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WILLOW ROCK ENERGY STORAGE CENTER
DELINEATION OF JURISDICTIONAL WATERS

WILLOW SPRINGS, KERN COUNTY, CALIFORNIA

Prepared for:
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1.0 INTRODUCTION

WSP USA Environment & Infrastructure Inc. (WSP) was contracted by GEM A-CAES LLC (GEM), a subsidiary of Hydrostor, Inc. (Hydrostor), to conduct a jurisdictional delineation and prepare a report for the Willow Rock Energy Storage Center (project) located in Kern County, California. This report presents regulatory framework, methods, and results of a delineation of jurisdictional waters, wetlands, and associated riparian habitat potentially impacted by the project. All figures referenced in this report are provided in Appendix A.

1.1 Purpose

The purpose of the delineation is to determine the extent of state and federal jurisdiction within the project area subject to regulation by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA), Regional Water Quality Control Board (RWQCB) under Section 401 of the CWA and Porter Cologne Water Quality Control Act, and California Department of Fish and Wildlife (CDFW) under Section 1602 of the California Fish and Game Code.

1.2 Project Description

The proposed project includes the development of an energy storage facility (approximately 190 acres) and approximately 20 miles (300 acres) of electrical transmission lines connecting to the existing Southern California Edison Whirlwind Substation. The total area, including the energy storage facility, transmission lines and their corridor (125-foot buffer), is approximately 490 acres and will be herein collectively referred to as the "project site" unless otherwise specified. In general, GEM proposes to construct and operate a nominal 500-megawatt (MW) advanced compressed air energy storage (A-CAES) facility deploying Hydrostor's proprietary A-CAES technology. The site will be designed to store 500 MW for up to 14 hours and deliver up to 4,000 megawatt hours (MWh) over an 8-hour period when discharging.

1.3 Project Location and Topography

The project site is located on private property in and around the rural community of Ansel, just north of State Route (SR) 138, south of SR 58, east of Interstate 5, and west of Edwards Air Force Base (Figure 1, Regional Location).

The energy storage facility is located on the 7.5-minute Soledad Mountain, California, U.S. Geological Survey (USGS) topographic quadrangle (topo quad). The transmission line route and variances are on the Soledad Mountain, Rosamond, Fairmont Butte, and Little Buttes topo quads. The project site is located within portions of Sections 31, 32, and 33 of Township 10 North and Range 12 West; portions of Sections 36 of Township 10 North and Range 13 West; portions of Sections 1, 2, 11, 14, 15, 16, 17, and 18 of Township 9 North and Range 13 West; portions of Sections 13, 14, 15, 16, 17, and 18 of Township 9 North and Range 14 West; and portions of Sections 13, 14, and 23 of Township 9 North and Range 15 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) in the southeast corner of the transmission line at the corner of Rosamond Boulevard and 65th Street W to 2,720 feet (830 meters) along Dawn Road, just south of an existing water tank facility (Figure 3, Local Vicinity).

2.0 METHODS

Prior to conducting delineation fieldwork, the following literature and materials were reviewed:

- Current and historical aerial photographs (Google Earth 2023) of the study area at a scale of 1:1800 to determine the potential locations of jurisdictional waters or wetlands
- USGS topographic maps to determine the presence of any "blue line" drainages or other mapped water features (USGS 2023a)
- U.S. Department of Agriculture (USDA) soil mapping data (USDA 2023)
- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) map to identify areas mapped as wetland features (USFWS 2023)
- National Hydrography Dataset (USGS 2023b)

Field surveys were conducted by WSP Senior Biologist Scott Crawford on October 3 and 4, 2023, within the project site, including a 500-foot survey buffer, herein referred to as the jurisdictional delineation "study area". All portions of the study area identified during the literature review as potentially jurisdictional features were walked to determine if the flows associated with the study area meet the minimum criteria to be considered jurisdictional by the USACE, RWQCB, and CDFW. Visual observations of vegetation types, changes in hydrology, soil, and culvert locations were used to locate areas for evaluation. Weather conditions during delineation fieldwork was conducive for surveying with conditions, including clear skies, winds ranging from 0 to 2 miles per hour, with temperatures of 57 to 61 degrees Fahrenheit during the surveys.

If present, USACE regulated waters of the United States (WOTUS) and RWQCB waters of the State of California (WSC) were delineated according to the methods outlined in *A Field Guide to the Identification of the Ordinary High-Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008a). The extent of WOTUS was determined based on indicators of an OHWM. The OHWM width was measured at points wherever clear changes in width occurred.

Potential federally regulated wetlands were identified based on the *Wetlands Delineation Manual* (USACE 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008b). Additional data were recorded to determine if an area fulfilled the wetland criteria parameters. Three criteria must be fulfilled to classify an area as a wetland under the jurisdiction of the USACE: (1) a predominance of hydrophytic vegetation, (2) the presence of hydric soils, and (3) the presence of wetland hydrology. State wetlands, if present,

were delineated using the methodology per the 1987 Manual and Supplement and modified to allow for areas devoid of hydrophytic vegetation to be considered a wetland per the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (Procedures).

RWQCB jurisdictional areas identified as WSC were determined by measuring the lateral extent of the OHWM indicators. OHWM was indicated by shelving, changes in sediment texture, and changes in vegetation.

CDFW jurisdictional streambed was defined from measuring the lateral extent of the top of banks, extending to the dripline of associated riparian vegetation, if present.

To determine jurisdictional boundaries, the surveyor walked the length of the drainage within the defined study area and recorded the centerline with a Trimble GeoXH global positioning system. The width of the drainage was determined by the OHWM indicators at locations where transitions were apparent. Other data recorded included bank height and morphology, substrate type, and vegetation type within the streambed, including adjacent riparian vegetation, if present. Areas that lacked evidence of hydrophytic vegetation and wetland hydrology did not receive soil testing because indicative wetland parameters were absent. Upon completion of fieldwork, all data collected in the field were incorporated into a geographic information system (GIS). The GIS was then used to quantify the extent of jurisdictional waters and prepare graphical representations of the data.

3.0 ENVIRONMENTAL SETTING

3.1 Existing Conditions

The study area comprises desert regions with pre-existing access routes (paved and unpaved), ephemeral streambeds, and washes. Scattered throughout this area are multiple small residential developments. Evidence of offroad highway vehicle usage and recreational shooting is prevalent across the study area. Moreover, illegal dumping sites are visibly present within portions of the study area.

3.2 Topography

The study area features mostly flat terrain, with a few elevated areas in the north. Elevations within the study area range from 2,450 feet (746 meters) above mean sea level in the southern sector to 2,770 feet (844 meters) above mean sea level in the northernmost part. Generally, elevations in the study area decrease in a southerly direction.

3.3 Hydrology

In the region, despite generally low rainfall averages, precipitation often arrives in the form of intense, brief storms, leading to flash floods in washes and canyons. The study area is situated within an endorheic basin, which is an area devoid of an outlet to the ocean. Water in these basins

follows processes of evaporation, infiltration, or accumulation in salt flats. Ephemeral streams and washes are notably present in the study area, remaining dry for extended periods but swiftly filling during and after rain events. These ephemeral streambeds and washes primarily drain towards the southeast direction.

