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| <b>Submitter Role:</b>  | Applicant Consultant                           |
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**WILLOW ROCK ENERGY STORAGE CENTER PROJECT  
RESULTS OF BURROWING OWL FOCUSED SURVEY  
2024 Addendum**



**UNINCORPORATED COMMUNITY OF ANSEL, KERN COUNTY, CALIFORNIA**

**Prepared for:**  
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**August 2024**

TABLE OF CONTENTS

1.0 INTRODUCTION .....1

1.1 Project Description .....1

1.2 Project Location and Topography .....1

2.0 BACKGROUND ON THE BURROWING OWL .....2

3.0 METHODS.....2

3.1 Literature Review and Records Search .....3

3.2 Habitat Assessment .....3

3.3 Phase II Burrow Survey.....3

3.4 Focused Surveys.....3

4.0 RESULTS .....5

4.1 Literature Review and Records Search .....5

4.2 Habitat Assessment .....5

4.3 Focused Surveys.....5

5.0 DISCUSSION AND CONCLUSIONS.....6

6.0 REFERENCES .....8

7.0 LIMITATIONS.....9

8.0 REPORT CERTIFICATION STATEMENT .....10

LIST OF TABLES

Table 1 Burrowing Owl Survey Data.....5

LIST OF APPENDICES

Appendix A Figures

Appendix B Vertebrate Species Detected

## **1.0 INTRODUCTION**

WSP USA Environment & Infrastructure Inc. (WSP) was contracted by GEM A-CAES LLC, a subsidiary of Hydrostor Inc. (Hydrostor), to conduct biological resources surveys at the site of the proposed Willow Rock Energy Storage Center (WRESC) in the unincorporated community of Ansel, Kern County, California. These studies were conducted in support of the preparation of the California Energy Commission's Application for Certification. As part of the 2023 biological surveys, WSP was tasked with conducting focused protocol-level surveys for the burrowing owl (*Athene cunicularia*) within the WRESC project site (WSP 2024), which includes an energy storage facility, a gen-tie transmission line, and additional workspace.

Hydrostor updated the WRESC project design to include additional project features in the fall of 2023 following the field survey season. This addendum report presents the methods, results, and discussion of the focused burrowing owl surveys conducted in 2024 in additional project areas that were not included in the 2023 surveys. All figures referenced in this report are provided in Appendix A; photographs may be provided upon request. Accessible portions were identified are areas within public road rights-of-way, parcels owned by the applicant, or parcels with right-of-entry agreements.

### **1.1 Project Description**

As part of the on-going data collection, additional focused surveys are required to document the presence of burrowing owls and their associated habitat in additional workspace areas and alternative gen-tie transmission line right-of-way alignments (gen-tie alignments). These areas are described as P2 North (47 acres) and P2 South (10 acres), as well as approximately 3.69 miles of additional gen-tie alignments (Figure 1, Regional Location). In the context of this report, "project site" specifically refers to the project footprint, including all linear transmission lines and other supporting ancillary features while "project area" refers to just the additional project areas that were added for the additional 2024 addendum.

### **1.2 Project Location and Topography**

The project area is located on private property in the rural community of Ansel within the 7.5-minute Soledad Mountain and Rosamond, California, U.S. Geological Survey topographic quadrangle (topo quad). P2 North and P2 South are located east of State Route 14 and the additional gen-tie alignments are located west of State Route 14 (Figure 1, Regional Location). The project site is located in portions of Sections 31, 32, and 33 of Township 10 North and Range 12 West; portions of Section 4 of Township 9 North and Range 12 West; and portions of Sections 14, 15, of Township 9 North and Range 13 West (Figure 2, Historic USGS Topographic Map).

Topography in the project site slopes from northwest to southeast with flat areas in the southern portions and gently rolling hills in the central portion of the project site. Elevations range from approximately 2,400 feet (732 meters) to 2,720 feet (830 meters) along Dawn Road (Figure 3, Local Vicinity).



## **2.0 BACKGROUND ON THE BURROWING OWL**

The burrowing owl, a member of the *Strigidae* family (the typical owl family), is a small, tan, ground-dwelling owl. It nests and roosts underground making it vulnerable to ground-disturbing activities. The burrowing owl is federally designated as a Bird of Conservation Concern and state-designated as a Species of Special Concern. Burrowing owl is protected by the federal Migratory Bird Treaty Act (USFWS 2023), and California Fish and Game Code Sections 3503, 3503.5, 3513, and 3800.

