



**ALAMEDA COUNTY COMMUNITY DEVELOPMENT AGENCY
PLANNING DEPARTMENT**

STAFF REPORT

TO: EAST COUNTY BOARD OF ZONING ADJUSTMENTS

HEARING DATE: AUGUST 28, 2025

GENERAL INFORMATION

APPLICATION: **PLN2025-00069 - APPLICATION TO MODIFY CONDITIONAL USE PERMIT (CUP) PLN2017-00201**

APPLICANT: **TODD HOPPER / VIRACocha WIND LLC**

PROPOSAL: To modify an existing approved CUP to allow the use of up to 13 turbines with up to 5.9 MW individual nameplate capacity (an increase from 4.0 MW for individual turbines) with no change to the approved project 50 MW generating capacity.

ADDRESS AND SIZE OF PARCEL: The project is located on fifteen (15) parcels located north and south of Altamont Pass Road about ½ mile west from W. Grant Line Road, north of Interstate 580, including the following APNs: 99B-7750-6-0; 99B-6325-1-4; 99B-6325-1-3; 99B-7375-1-7; 99B-7400-1-5; 99B-7300-1-5; 99B-7350-2-15; 99B-7350-2-5; 99B-7500-3-2; 99B-7500-3-1; 99B-7600-1-1; 99B-7750-8-4; 99B-7750-3-5; 99B-7750-3-7 and 99B-7750-11, with a project area of about 2,416 acres.

ZONING: “A” (Agricultural) and “A-BE” (Agricultural, 160-acre MBSA)

GENERAL PLAN DESIGNATION: LPA (Large Parcel Agriculture), East County Area Plan, adopted in 1994 and amended in November 2000 and May 2002.

ENVIRONMENTAL REVIEW: As described in further detail, this project will utilize an addendum to a previously certified Final SEIR, prepared under CEQA Guidelines Sections 15168(c) and 15164. Based on the information presented in this addendum to the certified SEIR, Alameda County has determined that the changes to the approved project do not trigger the need for further environmental review under State CEQA Guidelines Section 15162.

STAFF RECOMMENDATION

Staff recommends the East County Board of Zoning Adjustments (EBZA) accept the staff report, take public testimony, and adopt the attached resolution determining that the prepared CEQA addendum adequately addresses project changes, and approve the project modifications with findings and amended conditions of approval to PLN2017-00201.

PROJECT HISTORY

On February 13, 2020, the East Board of Zoning Adjustments (EBZA) certified the subsequent Environmental Impact Report for the Sand Hill Wind Project, under Conditional Use Permit PLN2017-00201. As described in Chapter 1, Introduction, the SEIR reviewed the Sand Hill Repowering Project as a project “tiered” from the Altamont Pass Wind Resource Area Repowering Program EIR (PEIR) under Section 15163 of the CEQA Guidelines, which the County of Alameda (County) certified in November 2014. The EBZA took further action to approve the project.

On appeal, the Alameda County Board of Supervisors upheld the EBZA action to certify the Final SEIR, and approved a reduced scope project, authorizing 16 of the previously approved 40 turbines, reducing the overall project generating capacity from 109.5MW to 50 MW, with reductions in the number of noncontiguous parcels from 15 to 11, with the addition of one parcel for access, and the project layout from 2,600 to 2,416 acres.

The applicant, Viracocha Wind, LLC, proposes to develop repowered projects at Sand Hill (the subject project) and the adjacent Rooney Ranch site. Rooney Ranch is covered under a separate PEIR Revalidation, subject to permitting through the city of Santa Clara, and not subject to discretionary permit consideration by the EBZA. Both Rooney Ranch and Sand Hill projects are covered under the same Avian Bat Protection Program (ABPP) subject to review and approval by the Alameda County Wind Repowering Avian Protection Technical Advisory Committee (TAC).

Subject to availability of parts and materials, the applicant proposes to modify the previous CUP approval to increase the generation capacities of the individual turbines from a range between 2.3MW and 4.0 MW, to up to 5.9MW, while retaining the 50.0 ceiling for the approved project. As part of the increase in wind turbine generation capacities the project would feature the following per wind turbine:

- | | |
|--|-----------------------|
| 1. Blade lengths up to 79.7 meters | (261 feet) |
| 2. Rotor diameters up to 163 meters | (535 feet) |
| 3. Rotor swept area up to 20,867 square meters | (224,611 square feet) |
| 4. Tower (hub) heights up to 110 meters | (361 feet) |
| 5. Total height (from ground to top of blade) to 189.5 meter | (621 feet) |

CEQA ADDENDUM

Section 15164 of the CEQA Guidelines provides that a lead agency may prepare an addendum to a previously adopted EIR if some changes or additions are necessary, but not to a level that would call for preparation of a subsequent CEQA document. CEQA allows lead agencies to restrict review of modifications to an approved project to the incremental effects associated with the proposed modifications, compared against the anticipated effects of the previously analyzed project at build-out. The environmental impacts of the proposed changes to the approved project are analyzed in the addendum to the degree of specificity appropriate, in accordance with CEQA Guidelines Section 15146. The attached addendum Section 1.2 for the CEQA analysis of the proposed changes relative to previously prepared CEQA reports.

The most critical aspect of the CUP modification request is whether the proposed changes would result in higher fatality rates for species of concern listed in the SEIR. For the purposes here impacts to birds and bats will be analyzed in some detail, however the addendum has a complete analysis of the changes and impacts before and after the CUP modification request. Under many of the topic areas required by CEQA this report does not discuss new impacts requiring additional analysis or mitigation measures, however the attached complete addendum does provide full analysis of each impact covered under CEQA.

The previously certified Final SEIR analyzed the per MW per year rates of bird and bat fatalities based upon other APWRA repowered facility fatality monitoring data and avian adjusted fatality rates, scaling this information to the total buildout capacity of the project in an effort to estimate the projected take of the facility (certified Final SEIR Tables 3.4-8 and 3.4-10). As a basis for comparison with theoretical pre-repowered take rates, since most facilities did not have documented take rates, the same calculation was performed using the pre-repowered rates used in the PEIR and calculated in the *Altamont Pass Wind Resource Area Bird Fatality Study, Monitoring Years 2005-2013* (ICF 2016). These rates were then scaled to the pre-repower facility size in MW. Before repowering, Sand Hill comprised four different turbine models and was an approximately 23.1-MW facility (Smallwood and Bell 2020). This analysis was applied to certain species and groups identified as the *focal species* in the PEIR. The certified Final SEIR analyzed this information for facilities with much larger output (144.5-MW, and 109.5-MW as an alternative) and is provided for the 50-MW facility for purposes of comparison, highlighting the reduction in avian and bat fatalities resulting from the changes.

The potential for blade throw hazard, not a topic in the 2025 CEQA Guidelines yet analyzed in the PEIR and the certified Final SEIR, is addressed in the Addendum and found to be an impact that, with the implementation of existing mitigation measure HAZ-8 pertaining to setback requirements based on total turbine height, would ensure that the blade throw impact from the facility would be less than significant.

The Addendum also discusses potential impacts from shadow flicker, which results from the light strobe effects on private residences in the area. The Addendum further finds that adherence to existing mitigation measures ensures that the impacts of shadow flicker remain at a less than significant level. These measures include the siting of turbines with adequate setbacks from sensitive locations, and working with owners of neighboring inhabited parcels where necessary, in cases where impacts are present for at least 30 minutes per day, or 300 minutes per year. Where adequate solutions, such as window coverings, awnings or landscaping, are not found to be feasible, and the turbine(s) involved cannot be shut down during the period of the flicker, the turbine may need to be relocated.

STAFF ANALYSIS

As this application is a request to modify an already approved project, the analysis is limited to the changes being proposed. Conformance to the County's land use regulations such as the General Plan and Zoning Ordinance have already been determined in earlier County actions and are not repeated here. Similarly, the findings for approval of the original CUP have been made by the Board of Supervisors in an earlier appeal hearing, and given that the current request results in minor changes to the approved conditions of approval, only minor edits to findings are anticipated.

The CUP modifications requested for the project and analyzed under the Addendum are as follows:

- Increase individual turbine nameplate capacity from 4.0 MW to 5.9 MW
- For individual turbines, increase the blade lengths from 67.2 meters to up to 79.7 meters, rotor diameters from 137 meters to up to 163.0 meters, rotor swept area from 14,741 square meters to up to 20,867 square meters, tower (hub) heights from 85 m to up to 110 meters, and total height (from ground to top of blade) from 150 meters to 189.5 meters.

Rotor Swept Area

The SEIR analyzed the potential for the operation of the 50 MW project, with a Rotor Swept Area (RSA) for each turbine of up to 20,867 square meters (224,611 square feet), to result in substantial avian and bat fatalities. Fatality rate estimates for birds and bats were calculated using both MW capacity and RSA metrics in the SEIR with the

conclusion that avian and bat fatalities from the operation of the wind energy facilities would be significant and unavoidable. The proposed project changes would reduce the number of installed turbines to 13 from 16 and would increase individual turbine capacity from 4.0 up to a maximum of 5.9 MW. However, the total capacity of the project with the proposed changes would remain at 50 MW (the approved capacity of the project analyzed in the SEIR). Depending on final turbine selection, the project may be further reduced to a minimum of 9 turbines. The reduction in number of turbines would also result in a decrease in the total RSA for the project by up to 83,697 square meters (900,906 square feet) compared to the SEIR. As described in the SEIR, rotor-swept area (RSA) is a relevant and widely used metric in evaluation of wind turbine effects because nearly all avian and bat mortalities are attributed to contact with rotors, and therefore the RSA is the physical location of the impacts. The reduced total RSA under the project with proposed changes would result in equal or reduced RSA-based fatality estimates as compared to RSA-based fatality estimates in the certified SEIR (see Addendum Table 3.6-1 and Table 3.6-2I).

The project with the proposed changes would result in equal or reduced RSA-based fatality rates for avian and bat species due to the reduced number of turbines and the reduced total RSA of the project, as compared to RSA-based fatality rates estimated in the certified SEIR. The relationship between height of the swept area above ground on fatality rates has not been quantified, and at this time, there is no evidence to show that lower blade clearances of individual turbines under the project with proposed changes would have a measurable, or a statistically significant effect on fatalities compared to the turbines analyzed in the certified SEIR.

CONCLUSION

The changes proposed in this CUP application consist of increases in the nameplate capacity cap of the individual turbines from 4.0 MW up to 5.9 MW and reductions in the number of turbines from sixteen (16) to thirteen (13), including the potential elimination of high-risk turbine locations posing the greatest hazard to Avian and Bat species. All dimensions proposed (blade length, rotor diameter, tower height, and total hub height) are within the range for microsituated dimensions previously considered. Although the proposed RSA for each turbine is close to the maximum microsituated dimension, the total RSA for the entire facility may be reduced by up to a million square feet less than the facility maximum of the certified SEIR, at 2 million square feet compared to 2.9 million square feet. The inclusion of avoidance technology such as IdentiFlight will also be required for the project. The minimization of issues such as Blade Throw and Shadow Flicker will be addressed during the continuing ABPP process as well as the construction phase. The project modifications requested were considered by the Alameda County Wind Repowering Avian Protection Technical Advisory Committee (TAC) at its July Meeting, where the proposed changes were recommended for Approval.

TENTATIVE FINDINGS

1. Is the use required by the public need?

The use is required by the public need in that wind energy production in the Altamont Pass Wind Resource Area (APWRA) represents a major source of renewable energy. The Project would generate and supply 100% locally sourced and emissions-free electricity to California, would support California's renewable energy goals, and would help reduce dependence on fossil fuels, a primary factor in global warming or climate change. The Project's energy may be sold to Alameda County's Community Choice Aggregator (AVA, formerly East Bay Community Energy) through a power purchase agreement, which improves County residents' access to locally-produced renewable energy. Project changes to maintain energy output and potentially reduce avian and bat fatalities improves the project and supports earlier findings that the use is required by the public need.

2. Will the use be properly related to other land uses and transportation and service facilities in the

vicinity?

The use will be properly related to other land uses and transportation and service facilities in the vicinity in that as an existing wind farm, the Project site is well- suited from a planning and practical perspective for continued use as a windfarm. The Project parcels have been developed with wind power project uses for over 30 years and are located a substantial distance away from residential, commercial and industrial uses. Existing supporting facilities will continue to be utilized to transmit the power generated to satisfy the electricity needs of Alameda County and California as a whole. Project changes to maintain energy output and potentially reduce avian and bat fatalities improves the project and supports earlier findings that the project is properly sited in relation to other uses and service facilities in the vicinity.

3. Will the use, if permitted, under all circumstances and conditions of this particular case, materially affect adversely the health or safety of persons residing or working in the vicinity, or be materially detrimental to the public welfare or injurious to property or improvements in the neighborhood?

The project would serve goals and objectives of the East County Area Plan and County economic development and environmental objectives, would have limited impacts on County services and infrastructure, and as mitigated with the measures to be adopted under the Mitigation Monitoring and Reporting Program and the conditions of approval, would not negatively impact the surrounding community.

Furthermore: a) as approved and subject to further TAC input, the subject turbines would be sited and operated in a manner that reduces risks to avian and bat species and according to specified minimum setbacks to reduce any health, safety or aesthetic concerns to any residents in close proximity; b) proper maintenance and operation efforts would be in effect to ensure the safe operation of the turbines; c) fire prevention and security measures would be in place to protect the public and local property; d) construction activities will be conducted in a manner that reduces potential health, safety and environmental concerns; e) the proposed use would not substantially hinder the continued use of the Project sites and surrounding land for cattle grazing as the primary property use; f) any access roads improved for the proposed use would provide improved access to the grazing lands; g) land owners would benefit from the lease payments made by the Permittee, which further supports grazing operations; and h) other improvements, such as roadways, railroads, electrical substations and landfills are not adversely affected by the presence of wind turbines and their associated infrastructure because the proposed Project would replace and/or continue to use existing facilities. Project changes to maintain energy output and potentially reduce avian and bat fatalities improves the project and supports earlier findings that the use will not materially affect the health or safety of persons, or be materially detrimental to the public welfare or injurious to property or improvements in the neighborhood.

4. Will the use be contrary to the specific intent clauses or performance standards established for the District in which it is to be considered?

The proposed Project is located in the A (Agriculture) zoning district, which has as its stated intent: "to promote implementation of General Plan land use policies for agriculture and other nonurban uses; to conserve and protect existing agricultural uses; and to provide space for and encourage such uses in places where more intensive development is not desirable or necessary for the general welfare." The proposed Project would be consistent with this intent because the development of wind power projects is both allowed and encouraged in the APWRA by the East County Area Plan, the Project removes minimal land from agricultural production, and the use is appropriately located in non-urban areas and serves the public welfare. Project changes to maintain energy output and potentially reduce avian and bat fatalities improves the project and supports earlier findings that the project is properly sited in the Agriculture zoning district.

Figure 1 – Proposed Turbine Locations with potential deletions indicated in yellow.

