

FINAL

Night Lighting Management Plan

West of Devers Upgrade Project
Riverside and San Bernardino Counties, California

Prepared for

Southern California Edison

April 2017

Prepared by

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Night Lighting Management Plan Checklist

Applicable Agencies:

- | | |
|--|---|
| <input type="checkbox"/> Bureau of Indian Affairs | <input type="checkbox"/> Coachella Valley Conservation Commission |
| <input checked="" type="checkbox"/> Bureau of Land Management | <input type="checkbox"/> Morongo Band of Mission Indians |
| <input checked="" type="checkbox"/> California Department of Fish and Wildlife | <input type="checkbox"/> Riverside County Regional Conservation Authority |
| <input checked="" type="checkbox"/> California Public Utilities Commission | <input checked="" type="checkbox"/> U.S. Fish and Wildlife Service |

Applies in the Following Areas:

- | | |
|---|--|
| <input checked="" type="checkbox"/> BLM Lands | <input checked="" type="checkbox"/> CV-MSHCP |
| <input checked="" type="checkbox"/> Morongo Reservation | <input checked="" type="checkbox"/> WR-MSHCP |
| <input checked="" type="checkbox"/> San Bernardino County | <input checked="" type="checkbox"/> Riverside County |

Applies to the Following Project Components:

- | | | |
|--|---|---|
| <input checked="" type="checkbox"/> Transmission Line | <input checked="" type="checkbox"/> Subtransmission | <input checked="" type="checkbox"/> Telecom |
| <input checked="" type="checkbox"/> Substations | <input checked="" type="checkbox"/> Distribution | |
| <input checked="" type="checkbox"/> Construction Yards | | |

Addresses the Following Measures:

- | | |
|--------------------|--|
| FEIR/FEIS MM VR-7a | Minimize night lighting at project facilities |
| FEIR/FEIS WIL-1b | Ensure wildlife impact avoidance and minimization. |

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Acronyms and Abbreviations

BLM	Bureau of Land Management
CAISO	California Independent System Operator
CPCN	Certificate of Public Convenience and Necessity
CPUC	California Public Utilities Commission
FEIR	Final Environmental Impact Report
FEIS	Final Environmental Impact Statement
kV	kilovolts
MM	Mitigation Measure
Plan	Night Lighting Management Plan
Project	West of Devers Upgrade Project
ROD	Record of Decision
ROW	right-of-way
SCE	Southern California Edison
SR	State Route
WOD	West of Devers

Introduction

Southern California Edison (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Project) to increase the power transfer capability of the WOD 220-kilovolt (kV) transmission lines between Devers, El Casco, Vista, and San Bernardino substations. The Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Project, planned to be operational by 2021, would upgrade the existing WOD transmission line system by replacing the existing WOD 220-kV transmission lines and associated structures with higher-capacity transmission lines and structures and making telecommunication improvements.

This Night Lighting Management Plan (Plan) for the Project presents the activities to be conducted to support compliance with the measures listed in Table 1-1. Compliance with the measures listed in Table 1-1 may reduce potential construction night lighting impacts to sensitive receptors caused by construction.

1.1 Project Overview

The Project would upgrade the existing WOD system by replacing existing 220-kV transmission lines and associated structures with new, higher-capacity 220-kV transmission lines and structures, modifying existing substation facilities, removing and relocating existing subtransmission (66-kV) lines, removing and relocating existing distribution (12-kV) lines, and making various telecommunication improvements. In particular, the Project would:

- Upgrade substation equipment within SCE's existing Devers, El Casco, Etiwanda, San Bernardino, and Vista substations in order to accommodate continuous and emergency power on the upgraded WOD 220-kV transmission lines. Activities related to substation upgrades will take place within the existing, disturbed fence lines of the substations and are not addressed further in this Plan.
- Remove and upgrade the existing 220-kV transmission lines and structures primarily within the existing WOD corridor as follows:
 - Segment 1 would be approximately 3.5 miles long and extend south from San Bernardino Substation to the San Bernardino Junction. It would include the following existing 220-kV transmission lines: Devers–San Bernardino, Etiwanda–San Bernardino, San Bernardino–Vista, and El Casco–San Bernardino.
 - Segment 2 would be approximately 5 miles long and extend west from the San Bernardino Junction to Vista Substation. It would include the following existing 220-kV transmission lines: Devers-Vista–No. 1 and Devers–Vista No. 2.
 - Segment 3 would be approximately 10 miles long and extend east from the San Bernardino Junction to El Casco Substation. It would include the following existing 220-kV transmission lines: Devers–Vista No. 1, Devers–Vista No. 2, El Casco–San Bernardino, and Devers–San Bernardino.
 - Segment 4 would be approximately 12 miles long and extend east from El Casco Substation to San Gorgonio Avenue in the City of Banning. It would include the following existing 220-kV transmission lines: Devers–Vista No. 1, Devers–Vista No. 2, Devers–El Casco, and Devers–San Bernardino.
 - Segment 5 would be approximately 9 miles long and extend east from San Gorgonio Avenue in the City of Banning to the eastern limit of the Morongo Reservation (Morongo Band of Mission

Indians) at Rushmore Avenue. It would include the following existing 220-kV transmission lines: Devers–Vista No. 1, Devers–Vista No. 2, Devers–El Casco, and Devers–San Bernardino.

- Segment 6 would be approximately 8 miles long and extend east from the eastern boundary of the Morongo Reservation to Devers Substation. It would include the following existing 220-kV transmission lines: Devers–Vista No. 1, Devers–Vista No. 2, Devers–El Casco, and Devers–San Bernardino.
- Remove a portion (approximately 2 miles) of the existing San Bernardino–Redlands–Timoteo and San Bernardino–Redlands–Tennessee 66-kV Subtransmission Lines from within the existing WOD right-of-way (ROW) and reconstruct as follows:
 - The relocated San Bernardino–Redlands–Timoteo 66-kV Subtransmission Line would be approximately 2 miles long and would reconnect to the 66-kV San Bernardino–Redlands–Timoteo Subtransmission Line inside Timoteo Substation.
 - The relocated San Bernardino–Redlands–Tennessee 66-kV Subtransmission Line would be approximately 3.5 miles long and would reconnect to the San Bernardino–Redlands–Tennessee 66-kV Subtransmission Line at Barton Road.
- Remove a portion of the existing Dental and Intern 12-kV distribution circuits within the WOD ROW and relocate the circuits as follows:
 - The relocated Dental 12-kV Distribution Circuit would be approximately 1.5 miles long and would reconnect to the existing Dental 12-kV circuit.
 - The relocated Intern 12-kV Distribution Circuit would be approximately 2.25 miles long and would reconnect to the Intern 12-kV circuit.
- Install telecommunication lines and equipment for the protection, monitoring, and control of transmission lines and substation equipment.

1.2 Project Location

The Project crosses the cities of Banning, Beaumont, Calimesa, Colton, Grand Terrace, Loma Linda, Palm Springs, Rancho Cucamonga, Redlands, San Bernardino, and Yucaipa, as well as the unincorporated areas of Riverside and San Bernardino counties (Figure 1-1). The transmission corridor passes over Interstate 215 in San Bernardino County, as well as State Route (SR)-60, SR-79, SR-243, and SR-62 in Riverside County, and then runs approximately parallel to the majority of the Interstate 10 corridor in both San Bernardino and Riverside counties.

1.3 Lead Agencies

Lead agencies have discretionary approval over the Project and are responsible for reviewing aspects of the measures documented in this Plan. The California Public Utilities Commission (CPUC) is the state lead agency responsible for compliance with the California Environmental Quality Act. The Bureau of Land Management (BLM) is the federal lead agency responsible for compliance with the National Environmental Policy Act. Identified materials or documentation will be provided to the CPUC and BLM per the Project requirements (Table 1-1).

