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WILLOW ROCK ENERGY STORAGE CENTER
SWAINSON'S HAWK FOCUSED SURVEY
2024 Addendum

UNINCORPORATED COMMUNITY OF ANSEL, KERN COUNTY, CALIFORNIA

Prepared for:

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Prepared by:

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August 2024

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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. The purpose of the surveys are to support the preparation of the California Energy Commission's Application for Certification. As part of the 2023 biological surveys, WSP was retained to conduct focused protocol-level surveys for the Swainson's hawk (*Buteo swainsoni*) in the WRESC project area (WSP 2024), which includes an energy storage facility, a gen-tie transmission line, and additional workspace. Accessible portions were identified are areas within public road rights-of-way, parcels owned by the applicant, or parcels with right-of-entry agreements.

Hydrostor updated the WRESC project design to include additional project features following the 2023 field survey season. This addendum report presents the methods, results, and discussion of the focused Swainson's hawk surveys conducted in 2024 within 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.

1.1 Project Description

As part of the on-going data collection, additional focused surveys were performed to document the presence of Swainson's hawk and their associated habitat in the additional workspaces 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. For the purposes of this report, these additional project elements, plus a 0.5-mile buffer are hereafter referred to as the survey area.

1.2 Project Location and Topography

The survey area is located on private property in and around the rural community of Ansel within the 7.5-minute Soledad Mountain, California, U.S. Geological Survey topographic quadrangle (topo quad) (USGS 1973). 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 within 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 SWAINSON'S HAWK

The Swainson's hawk, a member of the Accipitridae family (e.g., birds of prey), is a long-winged, large hawk with pointed wingtips. Swainson's hawks historically nested in Joshua tree (*Yucca brevifolia*) woodlands and foraged in grasslands and native desert scrub communities of the Antelope Valley areas of Kern County. Currently, they nest in Joshua tree woodlands, ornamental roadside trees, and windrow or perimeter trees in active and historical agricultural areas (CEC and CDFW 2010). Foraging habitat includes dry land and irrigated pasture, alfalfa, fallow fields, low-growing row or field crops, new orchards, and cereal grain crops. Swainson's hawks may also forage in grasslands, Joshua tree woodlands, and other desert scrub habitats that support a suitable prey base. Botta's pocket gopher (*Thomomys bottae*) is the most frequent prey taken for pairs nesting in agriculture areas, while pairs nesting in natural desert habitats consume a wider variety of prey species (CEC and CDFW 2010).

California's Central Valley Swainson's hawk population winters in Mexico, Central America, and South America, and a small percentage in the Central Valley; however, the migration habits of the Kern County populations are unknown (CEC and CDFW 2010).

The most recognized threat to Swainson's hawks is the loss of their native foraging and breeding grounds due to conversion of habitat to urban landscapes. Other threats include climate change, infrastructure placement, disease, pesticide poisoning, and electrocution (CDFW 2024a). Swainson's hawks have high nest site fidelity, meaning they return to the same site year after year (Estep 1989; Woodbridge et al. 1995). This may limit the exchange of individual birds between distant breeding groups (Hull et al. 2008). Hull et al. (2008) found evidence suggesting that the Central Valley population has had little recent genetic exchange with other populations east of the Sierra Nevada. Due to the geographical isolation of the Antelope Valley Swainson's hawk population from other breeding populations, together with the species' high site fidelity, the California Energy Commission and California Department of Fish and Wildlife (CDFW) believe that rapid re-colonization of the Antelope Valley would be unlikely if nesting pairs were lost (CEC and CDFW 2010).

The Swainson's hawk was listed as a threatened species by the California Fish and Game Commission due to loss of habitat and decreased numbers throughout the state of California. The Swainson's hawk is protected by the Migratory Bird Treaty Act and by California Fish and Game Code Sections 3503, 3503.5, 3513, and 3800.

