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| **Document Title:** | Willow Rock Energy Storage - CURE Data Request Set 2 with Cover Sheet |
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May 1, 2023

**Via CEC Online Portal**
Curt Hilderbrand
Hydrostor, Inc.
400 Capitol Mall, Suite 3000
Sacramento, CA 95814-4497

**Re: CURE Data Requests Set 2 for Willow Rock Energy Storage Center (21-AFC-02)**

Dear Mr. Hilderbrand:

California Unions for Reliable Energy ("CURE") submits this second set of data requests to Hydrostor, Inc. for the Willow Rock Energy Storage Center Project ("Project"), pursuant to Title 20, section 1716(b), of the California Code of Regulations. The requested information is necessary to: (1) more fully understand the Project; (2) assess whether the Project will be constructed and operated in compliance with all laws, ordinances, regulations, and standards; (3) assess whether the Project will result in significant environmental impacts; (4) assess whether the Project will be constructed and operated in a safe, efficient, and reliable manner; and (5) assess potential mitigation measures.

Pursuant to section 1716(f), written responses to these requests are due within 30 days. If you are unable to provide or object to providing the requested information by the due date, you must send a written notice of your objection(s) and/or inability to respond within 20 days.

Please contact us if you have any questions. Thank you for your cooperation with these requests.

Sincerely,
Tara C. Rengifo
Tara C. Rengifo

Attachment
TCR:acp

5260-035acp

**STATE OF CALIFORNIA**

**State Energy Resources Conservation and Development Commission**

| | |
|---|---|
| In the Matter of:<br><br>WILLOW ROCK ENERGY STORAGE CENTER | Docket No. 21-AFC-02 |

# CALIFORNIA UNIONS FOR RELIABLE ENERGY DATA REQUESTS SET 2

May 1, 2023

Tara C. Rengifo
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Attorneys for California Unions for Reliable Energy

The following data requests are submitted by California Unions for Reliable Energy ("CURE"). Please provide your responses as soon as possible, but no later than May 31, 2023, to:

Tara C. Rengifo
Adams Broadwell Joseph & Cardozo
601 Gateway Blvd., Suite 1000
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Please identify the person who prepared your responses to each data request. If you have any questions concerning the meaning of any data requests, please let us know.

**WILLOW ROCK ENERGY STORAGE CENTER**
**CURE Data Requests Set 2 (Nos. 43-140)**

## GEOLOGY

### BACKGROUND: GEOTECHNICAL CHARACTERIZATION

The underground components of the Willow Rock Energy Storage Center Project ("Project") need suitable geological formations to construct and operate the subsurface air storage caverns. The air storage caverns are constructed in geologic formations that must have certain optimal physical characteristics such as bulk permeabilities, hydraulic conductivities, minimal fracture or fault features, and certain rock density characteristics. Attachment DA54-1, "Geologic Figures," (TN 242792) demonstrates that the proposed facility is located in a complex geologic environment with several normal faults, volcanic dikes, and intrusive granitic rocks. The descriptions of the Project's construction activities and operations do not provide the specific geologic and hydrogeologic criteria that will be used to evaluate cavern construction impacts on the Project site's geologic and hydrogeologic systems. This information is also necessary to evaluate the relevance of the Project's drilling and downhole testing results.

### DATA REQUESTS:

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

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

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

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

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

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.

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

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

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.

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

53. Please confirm whether the liquefaction risks remain low.

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.

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.

## AIR QUALITY AND PUBLIC HEALTH

### BACKGROUND: CONSTRUCTION PM10 EMISSIONS

In response to DR 113 (TN 247661) on construction Particulate Matter ("PM") 10 emissions, the Applicant GEM A-CAES LLC ("Applicant") explained that the results shown in Table 1 and 2 of Appendix 5.1C in the Project's Application for Certification ("AFC") (TN 240768-5) were based on the assumptions that the emissions from unpaved roads could be controlled to an efficiency (emission control rate) up to 85% and emissions from open areas could be controlled to an efficiency of 70% due to watering. These figures, however, may be an overestimation of the potential reduction in dusts generated on site based on the literature. Without a clear reference to how these control efficiencies were calculated, the values are unsupported. The actual emissions from the unpaved portion of the Project site may therefore be higher than the calculations in the AFC's analysis.

For fugitive dust from paved and unpaved roads, the Western Regional Air Partnership's (WRAP) Fugitive Dust Handbook is a well-respected and credible resource for assumed emission controls. Commonly cited dust control efficiencies include 55% for watering once a day, 70% for watering more than once a day, and 80% for chemical suppressants, assuming that the suppressants remain in place.

**DATA REQUESTS:**

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).

57. If no evidentiary support for the control efficiencies is provided in response to DR 56 above, please provide the $PM_{10}$ emissions during construction activities based on accurate control efficiencies. Provide all citation(s), reports, and calculations performed to support the analysis.

**REFERENCES:**

Midwest Research Institute. 2006. Background Document for Revisions to Fine Fraction Ratios Used for AP-42 Fugitive Dust Emission Factors. Prepared by Midwest Research Institute for Western Governors' Association Western Regional Air Partnership (WRAP). https://www.epa.gov/sites/default/files/2020-10/documents/background_document_for_revisions_to_fine_fraction_ratios_used_for_ap-42_fugitive_dust_emission.pdf

MRI, April 2001. Particulate Emission Measurements from Controlled Construction Activities, EPA/600/R-01/031

**BACKGROUND: VALLEY FEVER**

PM emissions from construction activities can significantly impact public health due to the inhalation of respirable dust particles as well as exposing sensitive receptors to contaminated soils impacted by spores of Coccidiodes imimitis (cocci). When soil containing the cocci spores are disturbed by construction activities, the fungal spores become airborne, exposing construction workers and other nearby sensitive receptors to infection from Valley Fever.