1.4 Measures

The measures addressed in this Plan, including mitigation measure (MM) from the Final Environmental Impact Report¹ (FEIR) and Final Environmental Impact Statement (FEIS) (BLM, 2016a), as presented in the Certificate of Public Convenience and Necessity (CPCN) (CPUC, 2016b) and the record of decision (ROD) (BLM, 2016b), respectively, are listed in Table 1-1.

Table 1-1. Project-specific Requirements
WOD Night Lighting Management Plan

Measures	Description
FEIR/FEIS MM VR-7a	<p>Minimize night lighting at project facilities. SCE shall avoid night lighting where possible and minimize its use under all circumstances. To ensure this, SCE shall prepare a Night Lighting Management Plan for both construction and operation, incorporating the following general principles and specifications:</p> <ul style="list-style-type: none"> • Use of portable truck-mounted lighting. • Emphasis on use of low-pressure sodium or amber light-emitting diode lighting. • White lighting (metal halide) would: (a) only be used when necessitated by specific work tasks, (b) would not be used for dusk-to-dawn lighting, and (c) would be less than 3,500 Kelvin color temperature. • All lamp locations, orientations, and intensities, including security, roadway, and task lighting. • Each light fixture and each light shield. • Total estimated outdoor lighting footprint expressed as lumens or lumens per acre. • Detailed list of anticipated circumstances and activities that would require night lighting, including the expected frequency of the activity, the duration of the activity, and the expected amount of lighting that would be necessary for that activity. • Light fixtures that could be visible from beyond project facility boundaries shall have cutoff angles sufficient to prevent lamps and reflectors from being visible beyond the project facility boundary, including security lighting. • Motion sensors and other controls to be used, especially for security lighting such that lights operate only when the area is occupied. • Surface treatment specification that will be employed to minimize glare and sky glow. <p>The Night Lighting Management Plan shall also consider the following factors:</p> <ul style="list-style-type: none"> • All temporary construction lighting and permanent exterior lighting shall include: (a) lamps and reflectors that are not visible from beyond the construction site or facility including any offsite security buffer areas, (b) lighting that shall not cause excessive reflected glare, (c) direct lighting that shall not illuminate the nighttime sky, except for required Federal Aviation Administration aircraft safety lighting (which, if required, shall be an on-demand, audio-visual warning system that is triggered by radar technology), (d) minimization of illumination of the Proposed Project and its immediate vicinity, (e) creation of sky glow caused by project lighting shall be avoided, and (f) compliance with local policies and ordinances to be outlined in the Night Lighting Management Plan. All permanent light sources shall be below 3,500 Kelvin color temperature (warm white) and shall be full cutoff fixtures. • Always-on security lighting is to be limited to one low-wattage, fully shielded, full cutoff light fixture at the main entrance to facilities. All other security lighting is to be motion activated only through the use of passive infrared sensors and controlled as specific zones such that only targeted areas are illuminated. No other lighting is to be used on a nightly basis when a facility is not occupied. • Lighted nighttime maintenance is to be minimized or avoided as a routine practice and should occur only during emergencies. <p>The draft Night Lighting Management Plan shall be submitted to the CPUC and BLM at least 60 days prior to the start of construction. Following the BLM’s and CPUC’s review of the draft plan, and at least 15 days prior to the start of construction, SCE shall submit to the CPUC and BLM for review and approval, a final Night Lighting Management Plan. Construction activities shall not start until CPUC’s and BLM’s approvals of the plan have been received.</p>

¹ For the purpose of this Plan, “FEIR” refers to the FEIR (CPUC, 2015) and Addendum to the FEIR (CPUC, 2016a).

