
- Construction of alternate nest substrates, such as nest platforms.

Specific locations for the use of exclusionary or deterrent devices will be determined in coordination with the SCE EPM/her representative and the construction team. The construction manager is responsible to furnish labor and materials for bird exclusion or deterrent devices unless otherwise directed by SCE. Bird exclusion or deterrent devices shall be installed, maintained, and removed according to product specifications by the construction contractor as directed by an SCE EPM/her representative, and included in the weekly report.

Nesting Habitat Reduction. Removing potential nesting habitat within approved work areas is the first component to effectively excluding nesting birds within a construction area. To the extent feasible, prior to the onset of the nesting bird season, construction areas may be cleared of vegetation and grubbed, as

appropriate, to reduce potential conflicts between construction activities and nesting birds during the nesting season. Where possible, vegetation will be trimmed rather than removed or cut at ground level in lieu of grubbing. Vegetation removal will typically include removal of trees, shrubs, and herbaceous species. Prior to vegetation clearance, an Avian Biologist will conduct a preconstruction survey to confirm the absence of nesting birds, including raptors, and year-round residents, such as burrowing owls in the area planned for vegetation removal.

Mooring Ball (Marine Buoy). Mooring balls, or similar sized rubber or plastic balls, have been utilized as nesting deterrents in transmission towers either inside the cup of an existing stick nest, or at locations in the tower where red-tailed hawks or ravens have a potential to nest, to preclude nest construction. An Avian Biologist will confirm that there are no active nests on a tower (See Section 3.3.1) before mooring balls are installed either in an inactive nest or on a portion of the tower that is without nests but has the potential to support nests.

SCE will develop and implement a strategy to avoid or minimize the need for installing deterrents during the nesting season, recognizing that in some cases, the need for this activity may be unavoidable. To the extent feasible, mooring balls will be installed in known vacant nests prior to the onset of nesting bird season. However, there may be scenarios that SCE will install mooring balls during nesting seasons. For example, if an active nest becomes inactive in an area that construction would like to access, there may be a need to install a mooring ball before another nesting pair can utilize the nest. Following installation, the Avian Biologist and Biological Monitors will periodically inspect towers with buoys to confirm there are no negative effects to nesting as a result of mooring ball installation. Mooring balls will be installed in towers within the Project corridor as a tool to preclude nesting during the construction phase of the Project and removed at the conclusion of construction activity in a given area.

Mesh Netting. Use of mesh netting to cover equipment, stored materials and equipment, and partially constructed facilities can be a very effective means to exclude birds from suitable nesting sites within construction areas. Netting may be left in place year-round on facilities or equipment where it poses no undue hazard to wildlife. Netting will not be used outside of the nesting season in areas supporting special-status species. When not in use, netting will be stored where it is inaccessible to birds or other wildlife. By preventing birds from accessing potential nesting sites within the construction areas, conflicts between nesting activities and construction and yard operations can be reduced. Netting of vegetation would only be used under consultation with CPUC, BLM, USFWS, and CDFW or NDOW.

Netting can be specially ordered for this purpose from a number of companies including: US Bird Control (http://www.usbirdcontrol.com/), Nylon Net Co., and Nixalite (http://www.nixalite.com/birdnetting.aspx). An example of a specification sheet for such netting (PollyNetTM) is included as Appendix D.

The size of the mesh grid can vary depending on the size of birds that are being excluded. Given the diversity of birds that could nest within construction areas throughout the Project area, a 0.75-inch mesh may be suitable for excluding most birds, including small birds such as house finches and swallows. Selection of mesh size will be coordinated with the CDFW and USFWS.

Mesh netting, if employed, must be installed and maintained according to manufacturer specifications to be provided by SCE for agency review prior to its use of any mesh netting. To increase the effectiveness of the mesh netting as a bird exclusion device, equipment or other objects should be completely covered leaving no gaps in the netting through which birds could enter and build a nest

under the netting. Mesh netting shall also be inspected twice daily by the Biological Monitors to detect, document, and remove any trapped wildlife, and to identify and notify the construction contractor of any rips or gaps in the netting that could permit birds to pass through and to look for wildlife that have become trapped in the netting. Lizards and snakes are especially prone to becoming entangled in excessive netting draped along the ground. Therefore, installed mesh netting should not drape on the ground. Netting shall be monitored twice daily where netting is installed on vegetation. Netting of vegetation would only be used under consultation with CPUC, CDFW or NDOW, and USFWS.

If the Construction Contractor observes wildlife inside or trapped in the mesh netting, the Biological Monitor will be contacted immediately. Any wildlife found trapped or entangled will be documented through FRED and reported to the CPUC, BLM, CDFW, and USFWS through FRED daily and weekly monitoring reports. SCE will document and correct any non-compliance related to mesh netting. Additional measures such as personnel training or changes to netting use will be taken if re-occurrence is a problem. If properly installed netting results in recurring entrapment, alternative methods will be implemented.

Bird Spikes. Use of plastic or stainless steel spikes can be effective in discouraging birds from landing on structures and to deter nest establishment. Bird spikes typically consist of groupings of stainless steel or UV-resistant polycarbonate spikes that are spaced in such a way as to prevent birds from landing and gaining a foothold on the surface to which the spikes are adhered. As birds cannot comfortably land on surfaces covered with the spikes, the likelihood that birds will attempt to build nests in these areas is low.

Bird spikes can be specially ordered for this purpose from a number of companies including: US Bird Control (http://www.usbirdcontrol.com/) and Bird-B-Gone (http://birdbgone.com/). An example of a specification sheet for such bird spikes (Bird-B-GoneTM) is included as Appendix E. Bird spikes, if employed, must be installed and maintained by the Construction Contractor according to manufacturer specifications.

Bird spikes are designed to be affixed to structures to provide longer-term deterrents to birds. Therefore, use of bird spikes may be more practical to deter nesting on structures like towers and substations. Such devices are not likely practical for use on equipment, material storage areas, or contractor yards. Installation of bird spikes on tower structures concurrent with structure construction may discourage birds from nesting on tower structures during construction. Because they are affixed to structures, maintenance of bird spikes is low; however, these devices must be replaced periodically per the product specifications to maintain effectiveness.

Visual Deterrents. There are a wide range of visual deterrents that can be used to discourage birds from nesting. These range from predator decoys (e.g., plastic owls) to reflective ribbon that provides visual and auditory discomfort to birds. Reflective ribbon such as Tangle Guard Bird Repeller Ribbon (http://www.nixalite.com/tangleguard.aspx, Appendix F) is a Mylar reflective ribbon that can be affixed to construction equipment, around the perimeter of storage yards, or on towers or other facilities, as appropriate, to scare birds from the area, thereby reducing the likelihood of nesting. Movement from wind action produces a metallic rattling sound and its holographic surface may be construed as menacing to birds. Use of reflective ribbons can be particularly effective in material storage yards and contractor yards that may be used for a long period of time. Holographic reflective ribbons can be specially ordered from a number of companies including US Bird Control.

Material and Pipe Covers. Sheltered spaces such as pipes or stacks of stored materials provide potential nesting sites for some birds. To reduce the likelihood that birds will build nests in these areas and therefore constrain the use of construction areas, substations and yards, such materials can be covered with mesh netting (discussed above) or other materials. Routinely covering equipment and stored materials will be used as a standard management practice to deter birds from nesting in these areas.

Yards often contain suitable nesting materials or opportunities for birds, especially for cavity nesting. For example, straw wattles can be attractive to birds as they provide excellent nesting material for a wide range of species. Birds attracted to this nest material may be more likely to build a nest in close proximity to these stored materials (e.g., within a yard), which can constrain work activities. To reduce the likelihood for nesting with yards where wattles are stored, such materials should be covered so birds cannot access the wattle material to use as nesting.

Colored Gravel. Use of colored gravel in graveled construction and facility areas can be effective in discouraging ground-nesting birds. The eggs of ground-nesting birds are colored in a manner to be camouflaged against naturally colored substrates such as soil or pebbles. By covering the ground surface with colored gravel that contrasts sharply with the color of the birds' eggs, ground-nesting birds can be effectively discouraged from nesting in such locations. Colored gravel installation will be consistent with any Environmental Impact Report/Environmental Impact Statement visual resource mitigation measures and will be removed, where required, following the completion of the Project.

Chick Fencing. Birds with precocial young (those that are mobile shortly after hatching) typically do not remain at the nest site once young have hatched, although parental care may continue until the young are capable of flight. These species have the potential to move into active construction areas, even when the nest itself may have been located outside of avoidance buffers and note detectable during preconstruction surveys. Killdeer, quails, and most waterfowl are examples of precocial birds that occur in the Project area.

While not intended to deter nesting, chick fencing will be installed if needed to exclude precocial chicks from entering active construction areas. Silt fencing or hardware cloth extending to ground level and folded or bent outwards at a 90-degree angle with no gaps can successfully exclude chicks. Burial of the bent or folded portion of the barrier will increase the effectiveness. Desert tortoise fencing would be effective as chick fencing, although this would not be installed at most work locations. In the event that prompt, unanticipated installation of chick fencing is required, silt fencing can be deployed rapidly.

Chick fencing will not be installed unless warranted by the presence of immature precocial birds at risk of entering an active construction area. In the event that the Avian Biologist or Biological Monitor detects immature precocial birds in the vicinity of a work area (within the species-specific nest buffer listed in Section 2.3), the activity of the birds would be monitored continuously until they move away from the work area. If the birds approach or remain near the work area, the Avian Biologist or Biological Monitor would consult with the EC to determine whether to temporarily pause work activities or install temporary chick fencing, based on the behavior of the birds and the type of work underway.

Because precocial birds move frequently and have the ability to avoid and disperse away from human activity, long-term avoidance buffers around locations where chicks have been sighted would not be an effective or appropriate response.

Trash Management. Although not a specific deterrent, management of trash on and around construction areas is important to reduce the potential for construction activities to attract birds. Trash from food

waste can provide an attractive food source for birds thereby increasing the likelihood of them nesting within construction areas. Effective management of food waste and other trash will be important to avoid attracting birds to construction areas. Such management measures will include daily removal of trash from the site as well as covering trash bins with wildlife-proof lids.

These methods, either on their own or in combination with other measures discussed above, can be effectively employed to potentially discourage birds from nesting within and immediately adjacent to construction areas. However, there is no single practical method to permanently exclude birds from construction yards, staging areas, or transmission structures. Knowledge of bird behavior and interactions and adaptive management in collaboration with the Construction Contractor is essential in understanding the implementation and effectiveness of deterrents.

Nest Platforms. To deter nesting in existing or partially constructed structures (e.g., poles, lattice steel towers) in critical construction areas, SCE may elect to install constructed nest platforms in the vicinity. This method would prove most useful where historical data suggests it is likely that tower-nesting species such as red-tailed hawks are likely to nest in a structure (i.e., evidence of site fidelity from previous years). Typically, other deterrent methods (e.g., marine buoys, bird spikes) would be installed in the existing or partially built structure to deter nesting at that location, while an artificial nest stand is installed nearby to offer a more enticing nest site. Nest platforms will be constructed according to SCE-provided guidelines or equivalent (see Appendix G). Nest platforms will be located within the existing SCE ROW or where SCE obtains case-by-case permission from the landowner to construct the platform. Ideally, nest platforms would be located at least 500 feet from construction areas. If not feasible, the platform will be located the maximum distance possible to prevent future conflicts.