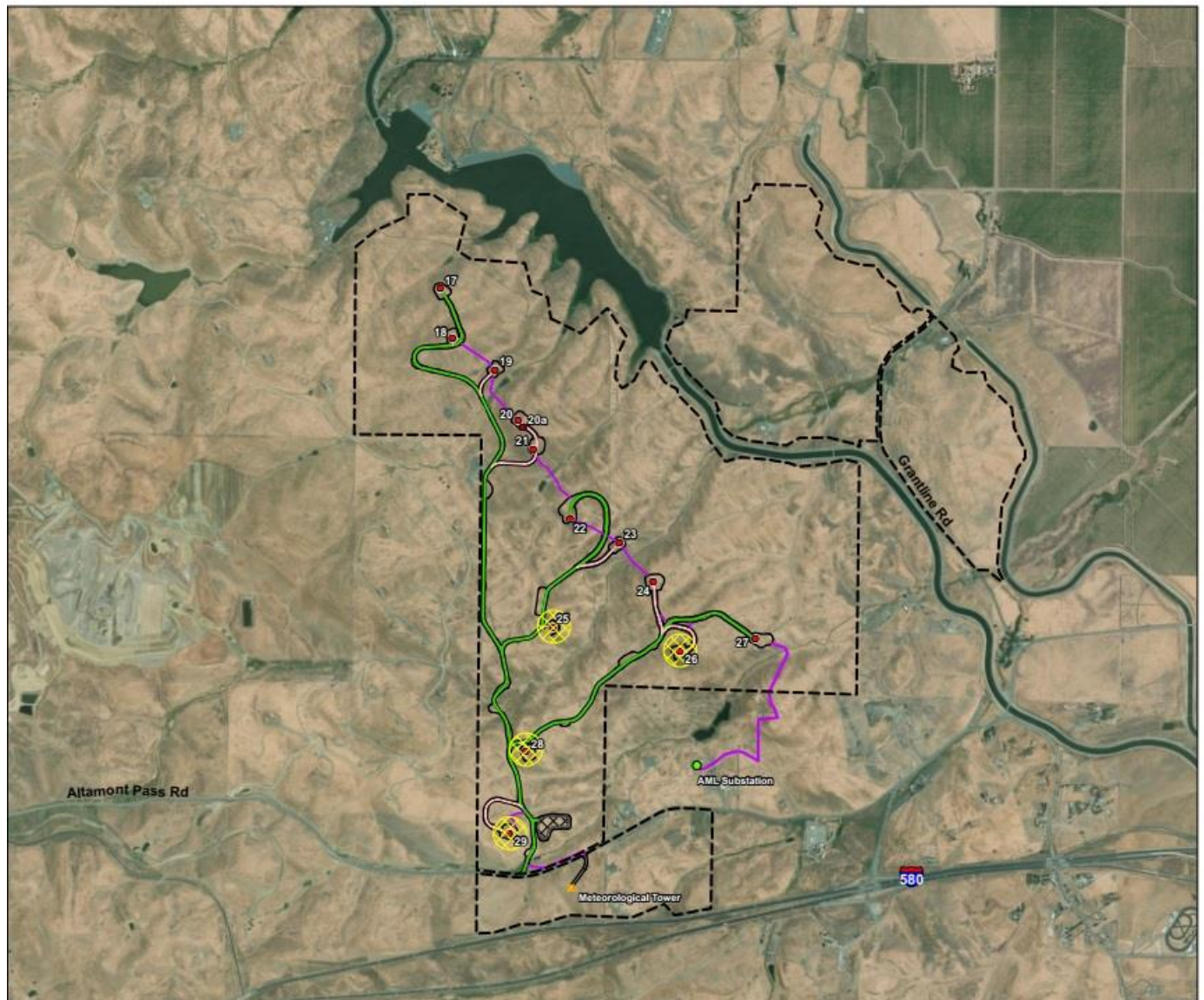


Figure 2 –Turbine Dimensions

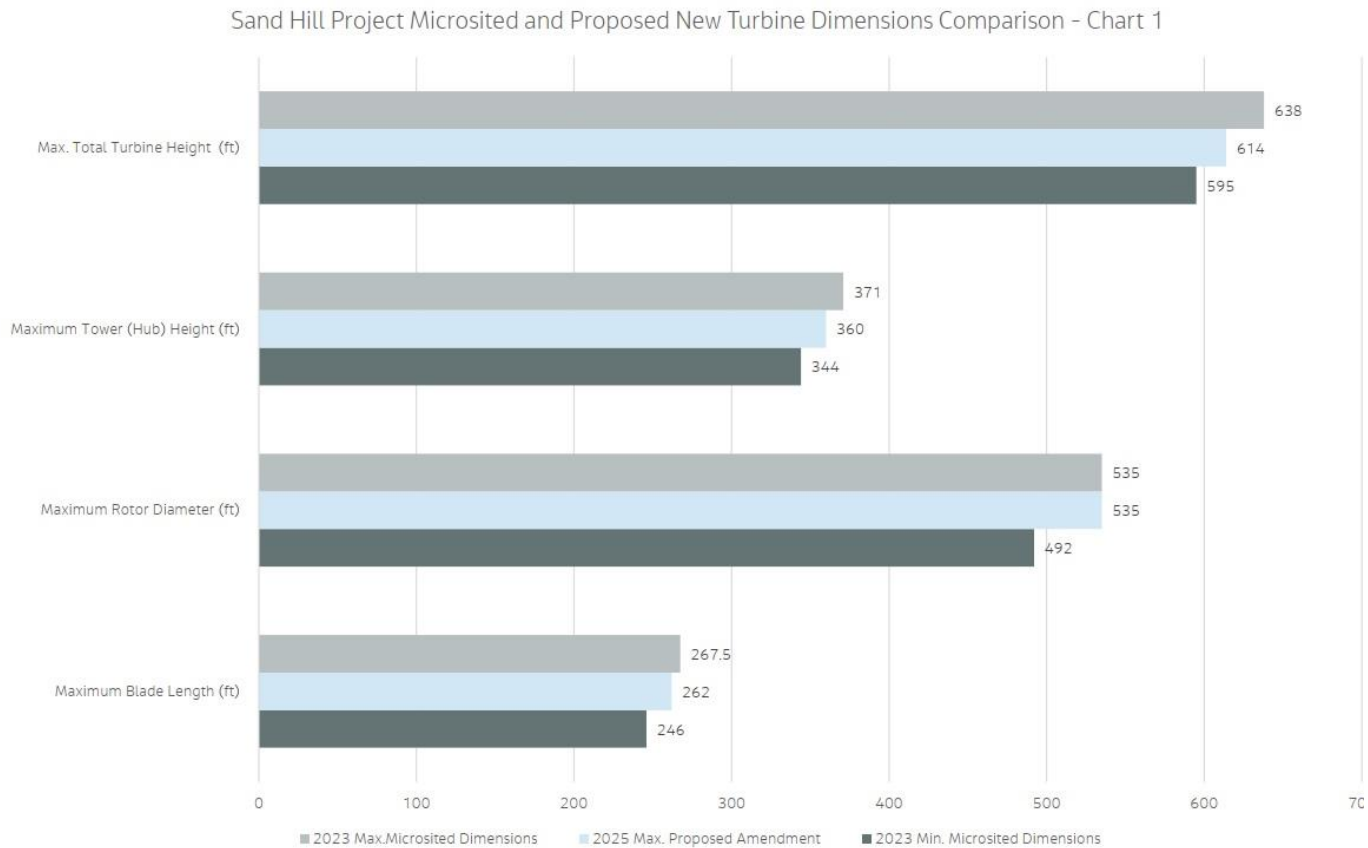
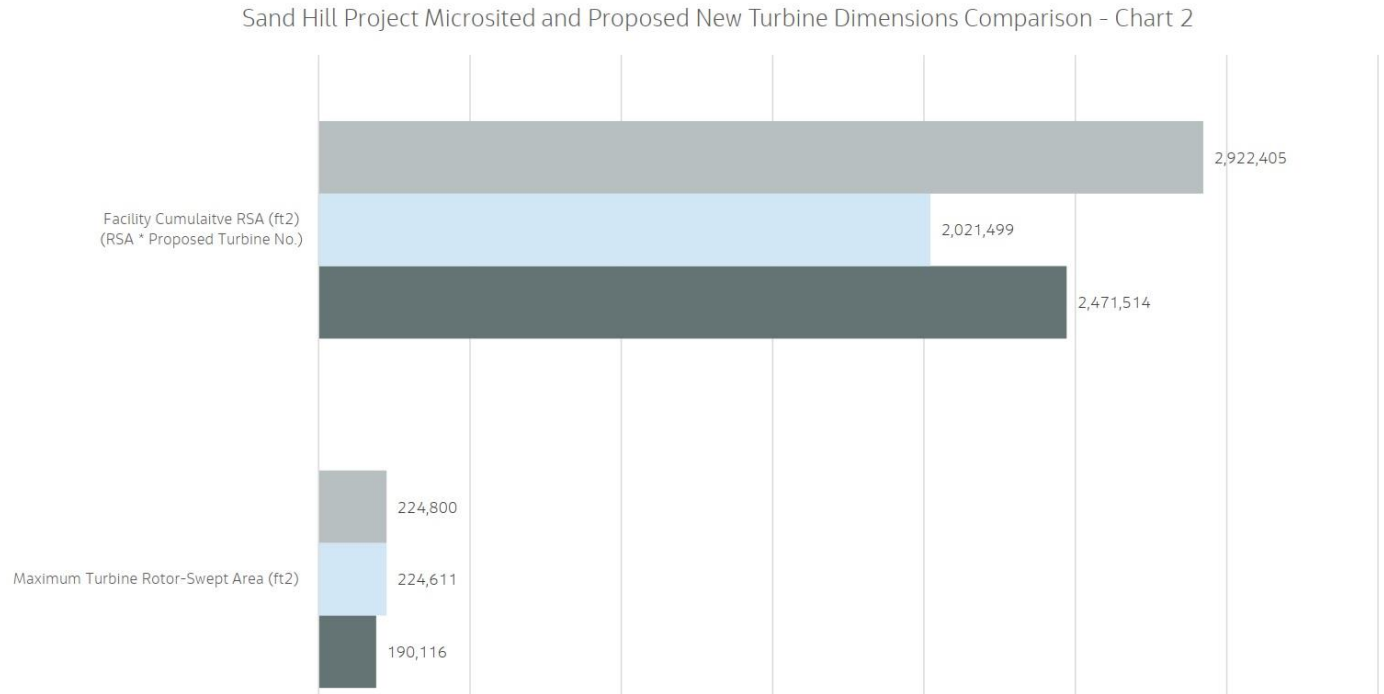


Figure 3 – Rotor Swept Area (RSA)



ATTACHMENTS

- A. Resolution approving CEQA Addendum and modified Conditional Use Permit PLN2025-00069
- B. CEQA Addendum
- C. Board of Supervisors Resolution from February 13, 2020

Prepared By Damien Curry
Reviewed By Albert Lopez

Senior Planner
Planning Director

**RESOLUTION NO. # Z-25-XX OF THE EAST COUNTY
BOARD OF ZONING ADJUSTMENTS
ADOPTED AT THE HEARING OF AUGUST 28, 2025,
CONCERNING CONDITIONAL USE PERMIT, PLN2025-00069**

WHEREAS, VIRACOCOA WIND, LLC, (Permittee), filed an application for CONDITIONAL USE PERMIT, PLN2025-00069 to modify conditions of approval for CONDITIONAL USE PERMIT PLN2017-00201, to allow a maximum of 13 wind turbines, each turbine rated up to 5.9 MW nameplate capacity (an increase from the 4.0 MW previously approved), on fifteen (15) parcels in an area designated Large Parcel Agriculture (LPA), and classified in the A (Agricultural) and the A-BE (Agricultural, 160 acre MBSA) Districts located on about 2,416 acres in total area in the southern portion of the Sand Hill Wind Resource Area, north of Interstate 580, including the following Assessor's Parcel Numbers: 99B-7750-6-0; 99B-6325-1-4; 99B-6325-1-3; 99B-7375-1-7; 99B-7400-1-5; 99B-7300-1-5; 99B-7350-2-15; 99B-7350-2-5; 99B-7500-3-2; 99B-7500-3-1; 99B-7600-1-1; 99B-7750-8-4; 99B-7750-3-5; 99B-7750-3-7 and 99B-7750-11; and

WHEREAS, the Alameda County Board of Supervisors affirmed on December 15, 2020, the decision of the East County Board of Zoning Adjustments (EBZA) to certify the Final Subsequent EIR (SEIR) for the project; and

WHEREAS, the EBZA considered an addendum to the certified SEIR, prepared in accordance with CEQA Guidelines Section 1568(c) and 15164, that analyzed potential impacts from the increase in turbine nameplate capacity from 4.0 MW to 5.9 MW, finding that no additional impacts would arise from the project proposal; and

WHEREAS, the EBZA considered the staff report, testimony from the applicant and the public, and other materials; and

WHEREAS, the EBZA reviewed the project request; and

WHEREAS, the EBZA found the addendum to be appropriate consistent with CEQA Guidelines Section 1568(c) and 15164 request; and

WHEREAS, it satisfactorily appears from affidavits on file that proper notice of said public hearing was given in all respects as required by law.

BE IT RESOLVED, the EBZA finds that:

1. The use is required by the public need in that wind energy production in the Altamont Pass Wind Resource Area (APWRA) represents a major source of renewable energy. The Project would generate and supply 100% locally sourced and emissions-free electricity to California, would support California's renewable energy goals, and would help reduce dependence on fossil fuels, a primary factor in global warming or climate change. The Project's energy may be sold to Alameda County's Community Choice Aggregator (AVA, formerly East Bay Community Energy) through a power purchase agreement, which improves County residents' access to locally-produced renewable energy. Project changes to maintain energy output and potentially reduce avian and bat fatalities improves the project and supports earlier findings that the use is required by the public need.

2. The use will be properly related to other land uses and transportation and service facilities in the vicinity in that as an existing wind farm, the Project site is well- suited from a planning and practical perspective for continued use as a windfarm. The Project parcels have been developed with wind power project uses for over 30 years and are located a substantial distance away from residential, commercial and industrial uses. Existing supporting facilities will continue to be utilized to transmit the power generated to satisfy the electricity needs of Alameda County and California as a whole. Project changes to maintain energy output and potentially reduce avian and bat fatalities improves the project and supports earlier findings that the project is properly sited in relation to other uses and service facilities in the vicinity.
3. The use would serve the goals and objectives of the East County Area Plan and County economic development and environmental objectives, would have limited impacts on County services and infrastructure, and as mitigated with the measures to be adopted under the Mitigation Monitoring and Reporting Program and the conditions of approval, would not negatively impact the surrounding community.

Further: a) as approved and subject to further TAC input, the subject turbines would be sited and operated in a manner that reduces risks to avian and bat species and according to specified minimum setbacks to reduce any health, safety or aesthetic concerns to any residents in close proximity; b) proper maintenance and operation efforts would be in effect to ensure the safe operation of the turbines; c) fire prevention and security measures would be in place to protect the public and local property; d) construction activities will be conducted in a manner that reduces potential health, safety and environmental concerns; e) the proposed use would not substantially hinder the continued use of the Project sites and surrounding land for cattle grazing as the primary property use; f) any access roads improved for the proposed use would provide improved access to the grazing lands; g) land owners would benefit from the lease payments made by the Permittee, which further supports grazing operations; and h) other improvements, such as roadways, railroads, electrical substations and landfills are not adversely affected by the presence of wind turbines and their associated infrastructure because the proposed Project would replace and/or continue to use existing facilities. Project changes to maintain energy output and potentially reduce avian and bat fatalities improves the project and supports earlier findings that the use will not materially affect the health or safety of persons, or be materially detrimental to the public welfare or injurious to property or improvements in the neighborhood.

4. The use will not be contrary to the specific intent clauses or performance standards established for the District in which it is to be considered, in that the proposed Project is located in the A (Agriculture) zoning district, which has as its stated intent: "to promote implementation of General Plan land use policies for agriculture and other nonurban uses; to conserve and protect existing agricultural uses; and to provide space for and encourage such uses in places where more intensive development is not desirable or necessary for the general welfare." The proposed Project would be consistent with this intent because the development of wind power projects is both allowed and

encouraged in the APWRA by the East County Area Plan. The Project removes minimal land from agricultural production, and the use is appropriately located in non-urban areas and serves the public welfare. Project changes to maintain energy output and potentially reduce avian and bat fatalities improves the project and supports earlier findings that the project is properly sited in the Agriculture zoning district.

AUTHORIZATION

1. Approval. Approval of this Permit authorizes Viracocha Wind, LLC, or any subsequent permittee, to decommission and remove an estimated 671 existing or previously existing wind energy turbine sites and construct up to 13 new turbines with a maximum production capacity of 50 megawatts (MW), using turbines rated up to 5.9 MW per turbine, on fifteen parcels extending over roughly 2,416 acres in the vicinity of Altamont Pass Road up to two miles west of Grant Line Road, on both sides of Mountain House Road up to one mile north of Grant Line Road, on both sides of Bethany Reservoir, more broadly in the eastern Altamont Hills or Mountain House area of Alameda County, bearing the following Assessor Parcel Numbers:

99B-7750-6-0; 99B-6325-1-4; 99B-6325-1-3; 99B-7375-1-7; 99B-7400-1-5; 99B-7300-1-5; 99B-7350-2-15; 99B-7350-2-5; 99B-7500-3-2; 99B-7500-3-1; 99B-7600-1-1; 99B-7750-8-4; 99B-7750-3-5; 99B-7750-3-7 and 99B-7750-11.