3.0 METHODS

Information on Swainson's hawk 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 Swainson's hawk occurrences in the project area. The review included, but was not limited to the following:

- A report from the CDFW California Natural Diversity Data Base (CNDDB) for a 10-mile radius of the project site (CDFW 2024b)
- Aerial photographs
- Pertinent documents from the WSP library and project files (e.g., other biological surveys from the WRESC project and general vicinity)

3.2 Focused Surveys

Survey methods were based on the latest accepted CDFW Swainson's hawk protocol, specifically referencing Antelope Valley (CEC and CDFW 2010). CDFW protocol designates 10 surveys to be conducted over four survey periods, which aim to capture progressive nesting behaviors and activity:

- **Survey Period I:** Preliminary survey of potential nest locations (optional). To be conducted between January and March 31.
- **Survey Period II:** Surveys targeting initial occupancy of traditional nest territories and nesting behaviors. To be conducted between April 1 and April 30.
- **Survey Period III:** Direct monitoring of known/identified active nests to confirm incubation. To be conducted between May 1 and May 30.
- **Survey Period IV:** Direct monitoring of known/identified active nests to confirm young rearing and final nest search. To be conducted between June 1 and July 15.

CDFW staff (Jeremy Pohlman) was contacted prior to conducting the surveys to confirm the survey limits would include a 0.5-mile buffer around the project site. This revised survey buffer is allowed under the protocol based on the known recorded Swainson's hawk nest within 7 miles of the project site. CDFW allowed the 0.5-mile buffer per the protocol, but in addition requested a general nest survey with a 5-mile buffer around the project site, which was completed (Figure 5, Swainson's Hawk Sightings and Nest Locations).

Surveys were conducted by WSP crews in Survey Period I to identify potential nest locations. The project site plus the 0.5-mile buffer area (the study area) (Figure 4) was driven to identify suitable nesting locations. If a suitable nest was identified, it was mapped and scanned with binoculars to determine activity level and occupying species. If the nest status or species was difficult to determine, the biologists walked around the nest at a distance of no closer than 500 feet to reduce disturbance of potentially nesting Swainson's hawk. Survey Period I was completed in 5 days over a period of two weeks.

Surveys were conducted by WSP crews in Survey Period II over the same survey area covered in Survey Period I (Figure 4). Except for rural residential parcels with suitable nesting trees, most of the developed

areas within the survey area were excluded from the surveys due to a lack of suitable habitat for foraging and nesting. Three surveys were conducted during Survey Period II over 7 days.

Surveys were conducted by WSP crews in Survey Period III to monitor known/identified active nests to confirm incubation. All active nests, regardless of species, identified during Survey Periods I and II were visited three times. If nesting activity at a location was determined to be completed or the nest was otherwise inactive, it was no longer monitored for the remaining surveys. Survey Period III was completed over 6 days of surveys undertaken over the course of three weeks.

Surveys were conducted by WSP crews in Survey Period IV to monitor known/identified active nests to confirm young rearing and final nest search. As part of the final nest search, the project site plus the buffer area was again completely surveyed. A total of 3 days were needed over the course of three weeks to complete Survey Period IV.

Data collected during the Swainson's hawk surveys included recording occupied Swainson's hawk nest trees, suitable nest trees, and nest competitors (e.g., common ravens [*Corvus corax*]), if present. Location data was recorded with a global positioning system.

4.0 RESULTS

4.1 Literature Review and Records Search

A Swainson's hawk pair and associated active nest was documented in 2021 approximately 1.8 miles (2.9 kilometers) north of the project area along Rosamond Boulevard during previous protocol surveys associated with the WRESC (Blackhawk 2021). The pair was nesting in a native Joshua tree and foraging in native open creosote bush scrub with Joshua trees intermixed. Subsequent surveys conducted in 2021 confirmed nest failure (Blackhawk 2021). This pair was not reported in the CNDDB records obtained during the previous literature review (Blackhawk 2021). The nearest CNDDB known record of Swainson's hawk is approximately 8 miles west of the WRESC site and 3 miles north of the project area (CDFW 2024b). The locations of these sightings are presented in Figure 5, Swainson's Hawk Sightings and Nest Locations.

