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| **Project Title:** | Willow Rock Energy Storage Center |
| **TN #:** | 250418 |
| **Document Title:** | CURE Data Request - Response Set 2 |
| **Description:** | Willow Rock Energy Storage Center (21-AFC-02) Responses to California Unions for Reliable Energy (CURE) Data Request Response Set 2 |
| **Filer:** | Kari Miller |
| **Organization:** | Golder Associates USA Inc. |
| **Submitter Role:** | Applicant Consultant |
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# Willow Rock Energy Storage Center (21-AFC-02)

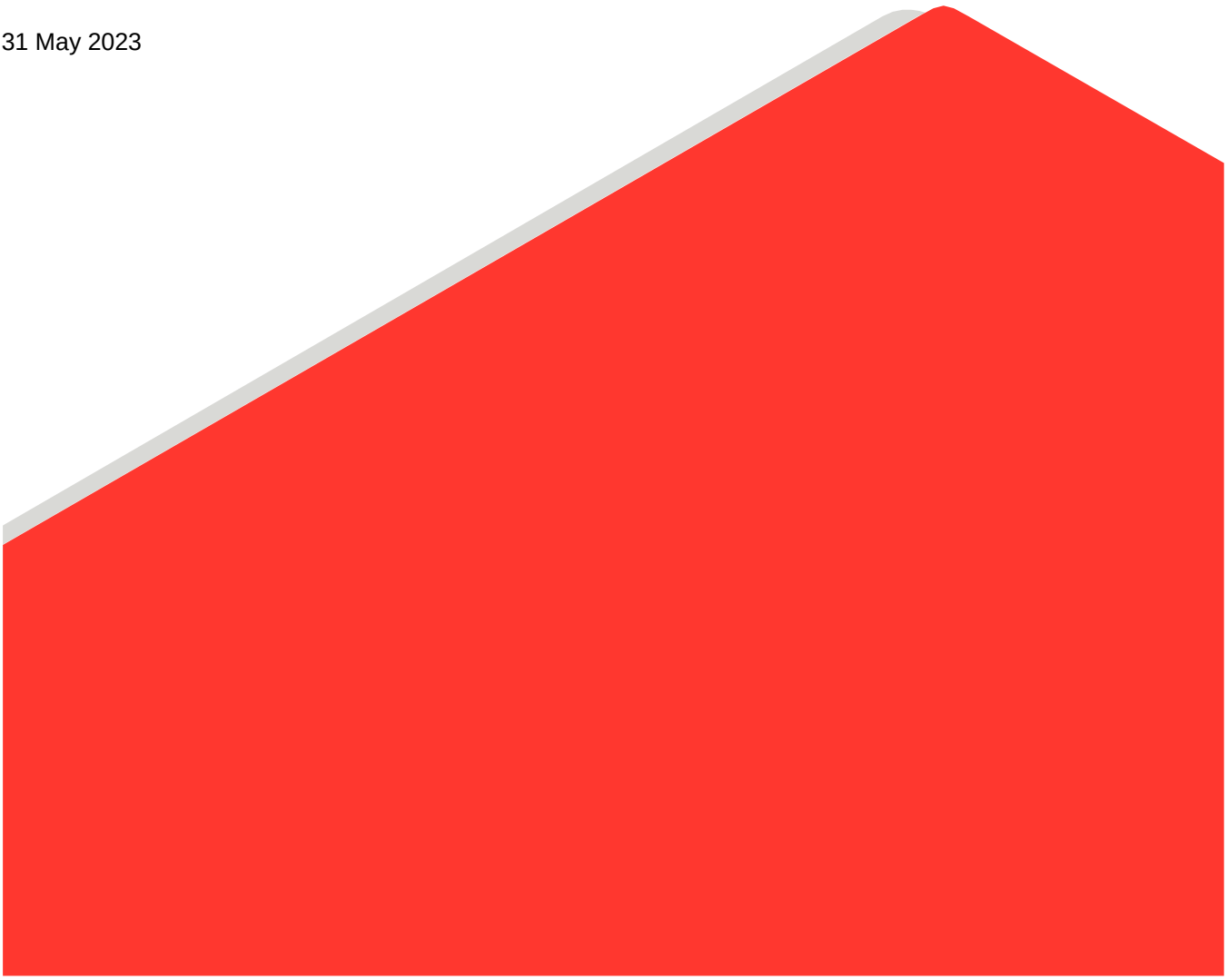
## Responses to California Unions for Reliable Energy (CURE) Data Request Response Set 2

Data Request Number 43 through 140

Submitted by:

**GEM A-CAES LLC with technical assistance from WSP USA Inc.**

31 May 2023



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# Acronyms and Abbreviations

| | |
|---|---|
| *AFC* | *Application for Certification* |
| *APLIC* | *Avian Power Line Interaction Committee* |
| *CDFW* | *California Department of Fish and Wildlife's CDFW* |
| *CEC* | *California Energy Commission* |
| *CEQA* | *California Environmental Quality Act* |
| *CFR* | *Code of Federal Regulations* |
| *CURE* | *California Unions for Reliable Energy* |
| *dBA* | *decibel A-weighted* |
| *GHG* | *greenhouse gases* |
| *IEEE* | *Institute of Electrical and Electronics Engineers* |
| *IES* | *Illuminating Engineering Society* |
| *ISO* | *International Organization for Standardization* |
| *kV* | *kilovolt* |
| *LADWP* | *Los Angeles County Department of Water and Power* |
| *Ldn* | *Day-Night Average Sound Level* |
| *Leq* | *equivalent continuous sound level* |
| *Lmax* | *maximum sound level* |
| *ROW* | *right of way* |
| *SCE* | *Southern California Edison* |
| *USBM* | *United States Bureau of Mines* |
| *USFWS* | *United States Fish and Wildlife Services* |
| *WHO* | *World Health Organization* |
| *WRESC* | *Willow Rock Energy Storage Center* |

# 1.0 GEOLOGY

# GEOTECHNICAL CHARACTERIZATION

## Data Request 43

*State the maximum acceptable bulk rock permeability values for cavern construction.*

**Response:** The maximum acceptable bulk rock permeability value for cavern construction is $10^{-7}$ square centimeters ($cm^2$.)

## Data Request 44

*Provide the criteria used to determine minimum cavern separation from an adjudicated or potentially usable groundwater resource.*

**Response:** The criteria used to determine minimum cavern separation from an adjudicated or potentially usable groundwater resource will be dependent on the rock quality and future hydrogeological modeling. The final criteria will be determined following Project optimization.

## Data Request 45

*Describe both the favorable and unfavorable lithologic units for cavern construction.*

**Response:** Favorable lithologic units include igneous or metamorphic rocks with low permeability and porosity. Unfavorable lithologic units include uncemented sedimentary, shale and other mudstones, and karst.

## Data Request 46

*State the in-situ effective rock pressure criteria for determining suitable formation for cavern construction.*

**Response:** Refer to Applicant's Set 1 Data Response 70 (TN 245698) which outlines the criteria that inform cavern construction details.

## Data Request 47

*Describe the criteria used to evaluate stress-relief and thermal microcracking on the matrix permeability of rock types favorable for cavern construction.*

**Response:** Refer to Applicant's Set 1 Data Response 70 (TN 245698) which outlines the criteria that inform cavern construction details.

## Data Request 48

*Provide the chemical analysis data, borehole logs, and lab testing data from Borehole #1 previously submitted to the California Energy Commission's ("CEC") Kiteworks system.*

**Response:** Due to the large file size associated with the information requested in Data Requests 48 – 52, an ftp link to enable downloading of the requested information was provided to Ms. Tara Rengifo at trengifo@adamsbroadwell.com on May 29, 2023. A summary of the transmitted files is provided below:

- CU DR48-1 September Kiteworks Geotechnical Data Transmittal for CEC DR68-1 (contains requested data regarding borehole #1)
- CU DR48-2 October Kiteworks Geotechnical Data Transmittal for CEC DR68-2 (contains requested data regarding borehole #1 and borehole #2)
- CU DR48-3 November Kiteworks Geotechnical Data Transmittal for CEC DR68-3 (contains requested data regarding borehole #1 and borehole #3)
- CU DR48-4 December Kiteworks Geotechnical Data Transmittal for CEC DR68-4 (contains requested data regarding borehole #3)

## Data Request 49

*Provide borehole logs with photos, geophysical logging data, and pump & packer data for Borehole #2 previously submitted to CEC's Kiteworks system.*

**Response:** Refer Data Response 48

## Data Request 50

*Provide core logs with photos, pump & packer results, and geophysical data from Borehole #3 previously submitted to CEC's Kiteworks system.*

**Response:** Refer to Data Response 48

## Data Request 51

*Provide the appendices to Attachment DR68-2 Willow Rock Energy Storage Center (21- AFC-02) Monthly Geotechnical Update – October 2022 previously submitted to CEC's Kiteworks system.*

**Response:** Refer to Data Response 48

## Data Request 52

*Explain why "unanticipated developments with geotechnical data collection and testing necessitates further investigation of geologic conditions" at the Project site (TN 248552).*

**Response:** Refer to Applicant's Status report #9 (TN 250361) filed May 26, 2023.

## Data Request 53

*Please confirm whether the liquefaction risks remain low.*

**Response:** Refer to Data Response 6 (TN 245698).

## Data Request 54

*Please provide the basis for the statement that the liquefaction risks are only relevant for the shallow portion of the shaft based on any new geotechnical investigation work.*

**Response:** Refer to Data Response 71 (TN 246210).

## Data Request 55

If the answer to Data Request ("DR") #53 is that the liquefaction risks do not remain low, please provide any updated analysis of the Project's liquefaction risks.

**Response:** Refer to Data Response 53.

# 2.0 AIR QUALITY AND PUBLIC HEALTH

## CONSTRUCTION PM10 EMISSIONS

## Data Request 56

*Provide support for using an emission control rate of up to 85% for unpaved roads and 70% in open areas for dust control (e.g., studies, reports, or other information).*

**Response:** The United States Environmental Protection Agency's updated AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition is an accepted standard reference for evaluating expected emissions from fugitive dust ( https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors ). Figure 13.2.2-2 in Section 13.2.2 of AP-42 provides a graphical representation of watering control effectiveness, demonstrating control efficiencies as high as 95% are achievable with sufficient moisture content. The Applicant expects to conform to the fugitive dust mitigation measures Kern County recommended be adopted by the CEC in its February 23, 2023, comment letter (TN 248942). Among these is a requirement that exposed areas be watered a minimum of three times daily. This is expected to maintain sufficient surface moisture to control and minimize fugitive dust. In addition, a Fugitive Dust Plan will be prepared before the commencement of construction, including the designation of an onsite monitor to observe and enhance the effectiveness of mitigation measures as necessary. The applicant's assumed efficiency of 85% for unpaved roads and 70% for open areas is therefore reasonable.

