

Appendix D.4

Burrowing Owl Relocation Plan E-Group PS Solar Project

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January 2025

Burrowing Owl Relocation Plan

E-Group PS Solar Project

JANUARY 2025

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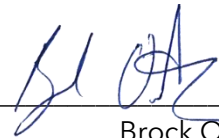
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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
BSA	biological survey area
CDFW	California Department of Fish and Wildlife
Plan	burrowing owl relocation plan
project	E-Group PS Solar Project

1 Purpose and Objectives

The following burrowing owl relocation plan (Plan) describes the burrowing owl (*Athene cunicularia*) monitoring and reporting requirements during construction of the E-Group PS Solar Project (project) as recommended in the Biological Technical Report prepared for the project (Dudek 2025). This Plan was prepared in accordance with the Mitigation Measure (MM)-BIO-5 per the Biological Resources Technical Report. The full text of this mitigation measure is provided in Section 1.1 herein for ease of reference.

This Plan is intended to identify when passive displacement of burrowing owls will be used, the methods that will be implemented to perform passive displacement, and the monitoring and reporting that will be required if passive displacement is performed. More specifically, this Plan includes descriptions of the following requirements for passive displacement procedures:

1. Methods to confirm a burrow is active
2. Measures that could be used to avoid and minimize impacts
3. Methods to be used to determine vacancy and excavation timing
4. Methods for burrow excavation
5. Removal of other potential owl burrow surrogates or refugia
6. Reporting methods of the excavation and closure of burrows
7. Monitoring to evaluate success
8. Reporting methods of long-term burrowing owl deterrence of the impacted site

1.1 Mitigation Measure BIO-5

This Plan was prepared in accordance with MM-BIO-5, per the project's Biological Resources Technical Report (Dudek 2025). The full text of this mitigation measure is provided below.

Pre-construction Burrowing Owl Surveys and Avoidance. One pre-construction burrowing owl survey shall be completed no more than 14 days before initiation of site preparation or grading activities and a second survey shall be completed within 24 hours of the start of site preparation or grading activities. If ground-disturbing activities are delayed or suspended for more than 30 days after the pre-construction surveys, the project site shall be resurveyed. Surveys for burrowing owl shall be conducted in accordance with protocols established in the Staff Report on Burrowing Owl Mitigation (prepared by the California Department of Fish and Game [now California Department of Fish and Wildlife; CDFW]) in 2012 or current version.

If burrowing owls are detected, and if impacts to burrowing owl cannot be feasibly avoided, the project applicant will consult with California Department of Fish and Wildlife (CDFW) and obtain appropriate take authorization from the CDFW through the California Endangered Species Act (CESA) Incidental Take Permit process.

In the event an Incidental Take Permit is needed, mitigation for direct impacts to burrowing owl shall be fulfilled through compensatory mitigation at a minimum 1:1 habitat replacement of equal

or better functions and values to those impacted by the Project, or as otherwise determined through the Incidental Take Permit process. Mitigation shall be accomplished either through off-site conservation or through a CDFW-approved mitigation bank. If mitigation is not purchased through a mitigation bank, and lands are conserved separately, a cost estimate shall be prepared to estimate the initial start-up costs and ongoing annual costs of management activities for the management of the conservation easement area(s) in perpetuity. The funding source shall be in the form of an endowment to help the qualified natural lands management entity that is ultimately selected to hold the conservation easement(s). The endowment amount shall be established following the completion of a Project-specific Property Analysis Record to calculate the costs of in-perpetuity land management. The Property Analysis Record shall take into account all management activities required in the Incidental Take Permit to fulfill the requirements of the conservation easement(s), which are currently in review and development.

2 Background

2.1 Project Overview

The approximately 184-acre on-site proposed project site, and approximately 3.3-acres of off-site areas, and 11.7 acres of road dedications for Amboy Road, Samarkand Drive and Noels Knoll Road, is located on undeveloped parcels of land located in the western part of the City of Twentynine Palms in San Bernardino County. Specifically, the proposed project site is located on public land survey system Section 23 of Township 1 North, Range 8 East on the Twentynine Palms, California 7.5-minute United States Geological Survey quadrangle. The proposed project is bounded by undeveloped open habitat in all directions (Figure 1, Project Location). The project would connect via a generation interconnection line along Two Mile Road to the nearby Southern California Edison Carodean Substation. The project also includes road dedications for the future extension of Amboy Road, Samarkand Drive, and Noels Knoll Road; however, the project does not include the construction of those future planned extensions.