The study area is in the Northern Mojave basin (HUC 180902) and falls within the Antelope-Fremont Valleys subbasin (HUC 18090206). It encompasses four distinct watersheds: Sacatara Creek-Kings Canyon (HUC 1809020613), Cottonwood Creek-Tylerhorse Canyon (HUC 1809020618), Tropico Hill-Oak Creek (HUC 1809020617), and Rosamond Lake (Figure 4, Hydrology Map).

3.4 Precipitation

The annual average total precipitation at the nearby Lancaster, CA WETS Station is 6.00 inches (15 centimeters), as per data from the past 20 years (http://agacis.rcc-acis.org). Over the last 5 years, the yearly average total precipitation has been recorded at 6.60 inches (16.8 centimeters). According to climatological data, the last recorded rainfall prior to the jurisdictional delineation was recorded on September 21, 2023 at 0.01 inches (0.03 centimeters).

3.5 Vegetation

The study area encompasses a total of 11 vegetation communities and land cover types, which comprises creosote bush scrub, cheesebush scrub, developed/disturbed, allscale scrub, creosote bush-white bursage scrub, rubber rabbitbrush scrub, Joshua tree woodland, tamarisk thickets, non-native grassland and forbes, white bursage scrub, and needleaf rabbitbrush scrub (Figure 5, Vegetation and Land Cover Types). The study area site features a diverse range of desert vegetation cover, ranging from sparse to moderately high densities, interspersed with disturbed areas, developed lands, and both dirt and paved roads. Notably, no hydrophytic vegetation was identified within any drainage feature within the study area. A small patch of Tamarisk thickets was observed along the Rosamond Boulevard ROW as a man-made windrow. Although Tamarisk is a FAC species per the National Wetland Plant List, it is located along a disturbed roadside area, and not within a drainage feature.

3.6 National Wetlands Inventory (NWI)

The USFWS is the principal federal agency that provides information to the public on the extent and status of the nation's wetlands. The USFWS has developed a series of maps, known as the NWI to show wetlands and deepwater habitat. This geospatial information is used by federal, state, and local agencies, academic institutions, and private industry for management, research, policy development, education, and planning activities. The NWI program was neither designed nor intended to produce legal or regulatory products; therefore, wetlands and non-wetland waters identified by the NWI program are not always considered jurisdictional waters if present.

The NWI Mapper (USFWS 2023) was accessed online to examine mapped wetlands or riverine areas within the study area. Numerous drainages outlined in the NWI were observed in the field,

while some were determined to be absent (Figure 6, NWI Data). All water features identified in the NWI Mapper and confirmed during field assessments are categorized as R4SBJ, Riverine, Intermittent, Streambed, excavated (Seasonally Flooded) based on the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979).

3.7 National Hydrography Dataset

The National Hydrography Dataset (NHD) is a comprehensive dataset that provides information about surface water features, such as rivers, lakes, and streams. It is maintained by the USGS and is widely used for various applications, including environmental research, resource management, and mapping.

The NHD includes information on the flow and relationships between different water features, helping to create a detailed and interconnected representation of the nation's hydrography. It is important to note that the dataset has its limitations in accuracy and should not be used to determine jurisdiction of waters. The NHD was accessed online to aid in the identification of potentially jurisdictional waters. Some of the NHD was determined to be jurisdictional and many were confirmed during the field assessment to be absent or non-jurisdictional swale features.

3.8 Soils

In the study area, 27 soil types were delineated and mapped (USDA 2023b; Figure 7, USDA Soils). The identified soil types include the following: Adelanto coarse sandy loam, 2 to 5 percent slopes; Adelanto loamy sand, 2 to 5 percent slopes; Arizo gravelly loamy sand, 0 to 5 percent slopes; Arujo sandy loam, 9 to 15 percent slopes; Cajon loamy sand, 0 to 2 percent slopes; Cajon loamy sand, 0 to 5 percent slopes; Cajon loamy sand, 2 to 9 percent slopes; Cajon loamy sand, loamy substratum, 0 to 2 percent slopes; Cajon sand, 5 to 15 percent slopes; DeStazo sandy loam, 0 to 2 percent slopes; Garlock loamy sand, 2 to 9 percent slopes; Hesperia fine sandy loam, 0 to 2 percent slopes; Hesperia fine sandy loam, 2 to 5 percent slopes; Hesperia loam, 0 to 2 percent slopes; Hesperia loamy fine sand, 0 to 2 percent slopes; Hesperia loamy fine sand, 0 to 2 percent slopes, hummocky; Hi Vista sandy loam, 2 to 9 percent slopes; Mohave coarse sandy loam, 2 to 5 percent slopes; Muroc sandy loam, 2 to 9 percent slopes; Porterville cobbly clay, 5 to 9 percent slopes; Rock land; Rock outcrop; Rosamond clay loam; Rosamond fine sandy loam; Rosamond loam; Rosamond loamy fine sand, hummocky; Rosamond loamy fine sand, slightly saline; Rosamond silty clay loam; Rosamond silty clay loam, saline-alkali; and Torriorthents-Rock outcrop complex, very steep.

None of the soils listed above are considered hydric and are categorized as either well-drained, somewhat excessively drained, or excessively drained.

4.0 RESULTS

Based on the field visit, no jurisdictional wetlands were identified and 7 non-wetland ephemeral drainages were documented in the study area (Figure 8, Jurisdictional Waters). The lateral limits (OHWM) of non-wetland waters ranged from 1 to 10 feet and was determined by heterogeneity

in soils, vegetation, and geomorphology compared to the adjacent uplands. Soils within the ephemeral features were composed of well-drained, coarse textures, such as sandy or gravelly materials with low organic content. The total acres of the non-wetland waters contained within the study area summed to 0.85 acres and 8,945 linear feet (2,726 meters). No hydrophytic or native riparian plant species were observed in the study area. Table 1 details the drainage names and their related acreages and linear feet comprised in the study area.

Cottonwood Creek is illustrated in NWI and NHD as coursing through the western portion of the study area. However, field observations indicate that Cottonwood Creek is no longer discernible in those regions; its flow regime has been altered and redirected due to intersections with various elements associated with the construction of the existing wind energy facility sited to the north of the study area.

Conclusions derived from the jurisdictional delineation indicate that the ephemeral waters documented in the study area are likely jurisdictional WSC regulated by the CDFW and RWQCB. No waters were deemed jurisdictional WOTUS as they were ephemeral waters lacking continuous surface connection to traditional navigable waters or territorial seas. Given the episodic flow regime and well-drained soils, both CDFW streambed and RWQCB jurisdictions coincided across the study area.

It should be noted that the USACE, in collaboration with the Environmental Protection Agency as needed, retains the ultimate authority for the final jurisdictional determination of WOTUS, while the RWQCB holds the ultimate authority for the final jurisdictional determination of WSC. Furthermore, the CDFW exercises ultimate discretion in determining its jurisdiction.

Site photos of representative portions of the onsite drainages are included in Appendix B.