Kern County is a well-recognized area impacted by Coccidiodes imimitis (cocci). Over 3,000 cases of Valley Fever and thirty-three (33)

deaths were recorded in Kern County in 2021, three (3) times more than the amounts reported in 2015. The fungus lives in the top two (2) to twelve (12) inches of soil. When soil containing this fungus is disturbed by activities such as digging, vehicles, construction activities, dust storms, or during earthquakes, the fungal spores become airborne. Standard fugitive dust mitigation measures are not adequate to protect construction workers and nearby sensitive receptors from this risk.

Dust exposure is one of the primary risk factors for contracting Valley Fever. The most at-risk populations are construction and agricultural workers. Construction workers are the very population that would be most directly exposed by the Project. A refereed journal article on occupational exposures notes that "[l]abor groups where occupation involves close contact with the soil are at greater risk, especially if the work involves dusty digging operations."

The potentially exposed population in surrounding areas is also at risk because the raising of dust during Project construction will carry the very small spores, 0.002–0.005 millimeters ("mm"), into nonendemic areas, potentially exposing large non-Project-related populations. These very small particles are not controlled by conventional construction dust control mitigation measures.

**DATA REQUESTS:**

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.

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

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.

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.

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.

**REFERENCES:**

Lawrence L. Schmelzer and R. Tabershaw, Exposure Factors in Occupational Coccidioidomycosis, *American Journal of Public Health and the Nation's Health*, v. 58, no. 1, 1968, pp. 107–113, Table 3; available at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1228046/?page=1.

Demosthenes Pappagianis and Hans Einstein, Tempest from Tehachapi Takes Toll or Coccidioides Conveyed Aloft and Afar, Western Journal of Medicine, v. 129, Dec. 1978, pp. 527–530; available at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1238466/pdf/westjmed00256-0079.pdf.

## NOISE

**BACKGROUND: NOISE IMPACTS ON WILDLIFE**

The AFC at page 5.2-26 (TN 242791) states, "Construction of the GESC Project may also result in temporary noise impacts to wildlife species within the vicinity. The Applicant will coordinate with USFWS and CDFW on construction mitigation measures and as such, impacts will be less than significant from the construction laydown area." The AFC concludes that the impacts will be less than significant without identifying or analyzing mitigation measures.

**DATA REQUESTS:**

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

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

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.

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.

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

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

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.

**BACKGROUND: EFFECTS OF INVERSIONS ON NOISE**

As described in the AFC at page 5.7-20 (TN 240751-13), the operational noise analysis for the proposed Project is based on 24/7 operations or an operational usage factor of 100%. Nevertheless, nighttime weather conditions were not modeled in the operational noise analysis. In many areas of California, temperature inversions are common, and strong inversions can cause sound to travel much farther than usual during the winter months in places like deserts where cold nights follow sunny, clear days or cold nights are followed by days with little solar warming. The Project is in a desert region that includes the Mojave Desert. During an inversion event, air quality degrades because particles are trapped lower to the ground, and the inverted temperature gradient creates conditions that allow sound to "bend" back down to the ground. Strong inversions can increase the sound level by 5 to 8 dBA and even more if combined with wind.

Table 5.7-9 in the AFC (TN240751-13) notes the input parameters for the operational noise model. The noise model input parameter used for wind conditions is for moderate inversion conditions (ISO 9613). No inversion condition is identified for the temperature input parameter, particularly during colder months and nighttime periods when stronger inversions may occur.

Table 5.7-12 (TN 240751-13) shows the predicted noise levels during daytime and nighttime operations based on the input parameters in Table 5.7-9. As modeled, operation of the project would exceed the baseline by as much as 18 dBA Leq during nighttime hours. This estimate, however, does not include the greater temperature inversion effects that may occur during the colder months of the year, which could substantially increase the Project's noise locally and at some distance from the Project site.

**DATA REQUESTS:**

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.

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

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).

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).

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).

**REFERENCES:**

Iacobellis, S., et.al, "Climate Variability and California Low-Level Temperature Inversions," August 2009. https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=5a1350c4e18bf70aaa47f0dfc1 c66b51bc9cab6c

National Park Service, "Weather and Climate Inventory National Park Service Mojave Desert Network," 2007. https://wrcc.dri.edu/nps/reports/2007_04_24_mojninventory_final.pdf

Saurenman, H. et.al, "Atmospheric Effects Associated with Highway Noise Propagation," October 2005. https://rosap.ntl.bts.gov/view/dot/40318/dot_40318_DS1.pdf

**BACKGROUND: SLEEP DISTURBANCE FROM OPERATIONAL NOISE**

AFC Table 5.7-12 (TN 240751-13) shows the predicted noise levels during nighttime operations in terms of hourly Leq and the Ldn. The day-night noise level (Ldn) is a 24-hour metric and is not adequate to assess how

the Project would impact sleep. The Ldn infers the on-going noise level in a sleep environment, but it does not provide sufficient detail to identify the nighttime noise levels (e.g., occurring between 10 PM and 7 AM) or the presence of high-level, short-duration sounds, which can jolt people awake. Noise can disturb sleep by making it more difficult to fall asleep, by waking someone after they are asleep, or by altering their sleep stage, e.g., reducing the amount of rapid eye movement (REM) sleep. Noise exposure for people who are sleeping has also been linked to increased blood pressure, increased heart rate, increase in body movements, and other physiological effects. People whose sleep is disturbed by noise often experience secondary effects such as increased fatigue, depressed mood, and decreased work performance. The World Health Organization ("WHO") published guidance in 1999 that identifies criteria of Leq of 30 dBA and Lmax 45 dBA at bedroom interiors to avoid sleep disturbance. The former would be suitable to assess whether the Project would cause significant impact to the on-going existing noise environment and disturb sleep, and the latter to determine whether intermittent noises caused by the Project could cause sleep disturbance.