2.2 2023/2024 Survey Results

Dudek conducted a biological reconnaissance survey, vegetation mapping, aquatic resources delineation, Mojave desert tortoise (*Gopherus agassizii*) protocol surveys, and western Joshua tree (*Yucca brevifolia*) focused survey in April through December 2023. Surveys were conducted within the 241.3-acre biological survey area (BSA), which includes the 184-acre project site, 3.3-acres of off-site areas that are associated with a proposed site driveway constructed off Two Mile Road and gen-tie alignment from the proposed solar facility to the existing Southern California Edison (SCE) Carodean Substation, plus a 100-foot buffer, as well as 11.7 acres of future road dedications for Amboy Road, Samarkand Drive and Noels Knoll Road¹. Dudek conducted protocol burrowing owl surveys within the BSA to determine the presence or absence of burrowing owl. These surveys were conducted in accordance with Appendix D of the Staff Report on Burrowing Owl Mitigation (CDFW 2012). Four survey passes were performed between March 26 and July 2, 2024.

¹ Of the 11.7 acre of road dedications for Amboy, Samarkand Drive and Noels Knoll Road, 10.7 acres were included within the BSA. The remaining 1.0-acre road dedication of Samarkand Drive was requested by the City after completion of the 2023-2024 biological resources field efforts.

Although the BSA contains open desert scrub areas that may support burrowing owls, this species was not incidentally observed during any of the 2023 survey efforts, nor during the focused burrowing owl surveys in 2024. However, numerous burrows that are potentially suitable for nesting were mapped, including burrows mapped during focused surveys for burrowing owl (Figure 2, Suitable Burrowing Owl Burrow Locations). Mapped burrows were at least 4 inches in diameter, and all were natural earthen burrows. The only sign of burrowing owl presence was a fresh pellet containing insect remnants observed at the entrance to a burrow in the northwestern corner of the BSA (Figure 2). No feathers or whitewash were observed. The nearest mapped California Natural Diversity Database record is approximately 9.3 miles northeast of the BSA, from September 12, 2010 (CDFW 2023). Based on the discussion above, suitable habitat for burrowing owl exists, and the species could occupy the BSA prior to construction. Pursuant to the California Fish and Game Code and the Migratory Bird Treaty Act, a pre-construction survey in compliance with the California Department of Fish and Wildlife (CDFW) 2012 Staff Report on Burrowing Owl Mitigation (CDFG 2012) would be necessary to re-evaluate the locations of potential burrowing owl burrows located within the project limits so that impacts to owls or active owl nests can be avoided or minimized. Consistent with the mitigation measure for Pre-construction Surveys for Burrowing Owl and Avoidance, a pre-construction survey for burrowing owl shall be conducted in areas supporting potentially suitable habitat no more than 14 days prior to the start of construction activities, and a second survey shall be completed within 24 hours of the start of site preparation or grading activities.

2.3 Mitigation Measures

If burrowing owls are detected during the pre-construction survey, and if impacts to burrowing owl cannot be feasibly avoided, the project applicant will consult with CDFW and obtain appropriate take authorization from the CDFW through the CESA Incidental Take Permit process. This Plan shall be reviewed and approved by CDFW prior to implementation. Furthermore, implementation of this Plan is likely to require a permit (e.g., Scientific Collection Permit or ITP).

In the event an Incidental Take Permit is needed, mitigation for direct impacts to burrowing owl shall be fulfilled through compensatory mitigation at a minimum 1:1 habitat replacement of equal or better functions and values to those impacted by the Project, or as otherwise determined through the Incidental Take Permit process. Mitigation shall be accomplished either through off-site conservation or through a CDFW-approved mitigation bank. If mitigation is not purchased through a mitigation bank, and lands are conserved separately, a cost estimate shall be prepared to estimate the initial start-up costs and ongoing annual costs of management activities for the management of the conservation easement area(s) in perpetuity. The funding source shall be in the form of an endowment to help the qualified natural lands management entity that is ultimately selected to hold the conservation easement(s). The endowment amount shall be established following the completion of a Project-specific Property Analysis Record to calculate the costs of in-perpetuity land management. The Property Analysis Record shall take into account all management activities required in the Incidental Take Permit to fulfill the requirements of the conservation easement(s), which are currently in review and development.