Protocol-level Swainson's hawk surveys conducted in 2023 (WSP 2024) confirmed the presence of the nest reported in Blackhawk (2021) approximately 1.8 miles (2.9 kilometers) north of the project area (Figure 5, Swainson's Hawk Sightings and Nest Locations). The nest was monitored throughout the 2023 nesting season and was determined to be successful, fledging two offspring (WSP 2024). Two additional Swainson's hawk observations were also recorded in the survey area: one south of an existing water tank on a rocky outcrop north of Dawn Road and between 20th Street West and 30th Street, West, and the second located south of Rosamond Boulevard and east of 140th Street West (Figure 5, Swainson's Hawk Sightings and Nest Locations). It is possible that these sightings were of the same nesting pair already identified, as there were no other signs of nesting activity or behavior in the surrounding area (WSP 2024).

4.2 Focused Surveys

Per the CDFW protocol, qualified WSP biologists conducted 10 focused surveys between March and June 2024. Table 1 presents the Swainson's hawk survey period dates, personnel, and positive Swainson's hawk observations.

Table 1. Swainson's Hawk Survey Dates and Personnel

Survey Date	Survey No.	Survey Period	Personnel	Species Observed
March 18-19	1	I	NM, MW, TC, EU, MB	No
March 25-27	2	I	NM, TC, EU, MB, SW	Yes
April 1-4	3	II	NM, MP, EU, MB, MB2, PC	Yes
April 12	4	II	MW, MP, TC, EU, MB, MB2, CS	No
April 23-24	5	II	NM, MW, MP, TC, EU, MB MB2	No
May 7 -8	6	III	NM, MW, EU, MB MB1	Yes
May 15-17	7	III	TC, SW	No
May 21	8	III	MW, TC, SW, MB	No
June 5	9	IV	TC, SW	Yes
June 12	10	IV	NM, TC, EU, MB, MB2, SW	No
June 19	11	IV	TC, SW	No

Key: CS= Ciara Shirley; EU=Emily Urquidi; JG=John; MP= Marshall Paymard MB=Melanie Bukovac; MB2=Melissa Bukovac
NM=Nathan Moorhatch; PC=Phil Clevinger; SC=Scott Crawford; SW = Sarah Williams; TC=Tim Chumley

Five Swainson's hawk adults were documented in the survey area during the 2024 focused surveys. Swainson's hawk were recorded on March 26, April 4, and April 10, 2024. These individuals were observed flying overhead or perched on rocks and trees.

On June 5, 2024, a pair of Swainson's hawks were incidentally identified near the nest reported by Blackhawk (2021) and WSP (2024), which is located offsite (not included in report figures). Nest activity was not monitored during the 2024 protocol surveys, as the nest was not in the survey area. This pair is possibly the same pair identified during previous Swainson's hawk surveys. As there was no other recorded nest activity within the survey area, the six identified Swainson's hawks observed during the 2024 protocol survey and incidental observation may be the same nesting pair foraging within the survey area.

Suitable foraging habitat (creosote bush- and saltbush-dominated vegetation communities) is available over a large portion of the additional project elements; however, nesting opportunities are limited to areas that support suitable nesting trees (e.g., large western Joshua trees) and landscaping and ornamental plantings, often in the form of windrows of the surrounding rural residences.

Focused surveys resulted in mapping a total of 119 nest sites within the 0.5-mile buffer surrounding the project site. One nest was of suitable shape and size for Swainson's hawk. Of the remaining identified

nest sites, two were occupied by red-tailed hawk (*Buteo jamaicensis*) and 83 nests were occupied by common raven (*Corvus corax*). The occupants of the remaining nest sites were unknown. Red-tailed hawks and common ravens are considered competitors of the Swainson's hawk and were observed in an assortment of native and non-native trees, on electrical transmission line distribution poles, lattice towers, and other man-made structures within the survey area.