Table 1. Potentially Jurisdictional Drainages (Study Area)

Drainage	Type	Jurisdiction	Acres/Linear Feet
A	Ephemeral	WSC/CDFW	0.19/1,037
B	Ephemeral	WSC/CDFW	0.06/897
C	Ephemeral	WSC/CDFW	0.05/287
D	Ephemeral	WSC/CDFW	0.05/2,128
E	Ephemeral	WSC/CDFW	0.3/2,155
F	Ephemeral	WSC/CDFW	0.01/344
G	Ephemeral	WSC/CDFW	0.19/2,094
***TOTAL**		**0.85 acres/8,945 LFT**	

*Totals may not sum due to rounding

5.0 IMPACTS TO JURISDICTIONAL WATERS

No impacts to jurisdictional waters are proposed for the project. All the jurisdictional waters within the study area are situated in the footprint of the transmission line, allowing for avoidance. The placement of the aboveground transmission line will be devised to ensure that the impact footprint is positioned in a manner that prevents any adverse effects on jurisdictional waters. If there are alterations to the current site plans or future changes that may impact drainages, additional measures will likely be required.

5.1 Permitting Requirements

The project site is currently designed to avoid impacts to jurisdictional waters; therefore, no permits are anticipated to be required from the USACE, RWQCB, or CDFW. Details on the Regulatory Framework is provided in Appendix C of this report.

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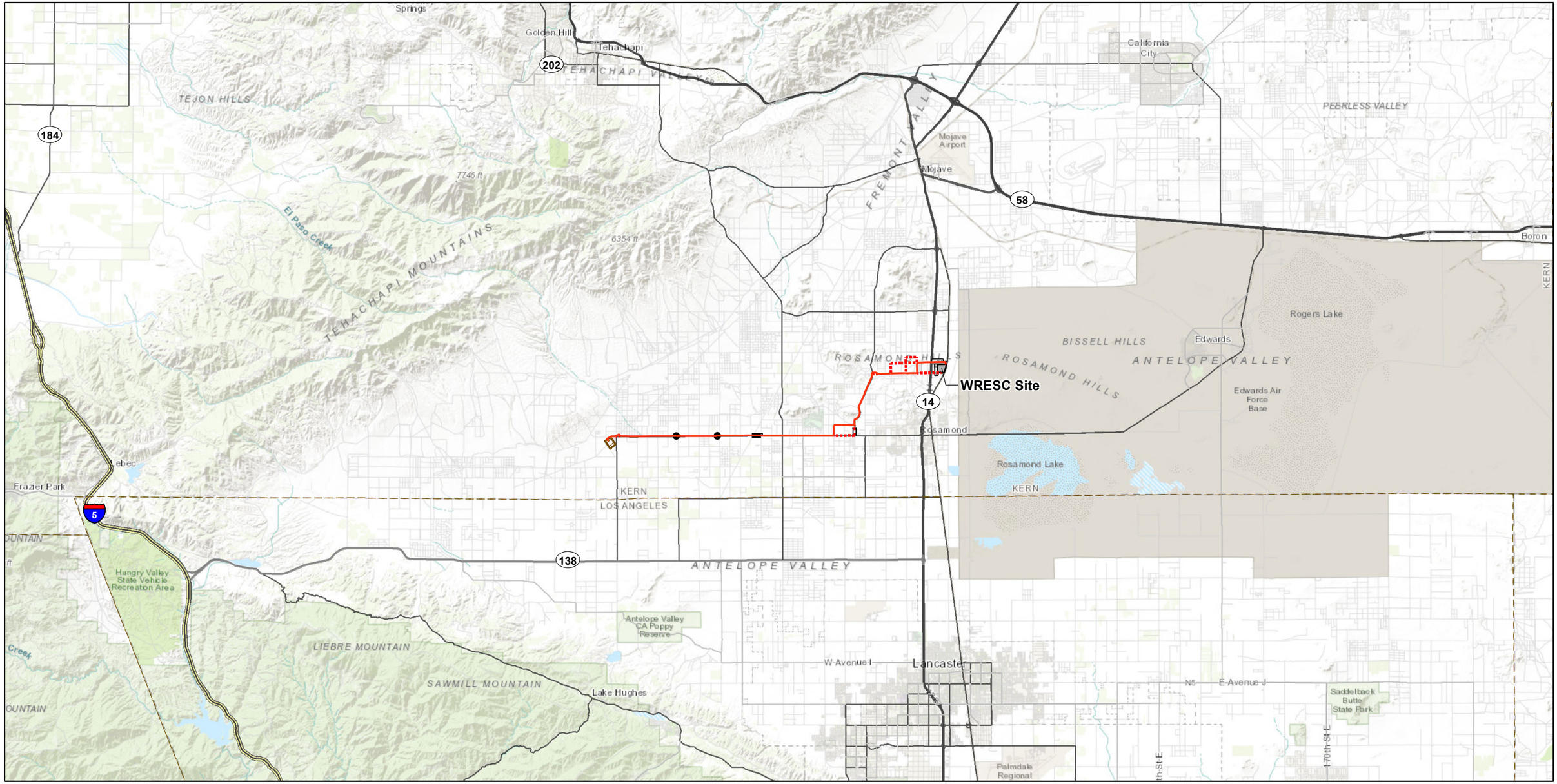
Appendix A JURISDICTIONAL MAPS



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
- Project Boundary
- SCE Whirlwind Substation

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MILES

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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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GEM A-CAES LLC

CONSULTANT
wsp

YYYY-MM-DD	2024-02-29
DESIGNED	MK
PREPARED	MK
REVIEWED	SC
APPROVED	VG/LL

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
BIOLOGICAL RESOURCES ASSESSMENT
JURISDICTIONAL DELINEATION FOCUS SURVEY