2.6 Inactive Nest Management

This section of the Plan discusses the protocol to remove inactive nests in and within 300 feet of active construction areas, including yards, substations, and materials and equipment to minimize opportunities for nesting birds. Based on the Migratory Bird Permit Memorandum (USFWS 2003), unoccupied nests (without birds or eggs) may be destroyed. This protocol does not cover listed species or bald or golden eagles. The purpose of inactive nest removal is to prevent or reduce the potential reuse of a currently inactive nest (e.g., return of a pair to the specific site) in a high-risk location.

Nest removal as described in this Plan will only be applicable to removal for Project construction and post-construction site restoration or remediation. Nest removal for non-Project activities, including routine operation and maintenance, would be conducted pursuant to existing permits or agreements with the resource agencies. At the end of each yearly nesting season, SCE will inventory all nests proposed for mooring ball installation prior to the beginning of the following nesting season and prepare an installation schedule. To the extent feasible, inactive nest removal will take place prior to the onset of nesting bird season. However, there may be scenarios where SCE will need to remove inactive nests during nesting seasons.

The following sections describe inactive nest removal for raptors, colonial bird species, and other non-listed, non-game native birds. All inactive nest removals for the Project will be documented in FRED.

2.6.1 Raptors

Raptors have additional protection under the CFGC. Since raptors exhibit nest-site fidelity, inactive raptor nests may be protected even though no eggs or young are present. Inactive or partially built raptor nests will be mapped and documented by the Biological Monitor or Avian Biologist. Inactive raptor nests (other than golden eagle nests) that will be impacted by Project construction activities will be removed according to the following protocol. Removal of raptor nests is not proposed under any other circumstances.

- An email notification will be sent out to CDFW and CPUC providing details of the nest location, reason for nest removal, nest ID number, and nest removal schedule 24 hours prior to nest removal.
- An Avian Biologist or Biological Monitor under the direction of an Avian Biologist will observe the nest for four hours (breeding season) or one hour (non-breeding season), during favorable field conditions (good visibility, low wind) to determine whether there is any activity at the nest site;
- If an Avian Biologist determines that the nest is unlikely to be active based on these observations (e.g. absence from the nest site and no "nest decorating" observed), the construction team will provide personnel to inspect the nest if it is not accessible by a Biological Monitor or Avian Biologist due to safety concerns; Nest removals will occur on the same day that the observations were made to determine the nest is inactive.
- For inaccessible nests (e.g., on transmission towers and poles), the construction team will take a photo of the nest contents and provide the photograph to a Biological Monitor or Avian Biologist;
- Once a Biological Monitor or Avian Biologist has confirmed from the photo that the nest is inactive, the construction contractor will remove the nest immediately following confirmation that it is inactive.

The agencies will receive notification of the nest removal through FRED and the weekly report. Nests will not be collected or taken off site.

If necessary and feasible, nest platforms may be constructed according to SCE-provided guidelines (see Appendix G).

Removal of all inactive raptor nests will be documented on a daily basis through a FRED daily monitoring report and summarized in weekly FRED monitoring reports that are sent via email to CPUC, BLM, USFWS, and CDFW or NDOW.

2.6.1.1 Golden Eagles

Removal of inactive nests known to be used by golden eagles could be considered 'take' under the definition of the BGEPA, which provides a higher level of protection for this species than the MBTA. Golden Eagle are a State of California Fully Protected species may not be taken or possessed at any time. While golden eagles will occasionally use nests located on transmission structures, preferred nest sites are typically in areas with minimal or no human presence and disturbance. If there is evidence that an inactive nest on a Project feature may have been used by golden eagles, the nest will be left in place until a determination can be made whether golden eagle use has the potential to occur, and whether removal

of that nest could harm golden eagles. Inactive nests that evidence indicates may be used by golden eagles will be preserved in place.

2.6.1.2 Burrowing Owls

Burrowing owls nest and shelter in burrows in the ground and are mostly non-migratory, meaning that burrows may be utilized (i.e., occupied) year-round as escape burrows. Additionally, because they nest in burrows in the ground, further surveys may be required (per the Staff Report on Burrowing Owl Mitigation; CDFW 2012) to determine whether or not their nest burrows are active, or their escape burrows are being used.

As described in Table 2, preconstruction surveys will determine if suitable habitat (i.e., burrows) for burrowing owl occupation and/or nesting is present. Management of occupied burrowing owl burrows are addressed in the species-specific Burrowing Owl Management and Passive Relocation Plan, including seasonal and agency differences in buffer distance requirements. Active nests with young that are not fledged and independent would be treated as any other active nest addressed in this Plan.

2.6.2 Colonial Birds

Colonial nesting birds (which include swifts and swallows) are highly vulnerable to disturbance. These birds may re-use nests in successive years. Destruction of unoccupied nests during or near the nesting season could result in take. Outside the species-specific nesting season, CDFW or NDOW staff and USFWS staff will be consulted regarding removal of colonial bird species' inactive and partially built nests. Inactive nests of colonial bird species will be removed or collapsed only after review by CDFW or NDOW and USFWS staff. Currently, there are no known colonial nests within or near the ROW.

Colonial bird nests that would be impacted directly by Project construction activities will be removed according to the following protocol:

1. A Biological Monitor or Avian Biologist will determine whether the nests are active through observation of bird sign and behavior, as described in Section 3.3.1. The Construction Contractor will provide personnel to inspect the nests and take a photograph of the contents if they are not accessible by the Biological Monitor or Avian Biologist.
2. If the Biological Monitor or Avian Biologist determines the nests are not active, CDFW and USFWS will be consulted regarding removal of colonial bird species nests. Nests will be removed or collapsed immediately after they are confirmed to be inactive and only upon review from CDFW and USFWS. CPUC and BLM will be copied on any correspondence when CDFW and USFWS are consulted.

Nest removals will be documented in FRED and summarized in the weekly reports. Nests will not be collected or taken off-site.

2.6.3 Non-Listed Special Status, Non-Special-Status, Non-Game Bird Species Nest Removal

Removal of inactive nests and deterrence of nesting for non-special-status, non-game bird species other than raptors, burrowing owls, and colonial bird species will be completed as discussed below. For these species, nests being constructed, but not containing eggs or chicks, are considered inactive (see Section 2.2). For non-listed special-status species, nests are considered active during nest building;

therefore, removal of non-listed special-status nests will only occur once the nest is confirmed inactive by this definition.

Inactive nests found within construction areas, including substations, yards, materials, and equipment, may either be removed and dropped to the ground, or have an in-nest deterrent (i.e., mooring ball, see Section 2.5). Mesh netting will not be installed in nests. The Construction Contractor will provide personnel to inspect the nest and take a photograph of the contents if it is not accessible by a Biological Monitor or Avian Biologist. Nests will not be collected or taken off site.

When construction takes place during the nesting season, inactive nests will be identified during preconstruction surveys and during construction monitoring, if not previously identified during earlier Project or non-Project SCE surveys or monitoring.

Non-listed special-status, non-special-status, non-game bird nests that would be impacted directly by Project construction activities will be removed according to the following protocol:

1. To determine whether a nest is inactive, a minimum of 1 uninterrupted, consecutive hour of monitoring in suitable conditions for detecting nesting activity is required prior to removal, as described in Section 3.3.
2. The construction contractor will provide personnel to inspect the nest and take a photograph of the contents if it is not accessible by a Biological Monitor or Avian Biologist. In rare circumstances, such as nests in substation equipment, it may not be possible to photograph a nest prior to removal. Nest removals will occur on the day that the observations were made to determine the nest is inactive.
3. After the Biological Monitor or Avian Biologist confirms that the nest is inactive and that it does not belong to a listed species, the nest will be removed and left on site.

No nests will be taken off the Project site or collected. The nest location will be subsequently monitored to detect any re-nesting attempts. Initial re-nesting attempts on Project elements or equipment will be deterred until the bird selects an alternative nest site.

3 Field Approach

Nesting bird surveys will be carried out in several stages during the nesting season (defined as beginning December 1 (golden eagles), January 1 (all other raptors), or February 1 (all other species) and continuing through July 31 (golden eagles) or August 31 (but may vary with species, elevation, or weather patterns). An Avian Biologist will conduct a preconstruction nest survey within 7 days prior to the start of work at any given site. Preconstruction survey results are submitted to CPUC to obtain approval prior to beginning work at the site. A daily communication protocol will be in place to allow prompt post-survey reporting to the CPUC designated avian consultant. Daily reports will be provided by email.

On the first day of construction at any given site, a qualified Avian Biologist will perform a pre-construction “sweep” to identify any bird nests or other resources that may have appeared since the 7-day survey. On each subsequent day of construction during the nesting season, the Biological Monitor will first perform daily sweeps during daylight hours at each work site to look for resources, including nesting birds. The daily sweeps will be conducted to identify new nests (partially built, active, or inactive) not detected

during the preconstruction survey or clearance sweep and to document the status (active or inactive) of known nests in a construction area.

The preconstruction nest survey and daily sweeps will be conducted within suitable habitat for nesting birds within the construction areas and include a 300-foot survey area for non-raptors and 500-foot survey area for raptors, collectively referred to as the Biological Survey Area (BSA). Prior to scheduling a survey or determining a change in status of a nest, adverse weather conditions and time of day (surveys typically should be conducted in the early morning) will be considered because these conditions reduce the likelihood of detecting nesting birds and associated nesting behavior. Care will be taken to avoid potential take of a nest due to surveying and monitoring efforts.

The status of all active nests within the BSA will be documented and summarized in weekly reports and the weekly nesting bird table. This information will be provided weekly to the CPUC, CDFW, NDOW, the USFWS, and the BLM via email summary reports (see Section 3.5).

3.1 Survey Requirements

3.1.1 Survey Experience and Training

Avian Biologists and Biological Monitors, hereafter collectively referred to as surveyors, will meet the qualifications described below. As different species have different nesting niches and different breeding strategies, surveyors must be able to readily distinguish species that may breed locally from those that do not; they must have knowledge of habitat contexts and types of behaviors to look for when evaluating nesting potential.

Appendix A contains a list of the potential nesting bird species and relevant information on their nesting behaviors. This list draws on information presented in the online *Birds of North America* (http://bna.birds.cornell.edu/BNA), Sibley (2016), as well as SCE's Biological Consultants' extensive experience surveying for and studying nesting birds in southern California. All surveyors will receive training on the information and procedures detailed within this Plan.

3.1.2 Qualifications

3.1.2.1 Lead Avian Biologist

To be approved as a Lead Avian Biologist, an individual is expected to have the following qualifications:

- Two or more years of focused experience with a range of bird species in Southern California performing nesting bird surveys or monitoring nests.
- Worked on 10 or more substantial multi-season bird projects, or the equivalent, performing surveys, habitat assessments, etc. in the field. Of these, at least eight must be in the Southwest, preferably in California.

3.1.2.2 Avian Biologist

To be approved as an Avian Biologist, an individual is expected to have the following qualifications:

- Worked on three or more substantial multi-season bird projects or the equivalent, performing surveys, habitat assessments, etc. in the field. Of these, at least two must be in the Southwest, preferably in California.