2.4 Qualified Biologist

In accordance with the 2012 Staff Report, a qualified biologist meets the following minimum qualifications (CDFG 2012):

1. Familiarity with the species and its local ecology

2. Experience conducting habitat assessments and non-breeding and breeding season surveys, or experience with these surveys conducted under the direction of an experienced surveyor
3. Familiarity with the appropriate state and federal statuses related to burrowing owls, scientific research, and conservation
4. Experience with analyzing impacts of development on burrowing owls and their habitat

In accordance with the 2012 Staff Report, a qualified biologist will perform the burrowing owl surveys as outlined in the Pre-construction Surveys for Burrowing Owl and Avoidance mitigation measure. Occupied burrows shall not be disturbed during the nesting season. Occupied burrows shall not be disturbed during the non-nesting season until a qualified biologist verifies that either (1) nesting has not begun or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival.

3 Avoidance and Minimization Measures

3.1 Pre-construction Burrowing Owl Surveys

In accordance with the Pre-construction Burrowing Owl Surveys and Avoidance mitigation measure, a qualified biologist (see Section 2.4) will conduct the surveys for both permanent and temporary impact areas as well as within a 150-meter (approximately 500-foot) buffer, where legally accessible, no more than 14 days prior to the start of the construction activities and again within 24 hours of the start of site preparation or grading. The surveys will identify active wintering or breeding burrowing owls within these areas.

The survey methods are detailed in the 2012 Staff Report (CDFG 2012) and will consist of walking parallel transects 7 to 20 meters apart over the entire survey area and noting all burrowing owls present and any suitably sized burrows (i.e., 4 inches or greater in diameter) with burrowing owl sign (whitewash, feathers, pellets, etc.). The results of the surveys will be submitted to the City of Twentynine Palms.

If burrowing owls or active burrowing owl sign are detected during pre-construction surveys, the qualified biologist or monitoring biologist will coordinate with the contractor to avoid and minimize impacts to burrowing owl by implementing the measures described below.

3.2 Buffer Distances

If occupied burrowing owl burrows are detected outside of the project site and off-site improvement areas but within the 150-meter buffer during the pre-construction surveys, the active burrow will be flagged to include a 160-foot buffer during the non-breeding season and a 250-foot buffer during the breeding season, or as otherwise determined by a qualified biologist. The buffer will be staked and flagged. Ground-disturbing activities during the breeding season will be restricted within the buffer. Depending on the level of disturbance, a smaller buffer may be established in consultation with the City of Twentynine Palms.

The active burrows will be monitored to ensure that the buffer distance is effective. Effective buffers minimize direct impacts by providing space between the bird and the construction activity. In addition, effective buffers minimize indirect impacts by decreasing sound and visual disturbance for the animal. A monitoring biologist will be present during all initial activities adjacent to burrowing owl buffers to monitor the birds' behavior. In any case

where a burrowing owl shows signs of stress or disturbance due to construction activities, all activities in the immediate vicinity will be halted, and the buffer distance and construction activities will be re-evaluated. In accordance with the mitigation measure, no project activities shall be allowed to encroach into established buffers without the consent of a monitoring biologist. The buffer shall remain in place until it is determined that any nesting activity has ended and/or occupied burrows have been vacated.

3.3 Burrow Screening

In cases where it is infeasible to maintain a 160-foot buffer during non-breeding season or a 250-foot buffer during the breeding season due to environmental, topographic, or construction constraints, etc., the buffer may be reduced by screening burrows as a means of minimizing potential impacts to burrowing owls where appropriate and feasible. This strategy involves screening burrows by installing hay bales, plywood, and/or other fencing material to create a visual and auditory barrier between construction activities and the active burrows. Biological monitors will need to determine if the topography of a specific site is appropriate for the use of this technique and whether this technique will be effective at reducing disturbance.