Final siting of the thirteen (13) turbine sites on the subject fifteen (15) parcels shall be reviewed by the County's Wind Repowering / Avian Protection Technical Advisory Committee (TAC) as required by Condition 90 (Mitigation Measure MM BIO-11g), which may recommend to the Planning Director final siting in consideration of the micro-siting studies included in the Final SEIR. Additionally, the Permittee shall consult the TAC for input to determine whether the location of Turbines 8, 9, 17 and 40 as indicated on Exhibit D of the project can feasibly be adjusted by further micro-siting analyses in light of the CUP authorization of 16 new turbines only.

2. Compliance and Conditions. Permittee agrees to comply with all applicable regulations, rules and requirements of the County of Alameda and its Agencies, all subdivisions and departments of such agencies, and to comply with specific conditions of approval described herein by the representatives of said agencies, including but not limited to:
 - a. Community Development Agency, Planning Department
 - b. Public Works Agency, Building Inspection Department
 - c. Public Works Agency, Land Development Department
 - d. Public Works Agency, Grading Division
 - e. Fire Department
 - f. County Sheriff

g. Health Services Agency, Environmental Health Department

Failure to act in compliance with the conditions herein will be construed as a violation of Zoning and enforcement proceedings shall commence as provided for by Chapter 17.58 of the Alameda County Zoning Ordinance.

Permittee further agrees to comply with all applicable regulations, rules and requirements of the State of California and United States agencies, including but not limited to the following:

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| h. California Public Utilities Commission | l. Bay Area Air Quality Management District |
| i. California Energy Commission | |
| j. California State Department of Fish and Wildlife | m. United States Fish and Wildlife Service |
| k. California State Water Quality and Control Board - San Francisco and Central Valley Regions | n. Federal Aviation Administration |

3. Insurance: A Comprehensive General Liability insurance policy in the minimum amount of \$1,000,000 and in the form prescribed in the document "INSURANCE REQUIREMENTS, ALAMEDA COUNTY PLANNING DEPARTMENT, November 12, 2014," in addition to insurance requirements of other agencies listed in Condition 2 shall be provided to the County within 20 business days following approval of this Conditional Use Permit and provided again within 20 business days of each annual anniversary thereof.
4. Utility Tax Compliance. Within 60 days of this approval, the Permittee shall submit to the Alameda County Planning Department evidence of business registration with the Alameda County Business Tax Unit in the form of a valid business certificate to ensure compliance with the County's utility tax regulations.
5. Liability. By exercise of this Conditional Use Permit, the Permittee agrees to defend, indemnify and hold harmless the County of Alameda, its officers, employees, agents and servants for any and all liability caused by the negligence or wrongful act of the Permittee arising out of the exercise of this Conditional Use Permit, and to pay all claims, damages, judgments, legal costs, adjuster fees, and attorney fees related thereto.
6. Indemnification. The Permittee shall defend, indemnify, and hold harmless Alameda County and its agents, officers, and employees from any claim, action, or proceeding against the County of Alameda or its, agents, officers or employees to attack, set aside, void, or annul Conditional Use Permit, PLN2017-00201, the Subsequent EIR, the Program Environmental Impact Report (PEIR), the September 2018 *Sand Hill Wind Repowering Project Environmental Analysis and CEQA Checklist* that preceded the Subsequent EIR, the California Environmental Quality Act findings, determination of significant impacts, the Mitigation Monitoring and Reporting Program (MMRP), or any combination thereof. Such indemnification shall include, but not be limited to, an award of costs and attorney's fees incurred by the County in its defense. The County shall promptly notify Permittee of any such challenge.
7. Planning Review and Permit Administration Costs. The Permittee shall be responsible for payment of all additional Planning Department and Public Works Agency staff and material costs for completing these agencies' reviews up to the time of this approval, including costs billed against the original application deposit, costs which exceeded the deposit and for a deposit of an additional \$2,000.00 for similar costs associated with administration and enforcement of the

conditions herein, independently of Inspection Costs as required below (Condition 8). If all or any part of said cash deposit is depleted by such administration activities, the Permittee shall restore the balance of the deposit to the original \$2,000.00.

The Permittee shall compensate the County for expenditures to retain a biological and avian resource consultant necessary to monitor implementation of these conditions and the Project MMRP during Planning Department review of the building permit, during construction, not to exceed \$15,000 for the Project plus \$100.00 per proposed MW.

The Permittee shall compensate the County for expenditures to retain a County technical representative to the Technical Advisory Committee, as necessary to review monitoring reports and advise the County regarding implementation of these conditions and the Project MMRP during each year of post-construction monitoring as specified in Conditions 90, 91 and 92 (Mitigation Measures BIO-11g, BIO-14b and BIO-14c). Such compensation shall be paid annually in proportion to the installed or rated MW capacity of the facility (as a proportional percentage of all wind repowering projects, which may be prorated on a monthly basis), not to exceed \$15,000 for all repowering projects (adjusted annually for inflation).

8. Inspections and Cost Recovery. The Permittee shall allow staff of the Alameda County Planning Department, Alameda County Public Works Agency, the California Department of Fish & Wildlife, and any other responsible agency to conduct site inspections during construction and operation of the Project in order to ensure compliance with approved permits, plans, and conditions of approval. Inspections shall be conducted at the discretion of said agencies. Discovery of noncompliance may be cause for commencement of proceedings to revoke this Conditional Use Permit, and for payment of applicable bonds. Public Works Agency staff is also authorized to inspect structural and pavement conditions of County roads serving the construction site prior to and after construction to identify needed repairs and to assess cost recovery requirements.

The Permittee or its successors shall be responsible for payment of all reasonable costs associated with necessary inspections of the facility, including costs incurred by the Planning Department, the County Fire Department, the Building Inspection Division, the Public Works Agency or any other applicable Federal, State or County department or agency. Each County Agency shall have the authority to require deposits of \$4,000.00 prior to plan review, for plan review, inspections or other necessary costs. State and federal agencies shall be responsible for collecting established fees and related compensation where required by statute.

9. Bonds. Application for Building Permits to implement any portion of this Conditional Use Permit shall be accompanied by the following bonds:
 - a. A \$2,000.00 cash bond shall be deposited to be used in the investigation and evaluation of a noise complaint as provided in Condition 86 herein below. If all or any part of said cash bond is depleted by such activities, the Permittee shall restore the balance of the bond to the original \$2,000.00.
 - b. A security bond or other acceptable instrument shall be recorded with the Director of Public Works to guarantee repair and restoration of roads serving the Project area that may be damaged in the course of construction of the Project, consistent with the requirements of the Traffic Control Plan as set forth in Condition 48 below.

- c. A surety bond or other acceptable security instrument shall be recorded with the Director of Public Works to guarantee implementation of the restoration and reclamation plan as required by Conditions 11 and 12 below.

- 10. Mitigation Monitoring and Reporting Program. The Permittee shall implement all applicable mitigation measures identified in the Mitigation Monitoring and Reporting Program (MMRP) attached herein as Exhibit B, and as specified individually herein. These conditions of approval incorporate the individual mitigation measures and present them either in summarized form or by reference only, and in certain cases provide additional clarification and guidance on the manner, timing and responsibility for implementation of the mitigation measures. The incorporation of the mitigation measures into the conditions of approval (i.e., their replication and representation herein) is not intended to revise, modify or add to any mitigation measure, or add any new obligation to the Permittee under CEQA, but only to augment the understanding of how each mitigation measure shall be implemented. Each mitigation measure is presented within the applicable phase of Project development used herein, beginning with design, and continuing through permit applications, pre-construction tasks, obligations during construction, performance during operation, and for periodic review through the life of the permit.

These conditions of approval are intended to and shall be interpreted by reading Exhibit B and the enumerated conditions together, as a whole, in a manner that gives the maximum effect to both and, to the extent necessary, harmonizes them to avoid any inconsistencies or superfluous terms. If the Permittee, the County or other public agency responsible for implementation of a mitigation measure finds any discrepancy between Exhibit B and these conditions, Exhibit B shall be relied upon unless the conditions herein provide greater clarification of the time or performance or the manner of implementation of the MMRP, when determined to be necessary for the effective implementation of the MMRP. Any remaining questions of interpretation shall be resolved by the Planning Director.

- 11. Restoration and Reclamation Plan: Prior to issuance of building permits the Permittee shall submit for review and approval by the County Planning Director and the Director of Public Works, a reclamation plan for removal at the end of this permit term (or by major default by the Permittee as described below) of all wind turbines, foundations and ground equipment to a depth of three feet below finished grade. Roads and above-ground facilities installed pursuant to this permit shall also be removed unless the property owner has requested in writing as part of the reclamation plan that they be left in place, subject to approval of the Planning Director. The reclamation plan shall include provisions for:
 - a. Removal of roads and staging areas within the subject property or properties not needed for maintenance and operations or for other allowed property uses by the property owner;
 - b. Re-grading and re-vegetation to return the subject property or properties to rangeland or pre-windfarm use conditions, with site-specific characteristics of topography, vegetation, drainage and other unique environmental features, subject to approval of the California Department of Fish and Wildlife;
 - c. Repair of County roadways from damage that may result from off-haul of materials, movement of oversized loading or heavy-haul vehicle, traffic management and a substantial increase in volume of vehicle trips;
 - d. A transportation control plan for conveyance of oversize turbine components.

The reclamation plan shall include a cost estimate of labor and material costs, prepared by a licensed contractor to implement the proposed reclamation plan, and the Planning Director shall have the authority to request additional details of specific cost elements. The reclamation plan shall include a guarantee by the Permittee to carry out the reclamation plan upon determination by the Planning Director and Director of Public Works that the permitted wind farm operations have been abandoned or have produced less than 5 percent of the rated output of the wind farm in one year.

The Planning Director and Director of Public Works may instead make a determination that more than 50% of the turbines are in disrepair and there is no other demonstrated plan, satisfactory to the Planning Director, to restore the equipment to a productive operating condition. Under such circumstances the Planning Director may order the Permittee or property owners to execute the reclamation plan.

12. Restoration and Reclamation Bond. Prior to issuance of building permits, and based on County approval of the reclamation plan as above, the Permittee shall post a security in the form of a surety bond. The security shall remain with the County for the life of the Project, except upon replacement as provided below and upon replacement shall be adjusted for inflation using the appropriate construction price index, as determined by the Director of the Public Works Agency. In the event ownership of the turbines changes from the current Permittee to another person or entity, the new owner shall replace the surety bond of the original Permittee with a surety bond in the name of the new owner within 30 days of the change of ownership.
13. Changes to Power Purchase Agreements. Permittee agrees that, at least six (6) months prior to the expiration, renewal or extension of any Power Purchase Agreements (PPA) made by the Permittee, the Permittee shall inform the Planning Director of such changes and provide the County of Alameda and any Community Choice Aggregation joint powers authority or equivalent program (CCA) in which the County participates, a right of first offer to establish a PPA between the Permittee and the County or the CCA.
14. Ten Year Review. No more than ninety (90) calendar days after the tenth anniversary of the initial approval and within ninety (90) days of the subsequent twentieth anniversary, the Planning Director shall, after notice as provided for in the initial hearing and except as provided for under Conditions 85 and 99 below, set this matter for public hearing by the East County Board of Zoning Adjustments for the purpose of reviewing and verifying compliance with the conditions of approval so as to validate the findings of this conditional use permit.
15. Post-Construction Monitoring Review. Upon completion of the post-construction avian fatality monitoring program required by Mitigation Measures 11g and if required, after implementation of adaptive management program review required by Mitigation Measures 11i, this matter may be set by the Planning Director for a public hearing, after notice as provided for in the initial hearing, for the purpose of assessing the effectiveness of avian protection plans, adaptive management measures, conservation or other strategies to improve or mitigate avian species safety concerns raised in the Program Environmental Impact Report (PEIR). This review may allow the Planning Director to modify conditions previously imposed or add conditions directly related to the results of the post-construction avian fatality monitoring program (Mitigation Measures 11g) and the recommendations of the Technical Advisory Committee.

16. Commencement Date. Pursuant to Section 17.52.050, building permits shall be obtained and construction activity commenced within 3 years of approval or this permit shall be of no force or effect.

PRIOR TO DESIGN SUBMITTAL

17. Preconstruction Surveys for Special-Status Plant Species (MM BIO-1a). As required by Mitigation Measure BIO-1a in the MMRP, no more than 3 years prior to ground-disturbing repowering activities, and during the appropriate identification periods for special-status plants as specified in the MMRP and the PEIR, the Permittee shall have a qualified biologist (as determined by the Alameda County Planning Director) conduct field surveys to identify special-status plant species within and adjacent to the Project site. The Permittee shall submit a report documenting the survey results to the Planning Director for review and approval, meeting the requirements of Mitigation Measure BIO-1a, prior to ground-disturbing activities and before issuance of building permits.
18. Preconstruction Surveys for Habitat for Special-Status Wildlife Species (MM BIO-3a). As required by Mitigation Measure BIO-3a in the MMRP, no more than 3 years prior to ground-disturbing repowering activities, the Permittee shall have a qualified biologist (as determined by Alameda County) conduct field surveys within decommissioning, repowering, and restoration work areas and their immediate surroundings to determine the presence of habitat for special-status wildlife species. The Permittee shall submit a report documenting the survey results and meeting the requirements of Mitigation Measure BIO-3a to the Planning Director for review and approval, prior to conducting any ground-disturbing repowering activities and before issuance of building permits.
19. Preconstruction Bat Roost Surveys (MM BIO-12a). As required by Mitigation Measure BIO-12a in the MMRP, prior to any ground-disturbing activity the Permittee shall have a roost habitat assessment prepared by a qualified bat biologist to identify potential colonial roost sites of special-status and common bat species within 750 feet of the construction area. If suitable roost sites are to be removed or otherwise significantly affected by the proposed Project, the bat biologist will conduct targeted roost surveys of all identified sites that would be affected. Surveys shall conform to the protocols and guidelines set forth in Mitigation Measure BIO-12a in the MMRP, and a report shall be submitted to the Planning Director following such surveys as specified by Mitigation Measure BIO-12a of the MMRP and prior to issuance of building permits.
20. Avoid Loss of Historic Resources and Record if Necessary (MMs CUL-1a and -1b). As required by Mitigation Measure CUL-1a in the MMRP, the Permittee shall avoid historic resources in the design and layout of the Project wherever feasible. As required by Mitigation Measure CUL-1b, if avoidance of resources in accordance with Mitigation Measure CUL-1a is determined to be infeasible, the significantly affected historic resource shall be recorded prior to site disturbance and before issuance of building permits, consistent with Mitigation Measure CUL-1b requirements.
21. Preconstruction Survey and Planning for Cultural Resources (MMs CUL-2a and CUL-2b). As required by Mitigation Measure CUL-2a in the MMRP, prior to ground-disturbing activities and issuance of the building permit, the Permittee shall have qualified personnel conduct an archaeological field survey of the Project area to determine whether significant cultural resources

exist within the Project area. Documentation of the field survey results shall comply with Mitigation Measure CUL-2a.

As required by Mitigation Measure CUL-2b, if any significant resources are identified through the preconstruction survey, a treatment plan with measures that could include site avoidance, capping, or data recovery will be developed and implemented by the Permittee and approved by the Planning Director subject to applicable requirements.

22. Environmental Site Assessment to Identify Possible Site Contamination (MM HAZ-4). As required by mitigation measure HAZ-4 in the MMRP, the Permittee shall have a Phase I Environmental Site Assessment (ESA) prepared for any Project area proposed for ground-disturbing activities and submit it to the Alameda County Health Services Agency – Environmental Health Department, as the authorized regulatory oversight agency. The Phase I ESA shall be in conformance with the minimum requirements described in Mitigation Measure HAZ-4 in the MMRP.