The burrowing owl occurs in open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation (Haug et al. 2011). In southern California, burrowing owls are found in undisturbed natural areas and in anthropogenically modified areas such as fallow agricultural fields, margins of active agricultural areas, livestock farms, airports, and vacant lots. Burrowing owls burrow selection is opportunistic, typically using small mammal burrows, drainpipes, culverts, and other suitable natural or man-made cavities at or below ground level. In the project area, unoccupied California ground squirrel (*Otospermophilus beecheyi*) and kit fox (*Vulpes macrotis*) burrows provide natural burrows for the burrowing owl. Burrows and other areas occupied by burrowing owls can be recognized by signs, including tracks, molted feathers, cast pellets, prey remains, eggshell fragments, owl whitewash, and decoration materials (e.g., paper, foil, plastic items, livestock, or other animal manure, etc.) (CDFG 2012). The species may be active both day and night and may be seen perching on fence posts or standing at the entrance of their burrows. Due to the characteristic fossorial habits of burrowing owls nesting and roosting burrows are a critical component of their habitat.

Natural burrows are described as those created by other species, such as desert kit fox, black-tailed jackrabbit, desert cottontail, and ground squirrel. Suitable burrows are characterized as burrows with an entrance larger than 4 inches (11 centimeters), sloping entrance (no vertical holes), and more than 36 inches deep (91 centimeters). Tock piles, pipes, and culverts may also be used.

Regional burrowing owl breeding population patterns have declined both locally in their central and southern coastal breeding areas. Statewide, the species has experienced breeding range retraction (Wilkerson and Siegel 2010). Threats affecting burrowing owl populations include habitat loss, degradation, and modification, as well as eradication of ground squirrels resulting in a loss of suitable burrows (USFWS n.d.). Regional and long-term conservation for burrowing owls includes protecting remaining breeding pairs, providing for population expansion, protecting and enhancing breeding and essential habitat, and amending or augmenting land adjacent to occupied habitat.

## **3.0 METHODS**

Information on burrowing owl presence and habitat was obtained from a background literature review and field surveys.

### **3.1 Literature Review and Records Search**

A literature review and record search were conducted to identify known burrowing owl occurrences at the project site and a 10-mile buffer. The review included the following:

- A report from the California Department of Fish and Wildlife California Natural Diversity Data Base for a 10-mile radius of the project site (CDFW 2024)
- Aerial photographs
- Available published literature, local maps, field guides, grey literature and project files (e.g., other biological surveys from the general vicinity)

### **3.2 Habitat Assessment**

All onsite areas and the areas present within a 500-foot (150-meter) buffer zone adjacent to the perimeter of the site were assessed for the presence of suitable burrowing owl habitat prior to the commencement of the focused surveys. All areas of the site were visually inspected for components of burrowing owl habitat (i.e., sparsely vegetated areas, presence of burrows) and/or man-made structures (i.e., culverts, drainpipes, piles of debris, openings beneath slabs and foundations, etc.) of appropriate size and depth suitable for burrowing owl use. Landforms (e.g., rocks, outcrops, berms, vegetation, etc.) and man-made structures suitable for perching were also noted and inspected for burrowing owl sign (i.e., whitewash, pellets, feathers, tracks, remains of prey, etc.).

### **3.3 Phase II Burrow Survey**

The burrow survey (Phase II of the survey guidelines) was conducted concurrent with the habitat assessment. All suitable areas of the site and within a 500-foot (150-meter) buffer zone adjacent to the perimeter of the site were surveyed on-foot, visually inspecting the areas for the presence of burrows and man-made structures that would provide suitable shelter and/or nesting habitat for burrowing owls. When and where detected, potentially suitable burrows and/or man-made structures were inspected for burrowing owl sign (i.e., whitewash, pellets, remains of prey items, feathers, eggshell fragments, prints, tracks and/or burrow adornments), mapped using a global positioning system (GPS), and photographed.

### **3.4 Focused Surveys**

The burrowing owl focused survey methods followed the guidelines outlined in Appendix D of *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). Per the guidelines, four focused burrowing owl surveys were conducted (survey pass 1 through 4) with the first survey conducted during the peak breeding season (February 15 to April 15) and the subsequent three surveys conducted at least three weeks apart. The final survey was conducted on June 19, 2024.

Surveys were conducted during appropriate weather conditions described in the guidelines. Weather conditions (i.e., temperature and wind speed) were recorded with handheld Kestrel weather meters. Cloud cover was visually estimated.