5.0 DISCUSSION AND CONCLUSIONS

Based on the detection of Swainson's hawk within the vicinity of the proposed project, the presence of both suitable foraging and nesting habitat, and the availability of contiguous suitable Swainson's hawk habitat, the construction and operations of the project has the potential to adversely affect Swainson's hawks. Based on the requirements of the *Swainson's Hawk Survey Protocols, Impact Avoidance, and Minimization Measures for Renewable Energy Projects in the Antelope Valley of Los Angeles and Kern Counties, California*, if an active nest site is found within 0.5 miles of the proposed project, a Swainson's Hawk Monitoring and Mitigation Plan must be prepared by a qualified biologist approved by the CEC's Compliance Project Manager (CPM) in consultation with the CDFW prior to construction to reduce temporary and permanent impacts to less than significant levels (CEC and CDFW 2010). Since the project site is more than 0.5 miles (1.8 miles) from the nearest known nest location, a Swainson's Hawk Monitoring and Mitigation Plan is not required. Prior to initial vegetation removal and soil disturbance, WSP recommends a Worker Environmental Awareness Program (WEAP) be completed for all project personnel. The WEAP should specifically address Swainson's hawk and the impact avoidance and minimization measures proposed or required to avoid and/or minimize potential project-related impacts. A pre-construction survey is recommended prior to initial vegetation removal and/or soil disturbance to confirm that no Swainson's hawks have established a nest within the project site. Also, biological monitoring is recommended to supervise construction activities near Swainson's hawk foraging habitat.

6.0 REFERENCES

Blackhawk Environmental, Inc. (Blackhawk). 2021. Hydrostor, Inc. Gem Energy Storage Center Application for Certification Project. Focused Swainson's Hawk Survey Report. Willow Springs, Kern County, California. September 2, 2021.

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Woodbridge B., K.K. Finley, and P.H. Bloom. 1995. Reproductive Performance, Age Structure, and Natal Dispersal of Swainson's Hawks in the Butte Valley, California. Journal of Raptor Research 29:187–192.

WSP USA Environment & Infrastructure Inc. (WSP). 2024. Willow Rock Energy Storage Center Project Results of Swainson's Hawk Focused Surveys. February.

7.0 LIMITATIONS

This document has been prepared for the exclusive use of Hydrostor Inc. 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.

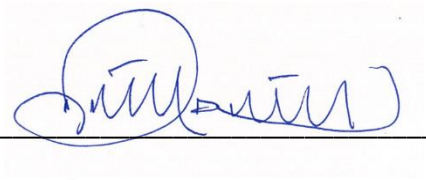
The findings and conclusions documented in this report have been prepared for the specific application to this project and have been developed in a manner consistent with that level of care normally exercised by environmental professionals currently practicing under similar conditions in the jurisdiction.

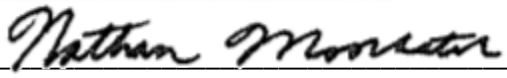
With respect to regulatory compliance issues, regulatory statutes are subject to interpretation. These interpretations may change over time, and should be reviewed.

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:  Date: 08/022024

Appendix A Figures

WRESC Site

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

KEY MAP

0 5 10

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REFERENCE(S)

1. COORDINATE SYSTEM: NAD 1983 STATEPLANE CALIFORNIA V FIPS 0405 FEET
2. 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

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GEM A-CAES LLC

CONSULTANT
wsp

YYYY-MM-DD	2024-07-30
DESIGNED	MK
PREPARED	MK
REVIEWED	SC
APPROVED	VG/LL

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
SWAINSON'S HAWK FOCUSED SURVEY

TITLE
REGIONAL LOCATION MAP

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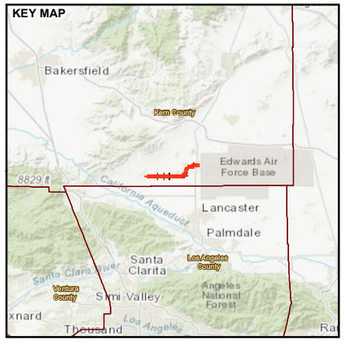
WRESC Site