3.1.2.3 Biological Monitor

To be approved as a biological monitor, the recommended qualifications are listed below:

- Worked on construction monitoring of biological resources on two or more projects (six 6 months or more total).

3.2 Field Maps

All surveyors will be provided with maps that depict the Project disturbance limits, ROW, access roads and other Project features, and current nest and buffer data. Surveyors will have access to the FRED database to view all previously collected data. The database and associated mapping interface will be regularly updated so real-time nest and other biological resource data will be available to the surveyors.

3.3 Nesting Season Survey Methodology

A survey will consist of a pedestrian search by an Avian Biologist for both direct and indirect evidence of bird nesting. Direct evidence will include the visual search of an actual nest location. Indirect evidence will include observing birds for nesting behavior, such as copulation, carrying food or nesting materials, nest building, adult agitation or feigning injury, feeding chicks, removal of fecal sacks, and other characteristic behaviors that indicate the presence of an active nest.

The size of the survey area physically surveyed will vary according to site-specific conditions. The amount of acreage covered by surveyors will be determined based upon the nesting bird activity encountered and the opinion of the qualified personnel conducting the surveys. The density and complexity of habitat type will be taken into account during survey planning to determine the field methods, number of qualified personnel, and the time needed to locate nests. Surveys located in riparian woodland found on the Project may require observations from multiple vantage points due to the density and height of vegetation, as well as additional search effort in trees and bushes, in order to attempt to locate all potential nests prior to construction. Surveys located in desert scrub habitats, found on the Project, may be completed in less time, relative to riparian woodland, due to lower vegetation density that would allow surveyors to spot nests and nesting activity.

Additional time or surveys will be conducted if the surveyor does not feel that the area has been adequately covered. A variety of survey approaches may be needed to locate nests depending on the species likely to be encountered at each BSA. Under some circumstances, the surveyor may be able to survey a substantial portion of the BSA from one (or more) inconspicuous location(s) to detect birds entering and leaving the BSA. Sitting quietly in inconspicuous locations when other types of disturbance are absent allows observers to intensively listen and observe bird behaviors for discernible direct and indirect evidence of nesting. When moving through vegetation, surveyors will watch for distraction displays, aggressive responses and interactions, and birds flushing suddenly from atypically close range (often an indicator of a nest site). If defensive or distraction displays from birds are observed, an active nest is likely to be nearby. Surveyors will utilize visual observations of nests and bird behavior as a method for detecting potential nests.

Nests that pose constraints to Project activities will be directly observed, or status may be inferred by behaviors such as feeding chicks or removing fecal sacs. If the presence of a potentially active nest is suspected but cannot be confirmed, additional surveys will be conducted. If construction is planned to occur in the area and additional surveys have not determined the precise location of a nest, a disturbance free buffer may be implemented that would protect the relative location until the biologist has located the precise location of a nest.

The Avian Biologist will notify the SCE EPM/her representative of all active and potentially active nests detected during the preconstruction surveys and sweeps as well as report them in FRED and include in weekly reports to the agencies. Preconstruction and daily clearance sweeps during nesting bird season will follow the same methodology discussed in this section to ensure that all active nests are located prior to construction occurring in the vicinity. Prior to vegetation removal activities within the nesting bird season, a sweep will be conducted by an Avian Biologist preceding the scheduled construction activity to help document and protect nests that have been built since the preconstruction survey.

Once a nest is found, it will be observed for activity. If no activity is observed within a minimum 1-hour monitoring period (4 hours for raptor nests), the nest would be approached to check the status. The Avian Biologists will use best professional judgement regarding the monitoring period and whether approaching the nest is appropriate. If no adult or juvenile bird activity is observed within 1 hour (4 hours for raptor nests), the nest may be considered inactive. If an inactive nest will be directly impacted by Project activities due to the location of the nest in a tower, or vegetation in an approved Project work area, then the removal procedures outlined in Section 2.6 of this plan will be implemented. If an Avian Biologist or Biological Monitor determines that an hour (or 4 hours for raptors) is not sufficient to make a determination on the nest status, then 1-hour increments will be employed until a final determination regarding nesting status can be made.

Every effort will be made as to not expose the nest to potential predation as a result of survey and/or monitoring activities. All nest visits will be conducted by a single surveyor and will last only as long as necessary to check the nesting stage or until circumstances necessitate departure (e.g., potential nest predator detected or sustained indications of stress by any protected bird).

When approaching a nest, surveyors will first determine whether there are any potential nest predators nearby (e.g., California scrub-jay [*Aphelocoma californica*], common raven [*Corvus corax*], cactus wren [*Campylorhynchus brunneicapillus*], and house wren [*Troglodytes aedon*]). If no predators are observed, the surveyor will approach the nest. Surveyors will be carefully aware of the possibility of additional, undetected nests nearby. They will avoid creating a scent or visual path that directs animals to the nest (e.g., leaving no trampled spot by the nest and continuing past the nest upon leaving it rather exiting on the entrance path). Surveyors will also briefly look in at least two empty potential host plants for bird nests before and after looking in the nest in an attempt to divert and discourage predators.

3.3.1 Active Nest Determination

When an active nest (defined in Section 2.2) is confirmed, the default species-specific buffer will be implemented per this Plan (Table 4) and work within the new nest buffer will cease immediately. If a bird is seen carrying food or nesting material, but the vegetation is too dense for the surveyor to visually locate the nest, the approximate nest location will be inferred by the surveyor based on observed bird behaviors.

Surveyors are not to risk the failure of a nest in an effort to discern an exact location or exact status (e.g., number of eggs, size of nestlings, etc.). If a buffer reduction is requested by the contractor, the surveyor

will then continue to observe the nest and parental behavior to determine whether a reduced buffer can be appropriately implemented. Active nests will be monitored before implementing a reduced buffer. Prior to implementation, all buffer reductions will follow the process outlined in Section 2.3.3.

A nest completion date can be estimated by combining the stage of nesting at discovery and the known typical nesting duration for the species. However, because the date will be estimated, it is important to note that a nest may be active for a shorter or longer period of time than that estimated. For altricial species, a time buffer from three days up to three weeks will be added to every nest to allow for post-fledging nest dependence.

3.4 Monitoring

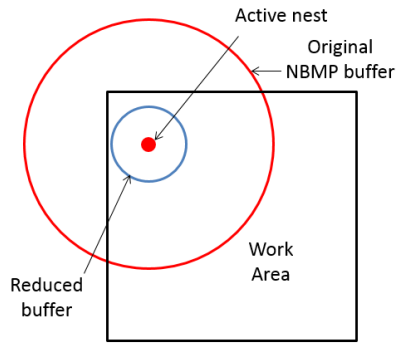
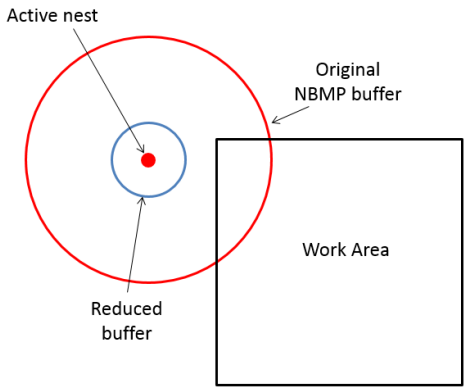
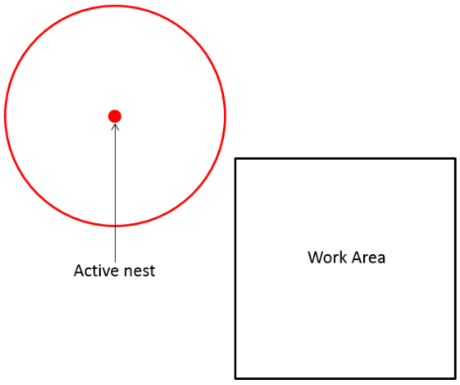
As a part of construction monitoring, Avian Biologists and Biological Monitors will check the status of any active nests within the BSA and update the nest monitoring database. This will ensure that nests around active construction areas are being given proper attention. The Biological Monitors will be responsible for monitoring the contractor's adherence to the established nest buffers, the contractor's adherence to the conditions of buffer reduction approvals, and monitoring the nesting birds' behavioral reaction to construction throughout the day during active construction.

Both nests with default buffers and nests with reduced buffers will initially require frequent monitoring to establish if the buffer is sufficient to prevent impacts to the nests. Thereafter, for most species, active nests will be monitored on intervals no longer than every 4 days (weekly for birds with longer nesting periods, over two months, such as ravens, great horned owls, and red-tailed hawks). Under the default buffers, active nests do not require further monitoring once work is completed in the area. For nests with reduced buffers, the same monitoring protocol will be followed until the nest is determined to be fledged or inactive. New nests discovered after work completion in an area would not require monitoring. Table 5 illustrates the monitoring frequency that SCE will utilize when an active nest is located.

Avian Biologists will be responsible for documenting new nests, providing status updates of previously identified active nests, and monitoring implemented buffers within and adjacent to construction areas. They will utilize construction maps, flagging, staking, and signage, and in-field communication to monitor for compliance with plan requirements. Avian Biologists and Biological Monitors will utilize monitoring methods as described in Sections 2 and 3 to minimize disturbance to active nests while conducting updates and documenting behavioral reaction to construction. Nests updates may be modified to accommodate adverse weather conditions where flushing an adult off of the nest could threaten the nest outcome or to accommodate nests noted as being sensitive to human presence.

For some hazardous construction activities (e.g., wire stringing) it is unsafe for the Biological Monitor to be too close to construction activities. In these scenarios, the Biological Monitors will observe the activity from outside of the right-of-way at a safe distance. Where feasible and safe around these activities, the monitor will still perform a clearance sweep at the beginning and end of the day to confirm the status of the active nests present in the BSA around the site. All nest visits will be documented in FRED (for biological resources), and reported to agencies, as requested.

In the case of precocial species such as killdeer, Biological Monitors will track broods after hatching to ensure chicks are not harmed by construction activities until chicks are capable of flying or are no longer found within active construction areas. Avian biologists may recommend chick fencing or other measures to prevent chicks from entering roads or work areas, as needed (see Section 2.5).

Table 5 Active Nest Monitoring Schedule			
Work Location	**Nest Location**		**Frequency**
Between original buffer and reduced buffer	Inside work area		Max interval every 4 days (weekly for some large-bodied species) until nest fledges or declared inactive
	Not inside work area		Max interval every 4 days (weekly for some large-bodied species) until nest fledges or declared inactive
Not in nest buffer	N/A		Max interval every 4 days (weekly for some species) until completion of work

3.5 Reporting

Pre-construction nest survey reports will be submitted to the CPUC and BLM electronically via FRED and will include the time, date, and duration of the survey; identity of the surveyor(s); a list of species observed; and electronic data and maps identifying nest locations and the boundaries of established buffer zones. The electronic data set will be updated following each pre-construction survey and will be accessible to CPUC and BLM on the FRED Database. Regular calls will take place between SCE and the agencies to discuss the weekly reports.