Table 1-1. Project-specific Requirements*WOD Night Lighting Management Plan*

Measures	Description
FEIR/FEIS WIL-1b	<p>Ensure wildlife impact avoidance and minimization. SCE shall undertake the following measures during the construction, restoration, and operation and maintenance phases to avoid or minimize impacts to wildlife resources.</p> <ul style="list-style-type: none"> Minimize lighting impacts. Night lighting, when in use, shall be designed, installed, and maintained to prevent side casting of light towards surrounding fish or wildlife habitat.

Notes:

To avoid redundancy, the FEIR/FEIS MM language was copied from the CPCN (CPUC, 2016b). While subtle differences in MM language were noted upon review of the ROD (BLM, 2016b), the requirements are ultimately the same. References for the citations in the requirement descriptions can be found in the source documents.

Sources: CPUC, 2016b

1.5 Applicable Project Segments

The Plan addresses construction light illumination where night work could occur and/or where night security would be required at temporary static sites. Night lighting may be required at temporary construction and storage yards. The Plan is applicable to all Project segments.

1.6 Timing

The measures described in this Plan are applicable during the preconstruction, construction, and post-construction/restoration phases of the Project, as shown in Table 1-2.

Table 1-2. Applicable Timing*WOD Night Lighting Management Plan*

Measure	Period		
	Preconstruction	Construction	Post-Construction/ Restoration
MM VR-7a	☒	☒	☒
MM WIL-1b	☒	☒	☒

Methods

This section includes a detailed description of the actions required to implement the applicable MMs for the Project work packages covered by this Plan. The Project may include construction lighting for nighttime activities conducted at static temporary construction, storage yards, and staging areas.

Nighttime construction is limited by applicable local jurisdiction (county, city) noise rules, standards, and ordinance noise prohibitions. It is expected that most construction activities will be performed during daylight hours without the need for any lighting. Occasionally, construction activities may be necessary to complete a specific daily work task or to complete work during an outage period. Project managers will endeavor to complete work during daylight hours without the need for lighting. Night work in construction yards is expected to be related largely to the delivery of materials. Project managers will endeavor to deliver a majority of the materials during daylight hours without the need for lighting.

The locations of planned Project components, including construction yards, are shown on Figure 2-1. Construction lighting may be used at these temporary static sites. SCE will comply with the construction lighting requirements set forth in MM VR-7a, to the extent feasible, as described in the following subsections.

2.1 Mitigation Measure VR-7a: Minimize Night Lighting at Project Facilities

2.1.1 Night Lighting Requirements

In the Project Contract documents, the design and installation of construction night work and security lighting will be performed in accordance with the following guidelines, to the extent possible and where appropriate:

- Light bulbs and reflectors will not be visible from public viewing areas.
- Lighting will not cause reflected glare.
- Illumination of the Project facilities, vicinity, and nighttime sky will be minimized
- Exterior light fixtures will be hooded, with lights directed downward or toward the area to be illuminated so that backscatter to the nighttime sky is minimized.
- Luminescence or light sources will be shielded to prevent light trespass outside of the Project boundary.
- Lighting will be designed using minimum necessary brightness consistent with worker safety.
- High-illumination areas not occupied continually will have switches or motion detectors to light the area when occupied, where appropriate.
- Any required tower aircraft safety lighting will comply with applicable Federal Aviation Administration standards and regulations.

2.1.1.1 Security Lighting

All lighting used for security purposes is expected to be motion-activated and shielded such that all light emitted by the fixture, either directly from the lamp or a diffusing element or indirectly by reflection or refraction from any part of the luminaire, is projected below the horizontal. Where appropriate, lighting

levels will be low-level, consistent with safety standards and local jurisdictional requirements, and will be installed to limit spillover glare offsite. Security lights will be aimed and further controlled with directional control shields as necessary so the light is confined to the workspace area and objects intended to be illuminated, to the extent possible.

Security lighting is expected to be used at the proposed construction yards. Table 2-1 presents the proposed construction yard locations, which will be situated within the screened construction fence in the general locations shown. Table 2-1 lists the size of each currently identified construction yard and the corresponding estimated number of portable lights to be used at each.