All burrowing owl surveys were conducted in the morning between 1-hour before sunrise (5:00 a.m., as sunrise was at 6:00 a.m.) to 10:00 a.m. Surveys were not conducted during inclement weather conditions such as heavy winds, fog, or rain (Table 1). The timing of the surveys and weather conditions provide a high confidence level regarding survey findings.

WSP biologists (Table 1) walked straight line belt transects spaced at 33-foot (10-meter) intervals throughout the project site. In addition to the project site, a 500-foot (150-meter) survey buffer, herein referred to as the burrowing owl "study area", was also surveyed. The belt transects provided full visual coverage in the study area during the burrow survey and first burrowing owl survey (Figure 4, Survey Transects). Biologists conducted a stand-watch every 328 feet (100 meters), during which the biologist stopped to document visual or auditory cue (e.g. burrowing owl vocalizations). For habitat where biologists could not safely survey or gain permission to access, such as private property, surveys were conducted by scanning the area from the perimeter.

The first burrowing owl survey was conducted in concert with sensitive plant and desert tortoise (*Gopherus agassizi*) surveys, which were also conducted in 2024 in the project site and study area. This was considered appropriate as these survey methods require 33-foot (10-meter) transects and are terrestrial based. The average pace for conducting surveys was 0.5 miles per hour. The remaining burrowing owl surveys were completed independently in areas with suitable burrowing owl burrows identified during the burrow survey.

Data recorded included observations of burrowing owls and their sign (i.e., pellets, whitewash, feathers, tracks, nest adornments, and auditory cues), suitable natural burrows, complexes, and surrogate burrow structures, if present. A burrow was considered suitable if it had an entrance larger than 4 inches (11 centimeters), and the entrance was sloping and more than 36 inches deep (91 centimeters). Other vertebrate species incidentally observed and/or detected were recorded in the respective observer's daily field notes. A complete list of the vertebrates observed and/or detected is included as Appendix B.

All burrowing owl locations and those burrows and surrogate burrow structures identified as suitable were mapped using a global positioning system, if present. Per protocol, if observed, any markings or bands were to be noted. Burrowing owl behavior was described, as well as a list of possible predators that may occur in the area.

The burrowing owl survey personnel, dates, times, and weather conditions are presented in Table 1.

**Table 1. Burrowing Owl Survey Data**

| Date (2024) | Survey Pass | Surveyor(s)                          | Time      | % Cloud Cover, (mph)      | Temperature (°F) | Burrowing Owl Observed? |
|-------------|-------------|--------------------------------------|-----------|---------------------------|------------------|-------------------------|
| April 2-4   | 1           | MP, EU, MAB, MEB, PC                 | 0700–1000 | Clear (0%), winds 0–2 mph | N/A              | No                      |
| April 8-9   | 1           | MW, SC, MP, TC, MAB, MEB, EU, PC, CS | 0700–1000 | Clear (0%), winds 1–3 mph | 60–71°F          | No                      |
| May 5-7     | 2           | NM                                   | 0500–0910 | 0–5% cover, winds 3–8 mph | 53–61°F          | No                      |
| June 5-6    | 3           | NM                                   | 0530–930  | 0–5% cover, winds 3-8 mph | 52-66°F          | Yes                     |
| June 18-20  | 4           | NM                                   | 0530-945  | Clear (0%), winds 1–3 mph | 53–64°F          | No                      |

Key: CS= Ciara Shirley; EU=Emily Urquidi; °F = degrees Fahrenheit; JG=John; MAB=Melissa Bukovac; MEB=Melanie Bukovac; MP= Marshall Paymard; mph = miles per hour; NM=Nathan Moorhatch; PC=Phil Clevinger; SC=Scott Crawford; TC= Tim Chumley

## 4.0 RESULTS

### 4.1 Literature Review and Records Search

The two nearest California Natural Diversity Database records of burrowing owl are approximately 3.5 miles southwest of the project site near the Rosamond Dry Lake (no number of owls identified; recorded in 2004) and 500 feet south of the Transmission Line Alignment along Rosamond Boulevard at 100th Street West (five individuals [two adults and three juveniles]; recorded in 2009) (CDFW 2024).

### 4.2 Habitat Assessment

Suitable habitat was observed throughout the project site and study area and consisted of open Mojave Creosote Bush Scrub with scattered Joshua trees. Higher quality habitat occurs in the northern portion of the project site, as the plant communities have a more open vegetative cover with fewer Joshua trees.