**DATA REQUESTS:**

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

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.

**REFERENCES:**

World Health Organization, Guidelines for Community Noise, eds B Berglund, T Lindvall, and D Schwela, 1999. https://apps.who.int/iris/handle/10665/66217 (Table 4.1)

**BACKGROUND: BLASTING NOISE AND OVERPRESSURE**

The Applicant provided a summary of the Project's controlled detonation activities (TN 247494). The Summary of Controlled Detonation Activities described the expected activities associated with the use of explosives during the construction phase for the cavern. Additional information about the anticipated noise and vibration impacts from the cavern construction detonation activities was provided in response to DRs 160-165 in Set 4 of CEC staff's DRs (TN 249495). Attachment DR161-1 sets forth "Detonation Vibration Estimates," (TN 249495). Delays that occur within 8 milliseconds of one another should have been combined but were not

in the estimations. Additionally, to properly account for low frequency effects of blast vibrations, the dominant wave frequency and corresponding time period should have been identified and charges that would occur within ¼ of that time period should have been combined in Attachment DR161-1 (TN 249495).

The Applicant's Summary of Controlled Detonation Activities (TN 247494) concludes that "Given the limited nature of the activity, we do not anticipate that the public would be significantly impacted by the controlled detonations." The Applicant's Summary refers to blast overpressure in the air as "vibration." We will use the terms "blast overpressure" or "air overpressure." (see also TN249495).

**DATA REQUESTS:**

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.

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.

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.

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

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

**REFERENCE:**

Siskind, David E., "Vibrations from Blasting," 2000. International Society of Explosives Engineers.

## BACKGROUND: GENERATOR TIE-LINE IMPACTS

Activities related to the construction of the Project's generator tie-line ("gen tie-line") will directly impact vegetation, habitat, and potentially special-status species. Some segments of the proposed gen-tie line routes contain existing access roads, whereas others do not. The need to construct new roads or widen existing roads to accommodate construction equipment and vehicle circulation could have substantial effects on the Project's permanent impacts to biological resources. Although the Applicant has stated that the Project's new access roads "are expected to be 16 feet wide and will conform to Kern County Building Department standards," the Applicant has not identified the width requirements for existing access roads (TN 248496).

The Project's gen-tie line would be constructed within a right-of-way ("ROW") that would be 75 to 125 feet wide (TN 240751-4). It is unclear whether this ROW would overlap with an existing power line ROW. However, even if the Project's ROW overlaps with an existing power line ROW (containing an existing access road), it appears that at least some spur roads would need to be constructed to enable access of construction vehicles from the existing access road to the specific locations where the Project's new transmission poles and lines would be installed. For example, there are power lines along (and immediately adjacent to) both sides of Tehachapi-Willow Springs Road. Therefore, if Alternate Route 2B (along Tehachapi-Willow Springs Road) is used for the Project's gen-tie line, the Project's power poles would need to be further removed from the road, thus (apparently) requiring construction of spur roads.

The Applicant responded to CURE's DR 23 (TN 248496) that only existing access roads would be used along Alternate Route 2A or 2B to the future Los Angeles County Department of Water and Power ("LADWP") Substation. However, based on AFC Figure 5.2-5 (TN 242791), the access road for LADWP's transmission lines (west of Alternate Route 2A) is located outside of both the Project Boundary and Survey Buffer, and spur roads would likely need to be constructed to access Alternate Route 2B. If existing access (or spur) roads do not exist, the Applicant would need to construct new access (or spur) roads to accommodate gen-tie construction vehicles, materials, and crews. These activities and the corresponding impacts are not disclosed or evaluated in the AFC.

Based on Google Earth imagery and AFC Figure 5.2-5 (TN 242791), some of the "existing access roads" along gen-tie routes to the Whirlwind

Substation are less than 16 feet wide and appear to require grading and widening to enable access for gen-tie construction vehicles and equipment. However, the values in AFC Tables 8b and 9b (TN 242791) indicate that the only permanent impacts along routes with existing access roads would be from transmission pole placement (i.e., existing roads would not require widening and no spur roads would need to be constructed).

According to AFC Figure 3-1 (TN 240751-4), each of the Project's transmission line poles will have a concrete foundation approximately eight feet in diameter. This equates to 50.24 square feet of permanent impacts per pole. AFC Tables 8a and 9a (TN 242791) quantify the total amount of permanent impacts due to pole placement, by route segment. Based on this information (and the distance of each route), pole placement would result in approximately 56.6 to 66.3 square feet of permanent impacts per mile of the gen-tie line (depending on the route selected). This equates to an average span of over 4,000 feet between poles, which does not appear feasible and is inconsistent with the spacing of other 230 kV line poles in the area (which are approximately 800 to 1,200 feet apart). In addition, the "permanent impacts" values provided in Tables 8a and 9a do not appear to account for permanent impacts to vegetation due to implementation of the California Public Utilities Commission's General Order No. 95 (requiring horizontal clearance of vegetation around powerline poles).

