# Appendix C2

Burrowing Owl Relocation Plan

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# Inland Empire North Logistics Center Apple Valley Project

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# Acronyms and Abbreviations

| Acronym/Abbreviation | Definition |
|---|---|
| BSA | biological survey area |
| CDFW | California Department of Fish and Wildlife |
| MM | Mitigation Measure |
| Plan | Burrowing Owl Relocation Plan |
| project | Inland Empire North Logistics Apple Valley Project |

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# 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 Inland Empire North Logistics Apple Valley Project (project) as recommended in Section 4.3, Biological Resources, of the environmental impact report prepared for the project (Dudek, forthcoming). This Plan was prepared in accordance with **Mitigation Measure (MM) BIO-11** per environmental impact report Section 4.3. The full text of **MM-BIO-11** 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:

- Methods to confirm a burrow is active
- Measures that could be used to avoid and minimize impacts
- Methods to be used to determine vacancy and excavation timing
- Methods for burrow excavation
- Methods for removal of other potential owl burrow surrogates or refugia
- Requirements for reporting on the excavation and closure of burrows
- Requirements for monitoring to evaluate success
- Requirements for reporting on long-term burrowing owl deterrence of the impacted site

## 1.1 Mitigation Measure BIO-11

This Plan was prepared in accordance with **MM-BIO-11**, per Section 4.3 of the environmental impact report (Dudek, forthcoming). The full text of **MM-BIO-11** is provided below:

MM-BIO-11 Pre-Construction Surveys for Burrowing Owl 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 California Department of Fish and Wildlife's 2012 (or most recent version) Staff Report on Burrowing Owl Mitigation.

If burrowing owls are detected, the Burrowing Owl Relocation Plan shall be implemented in consultation with the California Department of Fish and Wildlife (CDFW). As required by the Burrowing Owl Relocation Plan, disturbance to burrows shall be avoided during the nesting season (February 1 through August 31). Buffers shall be established around occupied burrows in accordance with guidance provided in CDFW's Staff Report on Burrowing Owl Mitigation. 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 occupied burrows have been vacated or the nesting season has completed.

Outside of the nesting season, passive owl relocation techniques shall be implemented. Owls shall be excluded from burrows in the immediate project area and within a buffer zone by installing one-way doors in burrow entrances. These doors shall be in place at least 72 hours prior to ground-disturbing activities. The project site shall be monitored daily for 1 week to confirm owl departure from burrows prior to any ground-disturbing activities. Compensatory mitigation for permanent loss of owl habitat, if the site is occupied by burrowing owl, shall be provided following the guidance in CDFW's Staff Report on Burrowing Owl Mitigation.

Where possible, burrows shall be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe shall be inserted into the tunnels during excavation to maintain an escape route for any wildlife inside the burrow. An endoscope (fiber optic camera) should also be used to scope the burrow in front of the excavation. Occupied burrows that are excavated need to be replaced at a 2:1 ratio if there are already suitable burrows present nearby.

Should burrowing owl be located during the clearance survey, the project would result in the loss of 165.4 acres of suitable habitat for burrowing owl. Mitigation for direct impacts to 165.4 acres shall be fulfilled through conservation of suitable burrowing owl habitat through the purchase of credits at a minimum of 1:1 in-kind habitat replacement of equal or better functions and values to those impacted by the project, for a total of 165.4 acres.

# 2 Background

## 2.1 Project Overview

The approximately 226.9-acre site, including the 178.72-acre on-site area, 22.35-acre off-site improvement area, and 25.82-acre biological buffer, is in the northwestern part of the Town of Apple Valley, which is within the Victor Valley Region of San Bernardino County (Figure 1, Project Location). The project boundary is located directly east of Interstate 15, north of Falchion Road and south of Norco Street. The project would involve construction of two industrial/warehouse buildings and associated improvements including loading docks, truck and vehicle parking, and landscaped areas within the entire 178.72-acre on-site area. Additionally, improvements to roadways would occur within the entire 22.4-acre off-site improvement area at Falchion Road between Outer Highway 15 and Apple Valley Road, Norco Street between Outer Highway 15 and Apple Valley Road, Outer Highway 15 between Falchion Road and Norco Street, and Apple Valley Road between Falchion Road and Norco Street.

## 2.2 2022/2023 Biological Survey Results

Biological resource surveys of the 226.9-acre biological survey area (BSA), which includes the project site and off-site improvement areas, plus a 100-foot buffer, were conducted May 2022 through December 2023.