The CPUC will receive the Project plan of the day listing scheduled Project activities for that day. Daily and weekly biological monitoring reports will be generated for the Project and provided to agencies. All data collected for the daily reporting will be input from the field on hard copy paper forms or mobile smart-phones using an offline form, and then entered/uploaded online into FRED. New nest events will be entered into FRED and agency biologists will be notified by automated email within 24 hours. A nesting bird table, updated weekly for submittal to the CPUC, CDFW, and NDOW, will show the current status of all active nests within the BSAs, distances of disturbance-free buffers that have been implemented to avoid nest failures, proximity to active construction activities, current list of nests with reduced buffers and status, construction activities occurring, and estimated fledge date. Further detail on data collection and processing is provided in Section 3.5.1 (Data Sheets).

An annual report shall be submitted to the CPUC, CDFW, NDOW, USFWS, and BLM by November 30 for each year the Project is under active construction or post-construction remediation or restoration. The annual report will provide a summary of the results of nest monitoring activities throughout the year, including reported nest success and failures. Nest failures will be categorized as Project-related, not Project-related, or unknown if evidence cannot support either of the previous two determinations. SCE will provide USFWS a summary spreadsheet of all nests tracked as a part of the Project for the previous nesting season. An annual meeting to review the annual report and "lessons learned" will occur prior to the start of the subsequent nesting season. The annual report will include sufficient substance and detail to provide the basis for the adaptive management and evaluation of lessons learned. Specific contents and format of the annual report will be reviewed and approved by the lead agencies in consultation with the other participating resource agencies.

3.5.1 Data Sheets

All nesting bird data will be entered into the FRED Bird Nest Events (online forms). This will provide the SCE EPM/her representative, Avian Biologist, and Biological Monitor current information pertaining to a specific nest, as well as the ability to print maps with the nest data (nest location and buffers). The data fields that have been established in FRED are defined in Table 6. FRED fields represent the most current fields and may be subject to updates as improvements to the FRED Database are made.

Table 6 Field Definitions for Online Entry into FRED

Field	Explanation
Date	Use calendar icon to choose date.
Time	Time (defaults to time of data entry).
Nest number	A unique identifier entered by the surveyor. The name will consist of the surveyor's initials and a number. For example – KF1.
Lead Monitor / SME	Segment Lead's name
Surveyor	Your name.
Segment	Pull-down menu for the segment numbers.
GPS coordinates UTM (meters)	Collected in UTM NAD 83. Make sure that measuring device (Garmin etc.) is set to proper units. Zone:___ ; _____mE and _____ mN • Ground Buffer Radius in feet. "0" for no buffer drawn • Helicopter Buffer Radius: in feet.
Buffer Implemented	Yes or No

Table 6 Field Definitions for Online Entry into FRED	
Field	**Explanation**
Device type	Pull-down menu choices are: “Garmin/Other-Recreational Grade (+/-40’)”, Smart Phone w/GPS-Advanced Recreation Grade (=/-10-15’)”, Trimble (Yuma)/Other-Professional Resource Grade (+/-1-3meter)”, Trimble (GOXH)/Engineering Survey Grade (Sub-Meter accuracy)”, “Launched From Map”, and “Device Unavailable”
Species	Pull-down menu based on the four-letter codes defined in Appendix A.
Offset	Check box for noting if the nest is offset from the GPS coordinates.
Direction	Pull-down menu of eight compass directions.
Distance in feet	How far the nest is from the GPS coordinates (in feet).
Nest location description	Where is the nest (specific description)? Be specific…. anything that can help another person find the nest; e.g., “nest within top half of the oak tree” or “nest is located within a rocky outcrop.” Use descriptive words. TAKE A PICTURE of the nest, at least one overview, and one close-up if possible.
Nest status	Active, Inactive, Inactive Vacant Raptor, Removed, Deterrent Installed. Active is a nest with eggs, nestlings, or recent fledglings, or a special-status species nest under construction. Inactive is a nest that no bird is currently using.
Number of eggs	If able to observe eggs, number of eggs observed.
Number of chicks	If applicable, number of chicks observed in nest.
Estimated fledge date	General estimate of how long before young fledge. Use Appendix A for reference.
Nest activity	Information on activity/behaviors observed. “Feeding Chicks”, “Fledglings close to nest” (i.e. branching), “Incubation,” “Nest Building,” “No Activity Observed,” Failed/Non-Project-related, Failed/Project-related, Failed/Unknown cause, Fledged, or Unknown Outcome. Determinations of the cause of failure will be made on the best evidence available. Abandonment of a viable nest once nearby work starts would support a conclusion of Project-related failure, but other potential causes should be considered.
Height from ground in feet	How high the nest is from the ground measured in feet.
Distance from work area in feet	Approximate distance from nest to the active work area in feet.
Distance from access road in feet.	Approximate distance from the nest to the access road in feet.
Substrate/species	What is the nest in (e.g. plant species, structure, bridge, and ground)? TAKE PICTURES from at least three directions.
Nest name	A unique identifier entered by the surveyor. The name will consist of the surveyor’s initials and a number. For example – KF1.
Location description/habitat	General area of the nest in relation to the surrounding vegetation/unique features. Be specific… anything that can help another person find the nest. i.e.: nest is located x-feet north/northwest of access road. Or nearest street address, cross streets etc. TAKE A PICTURE.
Is there an offset?	Are the measurements skewed from the actual location of the nest?
Offset directions	Pull-down menu options are: “N,” “NE,” “NW,” “S,” “SE,” “SW”, “E,” OR “W.”
Offset distance in feet	0.000
Descriptions of existing work activities.	Describe work activities currently occurring at nest site and adjacent to the nest site. Be sure to cover all directions (i.e. N/S/E/W). Note which activity is highest disturbance.
Environmentally Sensitive Area established?	Yes or No
ESA type	Two options: ground or helicopter

Table 6 Field Definitions for Online Entry into FRED	
Field	**Explanation**
Work area affected?	Yes or No
Name of road affected?	Access Road or Named Road.
SCE Notes	Record of agency engagement for the nest event.
Agency-reduced buffer in feet	Current Ground/Helicopter Buffer Radius
Tower or Work Area ID	Tower X or Construct X

4 Plan Approval and Amendment

This Plan will be implemented following approval by the CPUC and BLM. Any proposed revision or amendment must be reviewed by BLM and CPUC to confirm consistency with mitigation measures adopted by the lead agencies in the BLM Record of Decision and CPUC Decision.

Minor amendments or clarifications to the Plan will be implemented following receipt of email concurrence from CPUC and BLM staff. Minor amendments or clarifications may include, but are not necessarily limited to, additional blanket or programmatic buffer reductions or exemptions, additional construction activities and disturbance levels not already included in Table 1. Major amendments to this plan that may result from changes in applicable regulations, which alter the procedures outlined in this plan, will be submitted to the CPUC and BLM for concurrence prior to implementation. Following concurrence of minor or major amendments, a revised version of the plan with date of revision will be provided to the CPUC and BLM.

5 References

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U.S. Fish and Wildlife Service (USFWS). 2003. Migratory Bird Permit Memorandum, Subject: Nest Destruction. Issued: April 15, 2003. http://www.fws.gov/policy/m0208.pdf. Accessed October 16, 2014.

Appendix A. Species Information

Species			Nest Habitat and Substrate Type							Notes
Common Name	***Scientific Name***	**Alpha Code**	**Cavity and Crevice**	**Bridge, Culvert, and Building**	**Ground and Open Habitat**	**Understory and Thicket**	**Shrub and Tree**	**Open Scrub**	**Tower**	
American Kestrel	*Falco sparverius*	AMKE	●							• No nesting material is brought to the nest cavity. • Incubation and brooding performed primarily by female. • Average clutch size 4 or 5 eggs. • Incubation period 30 days, with an additional 28-31 days to fledging once hatched.
Anna's Hummingbird	*Calypte anna*	ANHU					●			• Female builds the nest, incubates the eggs, and broods the young. • Average clutch size 2 eggs. • Incubation period 16 days, with an additional 20 days to fledging once hatched.
Ash-throated Flycatcher	*Myiarchus cinerascens*	ATFL	●							• Nest built primarily by female. • Female incubates the eggs and broods the young. Both parents feed young. • Average clutch size 4 eggs. • Incubation period 16 days, with an additional 13-17 days to fledging once hatched.
Barn Owl	*Tyto alba*	BANO		●						• Nest arranged in existing structure by female. • Female incubates the eggs and broods the young. Male retrieves food. • Average clutch size depends on food availability. • Incubation period 31 days, with an additional 50-55 days to fledging once hatched.
Least Bell's Vireo	*Vireo bellii pusillus*	LBVI				●				• Special-status species • Male and female build the nest, incubate the eggs, and brood the young. • Average clutch size 4 eggs. • Incubation period 14 days, with an additional 10-12 days to fledging once hatched.
Arizona Bell's Vireo	*Vireo bellii arizonae*	ABVI				●				• Male and female build the nest, incubate the eggs, and brood the young. • Average clutch size 4 eggs. • Incubation period 14 days, with an additional 10-12 days to fledging once hatched.
Bendire's Thrasher	*Toxostoma bendirei*	BETH						●		• Special-status species • Male and female tend young. • Average clutch size is 3 eggs. Incubation period is unknown, but is 11 to 18 days in related species. • Young leave nest approximately 12 days after hatching.
Bewick's Wren	*Thryomanes bewickii*	BEWR	●			●				• Male and female build nest. • Female incubates eggs, and broods young. Both parents feed young. • Average clutch size 5-6 eggs. Incubation period 14-16 days, with an additional 16 days to fledging once hatched.
Black-tailed Gnatcatcher	*Polioptila melanura*	BTGN					●	●		• Both parents build the nest and incubate the eggs. • Average clutch size 4 eggs. • Incubation period 15 days, with an additional 15 days to fledging once hatched.
Black-throated Sparrow	*Amphispiza bilineata*	BTSP					●	●		• Female builds the nest, incubates the eggs, and broods the young. Both parents feed the young. • Average clutch size 3-4 eggs. • Incubation period 12 days, with an additional 10 days to fledging once hatched.
Blue-gray Gnatcatcher	*Polioptila caerulea*	BGGN					●	●		• Both parents build the nest, incubate the eggs. Female broods the young while the male brings food. • Average clutch size 4 eggs. • Incubation period 13 days, with an additional 10-15 days to fledging once hatched.
Brewer's Blackbird	*Euphagus cyanocephalus*	BRBL			●		●	●		• Female builds the nest and incubates the young. Both parents feed the young. • Average clutch size 4-6 eggs. • Incubation period 12-14 days, with an additional 13-14 days to fledging once hatched.