If the Phase I ESA indicates likely soil contamination a Phase II ESA shall be prepared by a qualified environmental professional under a work plan approved by the Environmental Health Director, including proposed soil sampling, remediation and disposal of contaminants if necessary. The Phase II ESA shall include the components outlined in Mitigation Measure HAZ-4, and shall be provided to the Planning Director and Environmental Health Director, the latter of which may require remediation of soil or groundwater or disposal of hazardous building materials subject to a work plan approved by the Environmental Health Director. Review of a work plan and Phase II ESA will require a deposit of \$6,000.00 (as of this approval date) with the County Health Services Agency – Environmental Health Department, and may require opening a Site Cleanup Program (SCP) file. Any contaminated soil identified on a Project site must be properly disposed of in accordance with the State Department of Toxic Substance Control (DTSC) regulations in effect at the time the Phase II ESA is submitted to the Environmental Health Director.

23. Preconstruction Noise Studies (MM NOI-1). As required by Mitigation Measure NOI-1 in the MMRP, if any turbine is proposed to be located within 2,000 feet of a noise sensitive receptor, such as a residence, school, church or public recreational trail, the Permittee shall have a qualified acoustic engineering consultant prepare a report to evaluate the Project-specific noise impacts associated with operation of the proposed wind turbine(s). This evaluation shall conform to the requirements of mitigation measure NOI-1. If operation of the turbine(s) is predicted to result in noise level of 55 dBA (Ldn) or greater where noise is currently less than 55 dBA (Ldn) or result in a 5 decibel (dB) increase where noise is currently greater than 55 dBA (Ldn), the Permittee shall modify the Project to select new specific installation sites or turbine designs within the Project boundary to ensure that these performance standards will not be exceeded.

Other methods that can be used to ensure compliance with these performance standards include but are not limited to increasing the distance between proposed turbines and noise sensitive uses, or use of alternative turbine operational modes to reduce noise. Upon completion of the noise study, the Permittee shall submit a report to the Alameda County Planning Director demonstrating how the Project will comply with these performance standards. After review and approval of the report by the Planning Director, the Permittee shall incorporate measures as necessary into the Project design to ensure compliance with these performance standards.

24. Safety Setbacks. New wind turbines shall have a minimum setback from other land uses as stated below.
- a. From a parcel boundary on which a separate windfarm operation is proposed or approved: 1.1 times (or 110% of) the rotor length.
 - b. From a parcel boundary on which no windfarm operation is proposed or approved: 1.25 times (or 125% of) the total turbine height.
 - c. From a Dwelling Unit: three times (or 300% of) the total turbine height.
 - d. From a public road, interstate highway, public trail, commercial or residential zoning: 2.5 times (or 250% of) the total turbine height.
 - e. From a recreation area or property approved for an outdoor recreation use: 1.25 times (or 125% of) the total turbine height.
 - f. From a high-tension electrical transmission line: 2 times (or 200% of) the total turbine height.

The setbacks specified above shall be increased by one (1) percent of the total turbine height (to the top of the rotor blade at the 12:00 o'clock position) per ten (10) feet of elevation that the turbine's ground elevation is above the ground elevation of the affected parcel or use, specifically the nearest affected parcel boundary, recreation area or property, dwelling unit, road or highway right-of-way, trail, commercial or residential zone district boundary, or the center of a transmission or conductor line. The setback may be decreased by one (1) percent of such total turbine height per ten (10) feet of elevation that the turbine's ground elevation is below the ground elevation of affected parcels or uses.

Furthermore, the setbacks specified above, as adjusted according to turbine elevation above or below an affected parcel or use, may be reduced by 50% to an alternative minimum (i.e., to one-half the resulting setback), if a notarized agreement or a recorded easement from the affected property owner (except in the case of setbacks from a public road, interstate highway or transmission line) is approved by the Planning Director, with the following exceptions and conditions:

- i. The setback from a parcel on which no windfarm operation is proposed or approved may be reduced to no less than 1.1 times (or 110% of) the rotor length.
- ii. The setback from a recreation area or property approved for an outdoor recreation use shall not be reduced to less than 1.0 times (100% of) the total turbine height.
- iii. The setback from a public road, interstate highway, public trail, commercial or residential zoning, or high-tension transmission line shall only be reduced to such minimum with the submittal of a report by a qualified professional, to be approved by the Planning Director with substantial evidence that public safety will not be compromised, and property owner agreement or easements shall be required only from private properties with commercial or residential zoning.

Adjustments based on the ground elevation of a turbine shall be limited to whole ten-foot increments, disregarding any smaller portion. Total turbine height shall always be measured from ground elevation to the top of the rotor at the 12:00 o'clock position (i.e., at the furthest upward reach of the rotor blade). For adjoining parcels under the same windfarm use permit, no setback is required. Knowledge of existing, proposed or approved windfarm use permits on adjacent

parcels shall be based on the best available information at the time of the subject application. The Planning Director shall reserve the right to reject all or part of an alternative minimum setback based on substantial evidence that a wind turbine will have adverse noise, safety or visual impacts on a dwelling unit that have not been previously disclosed publicly, or that a required report requires additional information before such a minimum is approved.

25. Safety Setbacks for Meteorological Towers. New temporary and permanent meteorological towers (met towers) shall have a minimum setback from the exterior Project boundary, shown in the permit application, equal to the total height of the met tower plus 25 feet.
26. Undergrounding of Utility Lines. All electrical utility collection and distribution connection lines shall be installed underground, except as required by the utility company for final connections to major substations.
27. Site Development Review for Previously Undeveloped Ridgelines (MM AES-2a). Site Development Review pursuant to Section 17.54.230 et. seq. of the County Zoning Ordinance shall be required for new turbines proposed on a ridgeline or hilltop which has not previously been developed with commercial-scale wind turbines (over 25 kW rated capacity). Such Site Development Review shall not be approved unless the Planning Director determines that the visual effects will be substantially avoided by distance from public view points (e.g., over 2,000 feet), intervening terrain, screening landscaping, or compensatory improvements to equivalent and nearby (radius of 1 mile) scenic features, as approved by the Planning Director.
28. Analyze Shadow Flicker Distance and Mitigate Effects (MM AES-5). Where shadow flicker could result from the installation of wind turbines near residences (i.e., within 500 meters or about 1,600 feet in a broadly easterly or westerly direction, accounting for all seasons of the year), the Permittee shall prepare a graphic model and study to evaluate the potential for shadow flicker impacts on residences for review and acceptance by the Planning Director. No shadow flicker in excess of 30 minutes in a given day or 30 hours (net or total) in a given year will be permitted unless it has been mitigated subject to the approval of the Planning Director.

If any residence is nonetheless affected by shadow flicker within the 30-minute/30-hour thresholds, the Permittee shall implement one or more measures to avoid or minimize the effect, such as providing opaque window coverings, window awnings, landscape buffers or a combination of these features to reduce flicker to acceptable limits for the affected receptor, or shutting down the turbine during the period shadow flicker would occur. Such measures shall be undertaken in consultation with the owner of the affected residence, and may be confirmed by preparation of a shadow flicker study at the Permittee's expense. If the shadow flicker study indicates that any given turbine would result in shadow flicker exceeding the 30-minute/30-hour thresholds and the affected property owner is not amenable to window coverings, window awnings, or landscaping and the turbine cannot be shut down during the period of shadow flicker, then the turbine operations would be set back or limited to avoid shadow flicker to the satisfaction of the affected owner of the residence.

29. Color Treatment. All wind turbines, blades, towers and structures shall be treated and maintained with a generally uniform off-white paint scheme in order to blend with the surroundings and minimize adverse visual effect. Exceptions may include experimental measures if recommended

by the TAC and approved by the Planning Director to allow any turbine to be painted as a mitigation for bird collisions.

30. Lighting Guidelines. Lighting design for turbine tower entries, substations and permanent operations and maintenance buildings shall be submitted for review and approval by the Planning Director and included in the building permit application. New lighting shall be downward casting and shielded, utilizing motion detection systems if appropriate and shall not unnecessarily "wash out" into surrounding areas. Lenses and bulbs shall not protrude from light fixtures. Fixtures intended to be lit for long periods of time shall utilize low-pressure sodium lamps or devices with similar properties (i.e., long-lasting and energy efficient). Fixtures shall be mounted at the lowest feasible height. If industrial design standards or FAA safety protocols require lighting designs that conflict with the requirements of this condition, such standards and protocols shall take precedence subject to approval by the Planning Director and Building Official with respect to other applicable conditions and mitigation measures.

Lighting required by FAA shall be shrouded, directed upward, or utilize other technology to minimize lighting at ground level. If FAA safety protocols require lighting designs that conflict with the requirements of this condition, such protocols shall take precedence subject to approval by the Planning Director and Building Official with respect to other applicable conditions and mitigation measures.

31. Tower Access. Each wind turbine tower shall be fully enclosed with interior access controlled by the Permittee with security measures approved by the Building Official, and ladder or lift safety measures.
32. Operational Safety. Each turbine generator shall be equipped with both manual and automatic controls to limit the rotational speed of the blade within the design limits of the overall turbine. Generators shall be designed, installed and operated to prevent emissions of electromagnetic interference that are disruptive to adjacent land uses.
33. Meteorological Tower Design Standards. Temporary meteorological towers (met towers) shall be shown on site plans submitted for building permits, and may be guyed (supported by guy-wires) with colored avian marker balls or spirals at appropriate intervals. Met towers installed for operation of more than two years (24 months) shall be free-standing and not supported by guy-wires. Permanent or temporary met towers in excess of 200 feet (or 60 meters) shall be referred to the Federal Aviation Administration for consideration of lighting requirements and paint treatment (e.g., aviation orange). Lighting required by FAA shall be shrouded, directed upward, or utilize other technology to minimize lighting at ground level. If FAA safety protocols require lighting designs that conflict with the requirements of this condition, such protocols shall take precedence subject to approval by the Planning Director and Building Official with respect to other applicable conditions and mitigation measures.
34. Permanent Signage. Permittee shall provide signage on the entry gates to the subject property(ies) providing basic contact information for use in case of an emergency, including the name of the Project, names, titles, and phone numbers of individuals responsible for operations, non-emergency phone numbers, and the Planning Department general contact information. The turbine towers, rotors, cabinets, or mountings shall not be used for advertising.

35. Turbine and Infrastructure Design and Siting to Reduce Avian Mortality (MMs BIO-11b, BIO-11c and BIO-11d). As required by Mitigation Measures BIO-11b, BIO-11c and BIO-11d in the MMRP, the Permittee shall utilize a siting process and prepare a siting analysis, using analyses of landscape features and location-specific bird use and behavior data to determine the specific turbine site locations with the potential to reduce avian collision risk and fatalities and otherwise minimize potential impacts on bird and bat species. Proponents will utilize existing data as well as collect new site-specific data as part of the siting analysis. Permittee shall implement Mitigation Measure BIO-11b as set forth in the Project MMRP.

Permittee shall use turbines with certain characteristics recognized to reduce the collision risk for avian species. Permittee shall implement the design-related measures set forth by Mitigation Measure BIO-11c as set forth in the Project MMRP. Permittee shall also apply specific measures outlined in Mitigation Measure 11d when designing and siting turbine-related infrastructure in order to reduce the risk of bird electrocution and collision.

Upon determining that the information in the siting analysis is sufficiently detailed for Technical Advisory Committee (TAC) consideration and recommendations, the Planning Director shall schedule a meeting for TAC review of the Project's compliance with mitigation measures BIO-11a and BIO-11b.

36. Retrofit Existing Infrastructure to Minimize Risk to Raptors (MM BIO-11e). As required by Mitigation Measure BIO-11e, the Permittee shall have any existing power lines in its Project area, that are owned or operated by the Permittee and that are associated with electrocution of an eagle or other raptor retrofitted within 30 days of any recorded electrocution, or prior to the start of commercial operation, to make them raptor-safe according to Avian Power Line Interaction Committee guidelines. All other existing structures to remain in a Project area during repowering will be retrofitted, as feasible, according to specifications of Condition 35 and Mitigation Measure BIO-11c prior to repowered turbine operation.
37. Site Management to Discourage Prey for Raptors (MM BIO-11f). As required by Mitigation Measure BIO-11f in the MMRP, the Permittee shall prevent the use of rodenticides, allow rock piles only over 500 meters from any new turbine, and use gravel around turbine foundations, when designing and siting turbine-related infrastructure and other site improvements, and operating the wind turbines, in order to minimize opportunities for fossorial mammals to become established and thereby create a prey base that could become an attractant for raptors.
38. Turbine Siting and Selection to Minimize Potential Bat Mortality (BIO-14a). Permittee shall use the best information available to site turbines and to select from turbine models in such a manner as to reduce bat collision risk. The siting and selection process will take into account bat use of the area and landscape features known to increase collision risk (trees, edge habitats, riparian areas, water bodies, and wetlands). Measures include but are not limited to siting turbines the greatest distance feasible up to 500 meters (1,640 feet) from still or flowing bodies of water, riparian habitat, known roosts, and tree stands. Permittee shall implement Measure BIO-14a as set forth in the Project MMRP.
39. Design of Circuit Breakers to Minimize Sulfur Hexafluoride (SF₆) Leakage (MM GHG-2b). The Permittee shall ensure that any new circuit breaker installed at a substation has a guaranteed Sulfur Hexafluoride (SF₆) leak rate of 0.5% by volume or less. The Permittee shall provide the Building Official with documentation of compliance, such as specification sheets, prior to

installation of the circuit breaker. In addition, the Permittee shall monitor SF6-containing circuit breakers at the substation consistent with the California Air Resources Board's Scoping Plan Measure H-6 for the detection and repair of leaks.

CONSTRUCTION PERMIT REQUIREMENTS

40. Building Permit Application Requirements (including MM GHG-2d). The Permittee shall apply for and obtain approval for separate building permits for the removal and demolition of existing turbines and associated facilities, and the construction of new turbines, and shall conform to the following requirements.
- a. Soils report and/or geological/geotechnical study will be required.
 - b. Comply with building codes and submittal requirements in effect at the time of submitting for building permits.
 - c. A California licensed architect or engineer shall be designated as the design professional responsible and in charge of the Project submittal. Submittal documents may be signed and sealed by multiple licensed architects or engineers.
 - d. The Permittee's designated California-licensed land surveyor shall be responsible for the property information filed with the Building Permit application.
 - e. The demolition and construction debris diversion plan shall comply with applicable policies of the Public Works Agency's Construction & Demolition Debris Management Program. In particular, the Permittee shall implement Mitigation Measure GHG-2d as set forth in the MMRP, to comply with the County's revised Green Building Ordinance regarding construction and demolition debris to achieve the following minimum standards: 1) 100% of inert waste and 50% wood/vegetative/scrap metal not including Alternative Daily Cover (ADC) and unsalvageable material will be put to other beneficial uses at landfills; and 2) 100% of inert materials (concrete and asphalt) will be recycled or put to beneficial reuse.
 - f. Plans filed for the Building Permit application shall obtain Zoning Approval (i.e., Planning Department approval for consistency determination that the plans are consistent with this permit), and shall be drawn to scale, indicating the location of each wind turbine, the location and function of all structures within 1,000 feet of any wind turbine, as well as all trailers and major ground equipment to be put in place for use during construction.
 - g. Evidence of a proposed interconnection agreement and any technical requirements and specifications required by the interconnection authority.
 - h. Evidence of filing a notice of proposed construction with the Federal Aviation Administration (FAA) and the required referral to the Alameda County Airport Land Use Commission.
41. Use of Recycled Content in New Building Materials (MM GHG-2c). The Permittee shall require the construction of all new substation and other permanent buildings to incorporate materials for which the sum of post-consumer recycled content plus one-half of the post-industrial content constitutes at least 10% of the total value of the materials in the Project.
42. Fire Department Approval Requirements. Permittee shall contact the Alameda County Fire Department, Fire Prevention Bureau, to obtain a fire clearance certificate. The Bureau may be reached by telephone at (510) 670-5853. The Permittee shall install a Knox Box at all entry

gates, provide an emergency contact to the Department, and maintain a fire extinguisher in each ground equipment area. Water tanks meeting NFPA 1142 standards shall be provided at each construction staging area and shown on Building Permit application site plans. Permittee shall be responsible for compliance with the Altamont Pass Windfarms Fire Requirements dated September 22, 2005 and as updated or revised herein.