Although the BSA contains open scrub areas that may support burrowing owls, this species was not observed during focused surveys. However, numerous burrows that are potentially suitable for nesting were mapped, including burrows mapped during protocol surveys for Mojave desert tortoise (*Gopherus agassizii*) (Figure 2, Suitable Burrowing Owl Burrow Locations). Mapped burrows were at least 4 inches in diameter, and all were natural earthen burrows. No active burrowing owl sign (i.e., feathers, whitewash, or pellets) were observed within the BSA. The nearest mapped CNDDB record is approximately 4.5 miles southwest of the BSA, from 2008 (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's (CDFW) 2012 Staff Report on Burrowing Owl Mitigation (2012 Staff Report) (CDFG 2012) would be necessary to re-evaluate the locations of potential burrowing owl burrows within the project limits so that impacts to owls and active owl nests can be avoided or minimized. Consistent with **MM-BIO-11**, a pre-construction survey for burrowing owl will be conducted in areas supporting potentially suitable habitat no more than 14 days prior to the start of construction activities, and a second survey will be completed within 24 hours of the start of site preparation or grading activities.

## 2.3 Mitigation Measures

The project would result in the permanent loss of 165.4 acres of suitable habitat for burrowing owl, specifically 93.6 acres of creosote bush scrub, 62.39 acres of rubber rabbitbrush, and 9.43-acres of disturbed habitat. If the site is found to support burrowing owl during the pre-construction survey, then the project will be required to mitigate for this habitat loss at a 1:1 ratio. Mitigation measures include **MM-BIO-11,** Pre-Construction Surveys for Burrowing Owl and Avoidance, and **MM-BIO-1**, Conservation of Western Joshua Tree Lands. As required by MM-BIO-1, mitigation for direct impacts to 283 western Joshua trees will be fulfilled through a payment of the elected fees as described in Section 1927.3 of The Western Joshua Tree Conservation Act In conformance with the reduced fee schedule, mitigation will consist of payment of $1,000 for each western Joshua tree 5 meters or greater in height,

$200 for each western Joshua tree 1 meter or greater but less than 5 meters in height, and $150 for each western Joshua tree less than 1 meter in height. Conservation efforts for western Joshua tree associated with the Western Joshua Tree Mitigation Fund will focus on the conservation of large, interconnected Joshua tree woodlands on lands where edge effects are limited, versus lands in urban settings that are subject to habitat fragmentation and edge effects, such as the project site. Mitigation for impacts to western Joshua tree will also mitigate for impacts to loss of suitable habitat for burrowing owl.

If passive displacement of burrowing owl is implemented, the abovementioned purchase of credits at a CDFW-approved mitigation bank or other conservation mechanism approved by CDFW will mitigate for direct impacts to displaced burrowing owls.

## 2.4 Qualified Biologist

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

- Familiarity with the species and its local ecology
- Experience conducting habitat assessments and non-breeding- and breeding-season surveys, or experience with these surveys conducted under the direction of an experienced surveyor
- Familiarity with the appropriate state and federal statuses related to burrowing owls, scientific research, and conservation
- 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 **MM-BIO-11**. Occupied burrows will not be disturbed during the nesting season. Occupied burrows will also 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 **MM-BIO-11**, a qualified biologist (see Section 2.4) will conduct surveys of the project site and off-site improvement areas and within a 150-meter buffer, where legally accessible, no more than 14 days prior to the start of 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 (e.g., whitewash, feathers, pellets). The results of the surveys will be submitted to CDFW.

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 the 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 lead agency.

The active burrows will be monitored to ensure that the buffer distance is effective. Effective buffers minimize direct impacts by providing space between the owl 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 bird 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 **MM-BIO-11**, no project activities will be allowed to encroach into established buffers without the consent of a monitoring biologist. The buffer will 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 the non-breeding season or a 250-foot buffer during the breeding season due to environmental, topographic, or construction constraints, the buffer may be reduced and burrows screened to minimize 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. If this method is used, then care must be taken to reduce potential raptor perch locations near the burrow opening. Biological monitors will

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 will be stacked three bales high and 50 feet wide. During the non-breeding season, hay bales will be stacked two bales high and 50 feet wide. All hay bales used within the 150-meter buffer of the project site and off-site improvement areas will be certified as weed free. Perches near the burrow will remain within the sheltered area of the bales, and the bales will not be closer than 2 or 3 feet from the occupied burrow and will 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 that impacts to burrowing owl are minimized and the owls 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 owls 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 to make changes to the shelters and buffers in accordance with these guidelines to increase protection of the burrowing owls, 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 of the shelter, schematic/pictures of installation, a description of the installation, and a description of site conditions. The description should include 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 will be described in the monthly reports (see Section 5.2, Reporting Requirements).

## 3.4 Excavation of Inactive Burrows

Excavation of inactive burrows, confirmed inactive based on wildlife camera monitoring, will help deter burrowing owls from occupying construction areas. Pre-construction surveys (described above) 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 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 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.