LEGEND

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

KEY MAP



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CONSULTANT
wsp

YYYY-MM-DD	2024-07-30
DESIGNED	MK
PREPARED	MK
REVIEWED	SC
APPROVED	VG/LL

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
SWAINSON'S HAWK FOCUSED SURVEY

TITLE
USGS TOPOGRAPHIC MAP

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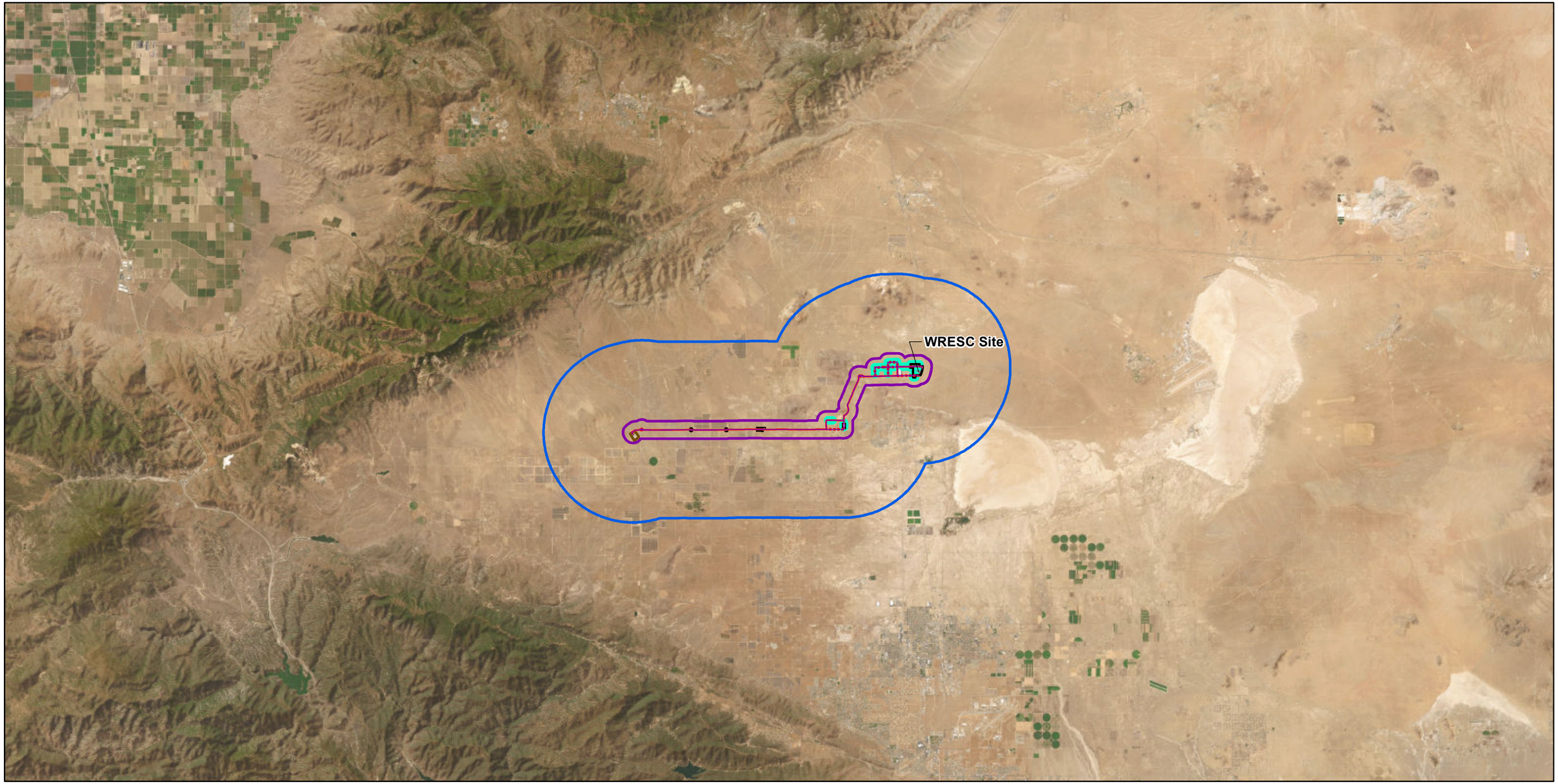
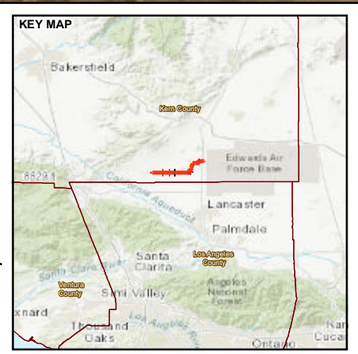