## Data Request 57

*If no evidentiary support for the control efficiencies is provided in response to DR 56 above, please provide the PM10 emissions during construction activities based on accurate control efficiencies. Provide all citation(s), reports, and calculations performed to support the analysis.*

**Response:** Refer to Data Response 56.

## VALLEY FEVER

## Data Request 58

*Provide all workplans and reference materials for compliance with AB 203 (Occupational safety and health: Valley Fever), along with a description of the types of personnel protective equipment (PPE) that will be provided to personnel onsite, the types of medical surveillance programs for workers and sensitive receptors near the Project site, and the training to be included in the employer's injury and illness prevention program.*

**Response:** The Applicant and its construction contractors will conform to the requirements of AB 203. The requested workplans are typically prepared by the selected construction contractor(s) following the issuance of the license and in response to conditions of certification that require these plans to be prepared and submitted for approval prior to the commencement of construction. The plans will be prepared in consultation with Kern County

Public Health Services Department to assure that they fulfill Kern County's Valley Fever mitigation measures (Refer to Data Response 61 for additional information).

## Data Request 59

*State whether soil testing for Coccidioidomycosis spores will be performed in advance of construction activities.*

**Response:** Refer to the response provided to CURE Data Request 2. The Applicant confirmed on May 16, 2023, with Kern County Planning Division Chief, Katrina Slayton, in a telephone conversation that the County does not require soil testing for Valley Fever spores.

## Data Request 60

*If no soil testing will be conducted in response to DR 59, provide support for why soil testing for Coccidioidomycosis spores is not necessary.*

**Response:** Refer to Data Response 59.

## Data Request 61

*State whether construction worker crews will be required to use respirators during Project clearing, grading, and excavation operations in accordance with the California Division of Occupational Safety and Health regulations.*

**Response:** Construction will conform to the Valley Fever mitigation requirements outlined in requested condition 26 of Kern County's comment letter of February 23, 2023 (TN 248942), which are provided below:

"26. To minimize personnel and public exposure to potential Valley Fever–containing dust on and off site, the following control measures shall be implemented during Project construction:

a. Equipment, vehicles, and other items shall be thoroughly cleaned of dust before they are moved off site to other work locations.

b. Wherever possible, grading and trenching work shall be phased so that earth-moving equipment is working well ahead or downwind of workers on the ground.

c. The area immediately behind grading or trenching equipment shall be sprayed with water before ground workers move into the area.

d. In the event that a water truck runs out of water before dust is sufficiently dampened, ground workers being exposed to dust shall leave the area until a truck can resume water spraying.

e. To the greatest extent feasible, heavy-duty earth-moving vehicles shall be closed-cab and equipped with a HEP-filtered air system.

f. Workers shall receive training in procedures to minimize activities that may result in the release of airborne *Coccidioides immitis* (CI) spores, to recognize the symptoms of Valley Fever, and shall be instructed to promptly report suspected symptoms of work-related Valley Fever to a supervisor. Evidence of training shall be provided to the Kern County Planning and Natural Resources Department within 5 days of the training session.

g. A Valley Fever informational handout shall be provided to all onsite construction personnel. The handout shall, at a minimum, provide information regarding the symptoms, health effects, preventative measures, and treatment. Additional information and handouts can be obtained by contacting the Kern County Public Health Services Department.

h. Onsite personnel shall be trained on the proper use of personal protective equipment, including respiratory equipment. National Institute for Occupational Safety and Health–approved respirators shall be provided to onsite personal, upon request. When exposure to dust is unavoidable, provide appropriate NIOSH-approved respiratory protection to affected workers. If respiratory protection is deemed necessary, employers must develop and implement a respiratory protection program in accordance with Cal/OSHA's Respiratory Protection standard (8 CCR 5144)."

## Data Request 62

*If respirators will not be required in response to DR 61, explain why this mitigation measure for Valley Fever-related impacts is not necessary.*

**Response:** Refer to Data Response 61.

# 3.0 NOISE

# NOISE IMPACTS ON WILDLIFE

## Data Request 63

*Provide the noise thresholds used to determine the temporary noise impacts on wildlife without mitigation.*

**Response:** As a standard practice, any construction activities that generate a noise level of less than 60 decibels/hour will not require mitigation. However, if a biological monitor determines that sensitive wildlife species and/or nesting birds protected under the Migratory Bird Treaty Act are noticeably affected by construction noise at levels less than 60 decibels/hour, mitigation measures may be required. Any reduction of the noise threshold is at the discretion of the biological monitor during construction activities.

## Data Request 64

*Describe the construction mitigation measures proposed to be implemented to reduce temporary noise impacts to wildlife within the Project vicinity.*

**Response:** Refer to Data Response 13 (TN 248496).

## Data Request 65

*Provide the basis for how the construction mitigation measures for the Project's noise impacts on wildlife species would reduce impacts to less than-significant levels.*

**Response:** Refer to Data Response 13 (TN 248496).

## Data Request 66

*Provide the noise mitigation measures that the U.S. Fish and Wildlife Service ("USFWS") and California Department of Fish and Wildlife ("CDFW") have recommended for other construction projects.*

**Response:** Common mitigation measures recommended by state and federal resource agencies have previously included some or a combination of the following measures:

- Limiting the amount of time loud equipment is used
- Creating no-work buffer zones around sensitive species/active bird nests
- Reduce activity periods to avoid working at dusk and dawn
- Require a biological monitor to observe wildlife behavior
- Construct a noise wall
- Installation of noise blankets (usually associated with the sound wall)

## Data Request 67

*Explain whether the Applicant has evaluated the efficacy of noise mitigation measures that the USFWS and CDFW have recommended for other construction projects.*

**Response:** Refer to Data Response 13 (TN 248496).

## Data Request 68

*If the answer to DR 67 is yes, please provide the Applicant's analysis.*

**Response:** Refer to Data Response 13 (TN 248496).

## Data Request 69

*If the answer to DR 67 is no, please provide the basis for the Applicant not evaluating the efficacy of the noise mitigation measures recommended by USFWS and CDFW.*

**Response:** Refer to Data Response 13 (TN 248496).

# EFFECTS OF INVERSIONS ON NOISE

## Data Request 70

*Describe the expected occurrences and severity of inversions in the area surrounding the Project during daytime and nighttime operations, citing any relevant studies, reports, or other information.*

**Response:** The occurrence and severity of inversions are not considered in the noise propagation modeling nor the analysis, as inversions are already considered among other such meteorological conditions favorable to noise propagation. The reasoning for not considering the potential impacts of inversions are as follows:

1) Under the International Organization for Standardization (ISO) 9613 standard of calculating attenuation of sound during propagation outdoors, which is the basis for the CadnaA modeling performed for this study, the

"propagation under a well-developed moderate ground-based temperature inversion, such as commonly occurs at night" is considered as part of the downwind propagation conditions in the model (ISO 1996).

2) Temperature inversions are of greater effect on long-distance noise propagation at distances greater than 1.2 miles (6,560 feet) (Parnell 2015). The noise sensitive areas most impacted by the construction and operations are less than 2,000 feet from the approximate center of the site. As noise attenuates at a distance, the receptors most impacted by temperature inversions would also be the receptors with the least overall modeled noise impacts. Receptors closest to the Project site, and therefore most impacted, will have little to no additional noise impacts from temperature inversions.

3) As the applicable noise standards are time-weighted over daytime or nighttime hours and are not based on maximum short-term noise levels, these conservative meteorological inputs along with other conservative assumptions are most appropriate.

**References:**

International Standards Organization (ISO). 1996. Attenuation of Sound during Propagation Outdoors, Part 2: General Method of Calculation. Geneva, Switzerland: ISO.

Parnell, Jeffrey. 2015. The Generation and Propagation of Noise from Large Coal Mines, And How It Is Managed In NSW. NSW Department of Planning and Environment Sydney NSW, Australia.

## Data Request 71

*Identify the noise model configuration parameters for temperature and wind conditions to calculate the inversion effects during nighttime operations.*

**Response:** Meteorological conditions assumed for the noise models can be found in Table 5.7-6 and Table 5.7-9 from the AFC and are based on ISO 9613 standards which assume favorable conditions for noise propagation.

## Data Request 72

*Provide the analysis of whether an inversion during daytime operations in colder months (e.g., October through March) may increase the noise level results in Table 5.7-12 (TN 240751-13).*

**Response:** Based on 2022 weather data from the Mojave Airport, which is located approximately 14 miles northeast of the Project site, winter daytime averages ranged between 40 and 50 degrees Fahrenheit and the relative humidity as a daily average ranged from 35% to 70% (meteoblue 2023). The weather conditions in the model were updated to 32 degrees Fahrenheit and 90% humidity to model a conservative cold winter period. Updated results from Table 5.7-12 are presented below.