43. Grading Permit Application and Geotechnical Investigation Requirements (MM GEO-1). Prior to any grading, ground-disturbing or construction activities on the Project site, the Permittee shall submit a preliminary grading plan and a site-specific geotechnical investigation to the County Grading Department. The geotechnical investigation/report shall be prepared by a qualified geotechnical firm in conformance with Chapter 15.36.320 and subsequent applicable sections of the Alameda County Grading Ordinance, for review by the County for the purpose of obtaining a grading permit in accordance with the provisions of the Grading Ordinance and the following requirements.
- a. The site-specific geotechnical/geologic report shall be prepared by a licensed geotechnical engineer or engineering geologist with local expertise in geotechnical investigation and design, based on data collected from subsurface exploration, laboratory testing of samples, and surface mapping. The report shall contain all of the elements listed under the Alameda County Grading Ordinance Chapter 15.36.350, as required, and address the following and any additional issues as required by the Director of Public Works.
 - Potential for surface fault rupture related to known and suspected earthquake fault lines, such as the Greenville, Corral Hollow-Carnegie, and the Midway faults (as appropriate to each location).
 - Turbine foundation and power infrastructure siting limitations and recommendations based on the location of such faults relative to proposed site plans.
 - Potential for strong ground shaking, slope failure or unstable cut or fill slopes, presence of expansive soils, unusual terrain or geological characteristics, and appropriate design recommendations for the design of turbine foundation and power collection systems to accommodate such soil or geological conditions.
 - b. The geotechnical/geologic report may be subject to a professional review by the County's consulting geotechnical engineer/geologist. It shall be the Permittee's responsibility to provide sufficient funds to the County for this professional review service if required.
 - c. Permittee shall implement the design recommendations in the geotechnical report, including revised recommendations resulting from the professional review, if such a review is required.
 - d. No grading work will be allowed during the rainy season, from October 1 to April 30, except upon a clear demonstration, to the satisfaction of the Director of the Public Works Agency, that at no stage of the work will there be any substantial risk of increased sediment discharge from the site.
 - e. Any proposal for grading work associated with fire access roads must be reviewed and approved by the Alameda County Fire Department prior to issuance of a grading permit.
 - f. The grading permit shall be subject to approval of the Alameda County Flood Control and Water Conservation District.

44. Stormwater Control Plan. Permittee shall prepare a Stormwater Control Plan (SCP) in compliance with the technical requirements of Provisions C.3 and C.6 of the Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit (Municipal Regional Permit, or MRP) and the County Building and Stormwater Management and Discharge Control Ordinances for the purpose of long-term (post-construction) stormwater control. The SCP shall be submitted to the Director of Public Works for approval prior to issuance of a County Stormwater Permit. The SCP shall include:
- a. Plan drawings showing the locations, sizing and Drainage Management Areas discharging to the proposed stormwater treatment system(s), the planned site design and source control measures, and any required hydromodification management (HM) facilities or devices.
 - b. A preliminary written plan that describes the operation and maintenance (O&M) (including inspection) of all installed stormwater treatment systems and HM controls both during construction and following construction.
 - c. A draft of a statement from the Permittee and property owner accepting long-term responsibility for the O&M of the installed stormwater treatment systems and HM controls, along with continuing upkeep of any required source control and site design measures, until such responsibility is legally transferred to another entity.
 - d. A draft of an agreement to include written conditions in any sales or lease agreements or deed for the Project that requires a buyer or lessee to assume long-term responsibility for the O&M of the installed stormwater treatment systems and HM controls, and the upkeep of the source control and site design measures, until such responsibility is legally transferred to another entity.
 - e. A signed statement from the Permittee and property owner(s) granting site access to all representatives of the County, local mosquito and vector control agency staff, and Water Board staff, for the sole purpose of performing O&M inspections of the installed stormwater protection systems (treatment systems, HM controls, source controls and site design measures).
 - f. A written statement from the Permittee and property owner(s) and successors acknowledging that the County may conduct annual inspections of all installed stormwater protection systems and that the Permittee agrees to pay for those inspection costs on a time and materials basis.
 - g. The plan shall specify that all new or modified drainage facilities shall be designed to ensure no net increase in stormwater discharge rates, flow velocities, or sediment transport would result from Project implementation.
 - h. Discharges from these facilities shall be designed so as to avoid concentration of flow and subsequent downstream scouring or sedimentation in natural creek beds.
 - i. Proposed roadways shall be designed so as to ensure that potential for slope failure and erosion is minimized.
 - j. The Stormwater Control Plan shall be incorporated into all design drawings and specifications as appropriate, and shall meet the following standards:
 - i. The Permittee shall design and construct all storm drainage facilities in compliance with the County Public Works Design Standards.

- ii. The Permittee shall prevent storm drainage from draining across driveway(s) or onto adjacent properties in a concentrated manner.
- iii. The Permittee shall obtain a drainage permit under applicable County Ordinances for the installation of new drainage culverts.

A Stormwater Control Plan, Waste Discharge Identification (WDID) Number, Notice of Intent (NOI) and a Storm Water Pollution Prevention Plan (SWPPP) must be submitted to the Public Works Agency prior to issuance of the County Grading and Stormwater Permits.

45. NPDES Permit Requirements to Prevent Stormwater Pollution During Construction (MM WQ-1).
As required by Mitigation Measure WQ-1 in the MMRP, the Permittee shall submit a Notice of Intent (NOI) and obtain coverage under the Construction General Permit (CGP) authority of the National Pollutant Discharge Elimination System (NPDES) for both the Central Valley and San Francisco Bay Regional Water Boards, before the onset of any construction activities for the purpose of preventing stormwater pollution during construction. The Permittee shall have a specific Project Storm Water Pollution Prevention Plan (SWPPP) prepared by a Qualified SWPPP Developer and ready for implementation prior to construction. This SWPPP shall be kept onsite during construction activity and provided upon request to representatives of the County and Water Board staffs.

Permittee shall apply for a County Stormwater Permit prior to the start of any construction; this application shall include proof of coverage under the CGP and a copy of the Project SWPPP. This SWPPP must provide for the implementation of pollutant discharge controls that utilize Best Management Practices (BMPs) and technology to reduce erosion, sedimentation, and other discharges to the water quality standards of the CGP and the County Stormwater Permit. BMPs may consist of a wide variety of protective measures taken to reduce pollutants in stormwater and other nonpoint-source runoff, including but not limited to, the following practices:

- a. Installation of temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) to control erosion and sedimentation from disturbed areas.
- b. Construction of dry detention basins (typically dry except after a major rainstorm, when it will temporarily fill with stormwater), designed to decrease runoff from the work site during storm events and to prevent flooding of the construction areas. Basin BMPs must include maintenance schedules for the periodic removal of sediments, excessive vegetation, and debris that may clog basin inlets and outlets.
- c. The application of covers or nontoxic soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more) that could contribute sediment to waterways.
- d. The enclosure and coverage of exposed stockpiles of dirt or other loose, granular construction materials that could contribute sediment to waterways.
- e. The control of run-on that could deposit sediment or other materials from areas adjacent to the work site.
- f. The assurance that no earth or organic material will be deposited or placed where it may be directly carried into a stream, marsh, slough, lagoon, or body of standing water.

- g. The application of controls that would preclude the following types of materials from being rinsed or washed into the County stormdrain system, the “waters of the United States,” or adjacent properties: concrete, concrete wash, solvents and adhesives, thinners, paints, fuels, sawdust, dirt, gasoline, asphalt and concrete saw slurry, and heavily chlorinated water.
- h. The establishment of grass or other vegetative cover on the construction site as soon as possible after disturbance.

The Permittee (and the selected contractor) shall select a combination of appropriate BMPs, consistent with the above and with the requirements of the CGP and the County Stormwater Permit, which is expected to minimize runoff and remove contaminants from stormwater discharges. The final selection of BMPs will be subject to approval by the County and by the San Francisco Bay Regional Water Board or the Central Valley Water Board.

The Permittee (and the selected contractor) shall verify that a Notice of Intent (NOI) has been filed with the appropriate State Water Board having jurisdiction, that the said Water Board has issued a Waste Discharge Identification (WDID) Number, that a project SWPPP has been prepared, and that a County Stormwater Permit has been issued before allowing construction to begin. The selected contractor shall perform regular inspections of the construction area, to verify that the BMPs specified in the SWPPP are properly implemented and maintained. The contractor will notify the appropriate Regional Water Board and the County immediately if there is a noncompliance issue. If necessary, the contractor shall require that additional BMPs be designed and implemented if those originally constructed do not achieve the identified performance standard of the CGP or the County Permit.

- 46. Roadway Encroachment Permit. Permittee shall apply to the Public Works Agency for separate roadway encroachment permits for temporary and permanent access and facilities. Improvement plans shall be prepared by a registered Civil Engineer for approval by the Director of Public Works, accompanied by the required review and inspection fees, as well as insurance and security deposits if required by the Public Works Agency.
- 47. Gate Entries. The Permittee shall provide designs to the Director of Public Works for roadway widening, pavement transitions, shoulder widening, necessary longitudinal and transverse drainage, and any driveway profile adjustments in conformance with County Roadway Standards. The new pavement section shall match, at a minimum, the full roadway section of each affected County roadway. No gates or fences shall be located within any County road right-of-way, and gates shall not swing out towards the public road.
- 48. Construction Traffic Control Plan (MM TRA-1). Prior to starting construction-related activities, the Permittee shall prepare and implement a Traffic Control Plan (TCP) as required by Mitigation Measure TRA-1 in the MMRP to reduce or eliminate impacts associated with the Project. The TCP shall adhere to Alameda County and Caltrans requirements, and must be submitted for review and approval of the County Public Works Agency prior to implementation. The TCP shall include the elements listed in Mitigation Measure TRA-1 such as controlling the peak hours of construction worker commuting, truck access during peak hours, notification of contractors of local road weight and speed limits, etc.; however, the County and Caltrans may require additional elements to be identified during their review and approval of the TCP.

When lane/road closures occur during delivery of oversized loads, provide advance notice (no less than five working days) to the County Fire Department, Sheriff's Office, and California Highway Patrol (CHP) to ensure that alternative evacuation and emergency routes are designated to maintain service response times. The names and 24-hour contact numbers of the Project construction superintendent and foreman shall be included as part of the advance notification.

For oversized loads transported on County roads, if road closures are required, the Permittee shall comply with transportation permit requirements of Caltrans, California Highway Patrol, and the Public Works Agency for oversized loads. To implement a road closure, a request should be submitted to the Alameda County Public Works Agency, Road Division, at least two months before the planned closure. Copies of the road closure request should be provided to Caltrans and the Alameda County Sheriff's Office. If determined to be necessary by the County Director of Public Works due to slow moving trucks, delivery of some or all large components or construction equipment may be restricted to night-time hours. Procedures include but are not limited to the following:

- i. Loads wider than the vehicle code limit of 8'-6" will require a Public Works Agency Oversize Move Permit (OMP), for which the Permittee shall provide a description of the largest vehicle/load combination (overall height, width, and length and axle loadings).
- ii. Notice of request for an OMP will be referred to the CHP, and based upon coordination between the PWA and CHP may provide the basis for a Repetitive OMP.
- iii. Prior to commencement of any construction activities, including grading and site preparation, Permittee shall give written notice to the Planning Director with a copy to the Director of Public Works of the commencement date, proposed access route and estimated duration in years of any construction activities.

The Transportation Control Plan shall also address the following requirements:

- a. Permittee shall submit video footage of pavements on County roads to be used for transport of major turbine components and construction equipment with the building permit or grading permit applications, and post a security bond to guarantee that the Permittee shall reconstruct any failed, cracked, or deteriorated portions of County road pavements that resulted from Project construction. The Permittee shall calculate the amount of the required security bond and submit the calculation to the County Director of Public Works for review and approval.
- b. The Permittee shall monitor roads during Project construction to identify any damage that requires immediate repair. Complete road repairs on local public roads as needed during construction to prevent excessive deterioration. This work may include construction of temporary roadway shoulders to support any necessary detour lanes.
- c. Repair or restore County road rights-of-way to original condition or better upon completion of the work.
- d. Emergency road repairs shall be completed at the Permittee's expense. Any potentially hazardous road segment must be flagged until the road is repaired.
- e. Coordinate Project-related construction activities, including schedule, truck traffic, haul routes, and the delivery of oversized or overweight materials, with Alameda County, Caltrans, and affected cities to identify and minimize overlap with other area construction projects.

49. Watercourse Protection Ordinance. If any ground disturbing work is proposed within or near a watercourse, a watercourse encroachment permit or a grading permit shall be secured from the Public Works Agency in accordance with the Alameda County Watercourse Protection Ordinance. Watercourse setbacks shall be delineated on the exhibit plan per the provisions of Article V of the Watercourse Ordinance. The Ordinance establishes a setback of 20 feet from the top of the creek bank. However, for existing bank slopes at 2 horizontal to 1 vertical, or steeper, establish the setback by drawing a line on a cross-section at a 2 horizontal to 1 vertical slope from the toe of the existing bank to a point where it intercepts the ground surface and then add 20 feet. As provided by the Watercourse Protection Ordinance (Section 13.12.310, item G), the Director of Public Works shall make the determination as to setback limits and any permitted development within a setback.
50. Other Watercourse Requirements. The Permittee shall be responsible, prior to any work near or within a recognized watercourse, for securing other permits (e.g., Streambed Alteration Agreement) or other approvals required for work which is regulated by any other public agency (i.e., the California Department of Fish and Wildlife, Army Corp of Engineers, etc.).
51. Project-Specific Avian Protection Plan (BIO-11a). The Permittee shall prepare a Project-specific Avian Protection Plan (APP) as required by Mitigation Measure BIO-11a in the MMRP to specify measures and protocols consistent with the program-level mitigation measures that address avian mortality. The Project-specific APP will include, at a minimum, the following components.
- a. Information and methods used to site turbines to minimize risk.
 - b. Documentation that appropriate turbine designs are being used.
 - c. Documentation that avian-safe practices are being implemented on Project infrastructure.
 - d. Methods used to discourage prey for raptors.
 - e. A detailed description of the postconstruction avian fatality monitoring methods to be used (consistent with the minimum requirements outlined in Mitigation Measure BIO-11g).
 - f. Methods used to compensate for the loss of raptors (consistent with the requirements of Mitigation Measure BIO-11h).

The Permittee shall prepare and submit a draft Project-specific APP to the County within 10 days of submitting the Building Permit application. The draft APP will be reviewed by the TAC for consistency and the inclusion of appropriate mitigation measures that are consistent with the PEIR and recommended for approval by the County. The Permittee must obtain approval from the Planning Director of the draft APP prior to commercial operation, and obtain recommendations from the TAC for preparation of the Final APP within six months of commercial operations. The Final APP shall be subject to approval by the Planning Director.

52. Stop Work Procedures for Encounters With Cultural Resources, Human Remains and Paleontological Resources During Ground-Disturbing Activities (MMs CUL-2d, CUL-3 and GEO-7c). Permittee shall ensure that construction specifications include a stop-work order if paleontological, prehistoric, or historic-era cultural resources, or human remains are unearthed during ground-disturbing activities. Specific procedures are set forth in Conditions 68, 69 and 70.