Because AFC Tables 8a, 8b, 9a, and 9b (TN 242791) appear to underestimate the extent of impacts associated with the Project's access roads and power poles, CURE's DR 24 asked the Applicant to explain how the values in those tables were calculated, to which the Applicant responded that the values were calculated by ARCGIS (TN 248496). The assumptions associated with each variable (e.g., access road, material laydown area, foundation for transmission structure, and conductor pull and tensioning site, among other variables) that would cause impacts along a given gen-tie route are undisclosed and the calculations in Tables 8a, 8b, 9a, and 9b therefore cannot be verified. Additional information about the Project's construction of new access roads and other ground disturbing activities along the preferred and alternative gen-tie routes is necessary to assess the Project's potentially significant impacts on sensitive biological resources.

**DATA REQUESTS:**

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.

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.

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).

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

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

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

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.

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.

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.

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.

**BACKGROUND: GENERATOR TIE-LINE FEASABILITY**

Figure 1-4 in the AFC (TN 240751-2) identifies the preferred route and several alternate routes for the Project's gen-tie line to the Whirlwind Substation. Whereas there are some minor differences among the various routes, all of the routes head west along either Hamilton Road or Irone Avenue until reaching at least 140th Street W, which is a distance of approximately five (5) miles. (TN 240751-23).

The Environmental Impact Report ("EIR") for the 2,285-acre Big Beau Solar Project was certified by Kern County in 2020. The EIR for the 1,406-acre AVEP Solar Project was certified by Kern County in 2021. These two projects encompass, and in some places vacate, the portions of Hamilton Road and Irone Avenue proposed for the Project's gen-tie line. In addition, a portion of the solar field for the AVEP Solar Project is located between LADWP's Barren Ridge transmission line and 100th Street W, which coincides with the area proposed for gen-tie Alternate Route 2A to the future LADWP substation (TN 240751-12). Thus, it appears that Alternate Route 2B to the future LADWP substation may be the only potentially feasible route for the Project's gen-tie line ROW.

**DATA REQUESTS:**

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.

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.

**BACKGROUND: EXISTING POWER LINES**

The spatial configuration of the Project's gen-tie line in relation to existing power lines has implications on habitat loss, fragmentation, and degradation. It also has implications on the avian collision threat posed by the Project's power lines.

CURE's DR 26 (TN 248496) asked the Applicant to provide a map that identifies the transmission (gen-tie) line route segments with existing aboveground power lines for both the preferred route to the Whirlwind Substation and the alternative routes to the future LADWP substation. The Applicant's response (TN 248496) cited AFC Figure 1-4 (TN 240751-2) for the locations of the proposed transmission line routes, as well as California Electric Transmission Line GIS data from the CEC's website. However, the CEC's GIS data do not depict existing power lines along the various transmission line routes proposed in AFC Figure 1-4.

**DATA REQUESTS:**

94. Please provide images from the CEC's map of California Electric Transmission Lines or any other evidence to show existing power lines

along the gen-tie routes depicted on AFC Figure 1-4 (TN 240751-2). Source: <https://cecgis-caenergy.opendata.arcgis.com/datasets/260b4513acdb4a3a8e4d64e69fc84fee_0/explore?location=36.526884%2C-122.255690%2C7.50>.

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

**BACKGROUND: AVIAN COLLISIONS AND ELECTROCUTIONS**

Overhead power lines kill millions of birds each year (due to collisions and electrocutions). These fatalities have the potential to cause population-level impacts. Consequently, CURE's DR 28 (TN 248496) asked the Applicant to discuss how the Project's gen-tie line components would adhere to the Avian Power Line Interaction Committee ("APLIC") practices for avian protection from power lines. The Applicant's response (TN 248496) identifies the APLIC documents that were reviewed and summarizes some measures that APLIC recommends to minimize the potential for avian electrocutions. For collisions, the response identifies factors that should be considered in power line placement, and it identifies line marking and burying lines as "additional options" if "feasible and warranted." The Applicant's response fails to identify which, if any, APLIC practices to minimize the potential for avian electrocutions and collisions would actually be implemented for the Project's electrical transmission facilities.

As indicated in the APLIC guidelines, the core strategy for reducing avian collisions with power lines involves: (a) spatial analysis that considers habitat variables, species, behavior, and other factors; (b) a field assessment to identify species, abundance, and high bird-use areas; and (c) an avian risk assessment to evaluate collision risk along potential routes (APLIC 2012, p. 54). The results of this site-specific assessment are then used to formulate risk reduction strategies. The AFC does not provide the site-specific analysis recommended by APLIC, nor does it provide evidence that the Project would implement the recommended risk reduction strategies.

**DATA REQUESTS:**

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

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

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.

**BACKGROUND: CUMULATIVE EFFECTS**

There are past, present, and reasonably foreseeable future projects within the vicinity of the Project site that may result in significant cumulative impacts on biological resources. The Biological Resources chapter of the AFC at page 5.2-34 (TN 242791) concludes that "[c]umulative impacts from GESC are expected to be less than significant." Although this determination was not accompanied by analysis, the Applicant's Biological Technical Report ("BTR") (TN 242779) at page 50 reasons: "[w]ith an abundance of natural land presently in the greater Antelope Valley and only a small portion slated for projects in the near future, vast acreages of natural land will remain following the construction of this Project and other pending projects, reducing cumulative impacts throughout the region." However, this reasoning was not accompanied by data on, or a map of, the past, present, and reasonably foreseeable future projects in the greater Antelope Valley.