### 4.3 Focused Surveys

Temperatures ranged from 52 to 71 degrees Fahrenheit, winds ranged from 0 to 8 miles per hour, and cloud cover ranged from clear skies to 5 percent cloud cover. A total of 11 unoccupied suitable burrows were identified within the survey area (Figure 5, Burrowing Owl Observation and Suitable Burrow Locations). No burrowing owl were identified within the survey area. No burrowing owl sign or indication of borrowing owl use was recorded at the suitable burrows, all of which were natural burrows.

A pair of burrowing owls were incidentally identified with binoculars in an inaccessible portion of the survey area within the 500-foot buffer area north of the P2 North workspace on June 6, 2024, during Survey Pass 3 (Table 1). These owls were observed foraging in the 500-foot buffer area approximately

200 feet from the northern boundary of the additional workspace area P2 North, but an accurate GPS point was not available due to private property access.

A total of 64 other vertebrate species were observed and/or detected through the presence of sign (i.e., carcasses, bones, shedded skin, feathers, tracks, prints, burrows, nests, etc.). Wildlife and domestic animals that are predators, or potential predators of burrowing owls were observed, including snakes, hawks, other owls, common ravens, coyote, kit fox, and domestic dogs.

## **5.0 DISCUSSION AND CONCLUSIONS**

Focused burrowing owl surveys conducted during the breeding season detected burrowing owls or their sign within the study area (which included the action area plus a 500-foot buffer), and suitable foraging habitat remains present and widespread. Therefore, the *Staff Report on Burrowing Owl Mitigation* requires pre-construction take avoidance surveys for burrowing owls in case they occupy the site between the focused surveys and initiation of construction:

*Field experience from 1995 to present supports the conclusion that it would be effective to complete an initial take avoidance survey no less than 14 days prior to initiating ground disturbance activities using the recommended methods described in the Detection Surveys section above. Implementation of avoidance and minimization measures would be triggered by positive owl presence on the site where project activities will occur. The development of avoidance and minimization approaches would be informed by monitoring the burrowing owls. Burrowing owls may re-colonize a site after only a few days. Time lapses between project activities trigger subsequent take avoidance surveys including but not limited to a final survey conducted within 24 hours prior to ground disturbance. (CDFG 2012)*

Consequently, within 14 days of initiating initial ground disturbance and/or construction activities, a pre-construction avoidance survey for burrowing owl should be conducted per the Staff Report on Burrowing Owl Mitigation (CDFG 2012). In addition, within 24 hours of initiating initial ground disturbance and/or construction activities, a final pre-construction take avoidance survey should be conducted. Surveys should include areas in the project site and a surrounding 500-foot (150-meter) buffer.

If new occupied burrows are identified within the project site during the take avoidance surveys and cannot be avoided by project activities, the California Department of Fish and Wildlife would require a Burrowing Owl Exclusion Plan to be prepared, approved, and implemented. Burrowing Owl Exclusion Plans typically describe burrowing owl exclusion and monitoring methods, including discussion of artificial burrow construction, if necessary, and reporting protocols.

If new occupied burrows are found within the 500-foot buffer area and will not be impacted by project activities, a biological monitor may be required to monitor construction activities that occur within 500 feet of the active burrowing owl nest.

If no burrowing owl sign is observed during the pre-construction clearance surveys, no additional biological monitoring is needed unless a burrowing owl is incidentally observed in the project site during

construction. A Worker Environmental Awareness Program (WEAP) may be required to educate construction workers on burrowing owl identification and mitigation.

Prior to construction, a WEAP should be provided to all construction workers. A sign-in sheet should be kept onsite to record attendance from all project personnel. The WEAP should include burrowing owl identification, biological monitor contact information, and next steps if any burrowing owl are identified within the action area during construction.

If burrowing owls are present during construction, adaptive mitigation measures to avoid or reduce impacts to burrowing owls may include scheduling construction during non-breeding periods, monitoring occupied burrow sites during construction, passive relocation of non-breeding burrowing owls, and instituting construction-free buffer zones and/or "shelter in place" techniques around occupied burrows.

## 6.0 REFERENCES

- California Department of Fish and Game (CDFG). 2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resources Agency. March 7, 2012.
- California Department of Fish and Wildlife (CDFW). 2024. California Natural Diversity Database (CNDDB) RareFind 5 records of sensitive elements.
- Haug, E.A., B.A. Millsap, and M.S. Martell. 2011. Burrowing owl (*Athene cunicularia*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology. Accessed online at: <http://bna.birds.cornell.edu/bna/species/061>.
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- USFWS. 2023. List of Birds Protected by the Migratory Bird Treaty Act (2023). Accessed online at: <https://www.fws.gov/media/list-birds-protected-migratory-bird-treaty-act-2023>.
- Wilkerson, R.L., and R.B. Siegel. 2010. Assessing changes in the distribution and abundance of Burrowing Owls in California, 1993-2007. Bird Populations 10:1-36.
- WSP USA Environment & Infrastructure Inc. (WSP). 2024. Willow Rock Energy Storage Center Project Draft Results of Burrowing Owl Focused Surveys. January 2024.