PRIOR TO ISSUING BUILDING PERMIT

53. Implement Best Management Practices (BMPs) to Avoid and Minimize Impacts on Special-Status Plant and Animal Species (MMs BIO-1b, BIO-5a and BIO-7a). The Permittee shall ensure that the following BMPs, in accordance with practices established in the East Alameda County Conservation Strategy (EACCS), will be incorporated into the Project design and construction documents.
- a. Employees and contractors performing decommissioning, reclamation or construction activities will receive environmental sensitivity training. Training will include review of environmental laws, mitigation measures, permit conditions, and other requirements that must be followed by all personnel to reduce or avoid effects on special-status species during decommissioning, reclamation or construction activities.
 - b. Environmental tailboard trainings will take place on an as-needed basis in the field. These trainings will include a brief review of the biology of the covered species and guidelines that must be followed by all personnel to reduce or avoid negative effects on these species during decommissioning and reclamation activities. Directors, managers, superintendents, and the crew leaders will be responsible for ensuring that crewmembers comply with the guidelines.
 - c. Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas to the extent practicable.
 - d. Offroad vehicle travel will be avoided.
 - e. Material will be stockpiled only in areas that do not support special-status species or sensitive habitats.
 - f. Grading will be restricted to the minimum area necessary.
 - g. Prior to ground-disturbing activities in sensitive habitats, Project construction boundaries and access areas will be flagged and temporarily fenced during construction to reduce the potential for vehicles and equipment to stray into adjacent habitats. Vehicles or equipment will not be refueled within 100 feet of a wetland, stream, or other waterway unless a bermed and lined refueling area (i.e., a created berm made of sandbags or other removable material) is constructed.
 - h. Erosion control measures will be implemented to reduce sedimentation in nearby aquatic habitat when activities are the source of potential erosion. Plastic monofilament netting (erosion control matting) or similar material containing netting will not be used at the Project. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.
 - i. Significant earth moving-activities will not be conducted in riparian areas within 24 hours of predicted storms or after major storms (defined as 1-inch of rain or more).
- Work sites for Project activities shall not allow: trash dumping, firearms, open fires (such as barbecues) not required by the activity, hunting, and pets.
54. Measures to Avoid, Minimize and Mitigate Impacts On Special-Status Wildlife Species (MMs BIO-3b, BIO-4a, BIO-5a, BIO-6, BIO-7a, BIO-8a, BIO-8b, BIO-9 and BIO-10a). The Permittee shall implement Mitigation Measures BIO-3b, BIO-4a, BIO-5a, BIO-6, BIO-7a, BIO-8a, BIO-9 and BIO-10a, as identified in the Project MMRP to address special-status invertebrates, amphibians, reptiles, nesting birds and mammals, which are based on the EACCS and which have

been modified and supplemented in the Project MMRP. The MMRP measures shall address the following species:

- a. Vernal pool branchiopods (invertebrates, including longhorn fairy shrimp, vernal pool fairy shrimp and vernal pool tadpole shrimp)
- b. Curved-footed hygrotus diving beetle
- c. Valley elderberry longhorn beetle
- d. California tiger salamander
- e. Western spadefoot
- f. California red-legged frog
- g. Foothill yellow-legged frog
- h. Western pond turtle
- i. Blainville's horned lizard
- j. Alameda whipsnake
- k. San Joaquin coachwhip
- l. Western burrowing owl
- m. Tri-colored blackbird
- n. Other non-special-status migratory birds
- o. San Joaquin kit fox
- p. American badger

Where impacts cannot be avoided or minimized, compensatory mitigation will be undertaken in accordance with mitigation ratios and requirements provided in the EACCS (Appendix C2 in the Final PEIR). In the event that an incidental take permit is obtained, compensatory mitigation will be undertaken in accordance with the terms of the permit in consultation with United States Fish and Wildlife Service (USFWS).

Implementation of some Mitigation Measures identified in the MMRP will require that the Permittee obtain incidental take permits from USFWS and CDFW (e.g., Alameda whipsnake) before construction begins. Additional conservation measures may be required in applicable Project permits (i.e., ESA incidental take permit).

55. Implement Best Available Control Technology for Heavy-Duty Vehicles (MM GHG-2a). The Permittee shall require existing trucks/trailers to be retrofitted with the best available technology and/or ARB-approved technology consistent with the ARB's *Truck and Bus Regulation* (California Air Resources Board 2011). The ARB Truck and Bus Regulation applies to all diesel-fueled trucks and buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds. The Permittee shall comply with the specific requirements of Mitigation Measure GHG-2a as set forth in the MMRP to mitigate for potentially significant cumulative construction and operations and maintenance contributions to greenhouse gas emissions.

PRIOR TO GROUND-DISTURBING ACTIVITIES

56. Establish Activity Exclusion Zones for Special-Status Plant Species (BIO-1c). As required by Mitigation Measure BIO-1c in the MMRP, where pre-construction surveys determine that a special-status plant species is present in or adjacent to a Project area, the Permittee shall establish activity exclusion zones to avoid direct and indirect impacts of the Project on such species. No ground-disturbing activities shall take place within these designated activity exclusion zones,

including construction of new facilities, construction staging, or other temporary work areas. Activity exclusion zones for special-status plant species will be established around each occupied habitat site, the boundaries of which will be clearly marked with standard orange plastic construction exclusion fencing or its equivalent. The establishment of activity exclusion zones will not be required if no construction-related disturbances will occur within 250 feet of the occupied habitat. The size of activity exclusion zones may be reduced through consultation with a qualified biologist and with concurrence from CDFW based on site-specific conditions.

57. Best Management Practices to Avoid and Minimize Effects on Special-Status Amphibians (MM BIO-5a). The Permittee shall implement BMPs and other appropriate measures consistent with Mitigation Measure BIO-5a in the Project MMRP to address special-status amphibians and shall ensure that, in accordance with measures developed for the EACCS, such BMPs are incorporated into the appropriate design and construction documents. Implementation of some of these measures will require that the Project proponent obtain incidental take permits from USFWS (e.g., California red-legged frog and California tiger salamander) and from CDFW (California tiger salamander only) before construction begins. Additional conservation measures or conditions of approval may be required in applicable Project permits (e.g., ESA or CESA incidental take authorization). Permittee shall comply with the specific requirements of Mitigation Measure BIO-5a in the MMRP to mitigate for effects on amphibians, including, but not limited to limits on the season in which ground-disturbing activities may occur, installation of barrier fencing, identifying appropriate relocation areas and preparing a relocation plan.

Permittee shall have a qualified biologist conduct preconstruction surveys immediately prior to ground-disturbing activities (including equipment staging, vegetation removal, grading). The biologist will survey the work area and all suitable habitats within 300 feet of the work area. If individuals (including adults, juveniles, larvae, or eggs) are found, work will not begin until USFWS and/or CDFW is contacted to determine if moving these life-stages is appropriate. If relocation is deemed necessary, it will be conducted in accordance with the relocation plan. Incidental take permits are required for relocation of California tiger salamander (USFWS and CDFW) and California red-legged frog (USFWS). Relocation of western spadefoot and foothill yellow-legged frog normally requires a letter from CDFW authorizing this activity; however, a biologist with a specific authorization (i.e., scientific collecting permit or MOU from CDFW) will be accepted for this purpose.

58. Preconstruction Surveys for Western Pond Turtle and Monitoring of Construction Activities (BIO-6). If determined as a result of pre-construction surveys pursuant to Mitigation Measure BIO-3a, that suitable aquatic or upland habitat for western pond turtle is identified within proposed work areas, Permittee shall implement Mitigation Measure BIO-6 as set forth in the Project MMRP, consistent with measures developed for the EACCS, to ensure that the proposed Project does not have a significant impact on western pond turtle. The mitigation includes but is not limited to surveys conducted both one week before and immediately before (within 24 hours) of work activity, use of a biological monitor if needed, and approval by CDFW for any required relocation of turtles.
59. Plan for Restoration of Disturbed Annual Grasslands (BIO-5c). Within 30 days prior to any ground disturbance, Permittee shall have a qualified biologist prepare a Grassland Restoration Plan in coordination with CDFW and subject to CDFW approval, to ensure that temporarily

disturbed annual grasslands and areas planned for the removal of permanent roads and turbine pad areas are restored to pre-Project conditions. The Grassland Restoration Plan shall conform to the requirements of Mitigation Measure BIO-5c in the MMRP.

The Grassland Restoration Plan shall include a requirement to monitor restoration areas annually (between March and October) for up to three years following the year of restoration. The restoration will be considered successful when the percent cover for restored areas is 70% absolute cover of the planted/seeded species compared to the percent absolute cover of nearby reference sites.

The Permittee shall provide evidence to the Planning Director that CDFW has reviewed and approved the Grassland Restoration Plan. Additionally, the Permittee shall provide annual monitoring reports to the County by January 31 for three years or until restoration is deemed successful by the CDFW, summarizing the monitoring results and any remedial measures implemented (if any are necessary) during the previous year.

60. Pre-Construction Worker-Awareness Training for Archaeological Resources (MM CUL-2c). The Permittee shall provide for training overseen by a qualified professional archaeologist prior to the initiation of any site preparation and/or the start of construction. The Permittee shall ensure that all construction workers receive adequate training, and to ensure that forepersons and field supervisors can recognize archaeological resources (e.g., areas of shellfish remains, chipped stone or groundstone, historic debris, building foundations, human bone) in the event that any are discovered during construction.

DURING CONSTRUCTION

61. Implement Applicable BAAQMD Basic Construction Mitigation Measures (MM AQ-2a). The Permittee shall require all contractors to comply with the following requirements for all areas with active construction activities.
- a. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered two times per day.
 - b. All haul trucks transporting soil, sand, or other loose material offsite will be covered.
 - c. All visible mud or dirt tracked out onto adjacent public roads will be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
 - d. All vehicle speeds on unpaved roads will be limited to 15 mph.
 - e. All roadways, driveways, and sidewalks to be paved will be completed as soon as possible. Building pads will be laid as soon as possible after grading unless seeding or soil binders are used.
 - f. Idling times will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage will be provided for construction workers at all access points.

- g. All construction equipment will be maintained and properly tuned in accordance with manufacturer's specifications. All equipment will be checked by a certified visible emissions evaluator.
 - h. Post a publicly visible sign with the telephone number and person to contact representing the Permittee regarding dust complaints. This person will respond and take corrective action within 48 hours. The Air District and County Building Official's phone numbers will also be visible to ensure compliance with applicable regulations.
- 62. Implement Applicable BAAQMD's Additional Construction Mitigation Measures (MM AQ-2b).
The Permittee shall require all contractors and subcontractors to comply with the following requirements for all areas with active construction activities.
 - a. During construction activities, all exposed surfaces will be watered at a frequency adequate to meet and maintain fugitive dust control requirements of the relevant air quality management entities.
 - b. All excavation, grading, and/or demolition activities will be suspended when average wind speeds exceed 20 mph, as measured at the Livermore Municipal Airport.
 - c. Wind breaks (e.g., trees, fences) will be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50% air porosity.
 - d. Vegetative ground cover (e.g., fast-germinating native grass seed) will be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
 - e. The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time will be limited.
 - f. All trucks and equipment, including their tires, will be cleaned off prior to leaving the site or Project area.
 - g. Site accesses to a distance of 100 feet from the paved road will be treated with a 6 to 12-inch compacted layer of wood chips, mulch, or gravel.
 - h. Sandbags or other erosion control measures will be installed to prevent silt runoff to public roadways from sites with a slope greater than 1%.
 - i. The idling time of diesel-powered construction equipment will be minimized to 2 minutes, and idling of equipment using other types of combustion engines shall comply with the Basic Construction Mitigation Measures set forth in Condition 61 or Mitigation Measure AQ-2a in the MMRP.
 - j. The Permittee will develop a plan demonstrating that the offroad equipment (more than 50 horsepower) to be used in the construction Project (i.e., owned, leased, and subcontractor vehicles) would achieve a Project wide fleet-average 20% NOX reduction and 45% PM reduction compared to the most recent Air Resources Board (ARB)-defined fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.
 - k. Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).

- l. All construction equipment, diesel trucks, and generators will be equipped with BACT for emission reductions of NOX and PM.
 - m. All construction equipment shall meet ARB's most recent certification standard for offroad heavy duty diesel engines.
63. Compliance with NPDES Storm Water Requirements (MM WQ-1). Permittee shall implement the Storm Water Pollution Prevention Plan (SWPPP) required by Condition 45 and as required by Mitigation Measure WQ-1 in the MMRP, maintain compliance with the other requirements of the CGP and the County C.6 Stormwater Permit (inspection, sampling, reporting, etc.) and construct the stormwater treatment system(s) per the Stormwater Control Plan (SCP). The SCP, SWPPP, and the CGP and County Stormwater Permit inspection, sampling and reporting documentation shall be kept onsite during construction activity and shall be made available upon request to representatives of the County and Water Board staff.
64. Prevent Introduction, Spread, and Establishment of Invasive Plant Species (MM BIO-2). The Permittee shall implement Mitigation Measure BIO-2 as set forth in the MMRP, in order to avoid and minimize the introduction and spread of invasive nonnative plant species, including the following BMPs, and the other requirements of Mitigation Measure BIO-2.
- a. Construction vehicles and machinery including tires will be cleaned prior to entering the construction area. Cleaning stations will be established at the perimeter of the construction area along all construction routes.
 - b. Vehicles will be cleaned only at approved areas. No cleaning of vehicles will occur at job sites.
 - c. To discourage the introduction and establishment of invasive plant species, seed mixtures and straw used within natural vegetation will be either rice straw or weed-free straw.
65. Retain a Biological Monitor During Ground-Disturbing Activities in Environmentally-Sensitive Areas (BIO-1e). As required by Mitigation Measure BIO-1e, the Permittee shall have a qualified biologist (as determined by the Alameda County Planning Director) conduct periodic monitoring of decommissioning, repowering, and reclamation activities that occur adjacent to sensitive biological resources (e.g., special-status species, sensitive vegetation communities, wetlands, etc.). Monitoring shall occur during initial ground disturbance where sensitive biological resources are present and weekly thereafter or as determined by the County in coordination with a qualified biologist. The biologist will assist the crew, as needed, to comply with all Project implementation restrictions and guidelines. In addition, the biologist will be responsible for ensuring that the Permittee or its contractors maintain exclusion areas adjacent to sensitive biological resources, and for documenting compliance with all biological resources-related mitigation measures.
66. Protection of Valley Elderberry Longhorn Beetle Habitat (MM BIO-4a). Where pre-construction surveys completed pursuant to Condition 18 (Mitigation Measure BIO-3a) indicate valley elderberry longhorn beetle habitat is present within proposed work areas or within 100 feet of these areas, the Permittee shall implement Mitigation Measure BIO-4a in the MMRP related to avoiding removal of elderberry shrubs, protecting elderberry shrubs/clusters near construction areas, providing buffer areas approved by USFWS, fencing and monitoring.

Biological inspection reports on the presence and protective actions taken regarding valley elderberry longhorn beetle habitat will be provided to the Permittee, the County and USFWS.

67. Stop Work Procedures for Encounters With Hazardous Materials or Soil or Groundwater Contamination (MM HAZ-4). As required in part by Mitigation Measure HAZ-4 as set forth in the MMRP, the Permittee shall initiate stop-work procedures upon encounters with hazardous materials or soil or groundwater contamination during construction, demolition or reclamation activities, and implement appropriate health and safety procedures, including the use of appropriate personal protective equipment (e.g., respiratory protection, protective clothing, helmets and goggles). Any such discovery shall be reported immediately to the Alameda County Health Services Agency – Environmental Health Department, and complete procedures outlined in Mitigation Measure HAZ-4 in the MMRP and as described in Condition 22.
68. Stop Work Procedures for Encounters With Cultural Resources During Ground-Disturbing Activities (MM CUL-2d). As required by Mitigation Measure CUL-2d as set forth in the MMRP, the Permittee shall, in addition to providing construction specifications requiring stop-work procedures upon encounters with cultural resources during grading or other ground-disturbing activity (as required by Condition 52), the Permittee and any related contractor shall immediately halt all activity within 100 feet of the find until a qualified archaeologist can assess the significance of the find. Prehistoric materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or tool-making debris; culturally darkened soil (“midden”) containing heat-affected rocks and artifacts; stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered-stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. If the find is determined to be potentially significant, the archaeologist, in consultation with the Native American representative (if appropriate), will develop a treatment plan that could include site avoidance, capping, or data recovery.
69. Stop Work Procedures for Encounters With Human Remains During Ground-Disturbing Activities (MM CUL-3). In addition to providing construction specifications requiring stop-work procedures upon encounters with cultural resources during grading or other ground-disturbing activity, the Permittee shall ensure the construction specifications include a stop-work order if human remains are discovered during construction or demolition. There will be no further excavation or disturbance of the site within a 100-foot radius of the location of such discovery, or any nearby area reasonably suspected to overlie adjacent remains. The Alameda County Coroner will be notified and will make a determination as to whether the remains are Native American. If the Coroner determines that the remains are not subject to his authority, he will notify the Native American Heritage Commission, who will attempt to identify descendants of the deceased Native American. If no satisfactory agreement can be reached as to the disposition of the remains pursuant to this state law, then the landowner will re-inter the human remains and items associated with Native American burials on the property in a location not subject to further subsurface disturbance. A final report will be submitted to Alameda County. This report will contain a description of the mitigation program and its results, including a description of the monitoring and testing resources analysis methodology and conclusions and a description of the disposition/curation of the resources.