TITLE
REGIONAL LOCATION MAP

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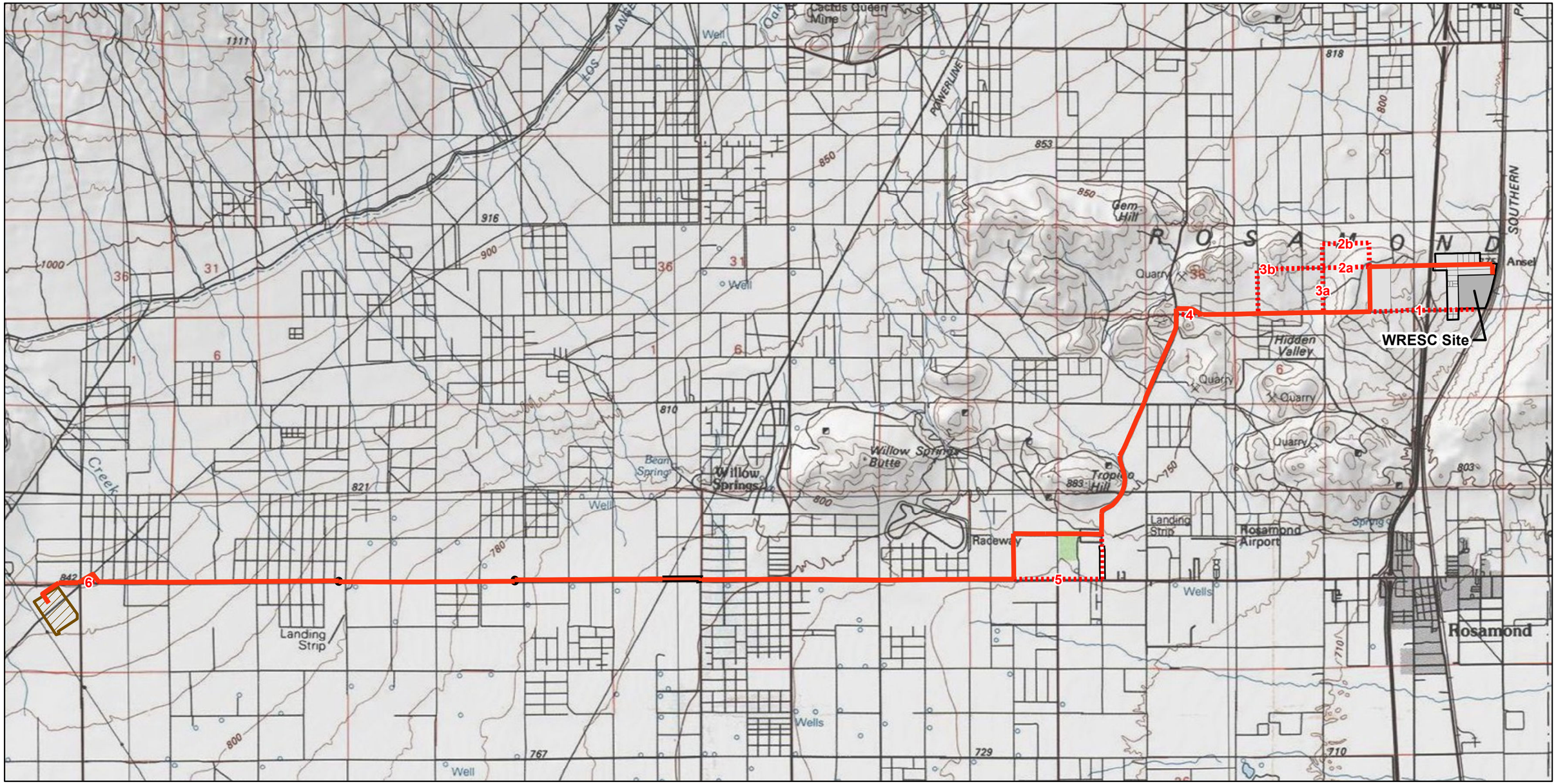


LEGEND

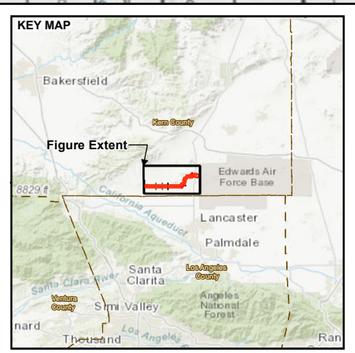
Proposed Transmission Line

- Preferred Route, Aboveground
- Preferred Route, Underground
- Route Options 1-6, Aboveground
- Route Options 1-6, Underground

Project Components

- WRESC Site
- Other Project Parcels
- Project Boundary
- SCE Whirlwind Substation

KEY MAP



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CONSULTANT
wsp

YYYY-MM-DD	2024-02-29
DESIGNED	MK
PREPARED	MK
REVIEWED	SC
APPROVED	VG/LL

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
BIOLOGICAL RESOURCES ASSESSMENT
JURISDICTIONAL DELINEATION FOCUS SURVEY

TITLE
HISTORIC USGS TOPOGRAPHIC MAP

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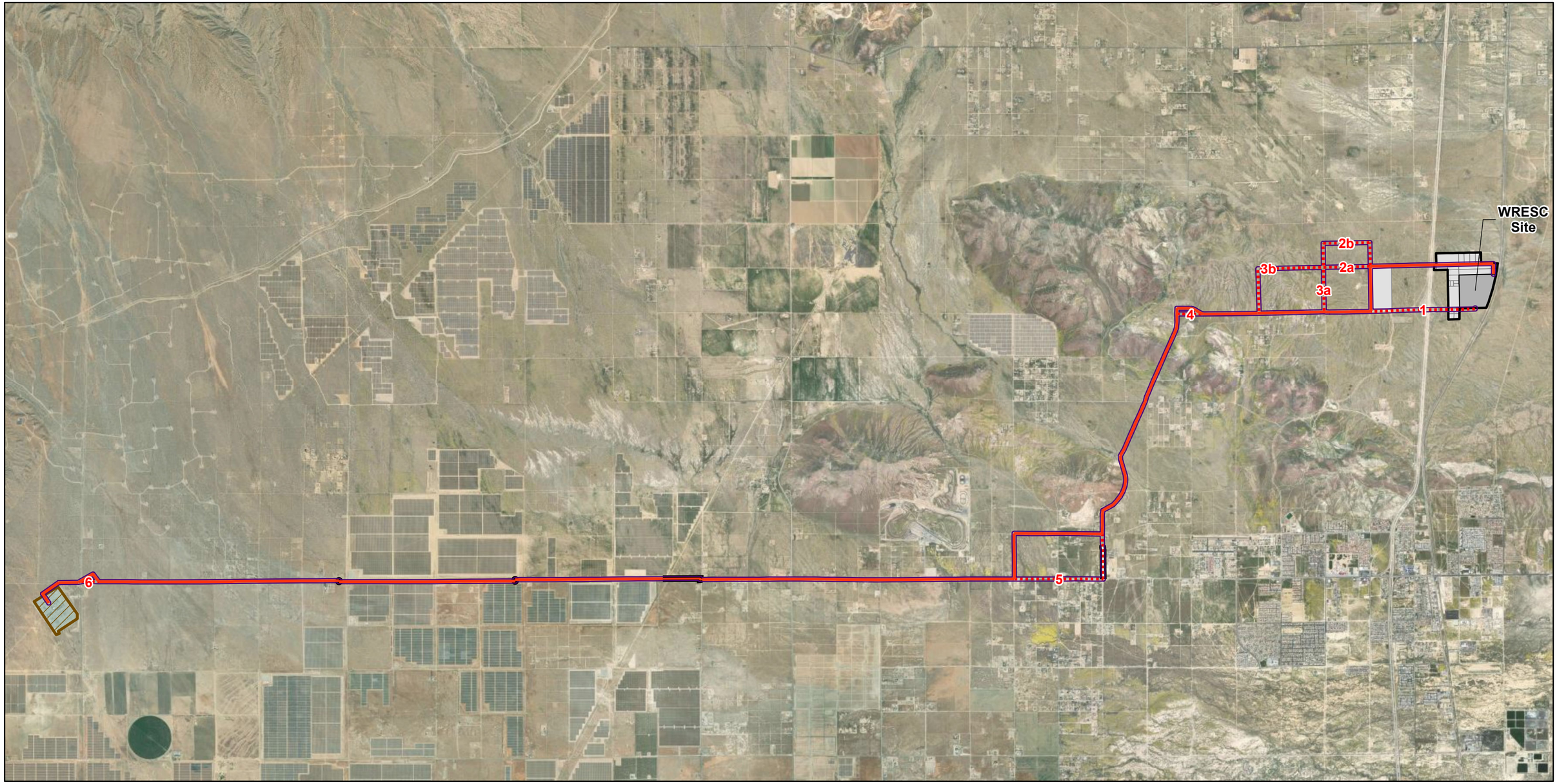