LEGEND

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
- Half-Mile Around Project Parcels and Transmission Line
- 5 Mile Around Project Parcels and Transmission Line

KEY MAP



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CLIENT
GEM A-CAES LLC

CONSULTANT
wsp

YYYY-MM-DD	2024-07-31
DESIGNED	MK
PREPARED	MK
REVIEWED	SC
APPROVED	VG/LL

NOTE(S)
1. PROJECT ROW IS A 62.5 FT BUFFER ON EITHER SIDE OF THE TRANSMISSION LINE.

REFERENCE(S)
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SOURCE: ESRI, MAXAR, EARTHSTAR GEOGRAPHICS, AND THE GIS USER COMMUNITY

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
SWAINSON'S HAWK FOCUSED SURVEY

TITLE
LOCAL VICINITY MAP

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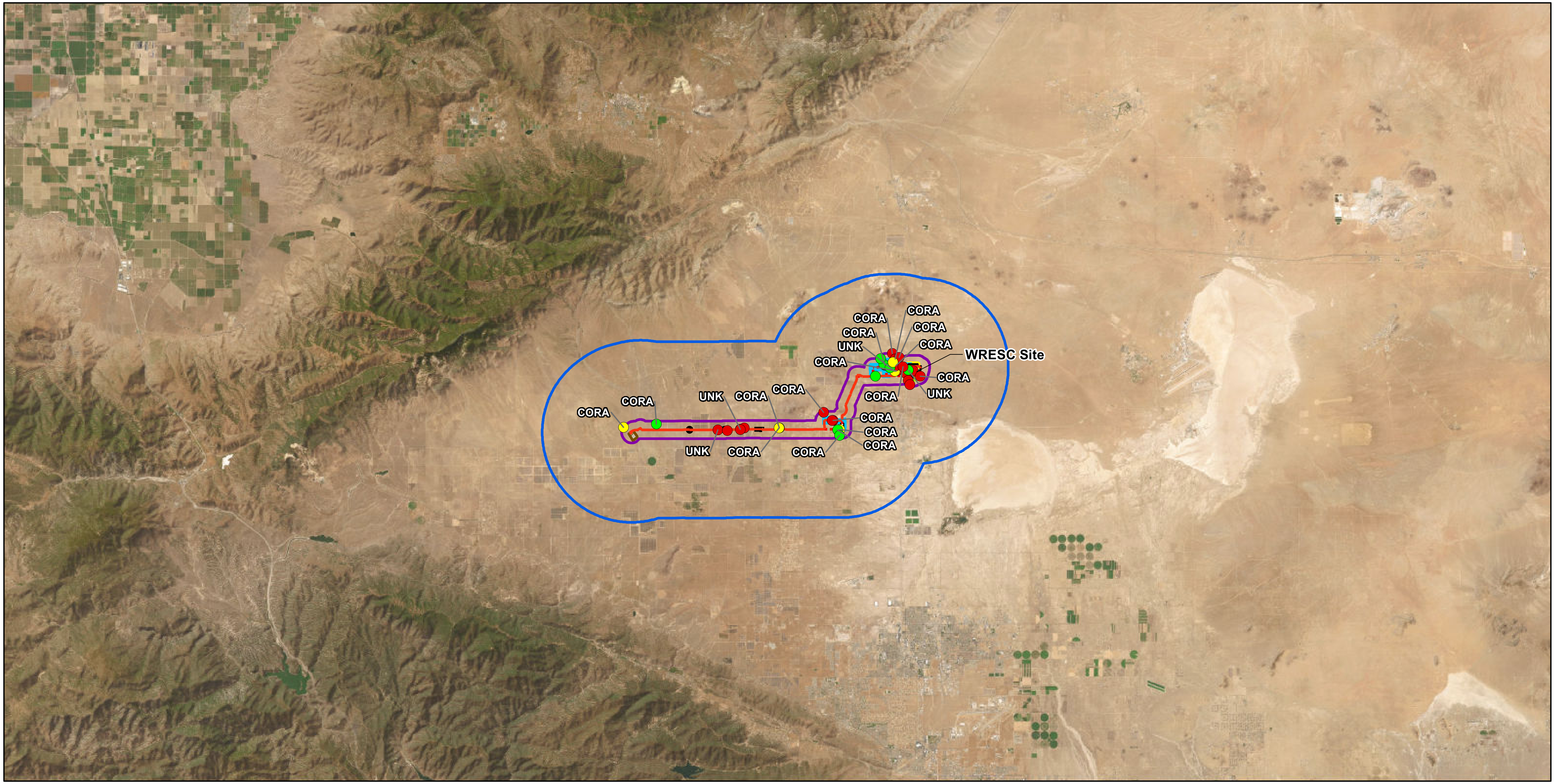