Table 2-1. Construction Yard Security Lights
WOD Night Lighting Management Plan

Construction Yard	Size (Acres)	Estimated Number of Lights per Yard
Devers	10	10
Grand Terrace	6	10
San Timoteo	17	17
Poultry	13	14
Beaumont 1	4	6
Beaumont 2	5	8
Mountain View 1	3	6
Lugonia	4	6
Hathaway 2	14	15
Matich	21	21

2.1.1.2 Construction Yards and Staging Areas

Construction activities to take place within new storage and staging areas will conform to the following:

- Staging and storage area security lighting will be motion-activated, and will be shielded such that all light emitted by the fixture, either directly from the lamp or a diffusing element, or indirectly by reflection or refraction from any part of the luminaire, is projected below the horizontal. Normal lighting levels will be low-level, consistent with safety standards and local jurisdictional requirements, and installed to limit spillover glare offsite and nighttime sky lighting. Lights will be aimed and further controlled with directional control shields as necessary such that the light will be confined to the workspace area and objects intended to be illuminated.
- Security lighting will be used for yard construction activities to the extent possible. However, to accommodate specific short-term tasks, portable lighting that provides higher light levels as well as lights that need to be aimed above the horizontal may be used for short periods.
- The specific locations of night work are unknown at this time. The need for night work will be determined once construction has begun and will occur only if night work is required to meet schedule constraints in permitted areas.

2.1.1.3 Construction Lighting Outside of Construction Yards and Staging Areas

Construction activities that may require lighting outside of construction yards and staging areas shall conform to the following:

- Where night work is allowed, portable lights with reflector housings that can be directionally shielded will be used for illumination. Low-mast lighting systems will be used as much as possible. The reflectors will at all times be directed downward and toward the specific work areas as appropriate to minimize stray light spillover. To accommodate specific short-term tasks, portable

lighting that provides higher light levels as well as lights that need to be aimed above the horizontal may be used for short periods.

- Lights will be adjusted to illuminate only the area necessary for night work tasks in specific work locations. The specific work locations are unknown at this time. The necessity for night work will be determined once construction has begun and will be employed only if night work in permitted areas is required to meet schedule constraints.

2.1.1.4 Substations

All substations/switch yards that will be modified have existing lighting. Any new lighting associated with substation/switch yard modifications will be of a type and style similar to the existing lighting. In the event a security guard is stationed at substation/switch yard laydown areas where lighting is insufficient, temporary lighting may be used that meets MM VR-7a.

2.1.1.5 Dispute Resolution

In the event that SCE receives a complaint regarding nighttime construction lighting via SCE's public information hotline or a local jurisdiction, SCE will work to resolve the dispute. The dispute resolution form (shown in Appendix A) will be completed by SCE Public Affairs and routed to the construction site for immediate response and resolution. All nighttime lighting dispute resolutions will comply with local ordinances and will be documented on the dispute resolution form provided.

2.1.2 Night Lighting Compliance

SCE will monitor compliance with the requirements in this Plan.

2.2 Mitigation Measure for WIL-1b: Ensure Wildlife Impact Avoidance and Minimization

2.2.1 Night Lighting Requirements

Should night lighting be required in either construction yards/staging areas or at temporary construction locations outside of these, SCE will minimize impacts to wildlife as much as possible by designing, installing, and maintaining lights so as to prevent side casting of light toward surrounding fish or wildlife habitat, if present in the vicinity of the work area.

SECTION 3

Plan Approval

This Plan has been prepared to address the requirements of FEIR/FEIS MM VR-7a and WIL-1b. The record of decision (ROD) has been approved. SCE requests review and approval of this Plan from the CPUC and BLM.

References

Bureau of Land Management (BLM). 2016a. *Final Environmental Impact Statement Report - Southern California Edison's West of Devers Upgrade Project*. August.