**Table 5.7-12: Modeled and Predicted Noise Levels at Boundary and Residential Receptors, Winter Months**

| Site[c] | Representative Land Use | A-Weighted Sound Levels (dBA) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Baseline | | | Modeled [a] | Predicted [b] | | | |
| | | L90, Day | L90, Night | Ldn (Leq) | | Day | Night | Ldn | Ldn Difference[c] |
| Site 1 | Residential | 35 | 33 | 60 | 50 | 50 | 50 | 57 | 0 |
| Site 2 | Residential | 35 | 31 | 41 | 44 | 44 | 44 | 50 | 10 |
| Site 3 | Residential | 40 | 33 | 58 | 42 | 44 | 43 | 49 | 0 |
| Site 4 | Residential | 32 | 31 | 50 | 33 | 35 | 35 | 41 | 0 |
| Site 5 | Residential | 36 | 33 | 57 | 35 | 39 | 37 | 44 | 0 |
| NSA 01 | Residential | 35 | 33 | 60 | 50 | 51 | 50 | 57 | 0 |
| NSA 02 | Residential | 35 | 33 | 60 | 49 | 49 | 49 | 55 | 0 |
| NSA 03 | Residential | 35 | 33 | 60 | 45 | 45 | 45 | 51 | 0 |
| NSA 04 | Residential | 36 | 33 | 57 | 38 | 40 | 39 | 46 | 0 |
| NSA 05 | Residential | 35 | 31 | 41 | 39 | 41 | 40 | 46 | 6 |
| NSA 06 | Residential | 36 | 33 | 57 | 37 | 39 | 38 | 45 | 0 |
| NSA 07 | Residential | 35 | 31 | 41 | 33 | 37 | 35 | 42 | 1 |
| NSA 08 | Residential | 36 | 33 | 57 | 32 | 37 | 36 | 42 | 0 |
| NSA 09 | Residential | 36 | 33 | 57 | 30 | 37 | 35 | 42 | 0 |
| NSA 10 | Residential | 40 | 33 | 58 | 43 | 45 | 44 | 50 | 0 |
| NSA 11 | Residential | 35 | 31 | 41 | 33 | 37 | 35 | 42 | 1 |
| NSA 12 | Residential | 40 | 33 | 58 | 38 | 42 | 39 | 46 | 0 |
| NSA 13 | Residential | 40 | 33 | 58 | 37 | 41 | 39 | 46 | 0 |
| NSA 14 | Residential | 36 | 33 | 57 | 32 | 37 | 36 | 42 | 0 |
| NSA 15 | Residential | 40 | 33 | 58 | 33 | 40 | 36 | 43 | 0 |
| NSA 16 | Residential | 40 | 33 | 58 | 34 | 41 | 37 | 44 | 0 |
| NSA 17 | Residential | 40 | 33 | 58 | 36 | 41 | 38 | 45 | 0 |

a Modeled noise generated by proposed center operations configuration calculated by the noise model Cadna A.

b Predicted impacts were calculated by logarithmically adding the modeled impacts to the baseline measurement.

c Baseline from the most comparable monitoring locations used for NSA baseline.

d Predicted Ldn - Baseline Ldn, if result less than zero, corrected to zero.

**Reference:**

meteoblue.com (meteoblue). 2023. Weather Archive. Mojave Airport. Accessed May 17, 2023. Weather Archive Mojave Airport - meteoblue

## Data Request 73

Provide the assessment of whether an inversion during nighttime Project operations may increase the noise levels disclosed in Table 5.7-12 (TN 240751-13).

**Response:** Refer to Data Response 72 which includes nighttime impact analysis.

## Data Request 74

*Provide the analysis of the distance the Project's noise impacts may extend during inversions and periods when the air temperature is different from the parameters identified in Table 5.7-9 (TN 240751-13).*

**Response:** Winter modeling results presented in Data Response 72 are illustrated in Figure 1 which can be found in Attachment CU DR74-1

# SLEEP DISTURBANCE FROM OPERATIONAL NOISE

## Data Request 75

*Provide the analysis of the potential for sleep disturbance using the WHO criteria of Leq of 30 dBA and Lmax 45 dBA.*

**Response:** The World Health Organization (WHO) recommendations do not apply to the Project. The Kern County standard for indoor noise is 45 dBA as an Ldn which includes a 10 dBA penalty for noise during nighttime hours. This can be found in Section 5.7.6.3 of the AFC. Normal Project operations are expected to be continuous, therefore "high-level, short-duration sounds, which can jolt people awake" are not expected. Based on the modeled and predicted noise levels provided in Data Response 72, the maximum predicted outdoor noise level at residential receptors is 50 dBA. Assuming a 15 dBA reduction in noise for dwellings between outdoor and indoors (as was done in the AFC), the indoor noise level would be 35 dBA. This would comply with the Kern County standard for indoor noise of 45 dBA as an Ldn.

## Data Request 76

*If the analysis provided in response to DR 75 shows an exceedance of the WHO criteria, please describe appropriate measures to mitigate sleep disturbance impacts.*

**Response:** Refer to Data Response 75 and Section 5.7.5 of the AFC for mitigation measures for noise.

# BLASTING NOISE AND OVERPRESSURE

## Data Request 77

*State the criteria used to evaluate potential impacts on the public and nearby buildings (e.g., building damage effects) from blasting overpressure, noise, and vibration. Please provide citations that support these criteria.*

**Response:** There are no applicable criteria for air overpressure for this Project, however former United States Bureau of Mines (USBM) RI-8485 set air blast overpressure criteria at 134 dBL for structures and 120 dBL for annoyance (Siskind et al 1980). The USBM was the lead agency in studying the blast effect on low-rise, residential-type structures.

The Code of Federal Regulations (CFR), under Title 30, Captor VII, Subchapter B, Part 715 regulates the use of explosives and sets the maximum ground vibration to not exceed 1.00 inches per second (in/sec) at 301 feet to 5,000 feet from the detonation site (CFR 2022).

Noise standards are set by Kern County and can be found in Section 5.7.6.3 of the AFC.

**References:**

CFR 2022. Title 30 – Mineral Resources § 71519 Use of Explosives

Siskind, David E., Stachura, Virgil J., Stagg, Mark S., and Kopp, John W. 1980. Report of Investigations 8507. Structure Response and Damage Produced by Ground Vibration from Surface Mine Blasting. United States Bureau of Mines. Twin Cities. Minnesota.

## Data Request 78

*Provide the calculations and citations that support the blast overpressure and noise analysis described in Attachment 2-1 Controlled Detonation of Explosives Information Summary, including the effect of the shafts to limit noise and overpressure at the surface.*

**Response:** The effects of the shaft were not considered in the calculations to be conservative, however, it's acknowledged that the shaft would attenuate noise at a greater rate than over land. This is based on a tunnel acoustics study indicating closer to 12 dBA reduction in noise through a tunnel (Thalheimer 2003).

Calculations are provided in Data Response 164 from CEC Data Request Set 4 Responses and are based on the inverse square law which is a generally understood geometrical consideration. The inverse square law is presented below and calculates a 6 dB change in noise levels based on a doubling or halving of the distance between a noise source and receptors.

$$I = P/\pi r^2$$

Where: $I =$ Intensity of the Sound (pressure)

$P =$ Power of he Source

$r =$ distance between the source and the point of interest

Please note that this information may change as a result of Project Optimization activities.

**References:**

Thalheimer, 2003 (to be added)

## Data Request 79

*Provide a citation or other support for the ground attenuation constant relied upon in Attachment DR161-1, "Detonation Vibration Estimates," (TN 249495) for the site-specific ground conditions.*

**Response:** The ground attenuation constant was based on an industry standard that can be found in many guidelines as a default constant for calculating peak particle velocity when site specific data is not yet available.

As an example, Dyno Nobel Pacific's Explosives Engineers' Guide states it is the constant usually related to the rock and site (Dyno 2020).

**Reference:**

Dyno Nobel Pacific. 2020. Explosives Engineers' Guide. Southbank, Australia. p. 30 https://www.dynonobel.com/apac/~/media/Files/Dyno/ResourceHub/Brochures/APAC/Explosives%20Engineers%20Guide.pdf. Accessed online 053123.

## Data Request 80

*State the expected time interval between each delay in Attachment DR161-1, "Detonation Vibration Estimates," (TN 249495).*

**Response:** The delay is assumed to be milliseconds apart; however, the calculations were based on the entirety of a blasting event, not a singular detonation out of an event. Note the expected duration of a single event is no more than a few seconds.

## Data Request 81

*Identify the expected dominant wave frequency for soil conditions in Attachment DR161-1, "Detonation Vibration Estimates," (TN 249495).*

**Response:** Dominant wave frequency was not an input for the detonation vibration estimate presented in Attachment DR161-1 (TN 249495).

# 4.0 BIOLOGICAL RESOURCES GENERATOR TIE-LINE IMPACTS

## Data Request 82

*Provide aerial imagery of any and all existing access and spur roads associated with Alternate Routes 2A and 2B. If none exist, please provide support for the claim that only existing access roads would be used for Alternate Routes 2A and 2B.*

**Response:** Refer to Attachment CU DR82-1. The figure demonstrates that there are numerous pre-existing access roads to support construction at the tentative pole locations along the transmission line route along proposed Route 2A. Route 2B is adjacent to an existing roadway and no additional access roads are anticipated to be required. Please note that this response is subject to possible change following completion of Project optimization.

## Data Request 83

*Clarify whether the Project's gen-tie line would occur in a new ROW, or whether the Project's ROW would coincide with an existing power line ROW.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

## Data Request 84

*Please state whether the construction of new access roads would impact any areas other than the roadbed (e.g., impacts from equipment staging areas outside the roadbed).*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

## Data Request 85

*Clarify whether any of the existing access roads along the gen-tie routes (preferred and alternate routes) would require grading or widening.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

## Data Request 86

*Identify the specific "Kern County Building Department standards" referenced in the response to CURE DR 21 (TN 248496).*

**Response:** Refer to Kern County comments docketed on February 23, 2023 (TN 248942). The Applicant will coordinate directly with Kern County to ensure that any road improvements conform to Kern County requirements.

## Data Request 87

*Explain whether spur roads would need to be constructed along any of the gen-tie routes with "existing access roads."*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

## Data Request 88

*Explain any assumptions in the calculations set forth in Tables 8a, 8b, 9a, and 9b in the AFC (TN 242791) regarding the number and size of material laydown areas during construction of the gen-tie, by route segment.*

**Response:** The following assumptions were used in determining the original temporary and permanent disturbance estimates:

- Steel mono-pole construction
- Straight line span distance equalling 950 feet
- Extra pole for every corner and connection
- Each pole requires 13,000 square feet ($ft^2$) for construction
- Each pole would leave 8 $ft^2$ of permanent disturbance
- Access roads are needed where the line deviates from the existing road right of way

- Access roads are anticipated to be 16 feet wide
- Subtracted pole construction area from access road length to avoid areas being doubled

Specific pole locations, material laydown, and pull and tensioning site areas have not been identified. As a result, they were assumed to be approximately evenly distributed across each transmission line route option. The permanent disturbance associated with transmission poles was originally calculated incorrectly using a parameter of 8 $ft^2$ instead of 8 feet in diameter, which as CURE notes result in a minor increase in permanent disturbance (50.265 $ft^2$ per pole). For the longest route option (the preferred route), the applicant estimated approximately 69 poles. This would result in an additional permanent disturbance of 0.067 acres for the preferred route. The Applicant is continuing to complete its optimization engineering which may result in further modifications to the disturbance estimates. An update, if required, will be provided following the completion of optimization engineering.

## Data Request 89

Explain any assumptions in the calculations set forth in Tables 8a and 9a in the AFC (TN 242791) regarding the foundations for transmission structures during construction of the gen-tie, by route segment.