Species			Nest Habitat and Substrate Type							Notes
Common Name	***Scientific Name***	**Alpha Code**	**Cavity and Crevice**	**Bridge, Culvert, and Building**	**Ground and Open Habitat**	**Understory and Thicket**	**Shrub and Tree**	**Open Scrub**	**Tower**	
Brown-crested Flycatcher	*Myiarchus tyrannulus*	BCFL	●							• Both parents build the nest and feed the young. Female incubates the eggs. • Average clutch size 4-5 eggs. • Incubation period 13-15 days, with another 12-18 days to fledging once hatched.
Brown-headed Cowbird	*Molothrus ater*	BHCO					●			• Species is a brood parasite that lays eggs in other species' nests. • Female may lay one egg per day for several weeks. • Young fledge 10-11 days after hatching.
Burrowing Owl	*Athene cunicularia*	BUOW			●					• Special-status species • Species may line existing burrow with soft material, but no real nest built. • Female incubates eggs. • Average clutch size 7-10 eggs. • Incubation period 28-30 days, with an additional 6 weeks to fledging once hatched.
Cactus Wren	*Campylorhynchus brunneicapillus*	CACW					●	●		• Both parents build the nest and feed the young. Female incubates eggs. • Average clutch size 3-4 eggs. • Incubation period 16 days, with an additional 19-23 days to fledging once hatched.
California Scrub-Jay	*Aphelocoma californica*	CASJ					●			• Both parents build the nest and feed the young. Female incubates the eggs. • Average clutch size 3-5 eggs. • Incubation period is 17-18 days, with an additional 18-22 days to fledging once hatched.
Canyon Wren	*Catherpes mexicanus*	CANW	●							• Both parents build the nest and feed the young. Female incubates the eggs. • Average clutch size is 5 eggs. • Incubation period 12-18 days, with an additional 15 days to fledging once hatched.
Cliff Swallow	*Petrochelidon pyrrhonota*	CLSW		●						• Both parents build the nest, incubate the eggs, and feed the young. • Average clutch size is 4-5 eggs. • Incubation period 14-16 days, with an additional 21-23 days to fledging once hatched.
Common Poorwill	*Phalaenoptilus nuttallii*	COPO			●					• No nest is built. • Both parents incubate the eggs and feed the young. • Average clutch size 2 eggs. • Incubation period 20-21 days, with an additional 20-23 days to fledging once hatched.
Common Raven	*Corvus corax*	CORA					●		●	• Both parents build the nest and feed the young. The female incubates the eggs. • Average clutch size 4-6 eggs. • Incubation period 18-21 days, with an additional 5-6 weeks to fledging once hatched.
Costa's Hummingbird	*Calypte costae*	COHU					●			• Female builds nest, incubates eggs, and feeds young. • Average clutch size is 2 eggs. • Incubation period 15-18 days, with an additional 20-23 days to fledging once hatched.
Crissal Thrasher	*Toxostoma crissale*	CRTH						●		• Special-status species • Both parents build the nest, incubate the eggs, and feed the young. • Average clutch size is 2-3 eggs. • Incubation period is 14 days, with an additional 11-13 days to fledging once hatched.
Eurasian Collared-Dove	*Streptopelia decaocto*	EUCD					●			• Invasive, nonnative species. • Both parents build the nest, incubate the eggs, and feed the young. • Average clutch size is 2 eggs. • Incubation period is 14-18 days, with an additional 15-20 days to fledging once hatched.

Species			Nest Habitat and Substrate Type							Notes
Common Name	***Scientific Name***	**Alpha Code**	**Cavity and Crevice**	**Bridge, Culvert, and Building**	**Ground and Open Habitat**	**Understory and Thicket**	**Shrub and Tree**	**Open Scrub**	**Tower**	
European Starling	*Sturnus vulgaris*	EUST	●	●						• Invasive, nonnative species. • Both parents build the nest, incubate the eggs, and feed the young. • Average clutch size is 4-6 eggs. • Incubation period is 12 days, with an additional 21 days to fledging once hatched.
Gambel's Quail	*Callipepla gambelii*	GAQU			●					• Female builds the nest and incubates the eggs. Both parents tend the nestlings once hatched. • Average clutch size is 10-12 eggs. • Incubation period is 21-24 days. Young can fly at 10 days, but parents care for the young after that.
Golden Eagle	*Aquila chrysaetos*	GOEA			●					• Special-status species • Nests on cliff ledges, rarely in large trees. • Both parents build the nest, incubate the eggs, and feed the young. • Average clutch size is 2 eggs. • Incubation period is 41-45 days, with an additional 60-70 days to fledging once hatched.
Gray Vireo	*Vireo vicinior*	GRVI					●			• Special-status species • Both parents build the nest, incubate the eggs, and feed the young. • Average clutch size is 4 eggs. • Incubation period 13-14 days, with an additional 13-14 days to fledging once hatched.
Great Horned Owl	*Bubo virginianus*	GHOW					●			• Uses nests from other large birds and adds little to no nesting material. • Female incubates the eggs, but both parents feed the young. • Average clutch size is 2-3 eggs. • Incubation period 28-35 days, with an additional 9-10 weeks to fledging once hatched.
Great-tailed Grackle	*Quiscalus mexicanus*	GTGR					●			• Female builds nest, incubates the eggs, and feeds the young. • Average clutch size is 3-4 eggs. • Incubation period 13-14 days, with an additional 3 weeks to fledging once hatched.
Greater Roadrunner	*Geococcyx californianus*	GRRO						●		• Both parents build the nest, incubate the eggs, and feed the young. • Average clutch size is 3-5 eggs. • Incubation period 20 days, with an additional 18-21 days to fledging once hatched.
Horned Lark	*Eremophila alpestris*	HOLA			●					• Female builds nest and incubates the eggs. Both parents feed the young. • Average clutch size is 3-4 eggs. • Incubation period 10-12 days, with an additional 9-12 days to fledging once hatched.
House Finch	*Haemorhous mexicanus*	HOFI		●			●		●	• Female builds the nest and incubates the eggs, but both parents feed the young. • Average clutch size is 4-5 eggs. • Incubation period is 13-14 days, with an additional 12-15 days to fledging once hatched.
House Sparrow	*Passer domesticus*	HOSP	●	●			●			• Invasive, nonnative species. • Both parents build the nest, incubate the eggs, and feed the young. • Average clutch size is 3-6 eggs. • Incubation period is 10-14 days, with an additional 14 days to fledging once hatched.
House Wren	*Troglodytes aedon*	HOWR	●	●						• The male builds the nest, the female incubates the eggs, and both parents feed the young. • Average clutch size is 6-7 eggs. • Incubation period is 12-15 days, with an additional 12-18 days to fledging once hatched.
Inca Dove	*Columbina inca*	INDO		●	●		●			• Male gathers materials for the nest, while the female builds the nest. Both parents incubate the eggs and feed the young. • Average clutch size is 2 eggs. • Incubation period is 15-16 days, with an additional 12-16 days to fledging once hatched.

Species			Nest Habitat and Substrate Type							Notes
Common Name	***Scientific Name***	**Alpha Code**	**Cavity and Crevice**	**Bridge, Culvert, and Building**	**Ground and Open Habitat**	**Understory and Thicket**	**Shrub and Tree**	**Open Scrub**	**Tower**	
Killdeer	*Charadrius vociferus*	KILL			●					• The nest is a shallow scrape in soil or gravel lines by with pebbles or other debris. Both parents incubate the eggs and tend the young. • Average clutch size is 4 eggs. • Incubation period is 24-28 days, with an additional 25 days to fledging once hatched.
Ladder-backed Woodpecker	*Dryobates scalaris*	LBWO	●							• Male excavates most of the nest, but female does contribute. Both parents incubate the eggs and feed the young. • Average clutch size is 3-4 eggs. • Incubation period is 13 days. Time to fledging is unknown, but related species fledge in 20 to 30 days.
Le Conte's Thrasher	*Toxostoma lecontei*	LCTH					●	●		• Both parents build the nest, incubate the eggs, and feed the young. • Average clutch size is 3-4 eggs. • Incubation period 15 days, with an additional 13-17 days to fledging once hatched.
Lesser Goldfinch	*Spinus psaltria*	LEGO					●	●		• Female builds the nest and incubates the eggs. Both parents feed the nestlings. • Average clutch size is 4-5 eggs. • Incubation period is 12 days, with an additional 12-15 days to fledging once hatched.
Lesser Nighthawk	*Chordeiles acutipennis*	LENI			●					• No nest is built. Female incubates the eggs, but both parents feed the young. • Average clutch size is 2 eggs. • Incubation period 18-19 days, with an additional 21 days to fledging once hatched.
Loggerhead Shrike	*Lanius ludovicianus*	LOSH					●	●		• Both parents build the nest and feed the nestlings. The female incubates the eggs. • Average clutch size is 5-6 eggs. • Incubation period 16-17 days, with an additional 17-21 days to fledging once hatched.
Lucy's Warbler	*Oreothlypis luciae*	LUWA	●			●				• Both parents build the nest, incubate the eggs, and feed the nestlings. • Average clutch size is 4-5 eggs. • Incubation period is unknown, but is 9-14 days in related species. • Time to fledging is unknown, but related species fledge in 8 to 11 days.
Mourning Dove	*Zenaida macroura*	MODO			●		●			• Male brings female nesting material as she builds the nest. Both parents incubate the eggs and feed the young. • Average clutch size is 2 eggs. • Incubation period is 14 days, with an additional 15 days to fledging once hatched.
Northern Flicker	*Colaptes auratus*	NOFL	●							• Both parents excavate the nest, incubate the eggs, and feed the young. • Average clutch size is 5-8 eggs. • Incubation period is 11-16 days, with an additional 28 days to fledging once hatched.
Northern Mockingbird	*Mimus polyglottos*	NOMO					●	●		• Both parents build the nest and feed the nestlings. The female incubates the nest. • Average clutch size is 3-4 eggs. • Incubation period is 12-13 days, with an additional 12 days to fledging once hatched.
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	NRWS		●						• Both parents build the nest and feed the nestlings. The female incubates the eggs. • Average clutch size is 5-7 eggs. • Incubation period is 12-16 days, with an additional 19-21 days to fledging once hatched.
Peregrine Falcon	*Falco peregrinus*	PEFA		●	●					• Special-status species • Nests on cliff ledges. However, no actual nest is built. • Female incubates the eggs while the male brings food to her. Both parents feed the young. • Average clutch size is 3-4 eggs. • Incubation period is 32-35 days, with an additional 39-49 days to fledging once hatched.