# 4 Passive Displacement

If an active burrow is identified in an area where there is potential for it or the tunnel structure to be destroyed or irreversibly affected by construction; 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 owl natural dispersal cycles (i.e., early in the non-breeding season, when owls exhibit less site-fidelity) (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 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 all connected legally accessible surrounding potentially active burrows within 160 feet—provided that they are at risk by development. 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 game camera. Once a qualified biologist can determine by site surveillance that the old burrow is vacant (i.e., 3 days of negative game camera results), with no sign of fresh use by wildlife, including tracks, scat, or recent excavation, the burrows 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 collapsed and 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 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.

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# 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 **MM-BIO-11**, 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 a minimum of 2 hours between the periods of 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 burrows 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 lead agency 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 lead agency. The reports will summarize the construction activities that occurred with the potential to impact burrowing owls, 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, and the methods used to continually make the site inhospitable to burrowing owls and fossorial mammals.

### Final Compliance Report

A final compliance report will be submitted to the lead agency summarizing the effectiveness of the mitigation measures and the level of burrowing owl take associated with the project.

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# 6 References


CDFG (California Department of Fish and Game). 2012. *Staff Report on Burrowing Owl Mitigation*. State of California, Natural Resources Agency. http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html.

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Le Gouar, P., J.B. Mihoub, and F. Sarrazin. 2012. "Dispersal and Habitat Selection: Behavioural and Spatial Constraints for Animal Translocations." In *Reintroduction Biology: Integrating Science and Management*, edited by J.G. Ewen, D.P. Armstrong, K.A. Parker, and P.J. Seddon, 138–164.

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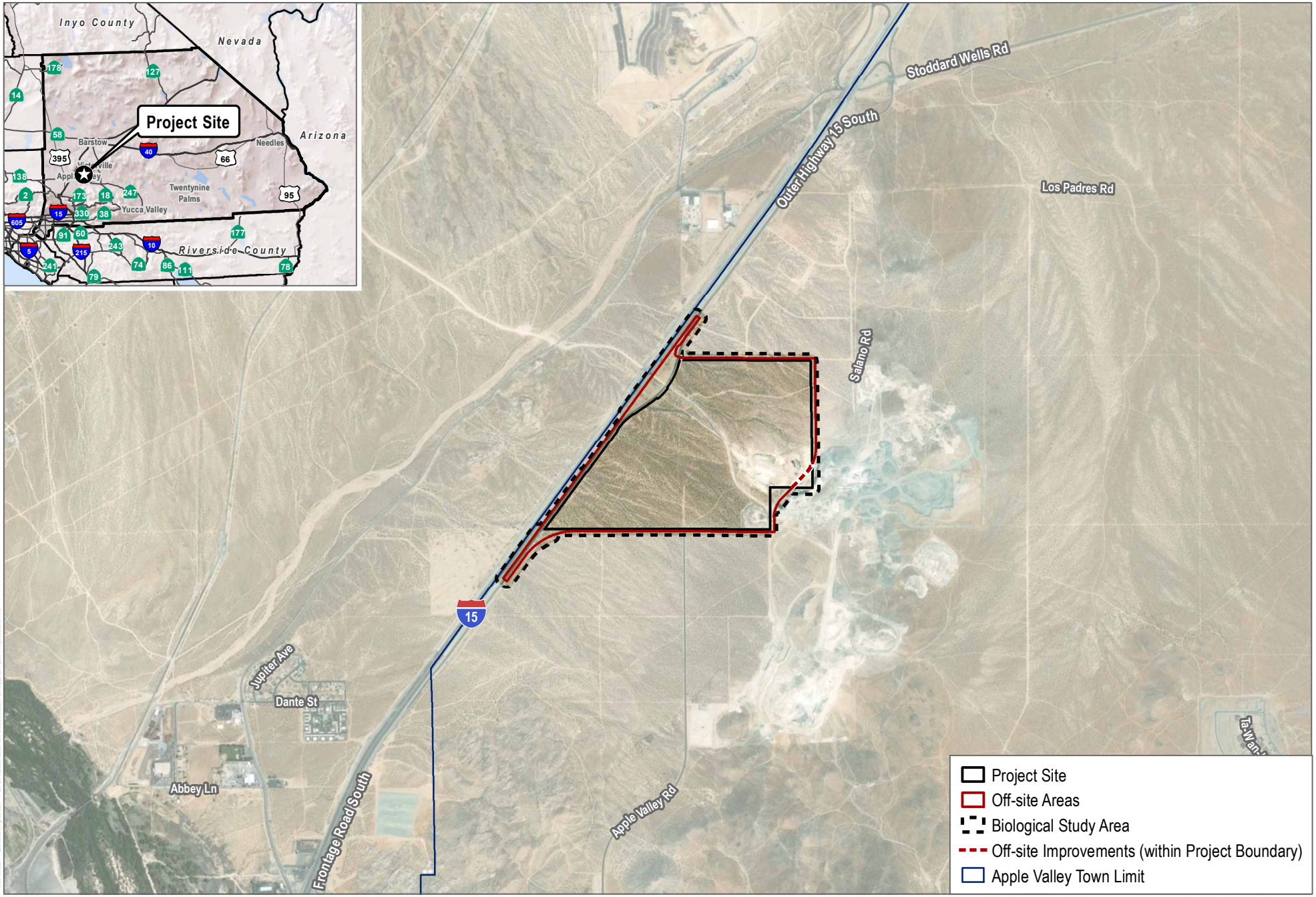