**Response:** Refer to DR88 for a complete list of assumptions used for calculations for Tables 8a and 9a.

## Data Request 90

*Explain any assumptions in the calculations set forth in Tables 8a and 9a in the AFC (TN 242791) regarding the conductor pull and tensioning sites during construction of the gen-tie, by route segment.*

**Response:** Refer to DR88 for a complete list of assumptions used for calculations for Tables 8a and 9a.

## Data Request 91

*Explain any assumptions in the calculations set forth in Tables 8a, 8b, 9a, and 9b in the AFC (TN 242791) regarding any other features or activities that would cause impacts during construction of the gen-tie, by route segment.*

**Response:** Refer to DR88 for a complete list of assumptions used for calculations for Tables 8a, 8b 9a, and 9b.

# GENERATOR TIE-LINE FEASIBILITY

## Data Request 92

*Please explain how Alternative Route 2A is a feasible alternate route for the Project's gen-tie line ROW given constraints (e.g., public access road vacations, solar arrays, etc.) associated with the Big Beau Solar Project and AVEP Solar Project.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

## Data Request 93

*Provide the analysis of any other approved projects that may affect the feasibility of the preferred and alternate routes for the Project's gen-tie line ROW.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

# EXISTING POWER LINES

## Data Request 94

*Please provide images from the CEC's map of California Electric Transmission Lines or any other evidence to show existing power lines 5260-036acp 15 along the gen-tie routes depicted on AFC Figure 1-4 (TN 240751-2). Source: <https://cecgiscaenergy.opendata.arcgis.com/datasets/260b4513acdb4a3a8e4d64e69fc84fee_0/explore?location=36.526884%2C-122.255690%2C7.50>.*

**Response:** Refer to Attachment CU DR94-1 for a map depicting existing transmission lines in the Project vicinity created using the California Energy Commission's publicly available California Electric Infrastructure App accessible at https://cecgis-caenergy.opendata.arcgis.com/apps/CAEnergy::california-electric-infrastructure-app/explore. Accessed online 053123.

## Data Request 95

*Specify the horizontal spacing that would be implemented between the Project's transmission line poles and existing transmission line poles (or towers).*

**Response:** Horizontal/Vertical spacing between the proposed transmission line and existing transmission line poles will be based on the final design of the new transmission line and the location of the existing poles within the existing road allowance. Once the final transmission route has been confirmed, the transmission line route will be surveyed to confirm the location of all existing utilities and other potential obstructions. This 2D survey will be supported by a field survey and engagement of other utilities along the transmission cooridor3D LiDAR survey to determine topographic features along the transmission line route. The contractor will then utilize a transmission line modeling tool, for the transmission line design. This tool will incorporate the conductor size and performance characteristics and vertical/horizontal setback requirements from existing utilities based on clearance codes/requirements. These codes would include both State of California General Order 95 requirements as well as national Institute of Electrical and Electronics Engineers (IEEE) guidelines.

Current California code requires that the following vertical/horizontal clearance be maintained to ensure no engagement between the various systems:

| | | |
|---|---|---|
| 500kV/230kV | Horizontal: 196.2” | Vertical: 246” |
| 230kV/230kV | Horizontal: 88.2” | Vertical: 128” |
| 230kv/115kV | Horizontal: 88.2” | Vertical: 128” |
| 230kV/<66kV | Horizontal: 88.2” | Vertical: 128” |

Confirmation that poles can be located within the same easement and adjacent to each other understanding that from a maintenance perspective, the clearance between the circuit should not impact the ability of the utility to perform any service and not be at risk. The line design could allow for the staggering of pole locations to maximize the horizontal and vertical separation between the various poles.

# AVIAN COLLISIONS AND ELECTROCUTIONS

## Data Request 96

*Specify which APLIC practices would be implemented for the Project's electrical transmission facilities.*

**Response:** Transmission line engineering has not advanced to the point where the selection of specific Avian Power Line Interaction Committee (APLIC) practices is appropriate.

## Data Request 97

*Provide the spatial analysis and site-specific assessments recommended in Reducing Avian Collisions with Power Lines (APLIC 2012) for this Project.*

**Response:** Transmission line engineering has not advanced to the point where a site-specific assessment is appropriate.

## Data Request 98

*Please explain whether line marking devices will be installed on the Project's transmission lines. If line marking devices will not be installed, please explain why not and include any relevant citation(s) to studies, reports, or literature.*

**Response:** Transmission line engineering has not advanced to the point where a site-specific assessment is appropriate.

# CUMULATIVE EFFECTS

## Data Request 99

*Identify any additional past, present, or reasonably foreseeable projects between January 2020 (when the Big Beau Solar Project EIR was released) and December 2021 (when the AFC was docketed).*

**Response:** On January 18, 2023, Kern County emailed the Applicant's consultant, WSP, a supplemental list of projects that should be considered in the cumulative impact analysis. The County's email is included as Attachment CU DR99-1. The list of projects to be considered within a 1-mile radius and 6-mile radius of the Project are included in Attachment CU DR99-2 and Attachment CU DR99-3, respectively.

## Data Request 100

*Provide a map that depicts the geographic scope of the Applicant's cumulative impacts analysis and the location of each past, present, and reasonably foreseeable future project within that geographic scope.*

**Response:** Kern County prepared and provided a map based on their planning records that are included as Attachment CU DR100-1.

## Data Request 101

*Provide an analysis to support the conclusion that the Project's cumulative impacts on biological resources would be less than significant.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

# MOJAVE SPINEFLOWER

## Data Request 102

*Describe the abundance and distribution of Mojave spineflower occurrences detected during the Applicant's surveys.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

## Data Request 103

*Provide a map of Mojave spineflower occurrences detected during the Applicant's surveys.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

## Data Request 104

*Provide the Applicant's analysis of the Project's direct and indirect impacts on the Mojave spineflower.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

## Data Request 105

*Provide the Applicant's analysis of whether the Project's contribution to the unavoidable significant impact on Mohave spineflower in the Willow Springs Specific Plan area would be cumulatively considerable.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

# TEHACHAPI POCKET MOUSE AND TULARE GRASSHOPPER MOUSE

## Data Request 106

*Please state whether focused surveys for the Tehachapi pocket mouse and the Tulare grasshopper mouse will be conducted within the Project Study Area (e.g., Project site and, where possible, 1,000-foot buffer, plus gen-tie out 500 feet from either side of the linear facility centerline).*

**Response:** Focused surveys will not be conducted for the Tehachapi pocket mouse or Tulare grasshopper mouse because the species are unlikely to occur within the Project site due to a lack of habitat. As described in Biological Technical Report, the Tehachapi pocket mouse is commonly found in isolated, montane areas in the Tehachapi and San Bernardino Mountains. Scarce resident in ponderosa and Jeffrey pine habitats, and

uncommon in mixed chapparal, sagebrush, creosote bush, and Joshua tree woodlands habitats. Burrows constructed in loose sand. The closest recorded occurrence of this species is approximately 4.5 miles northwest of the Willow Rock Project site. There are several active agricultural areas, the California aqueduct, transmission lines, access roads, and rural residential development between these occurrences and the Project site. There are numerous new solar fields recently constructed between the closest recorded occurrences and the Project site. If this species was present in the area, it would have been identified during the environmental review process for this Project. This species is commonly found between 3,000 and 6,000 feet above mean sea level in elevation. The Project site is approximately 2,600 feet in elevation.

The Tulare grasshopper mouse is found in hot, arid valleys and scrub deserts in the southern San Joaquin Valley and into the Tehachapi area. Typically inhabits hot, arid grassland and shrubland associations that include blue oak woodlands, upper Sonoran scrub, alkali sink and mesquite scrub, and sloping grassland. Prefers compact soils with sparse perennial grass. The closest recorded occurrence of Tulare grasshopper mouse is more than 6 miles from the Project site and consists of non-native grassland habitat. Non-native grassland habitat was not recorded to occur within the Project site. Although some annual buckwheat/grasses habitat was identified within the Project, it was not characterized as a non-native grassland. There is no habitat connectivity between the Project site and the known recorded occurrence. Similar to the Tehachapi pocket mouse, there are several active agricultural areas, the California aqueduct, transmission lines, access roads, rural residential development, and solar fields between the closest recorded occurrences and the Project site. Therefore, it is unlikely that either of these two species occur within the Project site.

## Data Request 107

*If focused surveys have been or will be performed for the Tehachapi pocket mouse and/or the Tulare grasshopper mouse, provide a complete survey report that describes the surveyor qualifications, survey methods, and survey results, if available. In addition, provide a map that depicts the survey areas and any positive findings.*

**Response:** Please refer to Data Request 106.

## Data Request 108

*If focused surveys will not be performed for the Tehachapi pocket mouse and/or the Tulare grasshopper mouse, provide the basis for not conducting focused surveys for these species despite CDFW's recommendation in its letter dated August 31, 2022 (TN 245782) that focused biological surveys should be conducted.*

**Response:** Please refer to Data Request 106.

# SWAINSON'S HAWK

## Data Request 109

*Provide support for why the two Swainson's hawks detected on April 5, 2021, and the four Swainson's hawks detected on April 14 and 15, were classified as transient/dispersing individuals.*

**Response:** A total of eight (8) Swainson's Hawk individuals were observed during the protocol-level surveys. It is difficult to determine if all eight are separate individual hawks or multiple sightings of the same individual. Since only a single nest was identified on the Project site and within the half-mile buffer, the remaining 6 individuals did not nest within the Project site and were therefore classified as transient/dispersing individuals.

## Data Request 110

*Explain when the Swainson's Hawk Monitoring and Mitigation Plan will be available for review.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

## Data Request 111

*State whether the Swainson's Hawk Monitoring and Mitigation Plan will include acquisition of compensatory habitat in accordance with CEC and CDFW mitigation guidelines.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

## Data Request 112

*If compensatory habitat will be provided, identify the mitigation ratio, site selection criteria, land acquisition schedule, and financial assurances, as feasible.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

# WILDLIFE MOVEMENT CORRIDORS

## Data Request 113

*Provide landscape-level spatial analysis to support that the Project's impacts on wildlife corridors would be less than significant. Because open space is not equivalent to habitat, the analysis must consider the spatial configuration of habitat types.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

## Data Request 114

*Analyze potential impacts to Swainson's hawk movement corridors.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

## Data Request 115

*Provide a map that depicts the boundaries of past, present, and reasonably foreseeable projects that could contribute to cumulative impacts on wildlife movement corridors.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

# BATS

## Data Request 116

*Provide an assessment of the potential for the abandoned mine shaft located approximately 350 feet south of the Project site (at approximately 34.888142°, -118.283678°) to provide habitat for roosting bats.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

## Data Request 117

*Provide evidentiary support for the AFC's conclusion that Townsend's big-eared bat roosts are presumed absent from the Study Area, and that foraging habitat quality is "low."*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

# ALKALI MARIPOSA LILY

## Data Request 118

*Provide support for the determination that the alkali mariposa lily has only a low potential to occur in the Project area.*

**Response:** The initial assessment was based on the low-quality habitat identified within the Project site. Additional rare plant surveys are being conducted during the 2023 spring season. The Applicant will provide an update for this Data Request following the completion of the survey reports.