CURE's DR 29 (TN 248496) asked the Applicant to provide a list of past, present, and reasonably foreseeable future projects within the Project vicinity. In response (TN 248496), the Applicant referenced the January 2020 EIR for the Big Beau Solar Project. Source: https://kernplanning.com/environmental-doc/big-beau-solar-project/. The analysis in the EIR for the Big Beau Solar Project includes a list of fifty-six (56) projects that could contribute to cumulative impacts on biological resources.

The Big Beau Solar Project EIR at pages 4.4-97 and -98 concluded that the cumulative loss of foraging and nesting habitat for special-status species would be significant and unavoidable, despite implementation of mitigation measures. It further determined that the Big Beau Solar Project, in combination with all identified cumulative projects, would result in a cumulatively significant impact on migratory birds, and that the impact may remain significant and unavoidable after implementation of mitigation. The Big Beau Solar Project is located two miles west of the Project site and it overlaps with portions of the Project's preferred gen-tie route to the Whirlwind Substation. Both project sites provide similar foraging and nesting habitat for special-status species and both projects have the potential to impact migratory birds.

**DATA REQUESTS:**

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).

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.

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

**BACKGROUND: MOJAVE SPINEFLOWER**

Mojave spineflower (*Chorizanthe spinosa*) is a California Rare Plant Rank 4 species that is limited to the western edge of the Mojave Desert in California. Threats to the Mojave spineflower include development, vehicles, road maintenance, and illegal dumping. The AFC at page 5.2-9 (TN 242791) states: "[s]ensitive or special-status species meet at least one of [sic] more of the following criteria…California Native Plant Society (CNPS) List 1-4 species." Mojave spineflower (*Chorizanthe spinosa*) is a "List 4" (now called "Rank 4") species that was detected during surveys for the Project (TN 242779). However, this species is not addressed in the AFC.

The Project site is within the Willow Springs Specific Plan Area. The Willow Springs Specific Plan determined there would be unavoidable significant impacts to the Mojave spineflower within the Plan area, which includes the Project site. Source: https://psbweb.co.kern.ca.us/planning/pdfs/SPs/WillowSprings_SP.pdf

**DATA REQUESTS:**

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

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

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

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.

**BACKGROUND: TEHACHAPI POCKET MOUSE AND TULARE GRASSHOPPER MOUSE**

The Tehachapi pocket mouse and the Tulare grasshopper mouse are California Species of Special Concern that have a high to very high risk of extinction based on NatureServe element ranking. The BTR (TN 242779) presumed absence of the Tehachapi pocket mouse and the Tulare grasshopper mouse on the grounds that suitable habitat typically associated with these subspecies does not occur in or adjacent to the Survey Area, and that the Survey Area is outside of the range of both taxa. The BTR's findings that both subspecies are absent from the Project area conflicts with the CDFW determination (TN 245782) that these taxa could be impacted by the Project, and that focused surveys should be conducted to determine whether either subspecies is present in the Project area. In addition, the BTR's rationale for presuming absence is based on outdated CNDDB records pertaining to the range of the taxa.

According to CDFW's 1998 species account, the Tehachapi pocket mouse historically occurred from the vicinity of Tehachapi Pass, west to Mount Pinos, and south to Elizabeth and Quail Lakes. However, the species account noted the difficulty in locating extant populations, and it stated that additional information on the distribution and abundance of the subspecies was needed. In 2011, Tehachapi pocket mice were detected at two locations outside of the taxon's previously known range. Both of these locations are within 2.5 to 2.75 miles of gen-tie Route H. The habitat where the pocket mice were detected was described as "desert scrub, creosote, and non-native grassland," which is comparable to the habitat that occurs throughout most of the Project site (including gen-tie Route H). Based on this information, the Project site provides potential habitat for the Tehachapi pocket mouse.

The Tulare grasshopper mouse is associated with a variety of low, open scrub and semi-scrub habitats, including desert scrub associations composed of grasses and shrubs such as *Ephedra*, *Gutierrezia*, *Ericameria*, and *Eriogonum*. The Project area contains open scrub and semi-scrub habitats suitable for the Tulare grasshopper mouse (TN 242791). Furthermore, the subspecies is not limited to the "foothills of the Tehachapi Mountains" as stipulated in the BTR; it has been documented in plains and valleys at elevations as low as 240 feet. Similar to the Tehachapi pocket mouse, in 2011 the Tulare grasshopper mouse was detected at two locations approximately

2.5 miles to 3.0 miles north of gen-tie Route H. Based on this information, the Project site provides potential habitat for the Tulare grasshopper mouse.

**DATA REQUESTS:**

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).

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.

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.

**REFERENCES:**

Brylski PV. 1998. Tehachapi pocket mouse, *Perognathus alticola inexpectatus* (Species Account). In: Bolster BC (editor). Terrestrial Mammal Species of Special Concern in California. California Department of Fish and Game, Sacramento, California. pp. 104 to 106.

California Natural Diversity Database. 2023. RareFind 5 [Internet]. California Department of Fish and Wildlife [Apr 1, 2023].

Collins PW. 1998. Tulare grasshopper mouse, *Onychomys torridus tularensis* (Species Account). In: Bolster BC (editor). Terrestrial Mammal Species of Special Concern in California. California Department of Fish and Game, Sacramento, California. pp. 126 to 128.