During the breeding season, hay bales should be stacked three bales high and 50 feet wide. During the non-breeding season, hay bales should be stacked two bales high and 50 feet wide. All hay bales used on the project site will be certified as weed-free. Perches near the burrow should remain within the sheltered area of the bales, and the bales should not be closer than 2 or 3 feet from the occupied burrow and should be placed as far from the active burrow as possible, outside the nearest work area. During and following installation of the shelter, biological monitors will be present for all ground-disturbing activities within the area between the recommended buffer and the edge of the reduced buffer. Biological monitors will evaluate and make adjustments to the buffer and/or shelter to ensure impacts to burrowing owl are minimized and the birds are not showing signs of stress or disturbance.

When determining an appropriate buffer setback distance, the qualified biologist will take into consideration any data collected on the individual sensitivities of the burrowing owl present at the project site. This data will be used as a baseline to compare the behavior of burrowing owls within no-disturbance buffers that are smaller than the recommended distances. Biological monitors will have the authority to stop construction or sheltering activities that are disturbing sensitive species and make changes to the shelters and buffers in accordance with these guidelines to increase protection of burrowing owl, if necessary.

Documentation of the installation of a shelter will include the following: where and when the shelter was installed, how long it will be required, anticipated level of construction activity, pictures and installation schematic of the shelter, pictures of installation, a description of the installation, and a description of site conditions. The site conditions that should be included are surrounding vegetation, topography of the area, animals present at the burrow, and line-of-sight conditions between the burrow and construction activities. This information and a status of the shelters in place will be described in the monthly reports (Section 5.2, Reporting Requirements).

3.4 Excavation of Inactive Burrows

Excavation of burrows confirmed inactive based on wildlife camera monitoring will help deter burrowing owls from occupying the construction areas. Pre-construction surveys (described in Section 3.1) will be conducted within the project site to determine if burrows are actively being used. If burrows are suitably sized (i.e., 4 inches or greater

in diameter), game cameras will be installed at the entrance for 3 days to confirm lack of burrowing owl presence. Inactive burrows will be excavated and refilled by a qualified biologist. To prevent injury to wildlife that might be inside the burrow, all excavation of inactive burrows will be performed using hand tools, escape routes will be installed (flexible plastic pipe), and a mirror or fiber-optic camera will be used to scope during the excavation of all burrows. The excavation of inactive burrows will occur prior to clearing or grading activities. In order to be most effective, burrows should be completely excavated and collapsed. Desert kit fox (*Vulpes macrotis arsipus*) will easily identify partially collapsed burrows and re-dig them, thereby creating a potential resource for burrowing owl.

4 Passive Displacement

If an active burrow is identified in an area where there is potential for it or its tunnel structure to be destroyed or irreversibly affected by construction, and the owl would be in danger, and shelter in place, setback distances, and avoidance will not be effective or possible, then passive displacement will be implemented. To the extent feasible, passive displacement will take place such that it is in sync with the owls' natural dispersal cycle (i.e., early in the non-breeding season, when owls are less site-faithful) (Hennessy et al. 2020; Le Gouar et al. 2012).

4.1 Determining Vacancy

Passive displacement will only occur outside of the breeding season (September 1 through January 31) after a qualified biologist verifies that juveniles from the burrow are foraging independently and capable of independent survival or the owls have not begun nesting. If exclusion will occur immediately (within 1 week) after the end of the breeding season (August 31), daily monitoring will be conducted for 1 week to confirm that young have fledged prior to exclusion. Similar to the excavation of inactive burrows, a mirror or fiber-optic camera will be used to scope all previously active burrows to ensure burrows are not occupied by eggs or young.

4.2 Excavation of Active Burrows

Burrowing owls will be excluded from currently occupied burrows by installation of a one-way door in the original burrow and in all connected, potentially active burrows within 160 feet, provided that they are at risk by development and legally accessible. One-way doors will remain in place at least 72 hours before excavation. The one-way doors will be monitored for exiting or trapped animals via a trail camera. Once a qualified biologist can determine by site surveillance that the old burrow is vacant (i.e., 3 days of negative trail camera results), with no sign of fresh use by wildlife, including tracks, scat, or recent excavation, they will be checked with an endoscope (fiber optic camera) immediately prior to excavation to verify status. Sections of flexible plastic pipe will be inserted into the tunnels during excavation to maintain an escape route for any animals that could be inside the burrow. Each burrow will be refilled with dirt and/or rocks to prevent reoccupation of the burrows. Photographs will be taken of the excavation and closure of the burrow to demonstrate success and sufficiency. Construction will occur as soon as possible following passive relocation and burrow collapse to discourage burrowing owls from re-occupying the disturbance area.