## Data Request 119

*Please clarify whether the surveyors visited a reference site to 5260-036acp 25 confirm alkali mariposa lily was evident and identifiable at the time of surveys. If a reference site was visited, provide the site's location, the date of the visit, and a discussion of the phenology of alkali mariposa lily at the time of the visit.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

## Data Request 120

*Identify the specific portion(s) of the Survey Area that was surveyed for rare plants on each of the dates listed in Table 4 of the BTR.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

# NOISE IMPACTS ON BIOLOGICAL RESOURCES

## Data Request 121

*Provide unweighted Leq data and noise levels at octave band centre frequencies for ambient noise at the Project site.*

**Response:** Baseline unweighted noise levels are presented in the table below:

**Noise Summary Table Flat Weighted Baseline Measurements at the Willow Rock Site July 2021**

| Site | Levels at Octave Band Centre Frequencies (dB) | | | | | | | | | | | Leq (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 16 | 31.5 | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | 16000 | |
| Site 1 Day | 60.3 | 55.2 | 57.9 | 60.8 | 56.1 | 55.1 | 57.8 | 51.7 | 42.3 | 35.1 | 25.7 | 66.7 |
| Site 2 Day | 67.6 | 60.9 | 52.4 | 44.9 | 39.2 | 33.9 | 31.8 | 28.1 | 26.8 | 25.7 | 29.2 | 68.6 |
| Site 2 Night | 51.0 | 46.5 | 45.3 | 32.9 | 25.3 | 24.7 | 25.2 | 17.3 | 24.0 | 19.4 | 24.3 | 53.2 |
| Site 3 Day | 67.8 | 61.8 | 57.2 | 57.5 | 53.5 | 51.4 | 53.4 | 46.6 | 37.8 | 28.8 | 24.5 | 69.7 |
| Site 3 Night | 51.9 | 50.3 | 49.2 | 43.0 | 41.1 | 40.3 | 48.4 | 40.8 | 30.5 | 24.8 | 24.2 | 56.7 |
| Site 4 Day | 65.6 | 59.8 | 54.7 | 51.4 | 47.8 | 51.2 | 48.0 | 40.0 | 32.7 | 27.5 | 25.3 | 67.2 |
| Site 4 Night | 51.3 | 49.4 | 45.7 | 34.2 | 25.4 | 26.8 | 25.9 | 23.5 | 23.4 | 22.4 | 24.5 | 54.2 |
| Site 5 Day | 65.4 | 58.3 | 54.3 | 55.0 | 52.0 | 50.4 | 54.0 | 46.2 | 36.5 | 28.8 | 25.1 | 67.2 |
| Site 6 Day | 72.9 | 66.5 | 58.3 | 49.1 | 44.8 | 36.3 | 33.5 | 29.4 | 25.2 | 21.3 | 24.4 | 73.9 |
| Site 7 Day | 76.5 | 71.2 | 61.9 | 51.6 | 40.8 | 35.7 | 35.1 | 33.7 | 30.2 | 25.1 | 24.6 | 77.8 |
| Long Term | 76.2 | 69.6 | 60.5 | 50.4 | 42.6 | 39.7 | 38.6 | 36.5 | 39.3 | 41.6 | 45.0 | 77.2 |

## Data Request 122

*Provide the Applicant's analysis of the impacts that the Project's impulse noises (e.g., from blasting, pile driving) would have on wildlife.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

## Data Request 123

Identify the noise impact threshold that the Applicant used to analyze the Project's impulse noises.

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

# RESTORATION/REVEGETATION OF IMPACTED VEGETATION COMMUNITIES

## Data Request 124

*Clarify whether vegetation communities temporarily impacted by the Project would be revegetated or restored. If some communities would be revegetated but others restored, identify the communities that would be restored.*

**Response:** The Applicant will determine revegetation and restoration requirements in consultation with Kern County, State and Federal wildlife agencies, and California Energy Commission staff. If required, a Habitat Restoration Management Plan will be prepared and vetted by the County and the resource agencies before implementation.

## Data Request 125

*Identify, and provide scientific support for, the number of years it would take to fully restore the habitat values of each vegetation community type that would be temporarily impacted by clearing and grubbing activities.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

## Data Request 126

*Identify the depth of the proposed grubbing activities.*

**Response:** The Project site will be grubbed and approximately 18 to 24 inches of topsoil will be removed. The extent of any grubbing for transmission line construction has yet to be determined but is expected to be surficial and much shallower since the primary purpose would be to clear smaller areas for temporary equipment laydown, placement of pulling/tensioning equipment and placement of transmission poles.

## Data Request 127

*Describe the proposed methods for restoration (or revegetation) of the Project's temporary impact areas.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

## Data Request 128

*For areas that would be revegetated, identify the plant species that would be used for revegetation (by vegetation community type, if applicable).*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

## Data Request 129

*Identify the source(s) of seeds or plants that will be used for restoration (or revegetation).*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

## Data Request 130

*Provide a draft of the Health Risk Management Plan (HRMP). If the HRMP has yet to be prepared, identify the anticipated date of release for public review.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

# INVASIVE PLANTS

## Data Request 131

*Clarify whether the HRMP would include an invasive plant monitoring and management component.*

**Response:** If required, the HRMP will include an invasive plant component.

## Data Request 132

*If the HRMP would include an invasive plant monitoring and management component, identify the proposed success criteria, monitoring regime, and treatment methods for invasive plants.*

**Response:** Refer to Applicant's Notice pursuant to 20 C.C.R. § 1716(f) for CURE Data Requests Set 2 filed on May 22, 2023, indicating additional time is needed for this response.

# BURROWING OWL

## Data Request 133

*Clarify whether compensatory mitigation would be provided for impacts to burrows (or surrogates) occupied by burrowing owls during the non-breeding season.*

**Response:** Compensatory mitigation will be required for impacts to burrows (or surrogates) considered occupied by burrowing owls during the non-breeding season. As is typically required for impacts to burrowing owl, 6.5 acres of suitable habitat will be required as compensatory mitigation for impacts each pair of burrowing identified as present within an occupied burrow within the Project site. Based on existing protocol-level surveys, no occupied burrows were identified within the Project site. However, the Project site does contain numerous suitable burrows and burrowing owl individuals were identified within some portions of the Project site, so occupancy of burrowing owls in the future cannot be completely ruled out. If present, a Burrowing Owl Management Plan will be required in addition to the compensatory mitigation.

## Data Request 134

*Explain whether compensatory mitigation would be provided if occupied burrows are not directly impacted by the Project, but burrowing owls need to be excluded from those burrows (i.e., due to the proximity of Project construction activities).*

**Response:** No, compensatory mitigation would not be provided for occupied burrows not directly impacted by the Project.

## Data Request 135

*State whether the 1:1 ratio proposed in MM-BUOW 4 applies to foraging habitat impacted by the Project, or only burrows that are impacted.*

**Response:** The 1:1 mitigation ratio in MM-BUOW 4 is only proposed for occupied burrows that are impacted.

## Data Request 136

*In response to DR 134, if MM-BUOW 4 applies to foraging habitat, identify the amount of compensation habitat in acres that would be provided, or alternatively, the means of determining that amount so as to achieve the 1:1 habitat compensation ratio.*

**Response:** Compensatory mitigation is only required for occupied burrows and not for foraging habitat.

## Data Request 137

*Although Figure 2-1 in the AFC (TN 240770) provides a map of the Project's Site Plan that may be used to identify the location(s) of these onsite mitigation areas, please provide a map to depict the location(s) of potential onsite mitigation areas referenced in MMBUOW 4.*

**Response:** If required, these locations will be identified as part of the future Burrowing Owl Management Plan.

## Data Request 138

*Describe the mechanism that would be used to ensure burrows and foraging habitat associated with onsite mitigation areas (i.e., at the Project site edges) would be protected and managed in perpetuity for the conservation of burrowing owls.*

**Response:** If required, any potential mitigation areas would be protected and managed in accordance with applicable provisions established by CDFW.

## Data Request 139

*Discuss potential offsite mitigation sites. If potential offsite mitigation sites have yet to be identified, identify the site selection criteria (e.g., geographic bounds).*

**Response:** Off-site mitigation sites would require key habitat components necessary to provide long-term habitat for burrowing owls. The first primary requirement is the presence of grasslands or open low-growing shrublands. Burrowing owl are typically not found in areas of dense or overgrown vegetation. The site would ideally:

- have a sufficient rodent population (numerous rodent burrows) for foraging purposes
- be away from any active or future development
- be located within the valley floor and avoid steep slopes
- have natural perching sites
- be adjacent to existing conservation/mitigation areas