**BACKGROUND: SWAINSON'S HAWK**

The small population of Swainson's hawks (approximately 10 pairs) that breed in the Antelope Valley represents the last remnant of a formerly substantial southern California breeding population that has been nearly extirpated due primarily to the loss of habitat. The persistence of this

population is highly threatened by additional habitat loss, stochastic processes, and the geographic isolation of the Antelope Valley population from other Swainson's hawk populations. Long-term monitoring data collected by Bloom Biological, Inc. suggest that the highest density of breeding Swainson's hawks in the Antelope Valley occurs in the Willow Springs area.

Eight Swainson's hawks and one active nest were detected during the Applicant's surveys conducted between March 31 and July 13, 2021 (TN 242791; TN 242779). The BTR at page 2 states that six of the Swainson's hawks were transient/dispersing individuals (TN 242779). Two of these birds were detected on April 5, 2021, and four additional birds were incidentally observed during focused burrowing owl surveys on April 14 and 15 (TN 242779). The BTR's conclusion that these six Swainson's hawks were transient/dispersing individuals was not substantiated and is inconsistent with the behavior of the species. Most Antelope Valley Swainson's hawks return from their wintering grounds between March 1 and April 1, and they *immediately* begin occupying their traditional nest territories. Therefore, it is extremely likely that most (or all) of the birds detected during the surveys were in their territories but were not sufficiently tracked to determine nest site locations (i.e., the birds were not transient or dispersing individuals).

According to CDFW in a letter dated August 31, 2022, "[w]ithout appropriate avoidance and minimization measures, potential significant impacts that may result from Project activities include nest abandonment, loss of nest trees and habitat, loss of foraging habitat that would reduce nesting success (loss or reduced health or vigor of eggs or young), displacement caused by human activity, and direct mortality." (TN 245782) CDFW determined that "[a]pproval of the Project will lead to direct loss of foraging habitat and ground-disturbing activities that will involve noise, groundwork, increased traffic, and movement of workers that could have the potential to result in disturbances to foraging behavior, significantly impacting local [Swainson's hawk]." (TN 245782) CDFW recommended that a qualified wildlife biologist conduct surveys for nesting Swainson's hawks, with additional pre-activity surveys for active nests if ground-disturbing activities are to take place during the bird breeding season (March 1 through September 15). In addition, CDFW recommended compensation for the loss of Swainson's hawk foraging habitat and the acquisition of an Incidental Take Permit if take cannot be avoided (TN 245782).

The AFC does not identify which portions of the Study Area provide potential foraging habitat for Swainson's hawks, nor does it quantify the Project's impacts to foraging habitat. This precludes understanding of the relative severity of the Project's impacts on the Antelope Valley Swainson's

hawk population. The discussion in the AFC's Biological Resources section (TN 242791) states: "[m]oderate to high densities of creosote bush, combined with saltbush, white bursage, non-native forbs and grasses that occur within the northern, central, and western portions of the Survey Area, as well as scattered landscaped and ornamental shrubs and trees generally associated with disturbed/ developed areas, preclude fossorial mammal movement in a general capacity. These areas offered limited foraging suitability at the time of the surveys due to an absence of open ground suitable for Swainson's hawk to maneuver and hunt prey and evade ground predators." The AFC's determination regarding "limited foraging suitability" is not supported by evidence (e.g., data on shrub density), is inconsistent with scientific literature, and is inconsistent with the BTR's (TN 242779) description of existing conditions: "[e]xisting conditions within the Survey Area broadly include areas of sparse to moderately high desert vegetation cover, intermixed with disturbed areas suitable for fossorial mammals and consequently, burrowing owls. Evidence of occupancy by fossorial mammals, such as white-tailed antelope squirrel (*Ammospermophilus leucurus*) and California ground squirrel (*Otospermophilus beecheyi*), was moderate." If the Study Area provides suitable habitat for burrowing owls, it also provides suitable foraging habitat for Swainson's hawks, which are less dependent on open habitat conditions than burrowing owls.

The analysis of biological resources impacts in the AFC (TN 242791) determines that "[t]he Project has the potential to adversely affect locally occurring Swainson's hawks, both permanently and temporarily," and finds that a Swainson's Hawk Monitoring and Mitigation Plan and targeted mitigation measures "*may*" adequately mitigate both temporary and permanent impacts on the species. The AFC does not provide evidence to support the determination that Project impacts on the species "may be adequately mitigated" and no Swainson's Hawk Monitoring and Mitigation Plan has been provided by the Applicant.

**DATA REQUESTS:**

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.

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

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.

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

**REFERENCES:**

Bloom Biological, Inc. 2015 Oct 18. Comments regarding Swainson's hawk mitigation in association with Willow Springs Solar Array Project in Kern County, California. Available at: <https://psbweb.co.kern.ca.us/planning/pdfs/eirs/willow_springs/willow_springs_solar_feir_consolidated_appK1.pdf>.

State of California, California Energy Commission and Department of Fish and Game. 2010 Jun 2. Swainson's Hawk Survey Protocols, Impact Avoidance, and Minimization Measures for Renewable Energy Projects in the Antelope Valley of Los Angeles and Kern Counties, California.