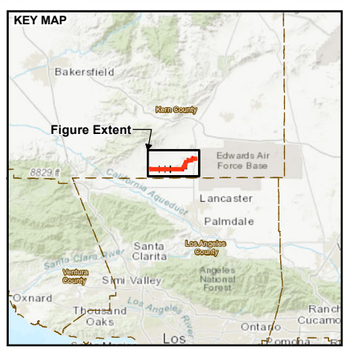
LEGEND

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
- Project Boundary
- SCE Whirlwind Substation

125 ft Buffer Around Transmission Line

KEY MAP



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NOTE(S)
1. PROJECT BOUNDARY IS CALCULATED BASED ON A 125 FT BUFFER AROUND TRANSMISSION LINES AND PROJECT PARCELS.

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SOURCE: ESRI, MAXAR, EARTHSTAR GEOGRAPHICS, AND THE GIS USER COMMUNITY

CLIENT
GEM A-CAES LLC

CONSULTANT
wsp

YYYY-MM-DD	2024-02-29
DESIGNED	MK
PREPARED	MK
REVIEWED	SC
APPROVED	VG/LL

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
BIOLOGICAL RESOURCES ASSESSMENT
JURISDICTIONAL DELINEATION FOCUS SURVEY

TITLE
LOCAL VICINITY MAP

PROJECT NO.	PHASE	REV.	FIGURE
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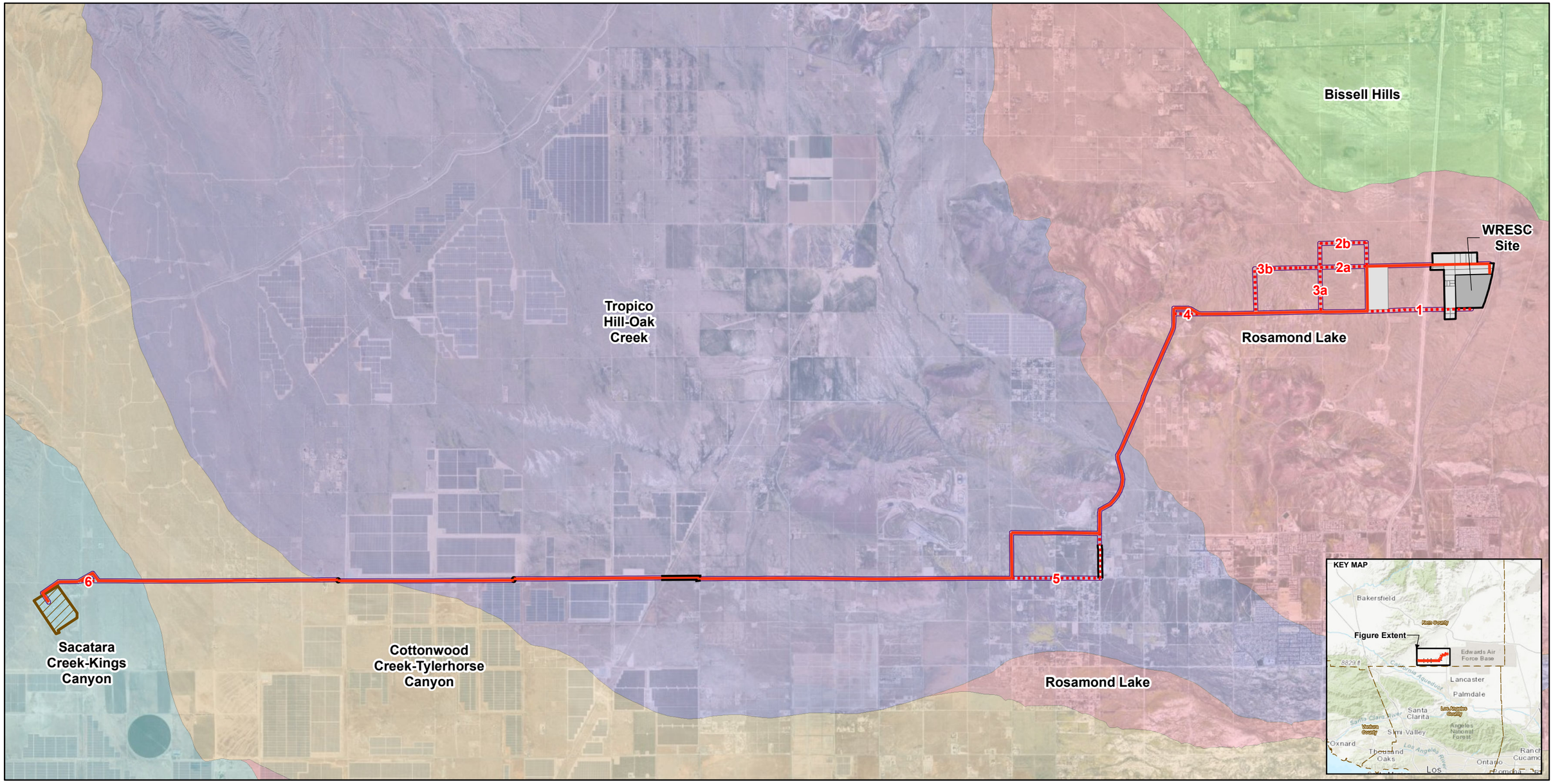

LEGEND

Watershed Boundary (HU-10)
- Bissell Hills
- Cottonwood Creek-Tylerhorse Canyon
- Rosamond Lake
- Sacatara Creek-Kings Canyon
- Tropico Hill-Oak Creek

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
- Project Boundary
- SCE Whirlwind Substation

- 125 Foot Buffer Around Transmission Line

0 1 2 MILES

NOTE(S)
1. PROJECT BOUNDARY IS CALCULATED BASED ON A 125 FT BUFFER AROUND TRANSMISSION LINES AND PROJECT PARCELS.