Bureau of Land Management (BLM). 2016b. *Record of Decision for the West of Devers Upgrade Project*. BLM/CA/PL-2015/012+1793, DOI-BLM-CA-060-0015-0021, CACA-055285. December.

California Public Utilities Commission (CPUC). 2015. *Final Environmental Impact Report - Southern California Edison's West of Devers Upgrade Project*. December. Available online at <http://www.cpuc.ca.gov/environment/info/asp/westofdevers/toc-feir.htm>.

California Public Utilities Commission (CPUC). 2016a. *Decision Granting Certificate of Public Convenience and Necessity for the West of Devers Upgrade Project and Related Matter*. August. Available online at <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M166/K441/166441910.pdf>.

California Public Utilities Commission (CPUC). 2016b. *Addendum to Final Environmental Impact Report Southern California Edison's West of Devers Upgrade Project*. SCH #2014051041. April.

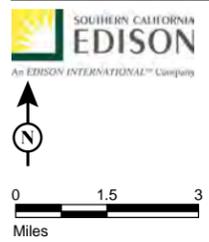
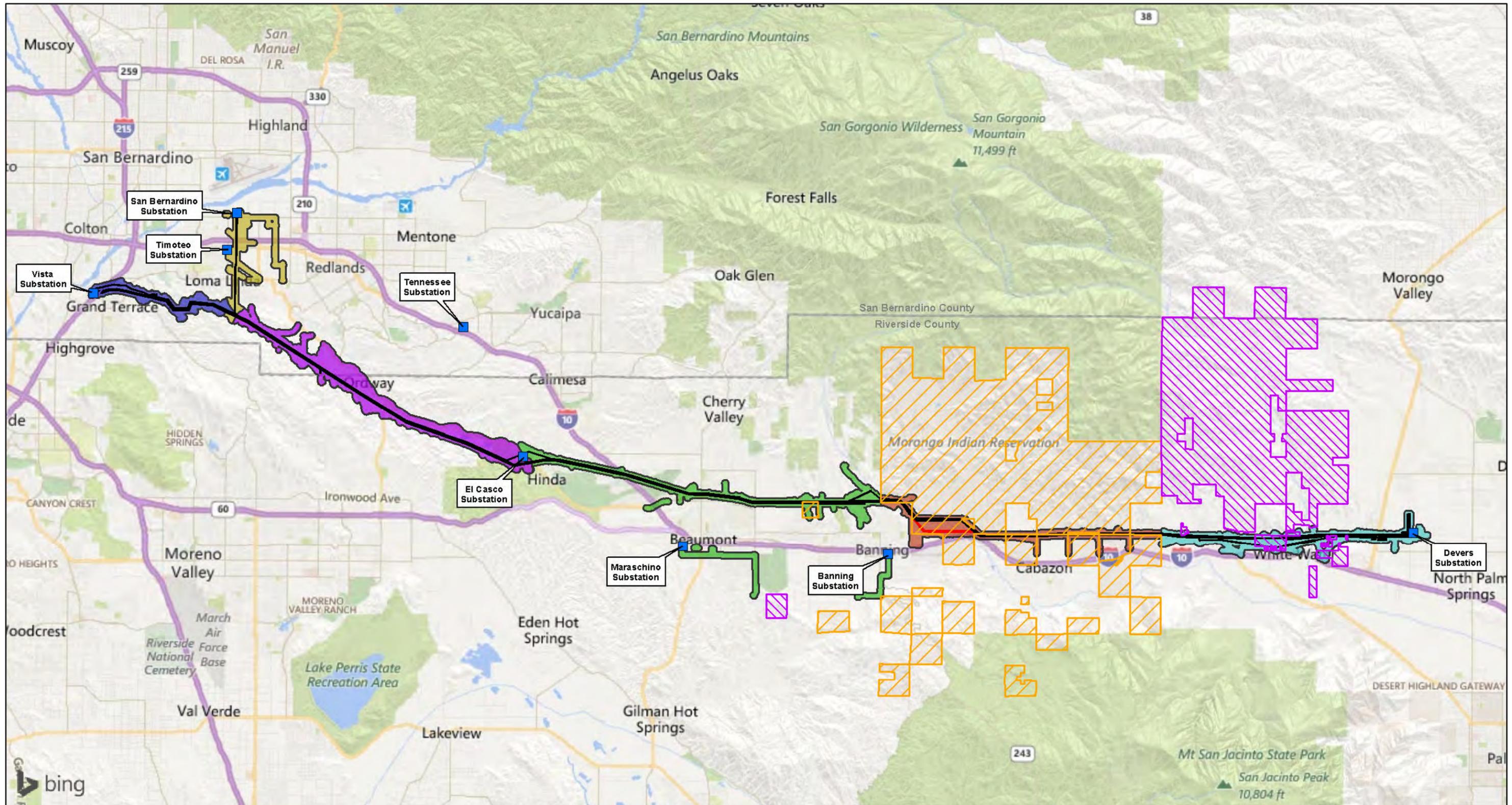
SECTION 5