## **7.0 LIMITATIONS**

This document has been prepared for the exclusive use of Hydrostor and its Construction Contract(s) in support of the preparation of the California Energy Commission's Application for Certification for the Willow Rock Energy Storage Center Project. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. WSP accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

This report was prepared based in part on information obtained from historic information sources. In evaluating the subject site, WSP has relied in good faith on information provided. We accept no responsibility for any deficiency or inaccuracy contained in this report as a result of our reliance on the aforementioned information.

The findings and conclusions documented in this report have been prepared for the specific application to this project and have been developed in a manner consistent with that level of care normally exercised by environmental professionals currently practicing under similar conditions in the jurisdiction.

With respect to regulatory compliance issues, regulatory statutes are subject to interpretation. These interpretations may change over time, and should be reviewed.

If new information is discovered during future work, the conclusions of this report should be re-evaluated and the report amended as required, prior to any reliance upon the information presented herein.



## 8.0 REPORT CERTIFICATION STATEMENT

We certify that the information in the survey report and attached exhibits fully and accurately represents our work.

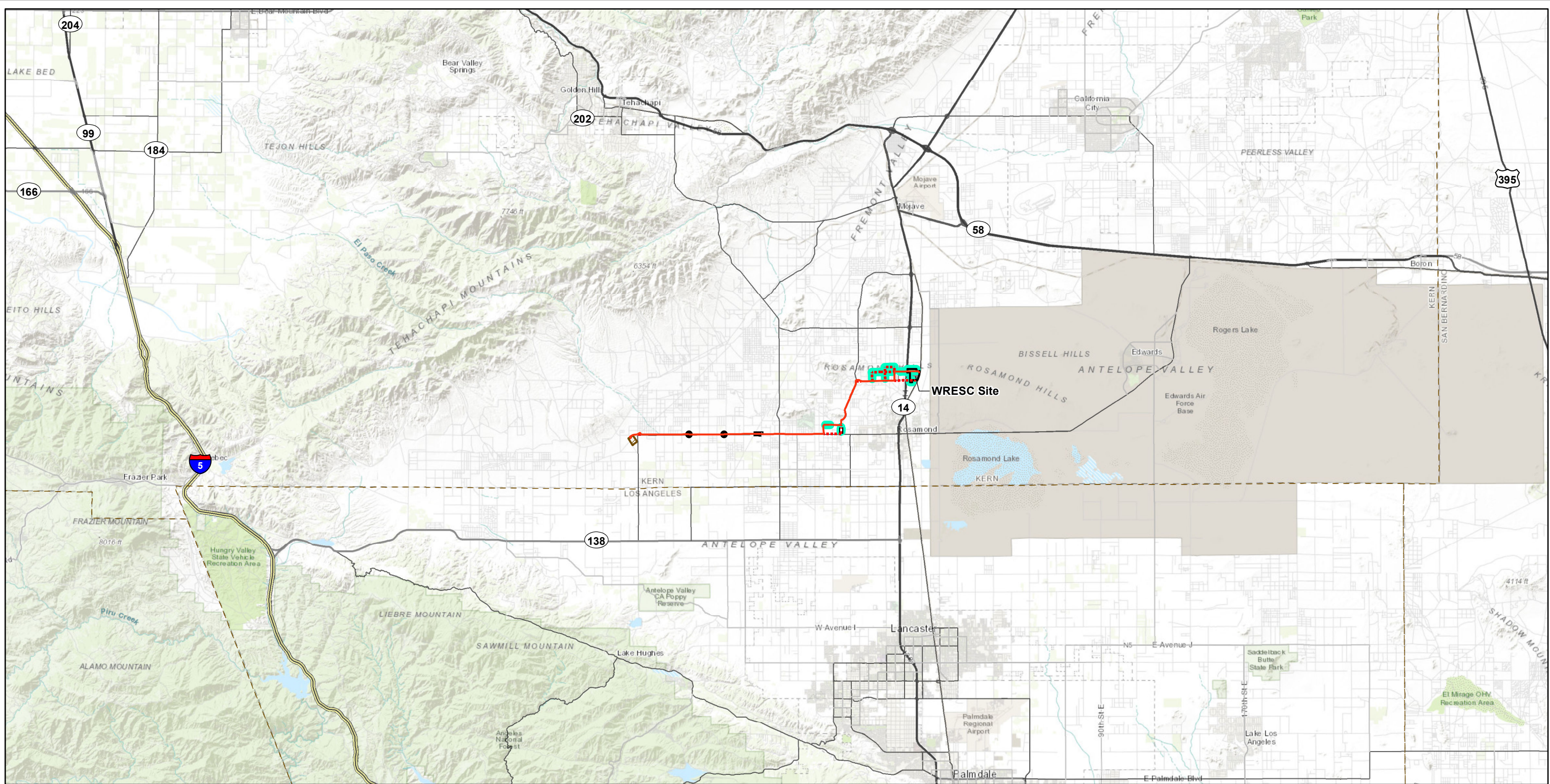
Signed:  Date: 08/02/2024

Signed: Nathan Mooradian Date: 08/02/2024

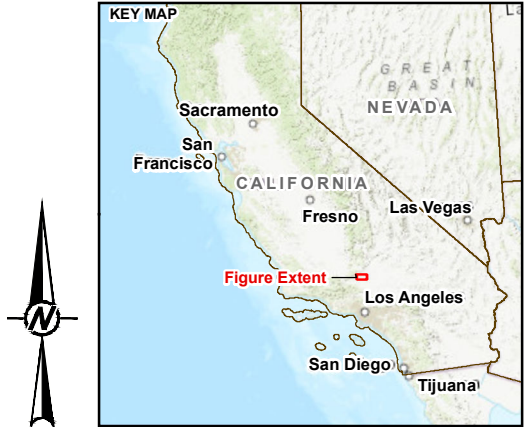