Species			Nest Habitat and Substrate Type							Notes
Common Name	***Scientific Name***	**Alpha Code**	**Cavity and Crevice**	**Bridge, Culvert, and Building**	**Ground and Open Habitat**	**Understory and Thicket**	**Shrub and Tree**	**Open Scrub**	**Tower**	
Phainopepla	*Phainopepla nitens*	PHAI					•	•		• Male builds nest, but both parents incubate the eggs and feed the nestlings. • Average clutch size is 2-3 eggs. • Incubation period is 14-16 days, with an additional 19-20 days to fledging once hatched.
Prairie Falcon	*Falco mexicanus*	PRFA			•					• Nests on cliff ledges. However, no actual nest is built. • Female incubates the eggs while the male brings food. Both parents feed the young. • Average clutch size is 3-5 eggs. • Incubation period is 31 days, with an additional 5-6 weeks to fledging once hatched.
Red-tailed Hawk	*Buteo jamaicensis*	RTHA					•		•	• Both parents build the nest and incubate the eggs. The male brings food to the nest after the eggs hatch, and the female feeds the nestlings. • Average clutch size is 2-3 eggs. • Incubation period is 28-35 days, with an additional 7-9 weeks to fledging once hatched.
Red-winged Blackbird	*Agelaius phoeniceus*	RWBL				•				• Female builds the nest and incubates the eggs. Both parents feed the nestlings. • Average clutch size is 3-4 eggs. • Incubation period is 10-12 days, with an additional 11-14 days to fledging once hatched.
Rock Pigeon	*Columba livia*	ROPI		•						• Nonnative. • Female builds the nest, but both parents incubate the eggs and feed the nestlings. • Average clutch size is 2 eggs. • Incubation period is 16-19 days, with an additional 25-32 days to fledging once hatched.
Rock Wren	*Salpinctes obsoletus*	ROWR	•		•					• Both parents build the nest and feed the nestlings. The female incubates the eggs. • Average clutch size is 5-6 eggs. • Incubation period 12-14 days and time to fledging approximately16 days.
Scott's Oriole	*Icterus parisorum*	SCOR					•			• Female builds the nest and incubates the eggs. Both parents feed the nestlings. • Average clutch size is 2-4 eggs. • Incubation period is 12-14 days, with an additional 14 days to fledging once hatched.
Song Sparrow	*Melospiza melodia*	SOSP				•	•			• Female builds the nest and incubates the eggs. Both parents feed the nestlings. • Average clutch size is 4 eggs. • Incubation period is 12-14 days, with an additional 10-12 days to fledging once hatched.
Southwestern Willow Flycatcher	*Empidonax traillii extimus*	SWFL				•				• Female builds nest and incubates the eggs. Both parents feed the nestlings. • Average clutch size is 3-4 eggs. • Incubation period is 12-15 days, with an additional 12-14 days to fledging once hatched.
Turkey Vulture	*Cathartes aura*	TUVU			•		•			• Little or no nest built, but eggs are placed in sheltered sites such as hollow logs and cliff crevices. • Both parents incubate the eggs. One parent remains with the young while the other hunts. • Average clutch size is 2 eggs. • Incubation period is 34-41 days, with an additional 9-10 weeks to fledging once hatched.
Violet-green Swallow	*Tachycineta thalassina*	VGSW	•							• Both parents build the nest and feed the nestlings. The female incubates the eggs. • Average clutch size is 4-6 eggs. • Incubation period is 13-18 days, with an additional 22-24 days to fledging once hatched.
Western Kingbird	*Tyrannus verticalis*	WEKI					•		•	• Both parents build the nest and feed the nestlings. The female incubates the eggs. • Average clutch size is 3-5 eggs. • Incubation period is 18-19 days, with an additional 16-17 days to fledging once hatched.
Western Meadowlark	*Sturnella neglecta*	WEME			•					• Female builds the nest and incubates the eggs. Both parents feed the nestlings. • Average clutch size is 3-7 eggs. • Incubation period is 13-15 days, with an additional 12 days to fledging once hatched.

Species			Nest Habitat and Substrate Type							Notes
Common Name	***Scientific Name***	**Alpha Code**	**Cavity and Crevice**	**Bridge, Culvert, and Building**	**Ground and Open Habitat**	**Understory and Thicket**	**Shrub and Tree**	**Open Scrub**	**Tower**	
Western Screech-Owl	*Megascops kennicottii*	WESO	●							• Previously excavated cavities are used for nests, with little or no additions. • Female incubates the eggs, but both parents feed the nestlings. • Incubation period is 26 days, with an additional 4 weeks to fledging once hatched.
White-throated Swift	*Aeronautes saxatalis*	WTSW		●	●					• Nests are built in cliff crevices and/or building crevices. • Both parents incubate the eggs and feed the nestlings. • Average clutch size is 4-5 eggs. • Incubation period is 20-27 days, with an additional 6 weeks to fledging once hatched.
White-winged Dove	*Zenaida asiatica*	WWDO					●			• Male brings nesting material to the female as she builds the nest. Both parents incubate eggs and feed young. • Average clutch size is 2 eggs. • Incubation period is 13-14 days, with an additional 13-16 days to fledging once hatched.
Woodhouse's Scrub-Jay	*Aphelocoma woodhouseii*	WOSJ					●			• Both parents build the nest and feed the young. Female incubates the eggs. • Average clutch size 3-5 eggs. • Incubation period is 17-18 days, with an additional 18-22 days to fledging once hatched.
Yellow-breasted Chat	*Icteria virens*	YBCH				●	●			• Female builds the nest and incubates the eggs. Both parents feed the nestlings. • Average clutch size is 3-4 eggs. • Incubation period is 11 days, with an additional 8 days to fledging once hatched.

Appendix B. Wildlife Rehabilitation Facilities

B1 Approved Wildlife Handling Rehabilitation Locations

All God's Creatures
Chino Hills, CA
(909) 393-1590

Joseph and Linda Chalk
2654 Akron Street
San Bernardino, CA 92407
(909) 887-8267

Kandie Cansler
37685 Oak Glen Road
Oak Glen, CA 92399
(909) 790-1010

Appendix C. Critical Construction Activities

C1 Critical Construction Activities

C1.1 Public Health and Safety

C1.1.1 Grading/Slope Stabilization

Slope contouring to accommodate the new mid-line series capacitors within and adjacent to the existing overhead transmission rights-of-way. It is critical to the safety of the construction crews and general public that slope stabilization on slopes that are 2:1 or greater be completed prior to construction activities ceasing in the event of discovering an active nest. The following includes the sequence of critical construction activities that must occur at a site that has a significant change in grade:

1. The construction crews will cut in a keyway at the toe of the slope (to retain the slope at the base that is being constructed).
2. Following the installation of the keyway grading crews will fill the slope in lifts ensuring proper compaction as the slope is constructed.
3. Once the design elevation has been achieved the grading crews will tie the daylight line of the slope into the existing contours.
4. To ensure the stabilization of the constructed slope, all fill slopes will have the final BMPs installed and/or have soil stabilizer applied to its surfaces.
5. Once slopes have been stabilized the final critical step in the process is to ensure that water drainage is diverted from the slope face per the engineered design (i.e. water bars, McCarthy Drains etc.).
6. Equipment moved off site.

C1.1.2 Structure Assembly

1. Let a piece of steel attached to a crane down on the ground, secure piece of steel, and remove crane. Activity will take approximately 1-8 hours and 8-14 crewmembers.
2. Secure a piece of steel on a structure and remove crane. Activity will take approximately 1-8 hours and 8-14 crewmembers. Assembly can be stopped as long as the steel is bolted and left in a secured stable position to protect the public from injury.

C1.1.3 Structure Disassembly

Let a piece of steel, attached to a crane, down on the ground, secure the piece of steel, and remove the crane. Activity will take approximately 1-8 hours and 8-14 crewmembers. This process can be interrupted once the tower has been safely secured and the rigging and crane removed so the tower can support itself.

C1.1.4 Drilling

Remove drill bit from drill hole, secure hole, and remove drill rig. Activity will take approximately 1-2 hours and 4-8 crewmembers.

C1.1.5 Structure Erection

This activity can be stopped as long as any erected steel is back-bolted and torqued so sections are secure for public safety.

C1.1.6 Flying Sockline/Hardline

Once sockline/hardline is threaded through the first traveler (on a structure), the helicopter must complete flying sockline to the end of the wire pull and secure the sockline/hardline. Once threading the sockline/hardline has been completed, it must be secured on both ends and can then hang in the air for an undetermined amount of time. Sockline needs to be secured for public safety.

C1.1.7 Pulling Conductor

Once pulling conductor has been initiated and it has passed through the first traveler, the conductor pull must be completed through the last structure of the pull, the hardline removed, and the conductor sagged and deadended. Once started, the process must be completed (the whole length of the conductor from the tensioner site to the puller site) and the conductor deadended. Activity will take approximately 1-8 hours and 5-12 crewmembers. The conductor sock that connects to the hardline is not made for long-term suspension, and therefore if left in the air, could cause the sock to fail and conductor to drop. The Institute of Electrical and Electronics Engineers also states that conductor cannot sit in travelers longer than 72 hours. This activity poses public health and safety concern as well as threat to integrity of infrastructure.

C1.1.8 Wire Drop

Once conductor has been cut for removal and the rewind process has begun, the single conductor must be completely removed, which is the whole length of conductor from the tensioner site to the puller site. Activity will take approximately 1-4 hours and 5-12 crewmembers until the conductor is rewound and the let-down rope is retrieved. Wire should never be left suspended by rope in the air because the rope could break, causing the wire to drop, endangering the public or anyone on the ROW.

C1.1.9 Freeway Crossing

When stringing or removing conductor over freeways, all activities for each conductor phase need to be completed by the end of the day to protect the public.

1. If removing conductor for a phase has been started, it needs to be completed by the end of the day.
2. Finish installing, deadending and/or clipping in conductor for each phase by the end of the day.

C1.2 Integrity

C1.2.1 Concrete Pour for Foundations

Finish current leg. One concrete truck holds 9 cubic yards of concrete). Depending on leg length, 1/2 to 5 trucks might be required. Activity will take approximately 3 hours to complete and 6 crewmembers. Once a concrete pour has started, the pour must be finished, and the foundation completed. Activities can be

stopped once concrete pour has been completed and the concrete 'finished'. If a concrete pour is stopped at any time before completion, it would result in a cold joint. Specifications state that construction joints shall be used only as a last resort.

C1.2.2 Drilling Foundations

Drilling foundation holes is an activity that needs to continue once the hole exceeds 6 feet. If the foundation has been drilled to depth, the hole needs to be cased to keep it open until concrete can be poured, or concrete pouring would need to be started immediately. A hole can typically be left open for 24 hours. Activities can be stopped if the hole is less than 6 feet deep. If the hole exceeds 6 feet, drilling would need to be continued until depth is reached and the hole cased or filled with slurry to keep it from caving. The integrity of the hole may be compromised if left open for more than 24 hours and not supported.

C1.2.3 Clipping Conductor

Once conductor is deadended, clipping must be completed. This consists of attaching (clipping in) the conductor in its permanent position. Clipping in the conductor must be completed. The conductor must be clipped in within 72 hours per the Institute of Electrical and Electronics Engineers' specifications.

C1.2.4 Spacing Conductor

Once the bundled (two sub-conductor strands) conductor has been fully deadended and clipped in, it needs to be spaced. This consists of using either a cart that rides the wire, or a helicopter, to install spacers between the bundled conductors. Operations can be stopped only after the conductor has been fully spaced from one deadend to the other. Bundled conductor must be fully spaced within 24 hours of being clipped in per SCE's construction specifications to prevent damage to the conductor.

Appendix D. Netting

PollyNet™ BIRD NETTING PREMIUM

Economical bird exclusion netting that can be installed under, over, on and around an endless list of objects, spaces and structures. Simple, humane bird exclusion.

PollyNet Premium Bird Exclusion Netting
Flexible and easy to cut, PollyNet Premium is an extruded, knotless, seamless and UV stabilized black polypropylene bird exclusion netting. It is easy to handle, cuts with scissors, installs quickly and is one of the most economical bird netting systems available. PollyNet Premium has a 5 year UV degradation product warranty.

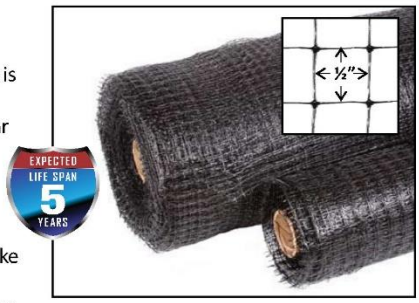
PollyNet Premium Applications
With a 1/2" (14 mm) pre-stretched square mesh, the PollyNet Premium excludes all types of pest birds and bat species. This includes pest birds like sparrows, starlings, waxwings, pigeons and seagulls. Prevent bats from roosting in unwanted spaces safely and humanely. Made to withstand the rigors of exterior architectural, agricultural and aquacultural applications. See the sidebar for more installation examples.