Prior to burrow collapse, the qualified biologist will be required to obtain confirmation that the burrows are empty of wildlife, document the installation of one-way doors 72 hours in advance of burrow excavation, and remove other

potential burrow surrogates or refugia on the project site. Burrows that are not threatened by collapse due to the project (i.e., burrows outside the construction area) will not be passively excluded or dismantled.

5 Monitoring and Reporting

5.1 Monitoring Requirements

In accordance with the 2012 Staff Report, monitoring will occur before, during, and after exclusion of burrowing owls. In accordance with the mitigation measure, if exclusion occurs, a qualified biologist will conduct daily monitoring for 3 days to confirm owls have vacated the burrows. Monitoring will be performed for at least 1 hour between 2 hours before sunset to 2 hours following sunset, or 1 hour before sunrise to 2 hours following sunrise, corresponding with the time when burrowing owls are most active; this monitoring time will be extended if owls are active longer. Biologists will examine the collapsed burrow and survey for owl-related impacts and new burrows in the surrounding area. The results of these monitoring efforts and an evaluation of the success of the passive displacement efforts will be included in the monthly compliance reports along with any needed remedial measures to avoid and/or minimize impacts.

5.2 Reporting Requirements

Pre-construction Clearance Survey Reports

A report will be submitted to the City of Twentynine Palms documenting the results of the pre-construction surveys. The report will describe the methods and results of the clearance surveys and will serve as notification as to whether owl passive relocation is necessary.

Monthly Reports

If avoidance or passive relocation is implemented, monthly reports will be prepared for submittal to the City of Twentynine Palms. The reports will summarize the construction activities with the potential to impact burrowing owls that occurred, any injuries or fatalities of burrowing owls, the effectiveness and practicality of the avoidance and minimization measures implemented, and recommendations for modifying the protection measures. If passive relocation of burrowing owls is performed, the monthly reports will also include the following: the total number and locations of burrows collapsed, a map of those locations, photographs of the excavation and closure of the burrows, the number and activity of the owls observed leaving the burrows to be excavated, the methods used to continually make the site inhospitable to burrowing owls and fossorial mammals, the results of the implementation, and compensatory habitat mitigation needs, evaluation process, and acreage.