## **Appendix A      Figures**



PATH: G:\Hydro\Area\09\_P\PROJECT\31406639\_000\_Hydro\Area\B\Survey\01\_LBR\_P\1\_BldSurvey\02\_PRODUCTION\XDOFIGURES\Burrowing\_Owl\_Focus\_Survey\Rev131406639\_000\_01\_L\_F02-01\_Rev1\_RegionalLocationMap.mxd PRINTED ON: 2024-07-29 AT 2:58:17 PM



- LEGEND**
- Freeway
  - Major Road
  - Secondary Road
  - Local Connecting Road
  - Important Local Road
  - Proposed Transmission Line
    - Preferred Route, Aboveground
    - Preferred Route, Underground
    - Route Options 1-6, Aboveground
    - Route Options 1-6, Underground
- Project Components**
- WRESC Site
  - Other Project Parcels
  - No Right of Entry Areas
  - Project Boundary
  - 2024 Project Area
  - SCE Whirlwind Substation



CLIENT  
GEM A-CAES LLC

CONSULTANT



|            |            |
|------------|------------|
| YYYY-MM-DD | 2024-07-29 |
| DESIGNED   | MK         |
| PREPARED   | MK         |
| REVIEWED   | SC         |
| APPROVED   | VG/LL      |

**REFERENCE(S)**

- COORDINATE SYSTEM: NAD 1983 STATEPLANE CALIFORNIA V FIPS 0405 FEET
- MAP SERVICE LAYER CREDITS: SOURCES: ESRI, HERE, GARMIN, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY

PROJECT  
WILLOW ROCK ENERGY STORAGE CENTER  
BURROWING OWL FOCUSED SURVEY

TITLE  
**REGIONAL LOCATION MAP**

|              |        |      |        |
|--------------|--------|------|--------|
| PROJECT NO.  | PHASE  | REV. | FIGURE |
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| PROJECT NO.  | PHASE  | REV. | FIGURE |
| 31406639.000 | 01.LBR | 1    | 4      |



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|--------------|--------|------|--------|
| PROJECT NO.  | PHASE  | REV. | FIGURE |
| 31406639.000 | 01.LBR | 1    | 5      |