SOURCE: County of San Bernardino; Open Street Map; ESRI World Imagery 2022

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**FIGURE 1**

Project Location

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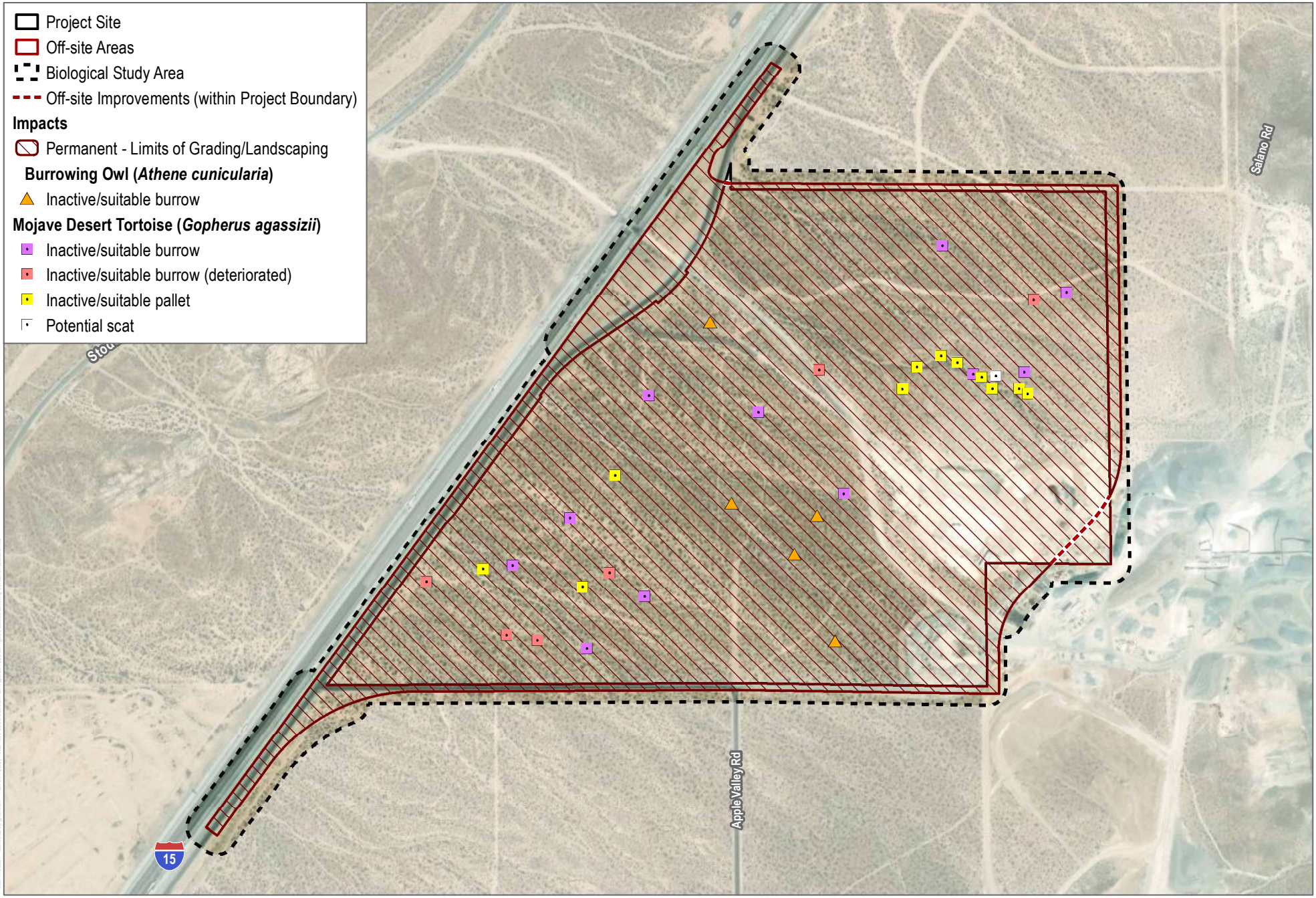


SOURCE: County of San Bernardino; Open Street Map; ESRI World Imagery 2022

DUDEK

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**FIGURE 2**

Suitable Burrowing Owl Burrow Locations

Inland Empire North Logistics Center Apple Valley Project

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