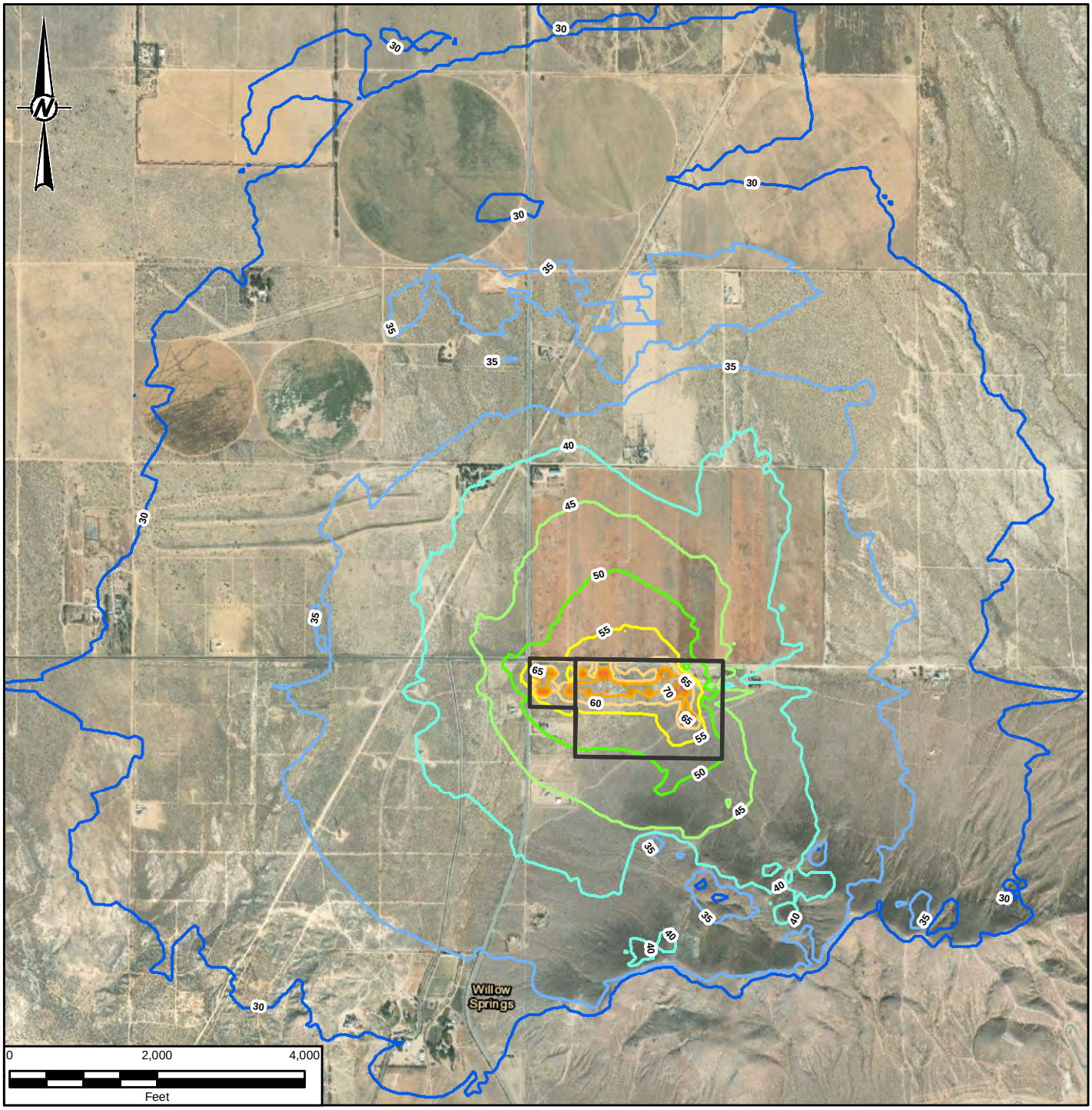
## Data Request 140

*Explain whether occupancy will be a mandatory criterion for selecting compensatory mitigation sites for burrowing owls, or if compensatory mitigation may consist of potential habitat on land unoccupied by burrowing owls.*

**Response:** Occupancy is not a mandatory criterion.

**ATTACHMENT CU DR74-1**

# Modeled A-Weighted Average Noise Levels from Operations Winter Months




**LEGEND**

- GEM SITE

**NOISE CONTOURS**

- 30 dBA
- 35 dBA
- 40 dBA
- 45 dBA
- 50 dBA
- 55 dBA
- 60 dBA
- 65 dBA
- 70 dBA
- 75 dBA
- 80 dBA

**REFERENCE(S)**

COORDINATE SYSTEM: NAD 1983 UTM ZONE 11N
SERVICE LAYER CREDITS: ESRI, HERE, GARMIN, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
SOURCE: ESRI, MAXAR, EARTHSTAR GEOGRAPHICS, AND THE GIS USER COMMUNITY

CLIENT
GEM A-CAES LLC

PROJECT
WILLOW ROCK ENERGY STORAGE CENTER

TITLE
**CU DR 74: MODELED A-WEIGHTED AVERAGE NOISE LEVELS FROM OPERATIONS, WINTER MONTHS**

CONSULTANT
wsp

| | |
|---|---|
| YYYY-MM-DD | 5/31/2023 |
| DESIGNED | JAM |
| PREPARED | JAM |
| REVIEWED | ED |
| APPROVED | DS |

PROJECT NO.
31406639.001

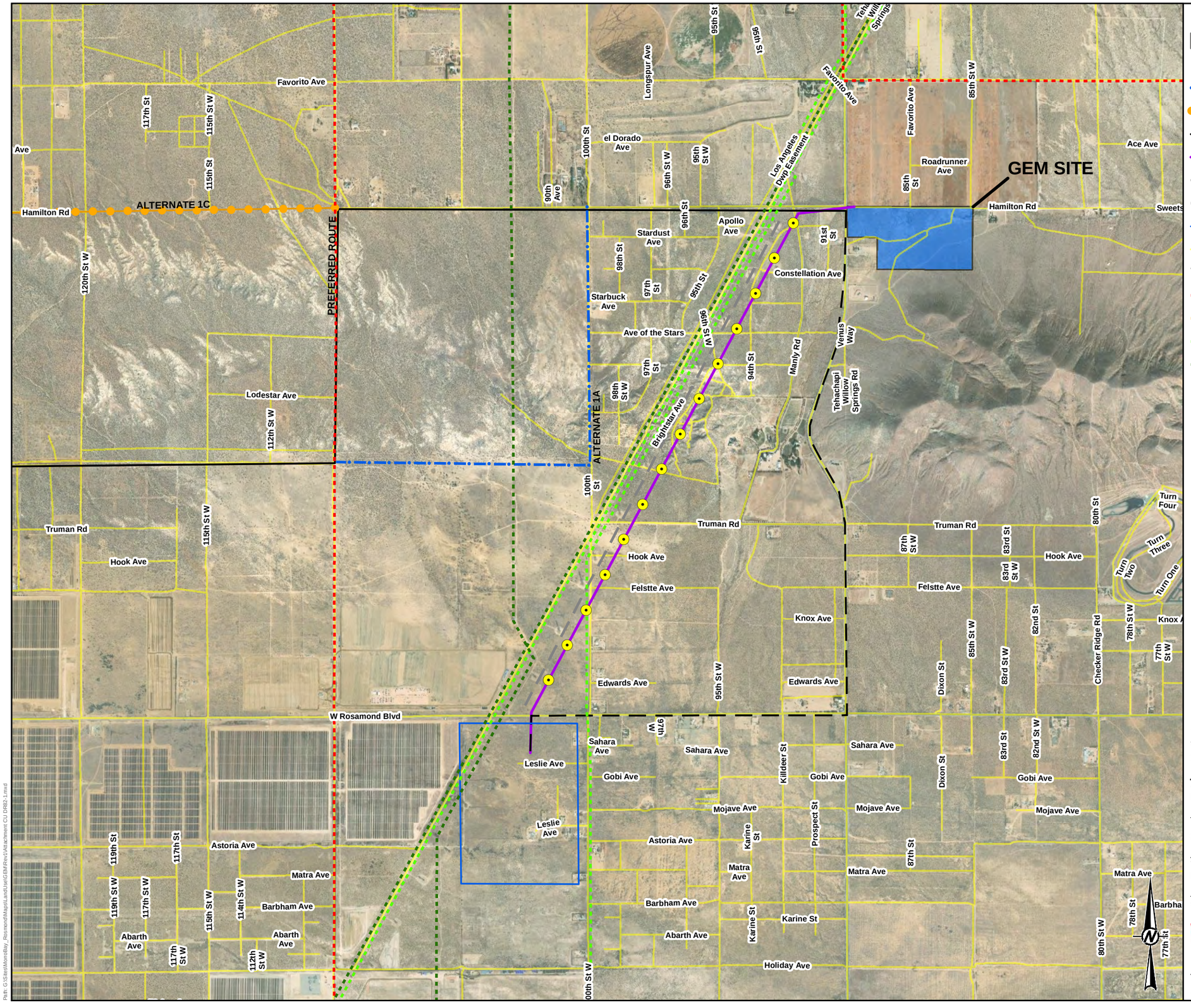
FIGURE
1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
0 25mm

PATH: G:\Sites\MoroBay_Resmon\Maps\NoiseNoise Figures for CUPE Data Response II\CU DR 74 MODELED A-WEIGHTED AVERAGE NOISE LEVELS FROM OPERATIONS, WINTER MONTHS.mxd

**ATTACHMENT CU DR 82-1**

# Figure DR82-1 Proposed Preliminary Tower Map




LEGEND

- GEM SITE
- TOWERS (PRELIMINARY)
- ALTERNATE 1A
- ALTERNATE 1C
- PREFERRED ROUTE
- ALTERNATE 2A
- ALTERNATE 2B
- LAWDP TRANSMISSION CORRIDOR
- LADWP ROSMOND SUBSTATION
- ROADS

**TRANSMISSION LINE**

- SMALLER THAN 110 KV
- 110 - 161 KV
- 220 - 287 KV
- 345 - 500 KV

0 2,000 4,000 Feet

**REFERENCE**

1. COORDINATE SYSTEM: NAD 1983 STATEPLANE CALIFORNIA V FIPS 0405 FEET
2. AERIAL IMAGERY. ESRI PROVIDED BASEMAP SERVICE. IMAGERY COLLECTED 11/23/2021.

CLIENT
HYDROSTOR, INC.