Revisions

Revisions made to standard text (black ink) should be noted below to document changes in requirements or SCE's approach to this Night Lighting Management Plan.

Date	Description of Revision	Contact

Figures



LEGEND

- Project Study Area
- Existing Transmission Line Right of Way
- Proposed Right of Way
- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Segment 6
- U.S. Bureau of Land Management
- Morongo Reservation
- Western Riverside County MSHCP
- Coachella Valley MSHCP

Source: SCE, Bing Maps

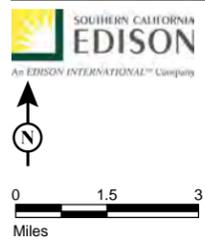
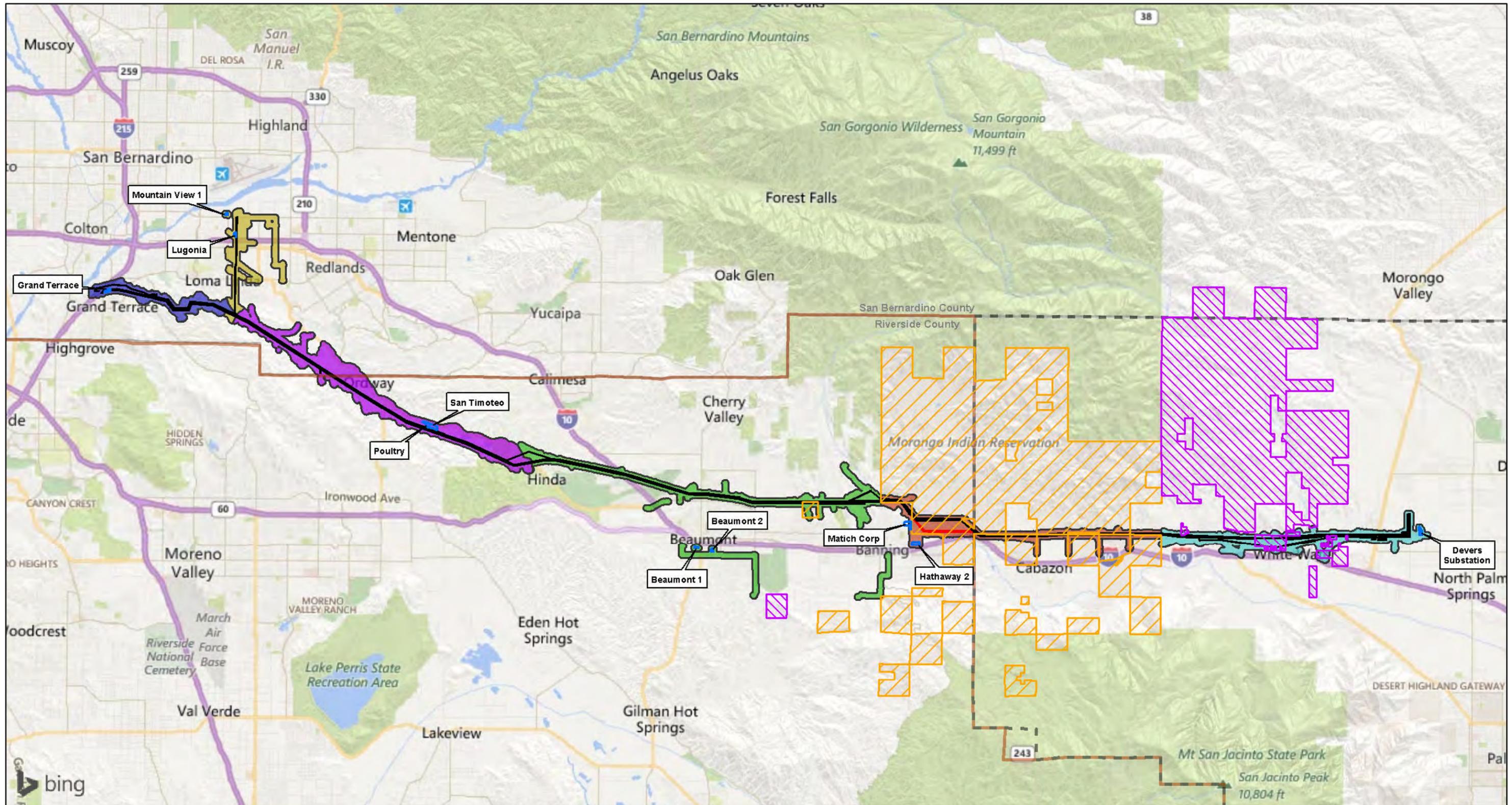
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FIGURE 1-1