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

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
BIOLOGICAL RESOURCES ASSESSMENT
JURISDICTIONAL DELINEATION FOCUS SURVEY

TITLE
HYDROLOGIC UNIT MAP

YYYY-MM-DD	2024-02-29
DESIGNED	MK
PREPARED	MK
REVIEWED	SC
APPROVED	VG/LL

PROJECT NO.	PHASE	REV.	FIGURE
31406639.000	01.LBR	0	4

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

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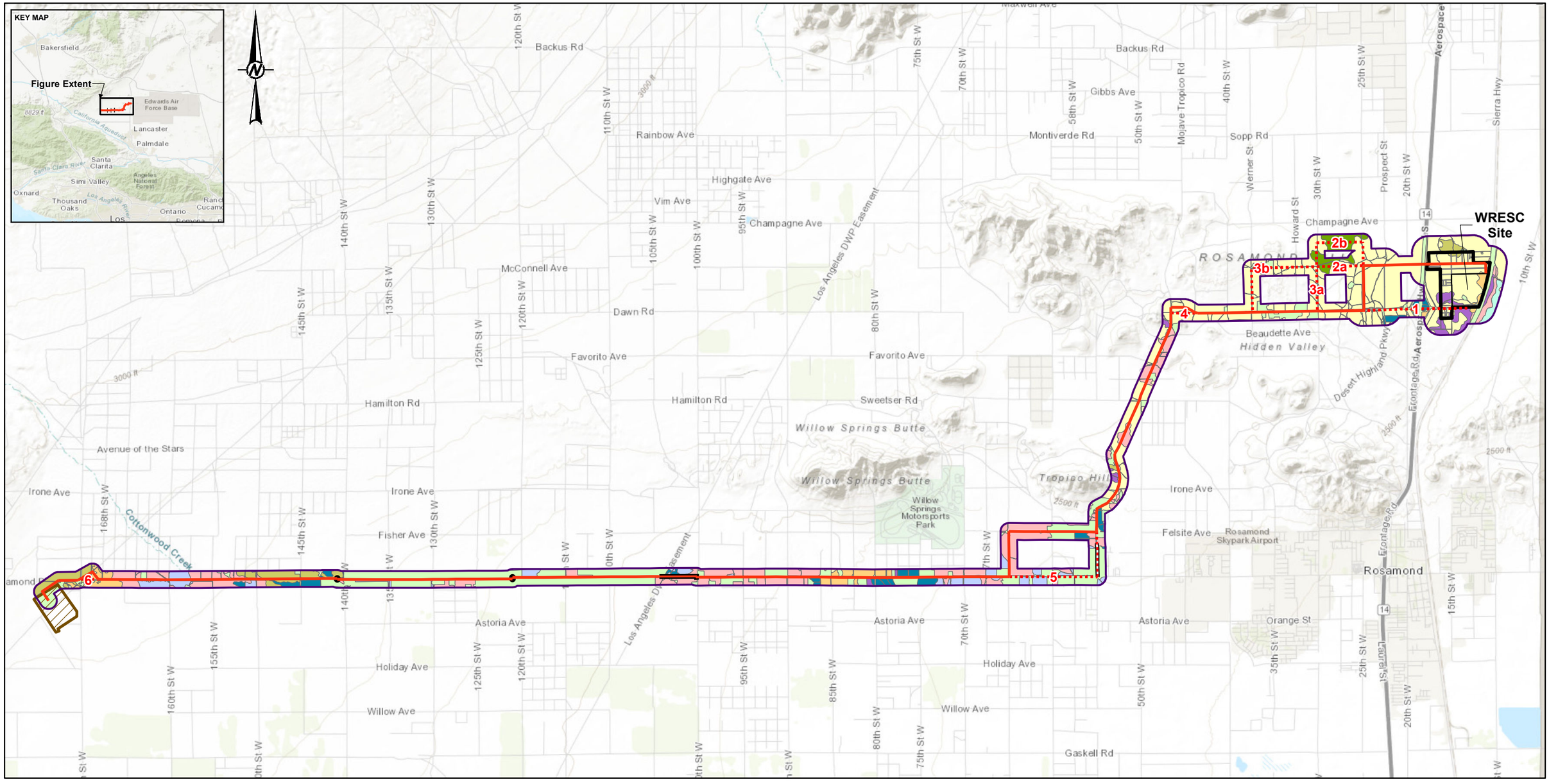

LEGEND

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
- Project Boundary
- SCE Whirlwind Substation
- Project Survey Area

Vegetation Class
- Allscale scrub (ASSC)
- Cheesebush Scrub (CHBS)
- Creosote bush - white bursage scrub (CBWS)
- Creosote bush scrub (CBS)
- Disturbed/Developed (DH-DEV)
- Joshua tree woodland (JTW)
- Needleleaf rabbitbrush scrub (NRS)
- Non-Native (NNGF)
- Non-Native Grassland and Forbes (NNGF)
- Rubber rabbitbrush scrub (RRS)
- Tamarisk Thickets (TTH)
- White Bursage Scrub (WBS)

0 1 2 MILES

NOTE(S)
1. STUDY AREA IS CALCULATED BASED ON A 500 FT BUFFER AROUND TRANSMISSION LINES AND A 1000 FT BUFFER AROUND PROJECT PARCELS.

REFERENCE(S)
1. CADFW - VEGETATION CLASSES
2. COORDINATE SYSTEM: NAD 1983 STATEPLANE CALIFORNIA V FIPS 0405 FEET
3. 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

CLIENT
GEM A-CAES LLC

CONSULTANT
wsp

YYYY-MM-DD	2024-02-29
DESIGNED	MK
PREPARED	MK
REVIEWED	SC
APPROVED	VG/LL

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
BIOLOGICAL RESOURCES ASSESSMENT
JURISDICTIONAL DELINEATION FOCUS SURVEY

TITLE
VEGETATION AND LAND COVER TYPES

PROJECT NO.	PHASE	REV.	FIGURE
31406639.000	01.LBR	0	5

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

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WRESC Site

LEGEND

- 10 Mile Buffer Around Transmission Line
- Route Options 1-6, Aboveground
- Route Options 1-6, Underground

Wetland Type

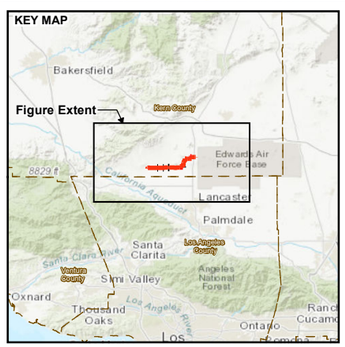
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

Proposed Transmission Line

- Preferred Route, Aboveground
- Preferred Route, Underground

Project Components

- WRESC Site
- Other Project Parcels
- Project Boundary
- SCE Whirlwind Substation



0 1.5 3
MILES

NOTE(S)
1. PROJECT BOUNDARY IS CALCULATED BASED ON A 125 FT BUFFER AROUND TRANSMISSION LINES AND PROJECT PARCELS.