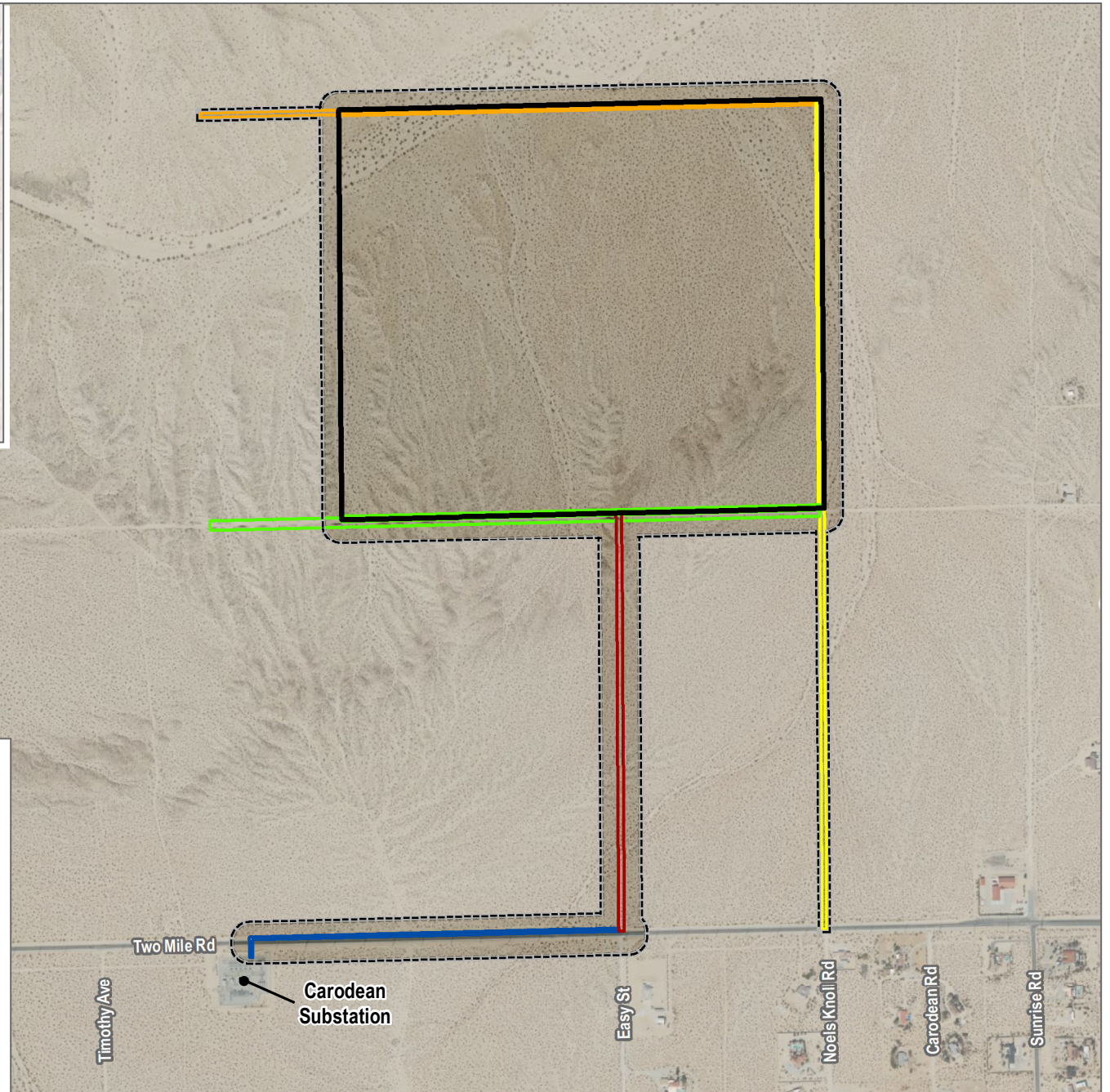
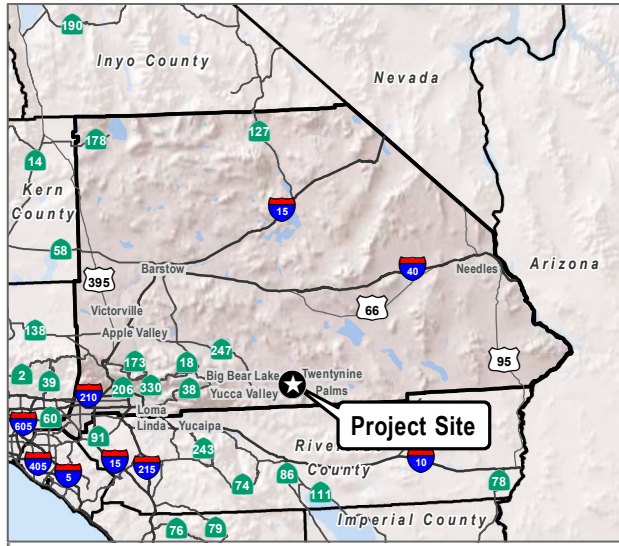
Final Compliance Report

A final compliance report will be submitted to the City of Twentynine Palms summarizing the effectiveness of the mitigation measures and the level of burrowing owl take associated with the project. This includes a summary of all the burrowing owl mitigation measures that were implemented and their outcomes.