## **Appendix B      Vertebrate Species Detected**



## Fauna Compendium

|                        |                                 |   |
|------------------------|---------------------------------|---|
| <b>Lycaenidae</b>      |                                 | <b>Blues and Hairstreaks</b>              |
| <i>Brephidium</i>      | <i>exilis</i>                   | pygmy blue                                |
| <b>Tabanidae</b>       |                                 | <b>Horse Flies</b>                        |
| <i>Tabanus</i>         | <i>punctifer</i>                | western horse fly                         |
| <b>Anthophoridae</b>   |                                 | <b>Digger Bees</b>                        |
| <i>Anthophora</i>      | <i>urbana</i>                   | digger bees                               |
| <b>Apidae</b>          |                                 | <b>Honey Bees, Bumble Bees and Allies</b> |
| <i>Apis</i>            | <i>mellifera</i>                | western honey bee                         |
| <i>Bombus</i>          | <i>vosnesenskii</i>             | yellow-faced bumble bee                   |
| <i>Bombus</i>          | <i>crotchii</i>                 | Crotch's bumble bee                       |
| <b>Crotaphytidae</b>   |                                 | <b>Collared and Leopard Lizards</b>       |
| <i>Gambelia</i>        | <i>wislizenii wislizenii</i>    | long-nosed leopard lizard                 |
| <b>Phrynosomatidae</b> |                                 | <b>Lizards</b>                            |
| <i>Callisaurus</i>     | <i>draconoides rhodostictus</i> | western zebra-tailed lizard               |
| <i>Sceloporus</i>      | <i>magister uniformis</i>       | yellow-backed spiny lizard                |
| <i>Uta</i>             | <i>stansburiana elegans</i>     | western side-blotched lizard              |
| <b>Teiidae</b>         |                                 | <b>Whiptails</b>                          |
| <i>Aspidoscelis</i>    | <i>tigris tigris</i>            | Great Basin whiptail                      |
| <b>Xantusiidae</b>     |                                 | <b>Night Lizards</b>                      |
| <i>Xantusia</i>        | <i>vigilis</i>                  | desert night lizard                       |
| <b>Colubridae</b>      |                                 | <b>Egg-laying snakes</b>                  |
| <i>Pituophis</i>       | <i>catenifer deserticola</i>    | Great Basin gophersnake                   |
| <i>Masticophis</i>     | <i>flagellum piceus</i>         | red coachwhip                             |
| <b>Viperidae</b>       |                                 | <b>Vipers</b>                             |
| <i>Crotalus</i>        | <i>scutulatus scutulatus</i>    | Northern Mojave green rattlesnake         |
| <b>Odontophoridae</b>  |                                 | <b>New World Quail</b>                    |
| <i>Callipepla</i>      | <i>californica</i>              | California quail                          |
| <b>Cathartidae</b>     |                                 | <b>Vultures</b>                           |
| <i>Cathartes</i>       | <i>aura</i>                     | turkey vulture                            |
| <b>Accipitridae</b>    |                                 | <b>Hawks</b>                              |
| <i>Circus</i>          | <i>hudsonius</i>                | northern harrier                          |
| <i>Buteo</i>           | <i>swainsoni</i>                | Swainson's hawk*                          |
| <i>Buteo</i>           | <i>jamaicensis</i>              | red-tailed hawk                           |
| <i>Buteo</i>           | <i>regalis</i>                  | ferruginous hawk (5-mile buffer)          |
| <b>Picidae</b>         |                                 | <b>Woodpeckers and Allies</b>             |
| <i>Dryobates</i>       | <i>scalaris</i>                 | ladder-backed woodpecker                  |
| <b>Falconidae</b>      |                                 | <b>Falcons</b>                            |
| <i>Falco</i>           | <i>sparverius</i>               | American kestrel                          |
| <i>Falco</i>           | <i>mexicanus</i>                | prairie falcon                            |
| <b>Columbidae</b>      |                                 | <b>Pigeons/Doves</b>                      |
| <i>Columba</i>         | <i>livia</i>                    | rock pigeon                               |
| <i>Streptopelia</i>    | <i>decaocto</i>                 | Eurasian collared-dove                    |
| <i>Zenaida</i>         | <i>macroura</i>                 | mourning dove                             |