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
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PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
BIOLOGICAL RESOURCES ASSESSMENT
JURISDICTIONAL DELINEATION FOCUS SURVEY

TITLE
NATIONAL WETLANDS INVENTORY - 10 MILE BUFFER AROUND TRANSMISSION LINE

YYYY-MM-DD	2024-02-29
DESIGNED	MK
PREPARED	MK
REVIEWED	SC
APPROVED	VG/LL

PROJECT NO.	PHASE	REV.	FIGURE
31406639.000	01.LBR	0	6

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

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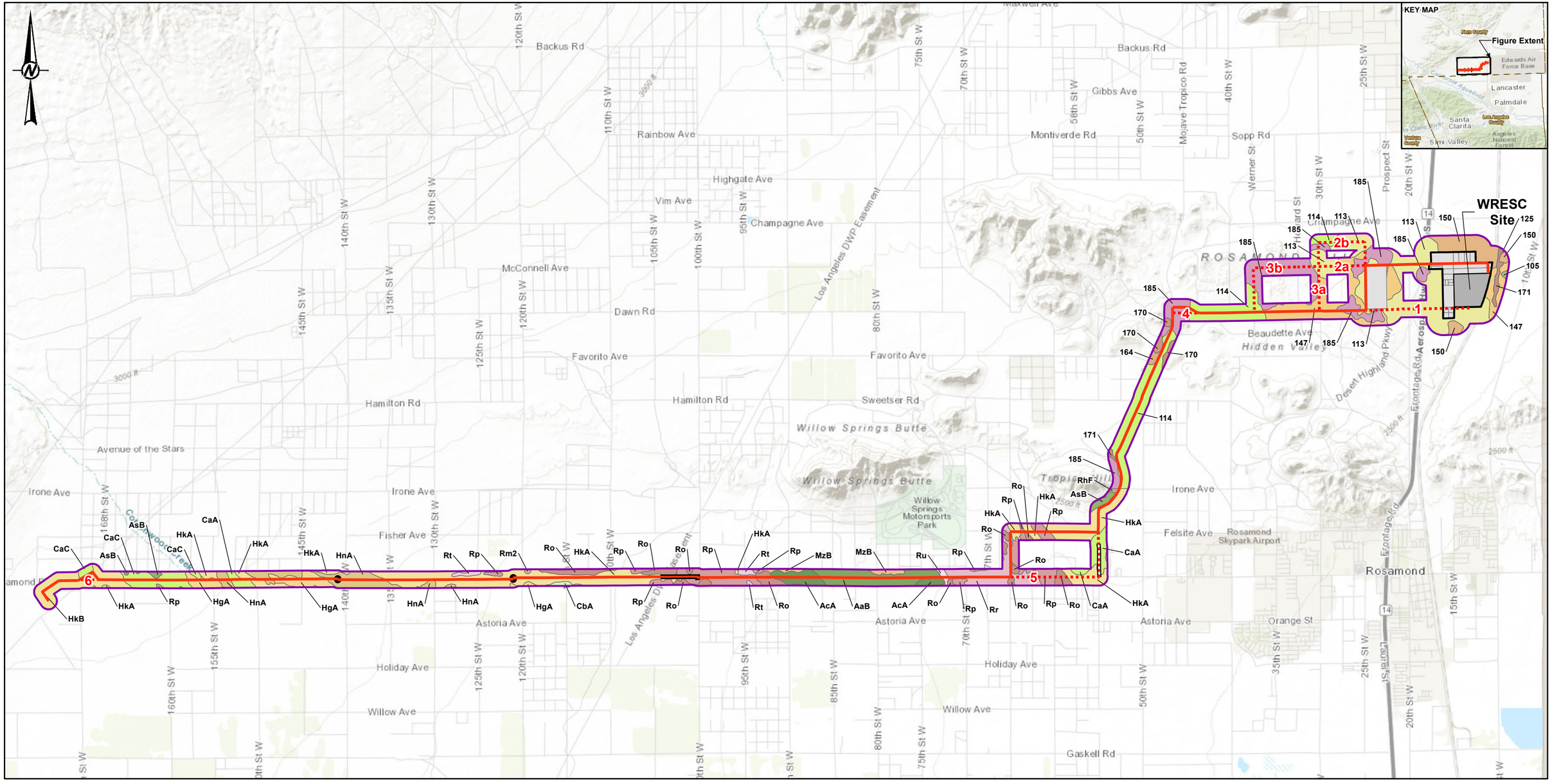

LEGEND

Soils Map Unit

- Adelanto coarse sandy loam (AcA)
- Adelanto loamy sand (AaB)
- Arizo gravelly loamy sand (AsB)
- Arujo sandy loam (105)
- Cajon loamy sand (114, CaA, CaC)
- Cajon loamy sand, loamy substratum (CbA)
- Cajon sand (113)
- DeStazo sandy loam (125)
- Hesperia fine sandy loam (HkA, HkB)
- Hesperia loam (HnA)
- Hesperia loamy fine sand (HgA)
- Hesperia loamy fine sand, hummocky (HgA2)
- Hi Vista sandy loam (147)
- Mohave coarse sandy loam (MzB)
- Muroc sandy loam (150)
- Porterville cobbly clay (164)
- Rock land (RhF)
- Rock outcrop (170)
- Rosamond clay loam (171)
- Rosamond fine sandy loam (Ro)
- Rosamond loam (Rp)
- Rosamond loamy fine sand, hummocky (Rm2)
- Rosamond loamy fine sand, slightly saline (Rr)
- Rosamond silty clay loam (Rt)
- Rosamond silty clay loam, saline-alkali (Ru)
- Torriorthents-Rock outcrop complex (185)

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
- Project Boundary
- Project Survey Area

0 1 2 MILES

NOTE(S)

1. STUDY AREA IS CALCULATED BASED ON A 500 FT BUFFER AROUND TRANSMISSION LINES AND A 1000 FT BUFFER AROUND PROJECT PARCELS.

REFERENCE(S)

1. SSURGO - SOILS DATA
2. COORDINATE SYSTEM: NAD 1983 STATEPLANE CALIFORNIA V FIPS 0405 FEET
3. 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

CLIENT
GEM A-CAES LLC

CONSULTANT
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YYYY-MM-DD	2024-02-29
DESIGNED	MK
PREPARED	MK
REVIEWED	SC
APPROVED	VG/LL

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
BIOLOGICAL RESOURCES ASSESSMENT
JURISDICTIONAL DELINEATION FOCUS SURVEY

TITLE
USDA SOILS

PROJECT NO.	PHASE	REV.	FIGURE
31406639.000	01.LBR	0	7

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

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WRESC Site

A B C D E F G

1 2a 2b 3a 3b 4 5 6

LEGEND

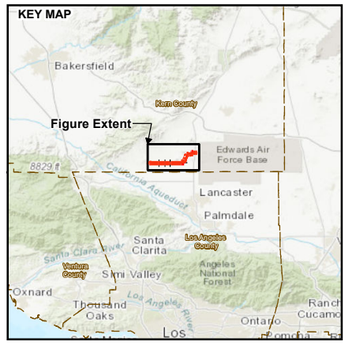
- Jurisdictional Drainages

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
- Project Boundary
- Portions of the Survey Area Not Surveyed
- SCE Whirlwind Substation
- 125 Feet Buffer Around Transmission Line



0 1 2 MILES

CLIENT
GEM A-CAES LLC

CONSULTANT
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YYYY-MM-DD	2024-02-29
DESIGNED	MK
PREPARED	MK
REVIEWED	SC
APPROVED	VG/LL

NOTE(S)
1. PROJECT BOUNDARY IS CALCULATED BASED ON A 125 FT BUFFER AROUND TRANSMISSION LINES AND PROJECT PARCELS.

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

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER
BIOLOGICAL RESOURCES ASSESSMENT
JURISDICTIONAL DELINEATION FOCUS SURVEY

TITLE
JURISDICTIONAL WATERS

PROJECT NO.	PHASE	REV.	FIGURE
31406639.000	01.LBR	0	8

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

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Appendix B SITE PHOTOGRAPHS

Photo 1. No identifiable drainage features observed.