**BACKGROUND: WILDLIFE MOVEMENT CORRIDORS**

The AFC at page 5.2-31 (TN 242791) defines wildlife movement corridors, or habitat linkages, as "connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations." The AFC explains that "[t]he Project area consists primarily of undeveloped land which can provide opportunity for undisturbed wildlife movement." The BTR at page 49 (TN 242779) states that "[w]ildlife movement corridors, particularly that of Swainson's hawk, have the potential to be directly impacted." The AFC ultimately determined that the impacts on wildlife movement corridors would be less than significant because permanent impacts to wildlife corridors would be limited to the Project site boundaries. However, as implied in the AFC's discussion, wildlife corridors provide landscape-level connectivity. Therefore, analysis of potential impacts to wildlife corridors must also be conducted at the landscape level. The AFC does not provide landscape-level analysis, which must consider the combined effects that the Project and other projects in the region would have on habitat linkages.

**DATA REQUESTS:**

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.

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

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.

**BACKGROUND: BATS**

The AFC addresses only one bat species, the Townsend's big-eared bat (TN 242791). The AFC assumed absence of roosting Townsend's big-eared bats, and only a "low" potential for foraging Townsend's big-eared bats (TN 242779). The AFC presumed absence of roosting Townsend's big-eared bats because "[t]here is no suitable roosting habitat in or immediately adjacent to the Project." (TN 242779) The AFC determined there was a low potential for foraging Townsend's big-eared bats at the site because "overall habitat quality for this species is low within the Survey Area." (TN 242779)

As set forth in Defenders of Wildlife comments on the Project (TN 248126), and supported by Google Earth imagery and U.S. Geological Survey ("USGS") topographical maps, two open mine shafts are located south of the Project site. One of the mine shafts is located approximately 350 feet from the Project site boundary, within the Project Study Area. Many species of bats (including the Townsend's big-eared bat) are known to use abandoned mine shafts as roost sites. Because the availability of suitable roost sites is the limiting factor for most bat populations, abandoned mine shafts have become a critical resource for bats.

Noise or vibrations near a bat roost can have significant impacts on the fitness of bats. For example, disturbance of maternity roosts (e.g., from noise) can cause abandonment and mass mortality of pups, and disturbance of wintering roosts can lead to expenditure of energy reserves vital to survival. Consequently, blasts and other noise associated with the Project could have significant impacts on bats if roosts occur in nearby mine shafts. As CDFW recommended in its letter dated August 31, 2022 (TN 245782), the Applicant should conduct surveys for bats within the Project site and within at least a 500-foot buffer.

**DATA REQUESTS:**

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.

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."

**REFERENCES:**

Gruver JC, Keinath DA. 2006. Townsend's Big-eared Bat (*Corynorhinus townsendii*): a technical conservation assessment. USDA Forest Service, Rocky Mountain Region. Available at: <https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5181908.pdf>.

U.S. Geological Survey. 1965. Willow Springs Quadrangle [7.5 minute series topographic map]. Available at: <https://ngmdb.usgs.gov/topoview/>.

**BACKGROUND: ALKALI MARIPOSA LILY**

The alkali mariposa lily (*Calochortus striatus*) is a special-status species (California Rare Plant Rank 1B) that is threatened by urbanization, grazing, trampling, road construction, and hydrological alterations. The AFC (TN 242791) determined that the alkali mariposa lily "has a low potential to occur in limited areas of the gen-tie line." On the other hand, the BTR (TN 242779) states that there are numerous CNDDB records of this species occurring within the eastern portion of the Project Survey Area, and that drought conditions likely reduced detectability of the species during the Applicant's surveys.

According to the BTR, rare plant surveys and Joshua tree mapping were conducted by D. Johnson and H. Milner on April 13, April 15, May 3, May 4, and May 5, 2021. The surveys in May were limited to approximately two hours in the morning and/or evening. The BTR indicates D. Johnson and H. Milner were conducting burrowing owl surveys on the same dates and at the same time as the rare plant surveys. Thus, the BTR suggests D. Johnson and H. Milner surveyed the entire 977-acre survey area for rare plants on April 13 and April 15. However, the BTR further indicates the May surveys were limited to "areas known to have suitable burrows."

**DATA REQUESTS:**

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

119. Please clarify whether the surveyors visited a reference site to

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.

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.

**BACKGROUND: NOISE IMPACTS ON BIOLOGICAL RESOURCES**

Noise generated during construction and operation of the Project has the potential to cause direct and indirect impacts on wildlife. According to the Applicant, "[t]he standard threshold for noise impacts to wildlife/biological resources is 60 dBA averaged over a one-hour period." (TN 249495) The Applicant's response to DR 16 cites Caltrans (2016) to justify this 60-dBA threshold (TN 248496). As discussed in Caltrans (2016), the appropriate threshold is dependent on several variables, including the ambient noise level. The 60-dBA threshold was derived in 1987 for birds exposed to traffic noise in an area with relatively high ambient noise levels (e.g., near an existing highway). As a result, the 60-dBA threshold may not be appropriate for birds that reside in quiet environments (e.g., the Project site) or that are exposed to different types of noise. Caltrans (2016) states: "[a]bove ambient noise levels, critical ratio data from 14 bird species, well documented short-term behavioral adaptation strategies, and a background of ambient noise typical of a quiet suburban area would suggest noise guidelines in the range of 50–60 dBA." In 2007, the authors of the Caltrans paper stated: "[n]ew data would now suggest that [the threshold] level should probably be 55 dB(A) for the typical bird (critical ratio of 27 dB)."