PROJECT
GEM ENERGY STORAGE CENTER

TITLE
**PROPOSED PRELIMINARY TOWERS MAP**

CONSULTANT
WSP GOLDER

| | |
|---|---|
| YYYY-MM-DD | 2023-05-23 |
| PREPARED | JAM |
| DESIGN | JAM |
| REVIEW | ED |
| APPROVED | DS |

PROJECT No.
20449449

FIGURE
**DR82-1**

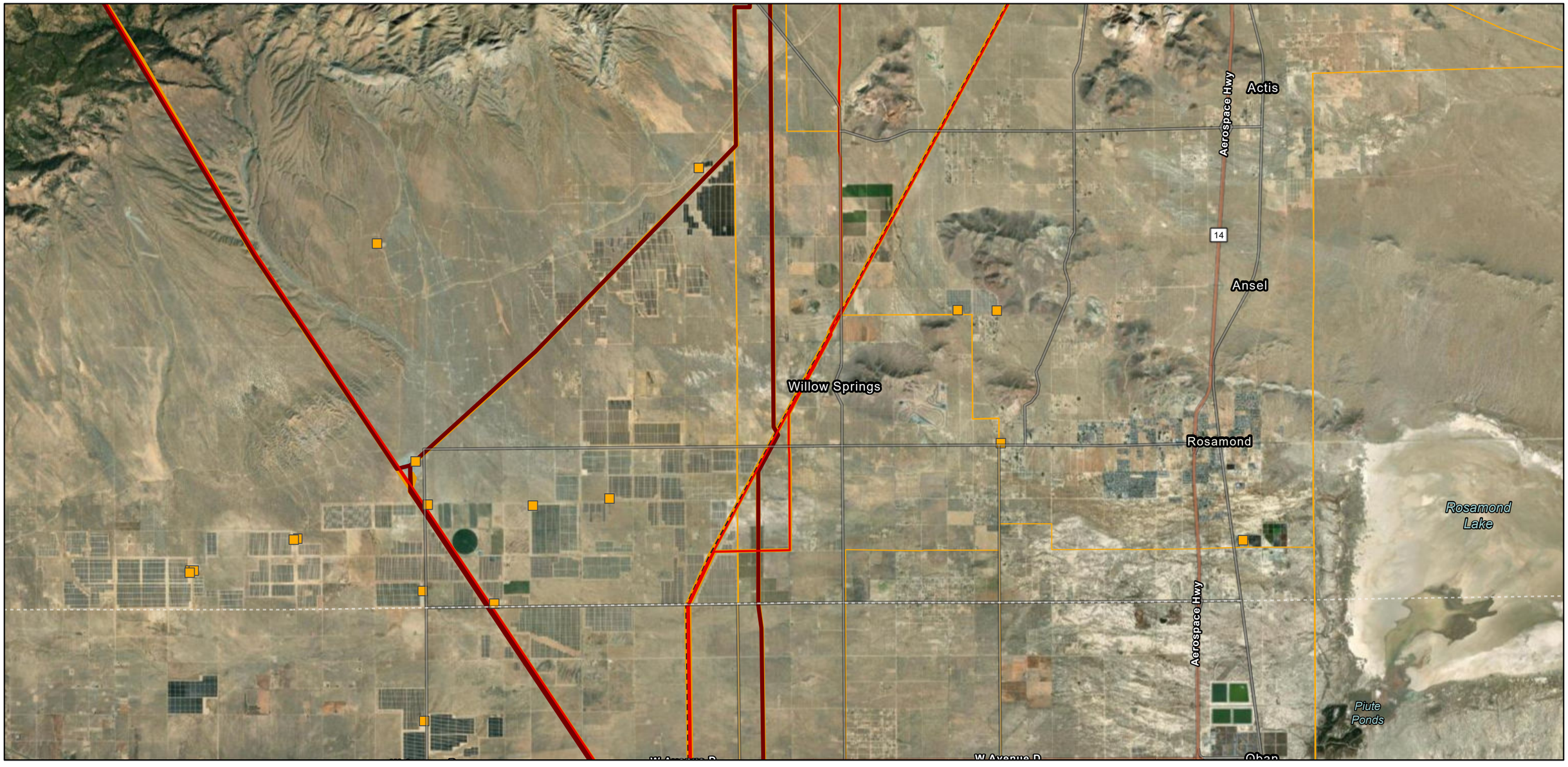
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET HAS BEEN MODIFIED FROM: ANSI B

Path: G:\Sites\MonoBay_Rosmond\Maps\LandUse\GEM\Rev1\Attachment CU DR82-1.mxd

**ATTACHMENT CU DR94-1**

# California Electric Infrastructure

# California Electric Infrastructure




5/23/2023, 4:39:31 PM

Electric Substations (CEC)

500 kV

345 - 500 kV

Transmission Lines (WECC)

DC

220 - 287 kV

Electric Transmission Lines (CEC)

Smaller than 110 kV

220 - 287 kV

1:144,448

0 1.25 2.5 5 mi

0 2 4 8 km

Earthstar Geographics, California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA

Web AppBuilder for ArcGIS
California Energy Commission - GIS Unit

**ATTACHMENT CU DR99-1**

# Willow Rock Cumulative Project List (email from Kern County)

| | |
|---|---|
| **From:** | Katrina Slayton |
| **To:** | Stein, David |
| **Cc:** | "Nyree Grimes"; "Victor Grille"; "Curt Hildebrand"; Masson, Peter; Paris, Jeremy |
| **Subject:** | RE: Project List for Willow Rock Cumulative Impacts Assessment |
| **Date:** | Wednesday, January 18, 2023 12:40:04 PM |
| **Attachments:** | image001.png<br>onemile_To App.xlsx<br>Sixmile_To App.xlsx |

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Hi David,

Please find attached a 1-mile and 6-mile radius cumulative project list as requested.

The cumulative analysis for air quality should also include energy projects applied and planned for in the Kern County portion of the air basin. In addition to the energy projects on the attached lists, these include:

- Chalan Solar; 618 acres
- Rosamond South Solar; 1302 acres
- Sanborn 2.0 Solar; 1,200 acres
- Tumbleweed Solar; 40 acres
- Kudu Solar; 674 acres
- Bellefield Solar; 6,269 acres
- Aratina Solar; 2,554 acres
- RB Inyokern Solar; 170 acres
- Edwards Air Force Base Solar; 4,000 acres
- Sanborn Solar; 2,006 acres
- Camino Solar; 383 acres

Thank you,

Katrina A. Slayton
Planning Division Chief
County of Kern
Planning & Natural Resources Department
(661) 862-8957 - Direct
(661) 862-8600 - Department

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**From:** Katrina Slayton
**Sent:** Monday, December 19, 2022 4:00 PM
**To:** 'Stein, David' <David_Stein@golder.com>

**Cc:** Nyree Grimes <nyree.grimes@hydrostor.ca>; Victor Grille <victor.grille@hydrostor.ca>; Curt Hildebrand <curt.hildebrand@hydrostor.ca>; Masson, Peter <Peter_Masson@golder.com>; Paris, Jeremy <Jeremy_Paris@golder.com>
**Subject:** RE: Project List for Willow Rock Cumulative Impacts Assessment

Hi David,

I'll have to have one run for you. I'll return it as soon as I get the report and go through what should be included.

Best,

Katrina A. Slayton
Planning Division Chief
County of Kern
Planning & Natural Resources Department
(661) 862-8957 - Direct
(661) 862-8600 - Department

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**From:** Stein, David <David_Stein@golder.com>
**Sent:** Monday, December 19, 2022 3:37 PM
**To:** Katrina Slayton <SlaytonK@kerncounty.com>
**Cc:** Nyree Grimes <nyree.grimes@hydrostor.ca>; Victor Grille <victor.grille@hydrostor.ca>; Curt Hildebrand <curt.hildebrand@hydrostor.ca>; Masson, Peter <Peter_Masson@golder.com>; Paris, Jeremy <Jeremy_Paris@golder.com>
**Subject:** Project List for Willow Rock Cumulative Impacts Assessment



Hi Katrina –

HAPPY HOLIDAYS!!

I'm not sure whether you are in the office this week or whether you are already out for the holidays.

We would like to get the County's input on a list of past, present, and reasonably foreseeable future projects within the Project vicinity that you would expect to be ultimately considered by the CEC in a cumulative impacts analysis of the Willow Rock project.

Is there a recent list from another recent project in the vicinity that you would recommend we use or would you be able to generate one for us?

I'd also be happy to discuss at your convenience. Please let me know.

Thanks!
Dave

**David A. Stein, PE**
Director, Environmental Planning & Permitting

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**ATTACHMENT CU DR99-2**

# Project List within 1 Mile

| Status | WorkDesc | CaseName | ApplicantBuisnessName | APN | Section | Tract | Township | Range | ParcelArea | ZoneMap | GeneralLocation | Notes | ProjectAddress |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| In Construction | AVEP Solar (Rabbitbrush/Chapparal) - GPA to change map code, zone change, CUP for solar energy and communications tower. 250 MW/2,000 MWh BESS on 1,406 acres | Conditional Use Permit, Specific Plan Amendment, Zone Change, Nonsummary Vacation | First Solar, et al | 252-341-482, various | 18 | | 9 | 13 | 1,406 | | ~5.5 miles west of unincorporated community of Rosamond | | |
| Applied | Map 214, 231, 232; GPA, ZCC, CUP - Bullhead Solar Facility. 270 MW/1,080 MWh BESS on ~1,343 acres | Conditional Use Permit, General/Specific Plan Amendment, Zone Change, Ag Excl, Nonsummary Vacation | EDF Renewables by Scott Kuhlke | 315-011-049, various | 6 | | 9 | 13 | 1,343 | | ~8 miles NW of community of Rosamond; ~2 miles north of community of Willow Springs | | 9678 DAWN RD, ROSAMOND, CA |
| Approved | CUP, Map 231, Geotechnical data collection program | | GEM A-CAES LLC | 315-081-091 | 8 | | 9 | 13 | 60.63 | | | | 8684 SWEETSER RD, ROSAMOND, CA |
| Approved | Map 231, CUP Mod - Geo Data Collection | Conditional Use Permit | GEM A-CAES LLC | 315-081-09 | | | | | | | | | |