Photo 2. Ephemeral drainage feature commonly observed onsite along the transmission line alignment.

Appendix C REGULATORY FRAMEWORK

REGULATORY FRAMEWORK

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged or fill material in waters of the United States (WOTUS) pursuant to Section 404 of the Clean Water Act (CWA).

Waters of the United States

On August 29, 2023, the U.S. Environmental Protection Agency and the Department of the Army issued a final rule amending the "Revised Definition of 'Waters of the United States," initially published in the Federal Register on January 18, 2023. This amendment aligns the definition of "waters of the United States" with the U.S. Supreme Court's decision in the case of Sackett v. Environmental Protection Agency on May 25, 2023. The Supreme Court deemed certain parts of the January 2023 Rule invalid based on its interpretation of the CWA in the Sackett decision. Consequently, the agencies have modified key elements of the regulatory text to comply with the Court's ruling. The conforming rule, titled "Revised Definition of 'Waters of the United States'; Conforming," was published in the Federal Register and became effective on September 8, 2023.

Furthermore, due to ongoing litigation, the January 2023 Rule is currently not in effect in certain states and for certain parties. The agencies are applying the January 2023 Rule, as amended by the conforming rule, in 23 states, the District of Columbia, and the U.S. Territories. In the remaining 27 states and for specific parties, the agencies are interpreting "waters of the United States" in accordance with the pre-2015 regulatory framework and the Supreme Court's decision in Sackett until further notice. To summarize some of the most applicable highlights, the agencies' new rule defines WOTUS as:

Categories of Jurisdictional Waters

1) Waters which are:

(i) Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(ii) The territorial seas; or

(iii) Interstate waters;

(2) Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (a)(5) of this section;

(3) Tributaries of waters identified in paragraph (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;

(4) Wetlands adjacent to the following waters:

(i) Waters identified in paragraph (a)(1) of this section; or

(ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;

(5) Intrastate lakes and ponds, streams, or wetlands not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section.

Eight exclusions from the definition of "waters of the United States" are codified at paragraph (b), and key terms are defined at paragraph (c). "Adjacent" is defined at (c)(2) as "having a continuous surface connection."

Key Court Rulings

The definition of "waters of the United States" has been shaped by five key Supreme Court decisions. In 1985, United States v. Riverside Bayview Homes, Inc. upheld the USACE's jurisdiction over wetlands near navigable waters, asserting that such wetlands are intricately connected to navigable waters and often have significant effects on water quality and aquatic ecosystems.

However, Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers (SWANCC) in 2001 established that the mere use of non-navigable, isolated, intrastate waters by migratory birds does not alone justify federal authority under the CWA. This decision prompted agencies to develop guidance on the "waters of the United States" definition.

In 2006, Rapanos v. United States presented a plurality opinion defining "waters of the United States" as relatively permanent bodies with a continuous surface connection to traditional navigable waters. Justice Kennedy, in a concurring opinion, introduced the concept of a "significant nexus," requiring a water or wetland to impact the integrity of other covered waters. Dissenting Justices argued for a broader interpretation.

Following Rapanos, in 2007 and 2008, additional guidance was developed to implement the definition of "waters of the United States." These legal developments illustrate ongoing complexities in interpreting and applying the regulatory framework.

On May 25, 2023, the Supreme Court ruled in Sackett v. Environmental Protection Agency, endorsing the Rapanos v. United States plurality standard for defining "waters of the United States." The Court concluded that the CWA's use of "waters" includes relatively permanent bodies of water forming geographic features such as streams, oceans, rivers, and lakes, as outlined in Rapanos. The Court also agreed with the plurality's formulation that wetlands are part of "the waters of the United States" when they have a continuous surface connection to bodies considered "waters of the United States" in their own right.

In response to the Sackett decision, on August 29, 2023, the agencies issued a final rule amending the January 2023 Rule to align with the Supreme Court's interpretation. Parts of the January 2023 Rule were deemed invalid by the Court's decision. Consequently, key aspects of the regulatory

text were amended to conform to the Court's ruling. The final conforming rule, titled "Revised Definition of 'Waters of the United States'; Conforming," became effective on September 8, 2023, following its publication in the Federal Register.

Regional Water Quality Control Board

The Regional Water Quality Control Board (RWQCB) regulates activities pursuant to Section 401(a)(1) of the CWA. Section 401 of the CWA specifies that certification from the State is required for any applicant requesting a federal license or permit, including a Section 404 permit. Through the Porter Cologne Water Quality Control Act, the RWQCB asserts jurisdiction over waters of the State of California (WSC), which is generally the same as WOTUS but may also include waters not in federal jurisdiction.

The State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State was adopted in April 2020 and put into effect statewide on May 28, 2020.

The Water Boards define an area as wetland as follows:

An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

The Water Code defines WSC broadly to include "any surface water or groundwater, including saline waters, within the boundaries of the state." WSC include all WOTUS but also includes waters not in federal jurisdiction.

The following wetlands are waters of the state:

1. Natural wetlands,
2. Wetlands created by modification of a surface water of the state, and
3. Artificial wetlands that meet any of the following criteria:
    a. Approved by an agency as compensatory mitigation for impacts to other waters of the state, except where the approving agency explicitly identifies the mitigation as being of limited duration;
    b. Specifically identified in a water quality control plan as a wetland or other water of the state;
    c. Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape; or
    d. Greater than or equal to one acre in size, unless the artificial wetland was constructed, and is currently used and maintained, primarily for one or more of the following

purposes (i.e., the following artificial wetlands are not waters of the state unless they also satisfy the criteria set forth in 2, 3a, or 3b):

i. Industrial or municipal wastewater treatment or disposal
ii. Settling of sediment
iii. Detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial stormwater permitting program
iv. Treatment of surface waters
v. Agricultural crop irrigation or stock watering
vi. Fire suppression
vii. Industrial processing or cooling
viii. Active surface mining – even if the site is managed for interim wetlands functions and values
ix. Log storage
x. Treatment, storage, or distribution of recycled water
xi. Maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits)
xii. Fields flooded for rice growing

All artificial wetlands that are less than an acre in size and do not satisfy the criteria set forth in 2, 3.a, 3.b, or 3.c are not WSC.

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW) regulates water resources under Section 1600-1616 of the California Fish and Game Code. Section 1602 states:

> *An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.*

Evaluation of CDFW jurisdiction followed guidance in the Fish and Game Code and A Review of Stream Processes and Forms in Dryland Watersheds. In general, under 1602 of the Fish and Game Code, CDFW jurisdiction extends to the maximum extent or expression of a stream on the landscape (CDFW 2010). It has been the practice of CDFW to define a stream as "a body of water that flows perennially or episodically and that is defined by the area in a channel which water currently flows or has flowed over a given course during the historic hydrologic course regime,

and where the width of its course can reasonably be identified by physical or biological indicators" (Brady and Vyverberg 2013). Thus, a channel is not defined by a specific flow event, nor by the path of surface water as this path might vary seasonally. Rather, it is CDFW's practice to define the channel based on the topography or elevations of land that confine the water to a definite course when the waters of a creek rise to their highest point.