Noise measurements at the "A scale" (i.e., dBA) correspond to sound frequencies sensitive to the human ear. However, many wildlife species hear at lower or higher frequencies than humans. Therefore, evaluating the effects of a project's noise on wildlife must include analysis of the spectrum level of noise (defined as the energy level for each frequency in the sound) in the frequency region of the taxa of concern. For example, noise at the "C scale" should be analyzed to assess impacts to birds and other taxa that hear low-frequency sounds.

The effects of noise on wildlife depend on the nature of the noise stimulus. Chronic and frequent noise interferes with animals' abilities to detect important sounds, whereas intermittent and unpredictable "impulse" noise is often perceived as a threat. Wildlife responds differently to these two types of noise. For example, impulse noise usually causes an animal to flee,

with concomitant consequences on fitness and reproductive output (e.g., birds will abandon their nests). The Applicant's proposal to use an impact threshold of 60 dBA averaged over a one-hour period fails to account for short duration "impulse" noise events (e.g., blasts) that can have significant impacts on wildlife.

**DATA REQUESTS:**

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

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.

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

**REFERENCES:**

Dooling RJ, Popper AN. 2016. Technical Guidance for Assessment and Mitigation of the Effects of Traffic Noise and Road Construction Noise on Birds. The California Department of Transportation, Sacramento, CA.

Dooling RJ, Popper AN. 2007. The Effects of Highway Noise on Birds. Technical report prepared for the California Department of Transportation, Sacramento, CA.

**BACKGROUND: RESTORATION/REVEGETATION OF IMPACTED VEGETATION COMMUNITIES**

The Biological Resources Chapter of the AFC (TN 242791) defines temporary impacts as "impacts [that] are considered to have reversible effects on biological resources." Temporary impacts would occur at the Project facility due to construction of temporary access roads and laydown areas (TN 242791). In addition, temporary impacts would occur along the gen-tie route due to clearing and grubbing for material laydown areas, conductor pull and tensioning sites, and for the heavy equipment used to install the transmission pole foundations (TN 248496). The BTR (TN 242779) proposes MM-BIO 13 as mitigation for Project-related impacts to natural communities. MM-BIO 13 entails habitat restoration/revegetation at a proposed 1:1 ratio for directly impacted natural vegetation community types. The BTR does not distinguish between areas that would be restored and areas that would be revegetated. This is important because a revegetation project does not

provide the same ecological values as a restoration project.

According to MM-BIO 13: "[t]he proposed mitigation would be outlined in a Habitat Restoration Monitoring Plan ("HRMP") that would include details on the restoration area(s), site preparations, planting plan, plant/seed materials, planting methods, maintenance program, monitoring plan, reporting procedures, and adaptive management strategies." Restoration and revegetation projects are inherently difficult and often fail. Furthermore, restoration and revegetation projects that are not implemented by qualified experts in the habitats in question can result in unintended ecological consequences. For example, use of seeds from non-local ecotypes can cause genetic contamination with significant impacts on ecological systems. Because restoration and revegetation plans often are plagued by weaknesses that go unnoticed or unquestioned, it is imperative that the Applicant's HRMP be vetted by the public, resource agencies, and scientific community prior to certification of the Project.

**DATA REQUESTS:**

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.

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.

126. Identify the depth of the proposed grubbing activities.

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

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

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

130. Provide a draft of the HRMP. If the HRMP has yet to be prepared, identify the anticipated date of release for public review.

**BACKGROUND: INVASIVE PLANTS**

Invasive plants reduce biodiversity, alter ecosystem processes, and are a primary threat to several special-status species that may occur in the Project area (e.g., desert tortoise). Clearing and grubbing activities create ideal conditions for colonization by invasive plants, in part because maintenance of native plant cover is one of the best defenses against invasive plants. The BTR (TN 242779) proposes MM-BIO 8 as mitigation for invasive plants, which requires construction equipment to be clean and free of soil and plant material. Whereas this mitigation measure would minimize the potential for construction equipment to introduce invasive plant propagules, it would not prevent invasive plant propagules transported via other vectors (e.g., wind) from colonizing the Project's temporary impact areas and new access roads.

**DATA REQUESTS:**

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

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.

**BACKGROUND: BURROWING OWL**

A burrowing owl and numerous potential burrows were detected during the Applicant's 2021 surveys. The Project has the potential to impact burrowing owls through habitat loss and destruction of burrows, among other impacts. As mitigation, the BTR (TN 242779) proposes MM-BUOW 1 through MM-BUOW 5. Additional information is needed to evaluate whether these mitigation measures would reduce impacts to less than significant levels.

MM-BUOW 3 states: "[i]n the event that burrowing owls will be excluded from the Project footprint and occupied burrows will be impacted, a mitigation site with suitable burrows and habitat shall be secured, and a Burrowing Owl Exclusion Plan shall be developed and approved by CDFW prior to excluding from burrows."

MM-BUOW 4 states: "CDFW may require compensatory mitigation for temporary and/or permanent impacts to burrowing owl-suitable nesting and foraging habitat. If additional mitigation is required, artificial burrowing owl burrows installed onsite at the Project site edges may avoid the need to seek

offsite mitigation opportunities...occupied burrowing owl burrows directly impacted may be replaced by installing artificial burrows on mitigation sites (i.e., conservation easements, in-lieu fee lands, Farm Contract land), or other land as agreed to by CDFW, at a ratio of 1:1."

**DATA REQUESTS:**

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

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).

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.

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.

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 MM-BUOW 4.

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.

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).

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.

Dated: May 1, 2023

Respectfully submitted,

**Original Signed by:**

/s/ Tara C. Rengifo

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