Southern California Edison
West of Devers Upgrade Project
Project Location Map





LEGEND

- Project Study Area
- Yard Location
- Existing Transmission Line Right of Way
- Proposed Right of Way
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Segment 6
- U.S. Bureau of Land Management
- Morongo Reservation
- Western Riverside County MSHCP
- Coachella Valley MSHCP

Source: SCE, Bing Maps

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FIGURE 2-1

Southern California Edison
West of Devers Upgrade Project
Construction Lighting Mitigation Locations



Appendix A
Nighttime Lighting Dispute Form

Nighttime Lighting Dispute Form

West of Devers Upgrade Project

Dispute No.:

001

The form is intended as documentation of any nighttime lighting disputes related to construction of the West of Devers Upgrade Project. All incidents submitted via this **Nighttime Lighting Dispute Form** will be resolved per the Nighttime Lighting Dispute Process described in the Night Lighting Management Plan (for Compliance with Mitigation Measure VR-7a).

1. CONTACT INFORMATION:		to be completed by Complainant	
Name:		Submittal Date:	
Agency/Co.:			
Address:			
Phone Number:		Email Address:	

2. LIGHT TRESPASS/DISPUTE DETAILS:		to be completed by Complainant	
Date of Trespass:		Time:	
Specific Location:			
Jurisdiction:			
Description of Trespass/Dispute (attach drawing as necessary):			

3. EFFORTS TO RESOLVE ABOVE LIGHT TRESPASS/DISPUTE:		to be completed by SCE	
Date Resolved:			
Parties Directly Responsible:			
Description of Action(s) Taken to Resolve Trespass/Dispute:			

4. CERTIFICATION OF DISPUTE RESOLUTION		to be completed by SCE	
SCE's signature below certifies that SCE has taken efforts to satisfactorily resolve the nighttime lighting dispute documented above in accordance with the Construction Lighting Mitigation Plan and Mitigation Measure V-1b.			
SCE Signature:		Date:	