70. Procedures and Preparation for Encounters with Paleontological Resources During Major Excavation (MMs GEO-7a, GEO-7b and GEO-7c). As required by Mitigation Measures GEO-7a, GEO-7b and GEO-7c in the MMRP, the Permittee shall retain a qualified professional paleontologist to monitor activities with the potential to disturb sensitive paleontological resources, and to determine if, on the basis of data gathered during detailed project design, where monitoring by a paleontologist during ground-disturbing activities will require monitoring. The Permittee shall implement Mitigation Measures GEO-7a, GEO-7b and GEO-7c as set forth in the MMRP related to paleontological resources.

The Permittee will ensure that all construction workers receive adequate training provided by a qualified professional paleontologist, and to ensure that forepersons and field supervisors can recognize fossil materials in the event any are discovered during construction.

If substantial fossil remains (particularly vertebrate remains) are discovered during earth disturbing activities, activities within 100 feet of the find will stop immediately until a state-registered professional geologist or qualified professional paleontologist can assess the nature and importance of the find and a qualified professional paleontologist can recommend appropriate treatment. Subsequent procedures are described in detail in the MMRP for Mitigation Measures GEO-7c.

71. Construction Signage. Permittee shall provide signage as required by the permitting authority (e.g. Fire Department, Building Department) including phone numbers of the facility operator for use in case of an emergency. The name of the Project and the names, titles, and phone numbers of individuals responsible for control of construction-related noise, dust, and traffic shall be maintained on all signage during construction. A 24-hour emergency number shall also be provided on all signage. The sign shall be kept up-to-date at all times.
72. Limit Construction to Daylight Hours (MM AES-1). As required by Mitigation Measure AES-1, major construction activities shall not be undertaken between sunset and sunrise or on weekends. Construction activity is specifically prohibited from using high-wattage lighting sources to illuminate work sites after sunset or before sunrise, with the exception of nighttime deliveries under the approved transportation control plan or other construction activities that require nighttime work for safety considerations. For the purpose of this condition and Mitigation Measure AES-1, major construction activities shall be defined as those which are visibly obtrusive from residences and public recreational trails, based on the finding of significant impacts in the PEIR.
73. Noise-Reduction Practices During Construction (MM NOI-2). The Permittee shall employ noise-reducing practices during decommissioning and new turbine construction so that resulting noise does not exceed Alameda County noise ordinance standards. Measures to limit noise may include the following:
- a. Prohibit noise-generating activities before 7 a.m. and after 7 p.m. on any day except Saturday or Sunday, and before 8 a.m. and after 5 p.m. on Saturday or Sunday.
 - b. Locate equipment as far as practical from noise sensitive uses.
 - c. Require that all construction equipment powered by gasoline or diesel engines have sound-control devices that are at least as effective as those originally provided by the manufacturer and that all equipment be operated and maintained to minimize noise generation.

- d. Use noise-reducing enclosures around noise-generating equipment where practicable.
- e. Implement other measures with demonstrated practicability in reducing equipment noise upon prior approval by the County.

In no case will the Permittee be allowed to use gasoline or diesel engines without muffled exhausts.

PRIOR TO DATE OF COMMERCIAL OPERATION

74. Remove Derelict Facilities and Restore Abandoned Roadways (MM AES-2b). As required by Mitigation Measure AES-2b as set forth in the MMRP, the Permittee shall clear the Project site of all derelict equipment, wind turbine components not required for the Project, and litter and debris from old turbine operations. Such litter and debris may include derelict turbines, obsolete anemometers, unused electrical poles and broken turbine blades. In addition, abandoned roads that are no longer in use on such parcels shall be restored and hydroseeded to reclaim the sites and remove visual traces from the viewscape, except in cases where state or federal resource agencies (i.e., USFWS and/or CDFW) recommend that the features be left in place for habitat purposes, or as specified by local landowners to facilitate continued ranching operations. All parcels with new turbines will be maintained in such a manner through the life of Project operations and until the parcels are reclaimed in accordance with the approved reclamation plan.
75. Compensate for Impacts on Special-Status Plant Species (BIO-1d). The Permittee shall avoid or minimize temporary and permanent impacts on special-status plants that occur on Project sites and will compensate for impacts on special-status plant species. All impacts on large-flowered fiddleneck, diamond-petaled California poppy, and caper-fruited tropidocarpum will be avoided, impacts on other special-status plant species will be avoided to the extent feasible, and any unavoidable impacts will be addressed through compensatory mitigation.

Where avoidance of impacts on a special-status plant species is infeasible, loss of individuals or occupied habitat of a special-status plant species occurrence will be compensated for through the acquisition, protection, and subsequent management in perpetuity (i.e., conservation easements) of other existing occurrences at a 2:1 ratio (occurrences impacted: occurrences preserved). The Permittee will provide detailed information to the County and CDFW on the location of the preserved occurrences, quality of the preserved habitat, feasibility of protecting and managing the areas in perpetuity, responsible parties, and other pertinent information. If suitable occurrences of a special-status plant species are not available for preservation, then the Project will be redesigned to remove features that would result in impacts on that species.

76. Conservation Measures to Compensate for Raptor and Avian Mortality (BIO-11h). The Permittee shall provide a plan for compensation for projected levels of mortality of raptors and other avian species including golden eagles, employing one or more of the options set forth in Mitigation Measure BIO-11h in the MMRP. The objective is to provide or improve habitat for raptors and avian species within the APWRA on a long-term basis, or in ten-year increments, to be adjusted on the basis of avian monitoring results only every ten years or once within each ten-year period. An avian conservation strategy, to be outlined in the draft APP required by Mitigation Measure 11a, shall be implemented within one year of the commercial operations date (or of 75 percent of the turbine capacity if construction is staged), unless compliance with the conservation strategy

includes complying with compensatory mitigation measures in an Eagle Take Permit (ETP) from the USFWS, in which case compensation shall be provided according to terms of the eagle permit. Strategic measures may include retrofitting of high-risk power poles or other electrical infrastructure, if required by an approved Eagle Conservation Plan under an eagle take permit from USFWS, contributions to raptor conservation and rehabilitation activities, acquisition of conservation easements within the APWRA, or other measures if supported by a Resource Equivalency Assessment (REA). If the ETP results in retrofitting of high-risk power poles outside of the APWRA, it will be accepted as compensatory mitigation only if required by an ETP from the USFWS, or if other compensatory mitigation measures causes a delay to the Project or results in a greater cost than would be incurred by high-risk power pole retrofits.

77. Compensate for Direct and Indirect Effects on Valley Elderberry Longhorn Beetle (BIO-4b). If elderberry shrubs cannot be avoided and protected as outlined in Condition 54 (Mitigation Measure BIO-4a), the Permittee shall obtain an incidental take permit from USFWS and compensate for the loss of any elderberry shrubs. Surveys of elderberry shrubs to be transplanted will be conducted by a qualified biologist prior to transplantation. Surveys will be conducted in accordance with the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (U.S. Fish and Wildlife Service 1999). Permittee shall comply with the specific requirements of Mitigation Measure BIO-4b of the MMRP to mitigate for effects on valley elderberry longhorn beetle.

The Project proponent will be responsible for funding and providing monitoring reports to USFWS in each of the years in which a monitoring report is required. As specified in the *Conservation Guidelines*, the report will include information on timing and rate of irrigation, growth rates, and survival rates and mortality.

78. Compensate for Loss of Habitat for Special-Status Amphibians, Reptiles, Western Burrowing Owl, San Joaquin Kit Fox and American Badger (MMs BIO-5b, BIO-7b, BIO-9 and BIO-10b). Where impacts on aquatic and upland habitat for special-status amphibians, reptiles special-status and non-special-status tree/shrub- and ground-nesting birds and burrowing owls, cannot be avoided or minimized, Permittee shall provide compensatory mitigation in accordance with mitigation ratios and requirements developed under the EACCS (Appendix C). In the event that take authorization is required, compensatory mitigation will be undertaken in accordance with the terms of the authorization in consultation with USFWS and/or CDFW.
79. Compensate for the Loss of Alkali Meadow Habitat, Riparian Habitat, and Wetlands (MMs BIO-15, BIO-16 and BIO-18; if applicable). If alkali meadow habitat, riparian habitat or wetlands are filled or disturbed as part of the repowering Project, the Permittee shall compensate for the loss of this habitat to ensure no net loss of habitat functions and values. Compensation ratios will be based on site-specific information and determined through coordination with state and federal agencies (CDFW, USFWS, United States Army Corps of Engineers, or USACE). Unless specified otherwise by a resource agency, the compensation will be at a minimum 1:1 ratio (1 acre restored or created for every 1 acre filled) and may be a combination of onsite restoration/ creation, offsite restoration, and mitigation credits. A restoration and monitoring plan will be developed and implemented. The plan will describe how alkali meadow habitat, riparian habitat or wetlands will be created and monitored.

80. Evidence of Compliance with the Federal Aviation Administration (FAA). Prior to the date of commercial operation, the Permittee shall provide a copy of the FAA Determination of No Hazard to the Alameda County Planning Director for a hearing by the Alameda County Airport Land Use Commission.

PERFORMANCE STANDARDS

81. Windfarm Fire Requirements. To provide a reasonable level of fire protection and safety for ongoing windfarm operations, the Permittee shall be responsible for compliance with the Altamont Pass Windfarms Fire Requirements dated September 22, 2005 adopted by Alameda County (ACFD) and which were reviewed and re-adopted on November 12, 2014. In addition, the Permittee shall make a reasonable attempt to maintain the telephone numbers of the inhabitants of all adjacent properties and give timely notification to same in the event of an on-site fire.
82. Safety Reporting. Permittee shall notify the County Building Official and Planning Director of any tower collapse, blade throw, fire, or injury to worker within five (5) days of any such occurrence.
83. Screen Surplus Parts and Materials (MM AES-2c). As required by Mitigation Measure AES-2c, the Permittee shall have surplus parts and materials that are kept onsite maintained in a neat and orderly fashion and screened from view, which may be accomplished by using a weatherproof camouflage material that can be draped over surplus parts and materials stockpiles. Draping materials shall be changed at least twice per year from green to brown and back again according to the season so that stockpiles are effectively camouflaged to match the predominant color of surrounding grass areas.
84. Site Maintenance. Litter and debris shall be contained in appropriate receptacles and shall be disposed of promptly. All construction trailers, construction materials and construction-related debris shall be removed following cessation of construction activity, or within 30 days of authorization of commercial operation.
85. Removal of Inoperative Equipment. Any inoperative windfarm or windfarm site that is determined to be substantially inoperative shall be restored or reclaimed consistent with the approved *Restoration and Reclamation Plan* (Condition 11), under the following procedures:
- a) The Planning Director and Director of Public Works shall make a determination that the permitted wind farm operations have been abandoned or have produced less than 5 percent of the rated output of the wind farm in one year, verified by the annual status reports and there is no demonstrated plan provided by the Permittee or property owner, satisfactory to the Planning Director, to restore the equipment to a productive operating condition.
 - b) The Planning Director and Director of Public Works may instead make a determination that more than 50% of the turbines are actively being removed or are in disrepair and there is no demonstrated plan, satisfactory to the Planning Director, to restore the equipment to a productive operating condition.

Upon determination by the Planning Director that either of the above criteria is present on the property, the Planning Director shall give notice to the property owner/wind operator of the following requirements:

- a. Within 30 days from the date of the notice by the Planning Director, the Permittee shall secure a building permit to inspect all inoperable or abandoned wind turbines; and
 - b. The application for a building permit shall be accompanied by a cash performance deposit to restore the site subject to the approved *Restoration and Reclamation Plan*.
86. Noise Standards. In the event a reasonable complaint is received by the Environmental Health Director alleging the presence of sound levels from one or more wind turbines exceeding the levels described in the application, or exceeding 55 dBA (Ldn) as measured at the exterior of any dwelling unit:
- a. The Environmental Health Director shall report this matter to the Permittee and to the Planning Director and upon receipt of such report, this matter shall be brought to hearing pursuant to Section 17.54.030.
 - b. Upon receipt of the report from the Environmental Health Director, the Planning Director shall require the Permittee to have a qualified firm furnish a site specific study with recommendations on the circumstances, if any, which would render the Project in conformance with all applicable noise conditions; the report shall also include a recommendation to the Planning Director who will make the final determination as to whether subsection (d) shall be imposed.
 - c. For a minimum 30 day period from the date of notification from the Environmental Health Director, at the time and place as may be agreed upon by the parties involved, Permittee shall attempt in good faith to negotiate a resolution of this matter with the party making the allegation; the results of such negotiation shall be reported to the Planning Director in a timely manner.
 - d. Following the review period as provided under subsection (c) and until the conclusion of the revocation procedures as provided by Section 17-54.030, one or more wind turbines authorized by this permit to be constructed or maintained that are in closest proximity to the dwelling or building site of the party making the allegation, may be required to be made inoperative.

The measurement standard for the A-weighted scale shall be adjusted by the Planning Director to allow any sound device that is installed on or around the turbine as a mitigation for bird collisions.

Methods for measuring and reporting acoustic emissions from wind turbines and wind-farms shall be equal to or exceed the minimum standards for precision described by the International Electrotechnical Commission (IEC) in its 61400 series – Standards and Technical Specifications – *IEC 61400-11: Acoustic Noise Measurement Techniques*.

The Planning Director, in consultation with the Alameda County Environmental Health Services, shall establish criterion for noise samples and measurement parameters such as the duration of

data collection, time of day, wind speed, atmospheric conditions and direction as set forth in the Wyle Research Report.

87. Electromagnetic Interference. If it has been demonstrated to the Planning Director that the turbine is causing disruptive electromagnetic interference, the Permittee shall promptly mitigate the disruptive interference, which may include discontinued operation of one or more turbine.

MONITORING AND SUBSEQUENT REVIEW

88. Initial Status Report. Six months from the issuance of grading and/or building permits, the Permittee shall submit to the Planning Director a status report describing compliance with conditions of the permit.
89. Annual Status Report. Following commercial operation date (COD), and on each annual anniversary of said commencement, Permittee shall submit to the Planning Director a brief status report containing the following information: description and rated capacity of all equipment installed, relevant meteorological data collected, and actual MW electric power generated to date broken down into appropriate time categories.
90. Post-Construction Avian Fatality Monitoring (MM BIO-11g). As required by Mitigation Measure BIO-11g as set forth in the MMRP, the Permittee shall provide for a postconstruction monitoring program to be conducted for the Project for a minimum of three (3) years beginning on the COD, or beginning upon commercial operation of 75 percent of the Project if construction is completed in phases. Monitoring shall be in conformance with the protocols and specifications of Mitigation Measure BIO-11g, including the formation of a technical advisory committee (TAC) to oversee the monitoring program and to advise the County on implementation of adaptive management measures.

As required by Mitigation Measure BIO-11g, if the results of the first 3 years of monitoring indicate that baseline fatality rates (i.e., the fatality rates of non-repowered turbines as described in the PEIR) are exceeded, monitoring will continue (potentially in combination with Condition 94/Mitigation Measure BIO-11i) until the average annual fatality rate is determined to be below the baseline fatality rate for two (2) consecutive years.

An additional two (2) years of monitoring will be implemented on the tenth anniversary of the COD.

91. Post-Construction Bat Fatality Monitoring (MM BIO-14b). As required by Mitigation Measure 14b in the MMRP, the Permittee shall implement a scientifically defensible, post-construction bat fatality monitoring program that is consistent with the protocols and sample size established and recognized by bat biologists in the APWRA, to estimate actual bat fatalities and determine if additional mitigation is required. Such monitoring shall take place concurrent with the 3-year post-construction monitoring program required by Mitigation Measure BIO-11g, and shall incorporate bat-specific components and protocols as specified by Mitigation Measure 14b in the MMRP. If recommended by the TAC, such a monitoring program shall recommence for two (2) years beginning on the tenth anniversary of the COD.