6 References

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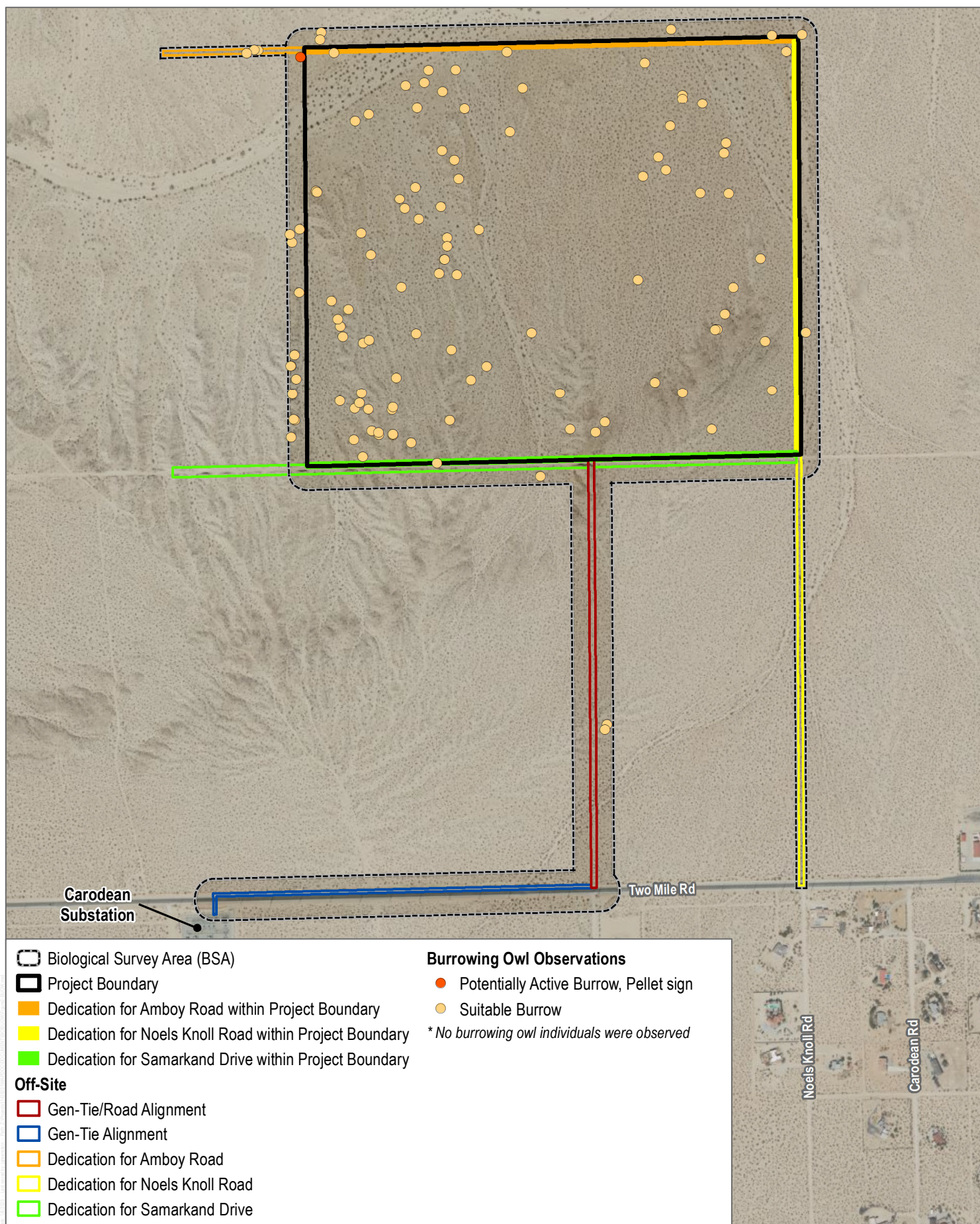
- Biological Study Area (BSA)
- Project Boundary
- Dedication for Amboy Road within Project Boundary
- Dedication for Noels Knoll Road within Project Boundary
- Dedication for Samarkand Drive within Project Boundary
- Off-Site**
- Gen-Tie/Road Alignment
- Gen-Tie Alignment
- Dedication for Amboy Road
- Dedication for Noels Knoll Road
- Dedication for Samarkand Drive

SOURCE: NEXT Engineering Group, 2024; County of San Bernardino; Open Street Map; Bing Maps

FIGURE 1

Project Location

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SOURCE: County of San Bernardino; Bing Maps

DUDEK



0 500 1,000 Feet

FIGURE 2

Suitable Burrowing Owl Locations

E-Group PS Solar Project Burrowing Owl Relocation Plan

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