**ATTACHMENT CU-DR99-3**

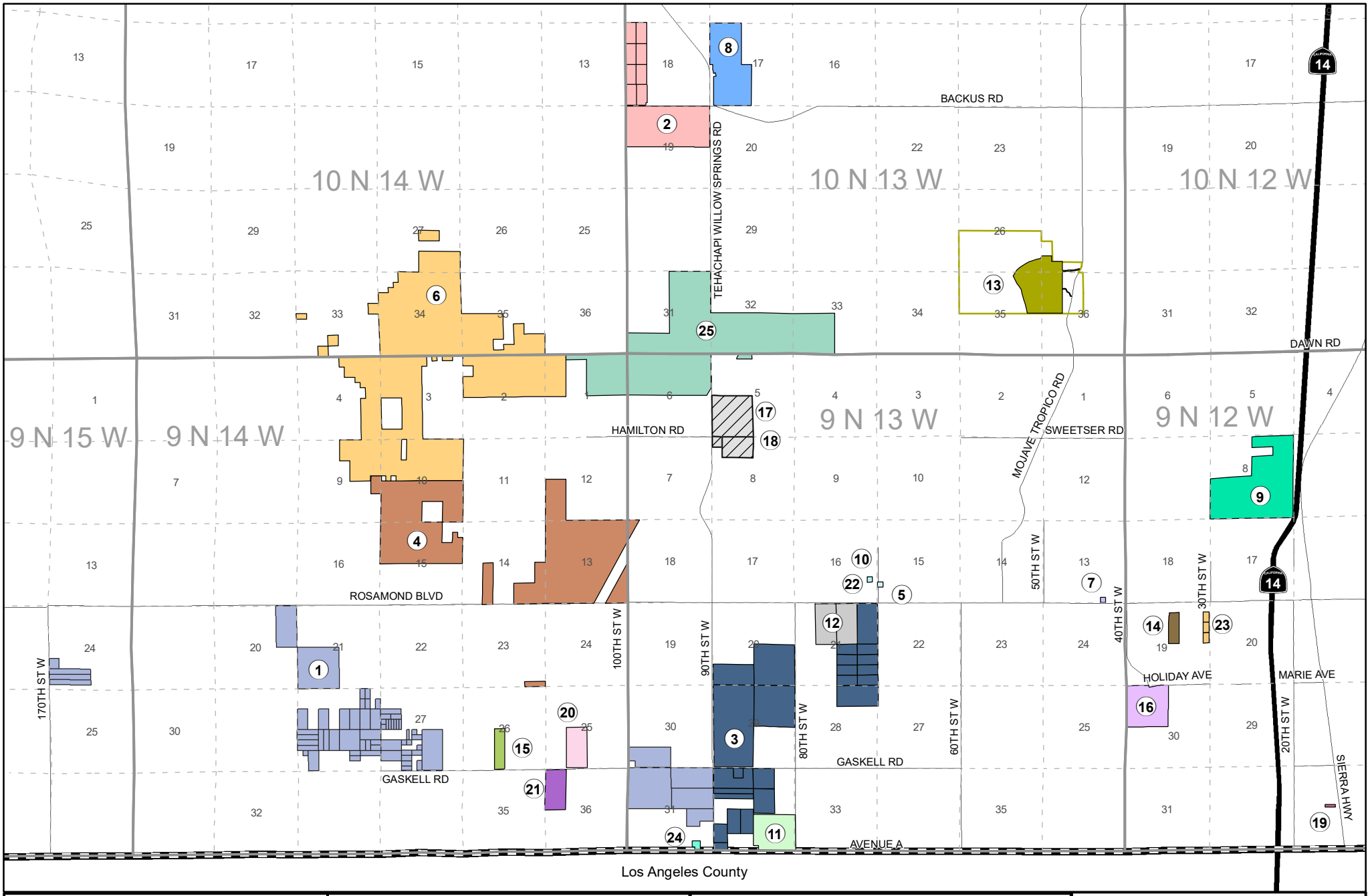
# Project List within 6 Miles

| Status | WorkDesc | CaseName | ApplicantBusinessName | APN | Section | Tract | Township | Range | ParcelArea | ZoneMap | GeneralLocation | Notes | ProjectAddress |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approved | Conditional Use Permit/Zone Change/General/Specific Plan Amendment, Map 232, Rosamond 7 Solar Project | | Golden Fields Solar VI, LLC, C/O Patrick Sullivan | 359-331-16 | | | 9N | 14W | | 232 | Near Willow Ave. in Rosamond CA | | |
| Approved | AV Apollo Solar (Sunbow, Syracuse, Tours) - 60 megawatt (MW) (AC) facility with 360 MWh energy storage, or alternatively, could be developed as three independent, 20 MW facilities on approximately 493 acres. | | Lendlease Energy Development | 346-022-031 | 19 | | 10 | 13 | 493.5 | 214 | 8 miles NW of unincorporated community of Rosamond | | |
| Approved | Raceway 2.0 Solar - Commercial Solar Project, 1225 acres, 291 MW with 291 MW energy storage, 5 sites | | Sustainable Power Group | 374-011-047 | 20 | | 9 | 13 | 1225 | 231 | adjacent to community of Rosamond, between Rosamond Blvd and Ave A and between 70th St West and 90th St West | | 102 90TH STREET WEST, ROSAMOND, CA |
| In Construction | AVEP Solar (Rabbitbrush/Chapparal) - GPA to change map code, zone change, CUP for solar energy and communications tower. 250 MW/2,000 MWh BESS on 1,406 acres | | First Solar, et al | 252-341-482 | 18 | | 9 | 13 | | | | | |
| Approved | Precise Development Plan and Zone Change, Map 231-15, 6,000 sq ft Warehouse/Storage | | JEFFERIES JOHN & JESSICA | 252-190-129 | 15 | | 9 | 13 | 2.55 | 231-15 | | | |
| Approved | BigBeau Solar Development of 128 MW PV solar with energy storage on 2,557 acres, including photovoltaic panels, battery storage, generators, foundations, generators, foundations, generation tie routes, transformers, substations, laydown yards, a meteorological tower, communication towers, temporary concrete batch plants, | | EDF Renewables on behalf of BigBeau Solar LLC | 358-010-015 | 10 | | 9 | 14 | 158.91 | | | | 4551 170TH STREET WEST, ROSAMOND, CA |
| Approved | CUP 2, Map 231-13 for EOT - Apt Complex | | Russell Khouri | 252-161-492 | 13 | | 9 | 13 | 2.51 | | | | 0 ROSAMOND BL, ROSAMOND, CA |
| Approved | A conditional use permit for an underground mining operation and development of a surface reclamation plan in accordance with Surface Mining and Reclamation Act (SMARA) of 1975. The applicant proposes to extract gold and silver ore. Surface disturbance will be limited to approximately 2.4 acres (all of which has been previously disturbed as a result of past mining operations) on a portion of three parcels totaling 260 acres in size. | | Blue Eagle Lode Mine Company | 346-021-02 | | | | | | | | | |
| In Review | Map 230 for GPA/ ZCC/ PD Hotel Development | General Plan Amendment, Precise Development, Zone Change | Westpark, LLC - Howard Field | 471-022-079 | 8 | | 9 | 12 | 460 | 230 | | | |
| Applied | ZCC, PD, Map 231-16 to allow a zone change from OS to M-1 PD to allow the development of six (6) 5,000 sq. ft buildings for light industrial/storage use. | Precise Development, Zone Change | Joe Facciano | 252-171-095 | 16 | | 9 | 13 | 2.53 | 231-16 | | | |
| Applied | Map 231, ZCC - E(2 1/2) RS MH FPS & OS to A | Zone Change | Tapia Bros., Inc. | 374-020-53 | | | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approved | Gettysburg Solar Project - 30 MW with 120 MWh of energy storage on 158 acres | Conditional Use Permit, Specific Plan Amendment, Zone Change | Gettysburg Solar Farm, LLC | 374-011-06 | | | | | 158 | 231-21 | 1/4 east of intersection of Rosamond Blvd and 80th St West | | |
| Processing | SMARA surface mining operation and rec plan - Gem Hill Quarry. Surface disturbance limited to 82-acre area of 210-acre project site. | Conditional Use Permit | CalPortland Company | 345-294-17 | | | | | 210 | 214 | 4 miles NW of uninincorporated community of Rosamond | | |
| In Review | Map 230, ZCC - 120 Unit SFR Development | Zone Change | FH II LLC dba Frontier Communities | 472-100-63 | | | | | | | | | |
| Approved | 2 Megawatt (MW) utility-scale solar facility with 125 MW energy storage on 39 acres | Zone Change, Conditional Use Permit | Tumbleweed Solar, LLC | 359-183-027 | 26 | | 9 | 14 | 39.18 | 232 | NW corner of Gaskell Rd and 115th St West in Rosamond area | | |
| Accepted | Map 230-30, ZCC Change in zoning classification from A-1 to R-1 on 160 acres. Tract Map to divide 160-acre parcel into 60 lots ranging from 6,083 sq ft to 18,489 sq ft and one 3-acre sump lot. | | Royal Investor's Group, LLC | 473-021-103 | 30 | | 9 | 12 | 159.02 | | | | |
| Approved | CUP, Map 231, Geotechnical data collection program | | GEM A-CAES LLC | 315-081-091 | 8 | | 9 | 13 | 60.63 | | | | 8684 SWEETSER RD, ROSAMOND, CA |
| Approved | Map 231, CUP Mod - Geo Data Collection | Conditional Use Permit | GEM A-CAES LLC (subsidiary of Hydrostor Inc.) by Stephen O'Kane | 315-081-09 | | | | | | | | | |
| Applied | Map 230, PD - Commercial Development | Precise Development | Irvine Carrillo | 472-100-15 | | | | | | | | | |
| Applied | PSR, Map 232, RTS Orchards, LLC | | RTS Orchards | 359-031-077 | 25 | | 9 | 14 | 78.48 | | | | |
| Applied | PSR, Map 232, RTS Orchards LLC | | RTS Orchards | 359-032-208 | 36 | | 9 | 14 | 79.09 | | | | 10984 GASKELL RD, ROSAMOND, CA |
| Applied | Map 231-16, ZCC - OS to M-1 for free standing garages (3,000 sq ft) with balcony (1,000 sq ft) | Zone Change | William J. Challman by Elizabeth Destro | 252-171-09 | | | | | | | | | |
| Applied | Map 230, ZCC - A-1 to R-1 Future Residential Development | Zone Change | Aaron Rivani by Cindy Parra | 472-100-16 | | | | | | | | | |
| Applied | Map 231, PD - Permit auto service and repair. | Precise Development | Slavica Illic Dragi | 374-450-09 | | | | | | | | | |
| | | | | | | | | | | | | | |

**ATTACHMENT CU DR100-1**

# Kern County Cumulative Project Map for Willow Rock




0 0.5 1 2 Miles

**Kern County Planning & Natural Resources Department**

1. Rosamond South Solar
2. AV Apollo Solar
3. Raceway 2.0 Solar
4. AVEP Solar
5. Map 231-15 ZCC 1 PD 1 John Jefferies
6. Big Beau Solar
7. Map 231-13 EOT CUP 2 Russell Khouri
8. Map 214 CUP 11 Blue Eagle Lode Mine Company
9. Map 230 GPA/ZCC/PD Westpark LLC
10. Map 231-16 ZCC/PD Joe Facciano
11. Map 231 ZCC Tapia Bros Inc
12. Gettysburg Solar
13. Gem Hill Quarry
14. Map 230 ZCC 121 FH II, LLC dba Frontier Communities
15. Tumbleweed Solar
16. Map 230-30 ZCC Royal Investors Group
17 & 18. Hydroster Willow Rock Project
19. Map 230 PD Irvine Carillo
20. Map 232 PSR RTS Orchards
21. Map 232 PSR RTS Orchards
22. Map 231-16 ZCC William J Challman
23. Map 230 ZCC Aaron Rivani
24. Map 231 PD Slavica Illiac Dragi
25. Bullhead Solar