PollyNet Premium Sizes
Premium PollyNet comes in convenient precut roll sizes. Net roll sizes are subject to change depending on availability at the time of order.

Item#	Description
Netting 50	14' wide and 50' long Premium PollyNet
Netting 100	14' wide and 100' long Premium PollyNet
Netting 200	14' wide and 200' long Premium PollyNet
Netting 3000	14' wide and 3,000' long **bulk roll** Premium PollyNet*

*Allow additional shipping time for bulk roll freight delivery

Installation Hardware
Nixalite offers a huge selection of netting installation hardware, tools and accessories. To keep the costs low and maintain ease of installation, we suggest using the **Poly Hardware** to install your PollyNet Premium bird exclusion netting. For more information on the Netting Hardware, contact Nixalite of America Inc or visit www.nixalite.com.



PollyNet Premium Applications
Installs over, under and around an **endless list** of objects, areas, structures. Here are just a few examples.

Windows	Bell Towers	Canopies
Gazebos	Roof Eaves	Dormers
Louvers	Columns	Truck Docks
Bridges	Garages	Boat Docks
Fish Ponds	Gardens	Exhaust Vents
Balconies	Vineyards	Barns/Sheds
Storeroom	Crawlspace	Pet Runs
Aviaries	Fruit Trees	Open Doorway

PollyNet Premium Bird Exclusion Net is **Made in the USA**

PollyNet bird netting is one of the very few bird exclusion nets to be **Made in the USA**. Perfect for projects and bids that require Made in the USA products.

Questions? Contact us by phone or visit our website

Nixalite® of America Inc
1025 16th Avenue, East Moline, IL. 61244
Experts In Architectural Bird Control Since 1950

Phone: 800.624.1189 or 309.755.8771
Fax: 800.624.1196 or 309.755.0077
Email: birdcontrol@nixalite.com
Web: www.nixalite.com

Lightweight, inexpensive and disposable bird exclusion netting for short term bird netting enclosures.

PollyNet Lightweight Bird Exclusion Netting

Flexible and easy to cut, PollyNet Lightweight is an extruded, knotless, seamless and UV stabilized black polypropylene bird exclusion netting. It is easy to handle, cuts with scissors, installs quickly and is one of the most economical bird netting systems available. Made of very thin polypropylene strands, the PollyNet Lightweight is a disposable netting used for short term bird exclusion applications. It can be recycled after use.

PollyNet Lightweight Applications

With a 3/4" (20 mm) pre-stretched square mesh, the PollyNet Lightweight excludes all types of pest bird species. This includes sparrows, starlings, waxwings, grackles and pigeons. Common uses are gardens, berry patches, vine arbors, dwarf fruit trees and any application that can benefit from temporary protection from hungry birds. Use for structures and objects that require temporary exclusion or where low visibility and economy are more important than product longevity.

PollyNet Lightweight Sizes

PollyNet Lightweight comes in precut sizes. Net sizes are subject to change depending on availability at the time of order. Larger bulk sizes are available.

Item#	Description
Lnet 28	28' wide and 28' long Lightweight PollyNet
Lnet 45	14' wide and 45' long Lightweight PollyNet
Lnet 100	14' wide and 100' long Lightweight PollyNet
Lnet 500	14' wide and 500' long Lightweight PollyNet
Lnet 1000	14' wide and 1000' long bulk roll Lightweight PollyNet*

*Allow additional shipping time for bulk roll freight delivery

Installation Hardware

Nixalite offers a huge selection of netting installation hardware, tools and accessories. We recommend that you use the **Poly Hardware** to install or fasten your PollyNet Lightweight bird netting. We DO NOT recommend the use of any metal netting hardware to fasten the Lightweight Netting. If you have any questions, please contact Nixalite of America Inc.

PollyNet Lightweight Applications

For use on objects or areas that will benefit from temporary protection or where low visibility and economy are more important than product longevity. Examples:

Gardens	Vine Arbors	Berry Crops
Fruit Trees	Potted Plants	Aquascapes
Garages	Balconies	Storage
Turf Seed	Bushes	Barns/Sheds
Nurseries	Fruit Trees	Greenhouses

Use for indoor or protected areas that would benefit from temporary bird exclusion. Just for birds - not intended to deter animals such as squirrels or raccoons.

PollyNet Lightweight Bird Exclusion Netting is **Made in the USA**

PollyNet bird netting is one of the very few bird exclusion nets to be **Made in the USA**. Perfect for projects and bids that require Made in the USA products.

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Appendix E. Bird Spikes

Bird•B•Gone® Bird Spikes





	PLASTIC SPIKES	STAINLESS STEEL SPIKES	GUTTER SPIKES	GIRDER SPIKES	MEGA SPIKES
Works For	Pigeons or larger pest birds	Pigeons or larger pest birds	Pigeons or larger pest birds	Pigeons or larger pest birds	Pigeons, Seagulls, Raptors & Vultures
Material	Polycarbonate plastic	Stainless steel pins in a polycarbonate base	Stainless steel pins in a polycarbonate base	Stainless steel pins in a polycarbonate base	Stainless steel pins in a polycarbonate base
Widths Available	3", 5", 7"	1", 3", 5", 8"	4"	3", 5", 8"	5"
Lenghts Available	2' sections 50' per box	2' sections 50' per box	2' sections 50' per box	2' sections 50' per box	2' sections 50' per box
Guarantee	5-Year	10-Year	10-Year	10-Year	10-Year
Specifications	U.V. protected. Non-conductive, rigid & unbreakable. Available in 7 Colors! Made in USA	U.V. protected. No-gap design. Made in USA	U.V. protected. Fits any gutter! Made in USA	U.V. protected. Fits all girders! Made in USA	U.V. protected. 7" high! Made in USA
Where to Use	Ledges, I-beams, parapet walls, conduits, signs, flat surfaces	Ledges, I-beams, parapet walls, conduits, signs, flat or curved surfaces	For gutters up to 3/4"	Any size girder up to 1" thick	Ledges, I-beams, parapet walls, conduits, pipes, flat or curved surfaces

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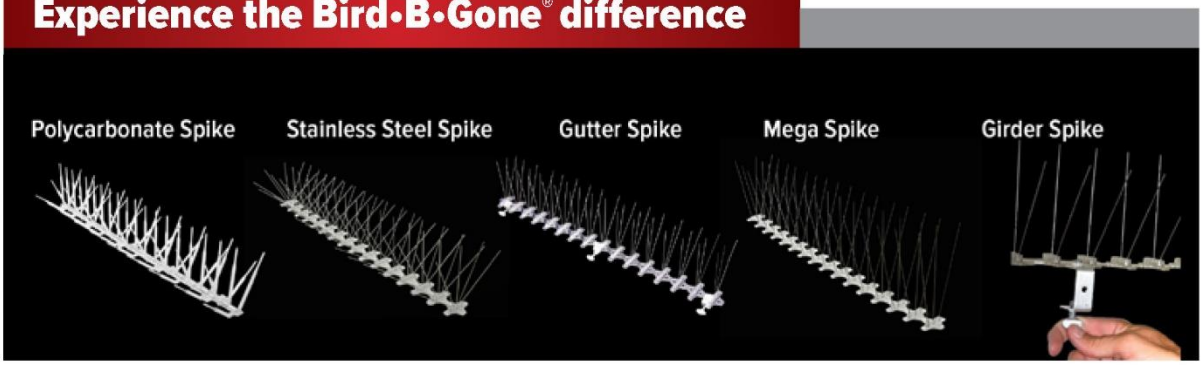
Experience the Bird•B•Gone® difference



Bird B Gone offers the widest variety of bird spikes!

Keep birds from landing and roosting in unwanted areas with Bird B Gone Bird Spikes. Bird spikes are the most affordable, effective, humane and cost-effective bird control solution that will not harm birds.

Bird B Gone Bird Spikes are ready to use and easy to install. No assembly required. Each bird spike strip comes pre-assembled in two foot sections and can be glued, screwed, or tied down to most surfaces.

Virtually invisible, Bird B Gone Bird Spikes are ideal for use on rooflines, window sills, fences, ledges and can be used on a variety of flat or curved surfaces.

Bird B Gone Bird Spikes are blunted at the tips so they won't harm birds, curious pets or installers; they have been approved by a number of humane groups.

PLASTIC BIRD SPIKES

Plastic Bird Spikes are the most affordable bird spikes on the market. Bird B Gone's plastic spikes are made of a rigid polycarbonate plastic that carries an industry leading 5-year guarantee. The plastic spikes come in 6 standard colors plus crystal clear. The spike strips are available in three widths; 3", 5" and 7" to cover most surfaces.

- Lowest cost bird spikes
- Humane, will not harm birds
- Virtually invisible
- Guarantee 5-years
- Patented
- Glue trough on base of spike allows for fast and easy application
- Non-conductive. Will not interfere with electrical or communications and transmissions
- U.V. protected, sun and weather proof. Not affected by extreme temperatures (+310°F to -200°F)

STAINLESS STEEL BIRD SPIKES

Stainless Steel Bird Spikes are a humane way to keep large birds from landing and roosting on high profile buildings. Once installed, stainless steel spikes are virtually invisible. They come in 4 widths, 1", 3", 5" and extra wide 8". The spikes are easily attached to most flat and curved surfaces using screws or glue. Bird B Gone's Stainless Steel Bird Spikes are the most specified bird spikes on the market by architects, contractors and government agencies. The spike strips carry an industry leading 10-year guarantee.

- Humane, will not harm birds
- Will no cut or injure the installer
- GSA approved
- Patented "bend and crush" design for permanent installation
- No-nest design. No gap spacing to deter birds from roosting or landing
- Virtually invisible when installed, ideal for high profile buildings

GUTTER SPIKES

Gutter Spikes are ideal for keeping larger birds from roosting and nesting in rain gutters on homes and buildings. The Gutter Spikes have attached C-clips that make installation a breeze so there is no need for separate clips or hardware. Bird B Gone Gutter Spikes are virtually invisible, once installed.

MEGA SPIKES

Mega Spikes are 7" tall bird spikes made to deter large birds like gulls, cormorants and vultures. They are the tallest bird spike deterrent available and will not harm birds. Mega Spikes will cover a surface from 3" - 7" wide with one row of spikes.

GIRDER SPIKES

Girder Spikes are ideal for keeping birds off of I-beams and girders. The spikes come in three different sizes: 3", 5" and 8" widths to cover most surfaces. The attached girder clamps make installation a breeze. Girder Spikes may be removed for cleaning or painting and then re-installed.

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Bird Spike 2000™ Polycarbonate Bird Spikes

Bird Species	Pigeons, seagulls or larger birds
Where to Use	Ledges, I-beams, parapet walls, conduits, signs, flat or curved surfaces
Material	UV protected polycarbonate plastic one-piece rigid construction
Bird Pressure	Light to Heavy
Warranty	5 years

Bird Spike 2001™ creates an uneven surface preventing birds from landing on flat or curved surface areas encouraging them to fly to a different spot.

Polycarbonate bird spikes installed on ledge.