LEGEND

Nest Observation Location (2024)

- 🟢 Active
- 🔴 Inactive
- 🟡 Unknown

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 Area
- Project Boundary
- SCE Whirlwind Substation
- Half-Mile Buffer Around Project Parcels and Transmission Line
- 5 Mile Around Project Parcels and Transmission Line

2024 Project Areas

- Gen-Tie Transmission Line Variances
- P2 North
- P2 South

KEY MAP

0 5 10

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REFERENCE(S)

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2. 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
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CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
SWAINSON'S HAWK FOCUSED SURVEY

CONSULTANT

wsp

YYYY-MM-DD	2024-07-31
DESIGNED	MK
PREPARED	MK
REVIEWED	SC
APPROVED	VG/LL

TITLE
NEST LOCATIONS AND ACTIVITY

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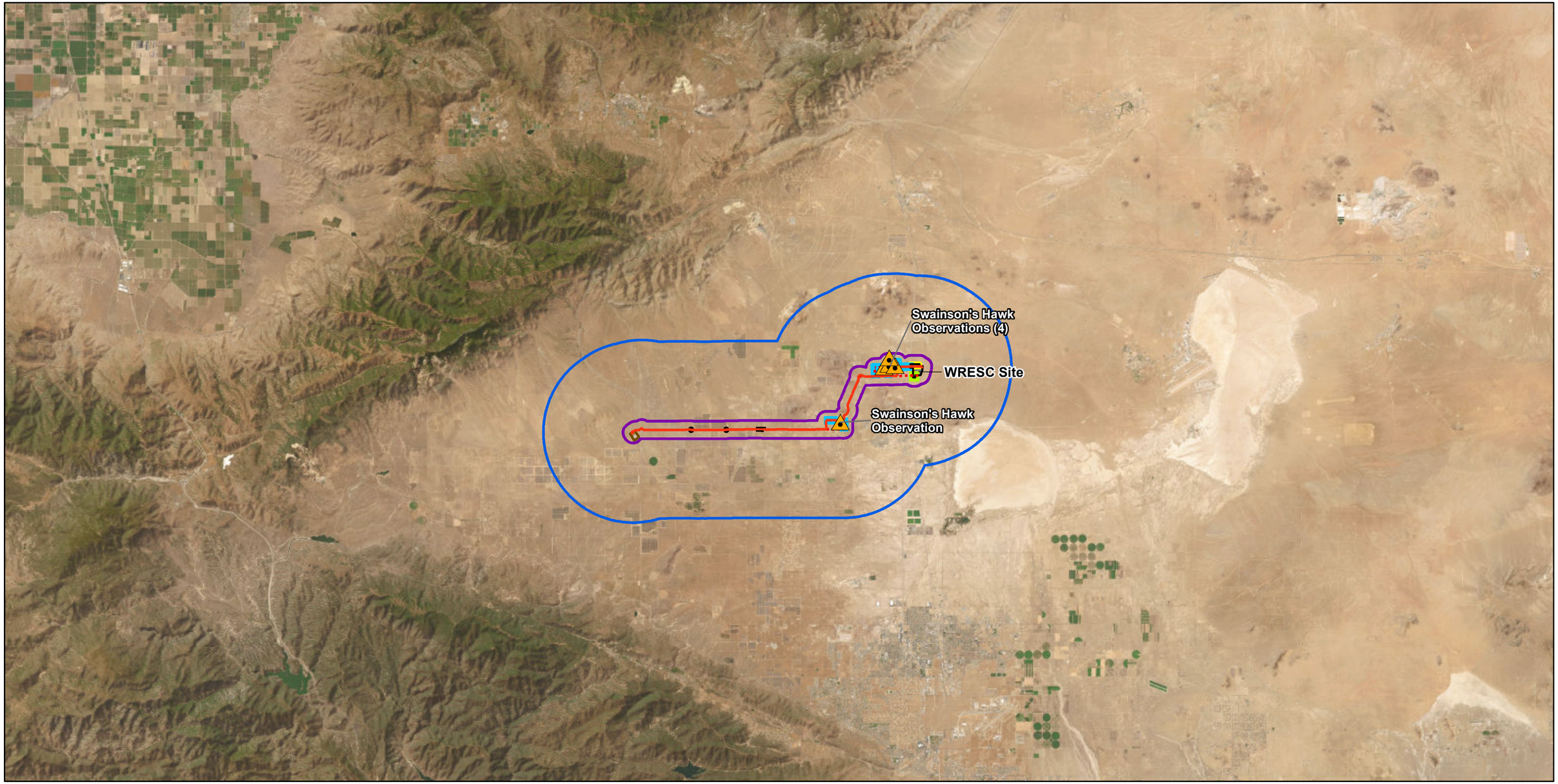


LEGEND

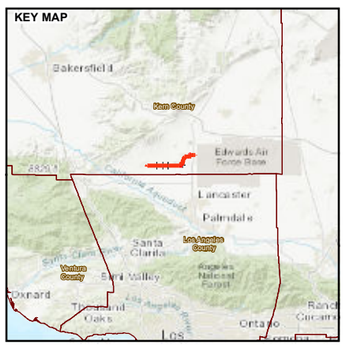
- Swainson's Hawk Observation (2024)

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
- SCE Whirlwind Substation
- Half-Mile Around Project Parcels and Transmission Line
- 5 Mile Around Project Parcels and Transmission Line

2024 Project Areas
- Gen-Tie Transmission Line Variances
- P2 North
- P2 South

KEY MAP



0 5 10
1:350,000 MILES

REFERENCE(S)
1. COORDINATE SYSTEM: NAD 1983 STATEPLANE CALIFORNIA V FIPS 0405 FEET
2. 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
SOURCE: ESRI, MAXAR, EARTHSTAR GEOGRAPHICS, AND THE GIS USER COMMUNITY

CLIENT
GEM A-CAES LLC

CONSULTANT
wsp

YYYY-MM-DD	2024-07-31
DESIGNED	MK
PREPARED	MK
REVIEWED	SC
APPROVED	VG/LL

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
SWAINSON'S HAWK FOCUSED SURVEY

TITLE
SWAINSON'S HAWK OBSERVATION LOCATIONS

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

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

0 1in

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