# Fauna Compendium

| Cuculidae              |                        | Cuckoos, Roadrunners, and Allies  |
|------------------------|------------------------|-----------------------------------|
| <i>Geococcyx</i>       | <i>californianus</i>   | greater roadrunner                |
| Ardeidae               |                        | Herons, Bitterns, and Allies      |
| <i>Ardea</i>           | <i>alba</i>            | great egret (5-mile buffer)       |
| <i>Egretta</i>         | <i>thula</i>           | snowy egret (5-mile buffer)       |
| Threskiornithidae      |                        | Ibises and Spoonbills             |
| <i>Plegadis</i>        | <i>chihi</i>           | white-faced ibis                  |
| Strigidae              |                        | True Owls                         |
| <i>Athene</i>          | <i>cunicularia</i>     | burrowing owl**                   |
| <i>Bubo</i>            | <i>viiginianus</i>     | great horned owl (5-mile buffer)  |
| Tyrannidae             |                        | Flycatchers                       |
| <i>Myiarchus</i>       | <i>cinerascens</i>     | ash-throated flycatcher           |
| <i>Tyrannus</i>        | <i>verticalis</i>      | western kingbird                  |
| <i>Sayornis</i>        | <i>saya</i>            | Say's phoebe                      |
| Laniidae               |                        | Shrikes                           |
| <i>Lanius</i>          | <i>ludovicianus</i>    | loggerhead shrike                 |
| Corvidae               |                        | Jays/Crows                        |
| <i>Corvus</i>          | <i>corax</i>           | common raven                      |
| Alaudidae              |                        | Larks                             |
| <i>Eremophila</i>      | <i>alpestris</i>       | horned lark                       |
| Hirundinidae           |                        | Swallows                          |
| <i>Hirundo</i>         | <i>rustica</i>         | barn swallow                      |
| Poliopitidae           |                        | Gnatcatchers and Gnatwrens        |
| <i>Poliopitila</i>     | <i>caerulea</i>        | blue-gray gnatcatcher             |
| Troglodytidae          |                        | Wrens                             |
| <i>Campylorhynchus</i> | <i>brunneicapillus</i> | cactus wren                       |
| Mimidae                |                        | Mockingbirds/Thrashers            |
| <i>Mimus</i>           | <i>polyglottos</i>     | northern mockingbird              |
| <i>Toxostoma</i>       | <i>lecontei</i>        | Le Conte's thrasher               |
| Sturnidae              |                        | Starlings                         |
| <i>Sturnus</i>         | <i>vulgaris</i>        | European starling                 |
| Icteridae              |                        | Blackbirds                        |
| <i>Sturnella</i>       | <i>neglecta</i>        | western meadowlark                |
| <i>Euphagus</i>        | <i>cyancephalus</i>    | Brewer's blackbird                |
| <i>Icterus</i>         | <i>cucullatus</i>      | hooded oriole                     |
| Parulidae              |                        | New world warblers                |
| <i>Setophaga</i>       | <i>coronata</i>        | yellow-rumped warbler (wintering) |
| <i>Wilsonia</i>        | <i>pusilla</i>         | Wilson's warbler (migrant)        |
| Emberizidae            |                        | Warblers, sparrow, etc.           |
| <i>Amphispiza</i>      | <i>billineata</i>      | black-throated sparrow            |
| <i>Spizella</i>        | <i>breweri</i>         | brewer's sparrow                  |
| <i>Zonotrichia</i>     | <i>leucophrys</i>      | white-crowned sparrow (wintering) |
| <i>Artemisiospiza</i>  | <i>belli canescens</i> | sage sparrow                      |
| <i>Passerculus</i>     | <i>sandwichensis</i>   | savannah sparrow (wintering)      |
| Fringillidae           |                        | Finches                           |
| <i>Haemorhous</i>      | <i>mexicanus</i>       | house finch                       |
| Passeridae             |                        | True sparrows                     |
| <i>Passer</i>          | <i>domesticus</i>      | house sparrow                     |

Fauna Compendium

|                  |              |                                |
|------------------|--------------|--------------------------------|
| Cardinalidae     |              | Cardinals and Allies           |
| Piranga          | rubra        | summer tanager (migrant)       |
| Leporidae        |              | Hares and Rabbits              |
| Lepus            | californicus | black-tailed jackrabbit        |
| Sylvilagus       | audubonii    | desert cottontail              |
| Sciuridae        |              | Squirrels                      |
| Ammospermophilu  | leucurus     | white-tailed antelope squirrel |
| Otospermophilus  | beecheyi     | California ground squirrel     |
| Xerospermophilus | tereticaudus | round-tailed ground squirrel   |
| Muridae          |              | Mice, Rats, and Voles          |
| Neotoma          | lepida       | desert woodrat                 |
| Heteromyidae     |              | Pocket Mice and Kangaroo Rats  |
| Dipodomys        | merriami     | Merriam's kangaroo rat         |
| Canidae          |              | Wolves and Foxes               |
| Canis            | familiaris   | domestic dog                   |
| Canis            | latrans      | coyote                         |
| Vulpes           | velox        | kit fox                        |
| Felidae          |              | Cats                           |
| Lynx             | rufus        | bobcat                         |
| Bovidae          |              | Bison, Goats, and Sheep        |
| Ovis             | aries        | domestic sheep                 |

\* No nests observed on-site  
\*\* in BUOW buffer