Advantages & Benefits

- Lowest cost bird spike.
- Will not harm birds.
- Virtually invisible.
- Non-conductive. Will not interfere with electrical or communication transmissions.
- Rigid, super strong, and unbreakable.
- UV protected and weatherproof. Won't be affected by extreme temperatures -200° F to 310° F (-129° C to 154° C).
- 2' (60.96 cm) lengths. Cuts labor time in half.
- Easy to install. No maintenance. Can be glued, screwed, or tied down.
- Manufactured by Bird•B•Gone® in the USA.

Available in 7 colors!

Brown Brick Red Gray Black White Tan Clear

To install: Surface should be clean and dry before installation. Select width of bird spike based on the surface to be covered leaving no more than 1" on either side. Glue, screw or tie down to the surface.

Glue troughs along the base make for easy installation. Bird•B•Gone® offers construction grade adhesives.

BIRD•B•GONE® Inc.

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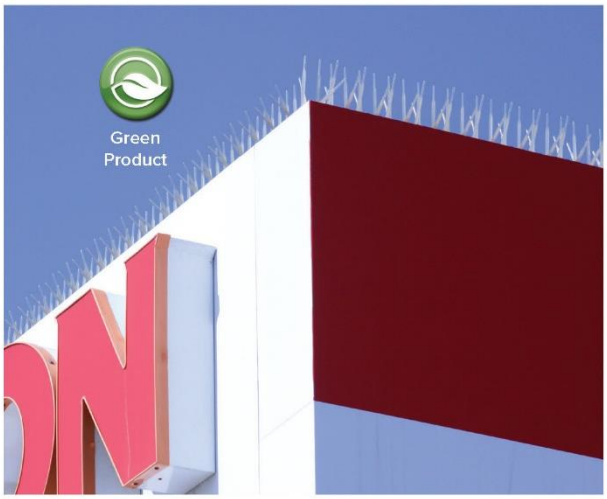
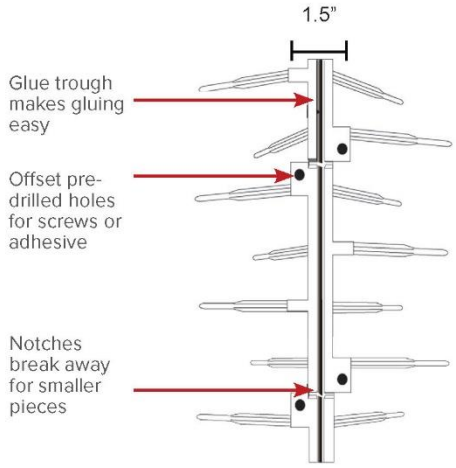
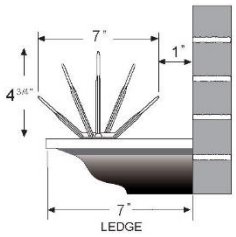
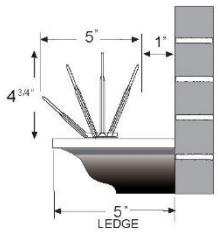
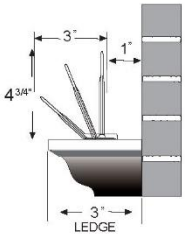
Bird Spike 2000™ Polycarbonate Bird Spikes



Spikes installed along roof lines and ledges will prevent birds from landing.

Underside View



Width	7"	5"	3"
			
Part #	BBG2000-7	BBG2000-5	BBG2000-3
Area of Coverage	6"- 8" (15.24 cm - 20.32 cm)	4"- 6" (10.16 cm -15.24 cm)	1"- 4" (2.54 cm -10.16 cm)
Pack Size	2' (61 cm) sections 50' (15.24 m) per box	2' (61 cm) sections 50' (15.24 m) per box	2' (61 cm) sections 50' (15.24 m) per box
			

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Appendix F. Reflective Tape

Tangle Guard Repeller Ribbon

A holographic foil ribbon that provides economical and humane spot control for nuisance birds and animals.

Repeller Ribbon is a safe, non-toxic and humane method for discouraging nuisance birds from roosting in gardens, home orchards, berry patches, trees, and structures.

Made in 25 and 100 foot long rolls, the 2" wide Repeller Ribbon is a holographic Mylar foil that provides temporary spot control for nuisance birds by producing visual and audible discomfort zones. A light breeze can produce bright reflections, movement and a metallic rattle which encourages pest birds and nuisance animals to away.

For simple spot control, installation is easy. With scissors, cut several pieces of Repeller Ribbon 2 to 3 foot long. Position these pieces of ribbon where nuisance birds and animals will see its flash and hear its metallic rattle. Fasten each piece at one end using velcro, string, twine, staples, etc. Make sure the Repeller Ribbon can move freely.

Use with Nixalite's Deer Blocker Deer Fence as Avoidance Flagging ! This is required for the first few months of the installation to ensure an effective deer barrier. Cut the ribbon into 16" to 24" lengths. Position each ribbon 4 feet up from the ground, every 10 feet of fence.

Use with simple garden poles to create a quick barrier fence to keep geese and other waterfowl from walking out of the water and into your yard. Run two rows of ribbon tied to simple posts or poles along the water's edge.

For more uses and applications, contact Nixalite.

Spot Control:

- Gardens
- Small Orchards
- Hobby Vineyards
- Trees, Shrubs
- Parking Areas
- Garage, Storage
- Boat Slips
- Gazebos, Sheds
- Small Ponds
- Barns, Stables
- Many More!

Use with other Nixalite products:

- Bird Scare Predator Eyes
- Scarecrow Motion Activated Sprinkler
- Deer Blocker Deer Fencing Systems
- Simple Barrier Fencing for Geese

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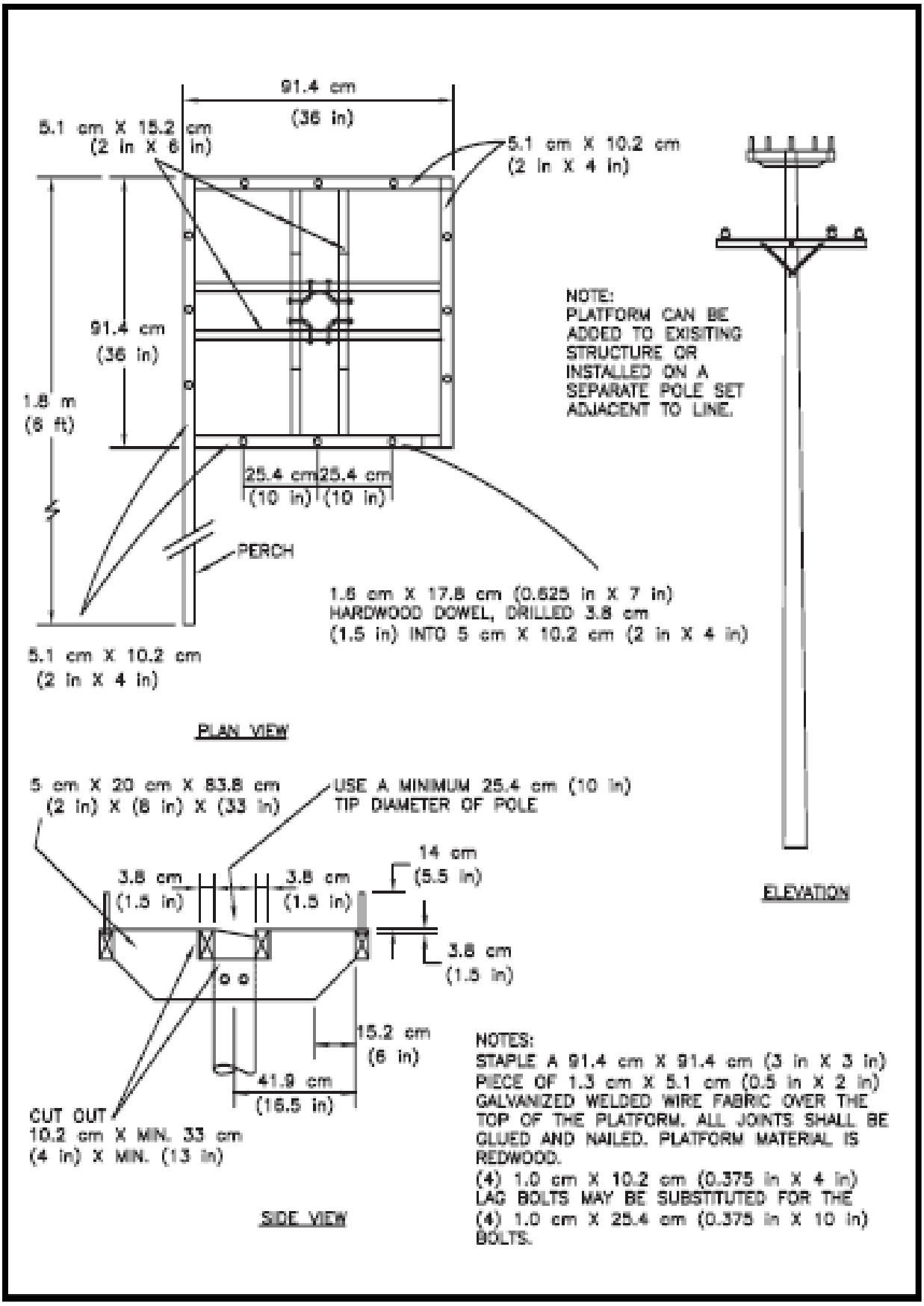
Where the World Shops for Humane Bird and Animal Control.

Appendix G. Nest Platform


91.4 cm
(36 in)
5.1 cm X 15.2 cm
(2 in X 6 in)
5.1 cm X 10.2 cm
(2 in X 4 in)
91.4 cm
(36 in)
1.8 m
(6 ft)
25.4 cm
(10 in)
25.4 cm
(10 in)
PERCH
1.6 cm X 17.8 cm (0.625 in X 7 in)
HARDWOOD DOWEL, DRILLED 3.8 cm
(1.5 in) INTO 5 cm X 10.2 cm (2 in X 4 in)
5.1 cm X 10.2 cm
(2 in X 4 in)
PLAN VIEW
NOTE:
PLATFORM CAN BE
ADDED TO EXISITNG
STRUCTURE OR
INSTALLED ON A
SEPARATE POLE SET
ADJACENT TO LINE.
ELEVATION
5 cm X 20 cm X 83.8 cm
(2 in) X (8 in) X (33 in)
USE A MINIMUM 25.4 cm (10 in)
TIP DIAMETER OF POLE
3.8 cm
(1.5 in)
3.8 cm
(1.5 in)
14 cm
(5.5 in)
3.8 cm
(1.5 in)
15.2 cm
(6 in)
41.9 cm
(16.5 in)
CUT OUT
10.2 cm X MIN. 33 cm
(4 in) X MIN. (13 in)
SIDE VIEW
NOTES:
STAPLE A 91.4 cm X 91.4 cm (3 in X 3 in)
PIECE OF 1.3 cm X 5.1 cm (0.5 in X 2 in)
GALVANIZED WELDED WIRE FABRIC OVER THE
TOP OF THE PLATFORM. ALL JOINTS SHALL BE
GLUED AND NAILED. PLATFORM MATERIAL IS
REDWOOD.
(4) 1.0 cm X 10.2 cm (0.375 in X 4 in)
LAG BOLTS MAY BE SUBSTITUTED FOR THE
(4) 1.0 cm X 25.4 cm (0.375 in X 10 in)
BOLTS.