92. Annual Monitoring Reports on Bat Use and Fatalities (MM BIO-14c). The Permittee shall have annual reports of bat use results and fatality monitoring prepared by a qualified biologist within 3 months of the end of the last day of each year's fatality monitoring as required by Mitigation Measure BIO-14b, and submit such reports to the TAC and Planning Director. Special-status bat species records will be reported to the California Natural Diversity Data Base (CNDDB).
93. Technical Advisory Committee (MM BIO-11g). The County shall convene a Technical Advisory Committee (TAC) to oversee the post-construction monitoring program as required by Mitigation Measure BIO-11g and Condition 90 and to advise the County on adaptive management measures required by Mitigation Measure BIO-11i and Condition 94. The roles and responsibilities of the TAC membership shall be established by the Planning Director following consultation with the East County Board of Zoning Adjustments (based on a public hearing to be held for such specific purpose on or before December 18, 2014). The TAC shall include representatives from the County (including one or more technical consultants, such as a biostatistician, an avian biologist, and a bat biologist), and wildlife agencies (CDFW, USFWS) and as determined following the above-mentioned consultation. The TAC will have a standing meeting, which shall be open to the public, every 6 months to review monitoring reports produced pursuant to Mitigation Measure BIO-11g and Condition 90. Formation and operation of the TAC shall otherwise be consistent with Mitigation Measure BIO-11g.

The TAC may be the same TAC as may be formed and meeting for the purpose of prior repowering projects, such as Golden Hills—Phase 1; no new TAC is either required or encouraged. An adjunct or auxiliary advisory committee for the TAC composed of landowners, special district representatives, environmental advocacy groups and other stakeholders shall be convened by the Planning Director to confer with the 'core' TAC members on an as-needed basis, particularly on issues of establishing conservation easements and providing for landscape-scale mitigation as required by Condition 76.

94. Implement an Avian Adaptive Management Program (MM BIO-11i). If fatality monitoring described in Mitigation Measure BIO-11g results in an estimate that exceeds the preconstruction baseline fatality estimates (i.e., estimates at the non-repowered turbines as described in the PEIR) for any focal species or species group (i.e., individual focal species, all focal species, all raptors, all non-raptors, all birds combined, e.g., 2.43 raptors per MW per year and 4.5 native non-raptors per MW per year), the Permittee shall prepare a Project-specific adaptive management plan within 2 months following the availability of the fatality monitoring results. The County shall review and approve such plan in consultation with the TAC and it shall be implemented within 2 months of such approval. Follow-up monitoring will be required to determine if specific measures shall be sustained, revised or replaced with other measures. Measures, as outlined in Mitigation Measure BIO-11i, include but are not limited to visual modifications, anti-perching measures, prey-reduction strategies, use of experimental technologies, turbine curtailment (including real-time curtailment), or cut-in speed adjustments based on a focused study of such a strategy.
95. Develop and Implement a Bat Adaptive Management Plan (MM BIO-14d). The Permittee shall develop adaptive management plans to reduce bat mortality, in concert with Mitigation Measure BIO-14b, using appropriate feasible measures, and using both currently available and emerging information. The goals of the adaptive management plans are to ensure that the best available science and emerging technologies are used to assess impacts on bats, and that impacts are

minimized to the greatest extent possible while maintaining energy production. Specific bat-related measures shall conform to the guidelines set forth in Mitigation Measure BIO-14d in the MMRP, including identified adaptive management measures.

96. Injured Bat Rehabilitation Compensation (MM BIO-14e). Project proponent shall pay in full the cost of reasonable, licensed rehabilitation efforts for any injured bats taken to wildlife care facilities from the Project area.
97. Stormwater Control Plan: Permittee shall carry out the operation and maintenance (O&M) of all installed stormwater protective system(s) as directed in the approved Stormwater Control Plan (SCP) and in compliance with Provision C.3 of the Municipal Regional Stormwater National Pollutant Discharge Elimination System Permit (MRP) and with the terms and conditions of the County Stormwater Permit, as required by Condition 45.
98. Monitor Substation Circuit Breakers for SF₆ Leakage. (MM GHG-2b). Permittee shall provide for periodic monitoring and necessary repair of circuit breakers installed at substations to verify a sulfur hexafluoride (SF₆) leak rate of 0.5% by volume or less consistent with the Air District's *Scoping Plan* Measure H-6 for the detection and repair of leaks.
99. Optional Review/Revocation/Revision. At any time during the term of this permit and after notice as provided for in the initial hearing, this matter may be set for rehearing if the Planning Director has made an initial determination based on substantial evidence that the use of the site for generation of electrical energy from wind turbine operations has ceased for a period of six months, or has produced less than 5 percent of the rated output of the wind farm in one year, and if therefore the permit should be revoked. In addition, pursuant to Section 17.54.030, the permit may be revoked if the permit has otherwise been exercised unlawfully or contrary to any condition or limitation of its issuance. As part of such rehearing, and/or reconsideration for the permit, the Board may determine that conditions previously imposed should be modified or new conditions should be added to assure continued affirmative findings for this permit. This reconsideration may include imposition of other requirements, treatments and measures to ensure public safety and applicable policies of the East County Area Plan. Any condition modified or added shall have the same force and effect as if originally imposed.
100. Transfer of Operations. Any entity that has acquired the facilities as authorized under this permit may maintain the benefits of the existing use permit provided that a letter of notification is submitted to the Board of Zoning Adjustments and Planning Department within six months after such transaction, and all conditions of approval for the subject facility are carried out by the new operator/Permittee.
101. Site Restoration. Permittee shall provide written notification to the Planning Director upon cessation of operations on the site by the Permittee. During operation of the Project, no abandoned turbine tower, rotor, ground or other equipment components shall be stored onsite outside designated storage areas. A wind turbine shall be deemed abandoned for the purposes of this Resolution if it has not produced electricity for one year or has produced less than 5 percent of the rated output of the wind farm in one year.

If all operations have been terminated, the Permittee and/or property owner shall be required to remove all improvements authorized under this permit from the site and the property shall be

returned within twelve months of cessation to a condition with no wind facilities, subject to the requirements of the County.

102. Termination. Said Conditional Use Permit shall terminate after 30 years, on the 30th anniversary of the date of approval of this application, and shall remain revocable for cause in accordance with Section 17.54.030 of the Alameda County Zoning Ordinance. Permittee shall either remove the turbines and improvements approved herein in accordance with the approved reclamation plan or shall apply for new use conditional permits in accordance with Section 17.54.130 of the Zoning Ordinance.

Addendum to the Certified Final Subsequent Environmental Impact Report

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Revision: Admin Draft Rev0

Viracocha Wind LLC

Prepared for
Alameda County Development Agency

Sand Hill Wind Project

May 2, 2025



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Acronyms and Abbreviations

AB	Assembly Bill
AEP	Association of Environmental Professionals
Applicant	Viracocha Wind LLC
APWRA	Altamont Pass Wind Resource Area
ARB	Air Resources Board
BAAQMD	Bay Area Air Quality Management District
BMP	best management practice
BSA	Biological Study Area
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CCAP	Community Climate Action Plan
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNNDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO ₂ e	carbon dioxide emissions
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CUP	Conditional Use Permit
DPM	diesel particulate matter
ECAP	East County Area Plan
ECBZA	East County Board of Zoning Adjustments
EIR	Environmental Impact Report
EO	Executive Order
FAA	Federal Aviation Administration
FESA	Federal Endangered Species Act
GHG	greenhouse gas
GVWR	gross vehicle weight rating
HMBP	Hazardous Materials Business Plan
LOS	level of service
m	meter
m ²	square meter(s)
m/s	meters per second
MW	megawatt
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O&M	operations and maintenance
OPR	Office of Planning and Research
PEIR	Program Environmental Impact Report
PM	particulate matter
ROG	reactive organic gas
SB	Senate Bill
SEIR	Subsequent Environmental Impact Report
SFBAAB	San Francisco Bay Area Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District

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SSC	species of special concern
SVP	Society of Vertebrate Paleontology
SWPPP	Stormwater Pollution Prevention Plan
TCP	Traffic Control Plan
TTH	total turbine height
USGS	U.S. Geological Survey
VMT	vehicle miles traveled

1. Introduction

This section includes background information on the Sand Hill Wind Project certified Final Subsequent Environmental Impact Report (certified Final SEIR) and purpose of this addendum to the certified Final SEIR, an overview of the California Environmental Quality Act (CEQA) and review of Viracocha Wind LLC's (Applicant's) proposed changes, scope and content of this addendum, and organization of this addendum.

1.1 Background

This section describes the certified Final SEIR and the purpose of this addendum to the certified Final SEIR.

1.1.1 Certified Final Subsequent Environmental Impact Report

The Sand Hill Wind Project was evaluated in the *Sand Hill Wind Project Draft Subsequent Environmental Impact Report* (Draft SEIR) (ICF 2019) and the certified Final SEIR (ICF 2020). The certified Final SEIR was tiered from the *Altamont Pass Wind Resource Area Repowering Final Program Environmental Impact Report* (Final PEIR) (Alameda County Community Development Agency 2014) in compliance with Sections 15152, 15162, and 15168(c)(2) of the 2020 CEQA Guidelines (AEP 2020). Pursuant to CEQA, the Alameda County East County Board of Zoning Adjustments (ECBZA) certified the Final PEIR on November 12, 2014.

The certified Final PEIR evaluated Conditional Use Permits (CUPs) that would progressively repower the Altamont Pass Wind Resource Area (APWRA). Repowering activities included decommissioning existing turbines, installing new turbines, and operating new turbines for their expected life under a 30-year permit. The permits included conditions of approval that included implementation of specified mitigation measures identified in the certified Final PEIR. The certified Final PEIR identified the 34-megawatt (MW) Sand Hill Wind Project as a future repowering project for use in subsequent CEQA analyses.

The certified Final SEIR evaluated the installation of up to 40 new wind turbines with generating capacities of 2.3 to 4.0 MW (with a total nameplate capacity of up to 144.5 MW of generating capacity) on 15 privately owned noncontiguous parcels in the APWRA extending over approximately 2,600 acres. The certified Final SEIR evaluated the installation of up to 40 new wind turbine generators, towers, foundations, pad-mounted transformers, a power collection system, and three meteorological towers, the use of existing roads to the extent possible and development of new roads, use of existing substations and equipment upgrades, and use of an existing operations and maintenance (O&M) facility, and removal of existing wind turbine foundations in conflict with new project components.

The Smaller Turbine – Pre-Micro-Sited Layout alternative was evaluated in the certified Final SEIR. The Smaller Turbine – Pre-Micro-Sited Layout would substitute 35 of the 40 new wind turbines with generating capacities of more than 3.0 MW with 2.8-MW turbines. The Smaller Turbine – Pre-Micro-Sited Layout would also micro-site turbines at all feasible locations determined through two sequential micro-siting studies conducted with the objective of potentially reducing bat and avian impacts. The number of turbines would remain the same as the proposed project evaluated in the certified Final SEIR; however, 19 of the proposed project's 40 turbine locations would be relocated. The Smaller Turbine – Pre-Micro-Sited Layout would reduce overall generating capacity from 144.5 MW to 109.5 MW, reduce rotor-swept area from 568,775 square meters (m²) to 496,220 m², and increase average turbine blade clearance from 14.1 m to 24.7 m above ground surface.

The certified Final SEIR identified the Smaller Turbine – Pre-Micro-Sited Layout alternative as the environmentally superior alternative. Pursuant to CEQA, the ECBZA certified the Final SEIR by Resolution

No. Z-20-01 (ECBZA 2020a) and approved the CUP (PLN2017-00201) by Resolution No. Z-20-02 (ECBZA 2020b) on February 13, 2020. The Golden Gate Audubon Society and Audubon California appealed the certification and approval on February 24, 2020 (Golden Gate Audubon Society 2020). The Alameda County Board of Supervisors held a virtual hearing on December 15, 2020; the Board of Supervisors upheld the ECBZA's action to certify the Final SEIR and amended approval of the CUP by Resolution No. R-2020-555 (ECBZA 2020c). The amended CUP authorized 16 of the 40 new wind turbines; reduced overall generating capacity from 109.5 MW to 50.0 MW; and reduced the number of privately owned noncontiguous parcels in the APWRA from 15 to 11 and added an additional parcel for access and, therefore, the project site from approximately 2,600 acres to 2,416 acres (Approved Project).

1.1.2 Purpose of this Addendum to the Certified Final Subsequent Environmental Impact Report

The purpose of this addendum to the certified Final SEIR is to evaluate the modifications to the Approved Project evaluated in the certified Final SEIR. The proposed changes are due to the selection of turbines available at the time of purchase and include:

- increasing new wind turbine generation capacities from between 2.3 and 4.0 MW to up to 5.9 MW (while retaining overall generating capacity of 50.0 MW in the Approved Project); and
- increasing blade lengths from 67.2 m to up to 79.7 m, rotor diameters from 137 m to up to 163.0 m, rotor swept area from 14,741 m² to up to 20,867 m², tower (hub) heights from 85 m to up to 110 m, and total height (from ground to top of blade) from 150 m to 189.5 m.

The proposed changes may include reducing the number of new wind turbines from 16 to 13 (Figures 1-1 and 1-2).

This is an addendum to the certified Final SEIR and has been prepared in compliance with Sections 15162 and 15164 of the 2025 CEQA Guidelines. The CEQA impact determinations in the certified Final SEIR are summarized at the beginning of each of the environmental factors evaluated in this addendum, beginning with Section 3.3, Aesthetics. Applicable mitigation measures from the certified Final SEIR that apply to the proposed changes are also incorporated into the environmental analysis for each of the environmental factors evaluated in this addendum, as appropriate.

1.2 California Environmental Quality Act Review of the Proposed Changes

If changes are necessary after certification of an EIR and the changes do not meet the provisions that require preparation of an SEIR, an addendum shall be prepared. Section 15162 of the 2025 CEQA Guidelines describes the provisions under which an SEIR would be prepared. Section 15164 of the 2025 CEQA Guidelines describes the provisions under which an addendum would be prepared. These provisions are described further in this section.

With regard to an SEIR, Section 15162 of the 2025 CEQA Guidelines indicates:

- (a) When an EIR has been certified, no SEIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:

- (1) Substantial changes are proposed in the project which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- (2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
- (3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete, shows any of the following:
 - (A) The project will have one or more significant effects not discussed in the previous EIR;
 - (B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;
 - (C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
 - (D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.
- (c) Once a project has been approved, the lead agency's role in project approval is completed, unless further discretionary approval on that project is required. Information appearing after an approval does not require reopening of that approval. If after the project is approved, any of the conditions described in subdivision (a) occurs, an SEIR shall only be prepared by the public agency which grants the next discretionary approval for the project, if any. In this situation no other responsible agency shall grant an approval for the project until the SEIR has been certified.
- (d) An SEIR shall be given the same notice and public review as required under Section 15087 or Section 15072. An SEIR shall state where the previous document is available and can be reviewed.

With regard to an addendum to an SEIR, Section 15164 of the 2025 CEQA Guidelines indicates:

- (a) The lead agency or responsible agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred.
- (c) An addendum need not be circulated for public review but can be included in or attached to the final EIR.
- (d) The decision-making body shall consider the addendum with the final EIR prior to making a decision on the project.
- (e) A brief explanation of the decision not to prepare a subsequent EIR pursuant to Section 15162 should be included in an addendum to an EIR, the lead agency's findings on the project, or elsewhere in the record. The explanation must be supported by substantial evidence.

Under CEQA, lead agencies can limit their review of proposed changes to an approved project to the environmental effects that would occur due to the proposed changes. Such environmental effects would be evaluated against the environmental effects of the Approved Project previously analyzed.

Changes to the Approved Project due to the proposed changes and any altered conditions since certification of the SEIR in February 2020 would not result in any new significant environmental effects and not substantially increase the severity of previously identified significant effects. No new information of substantial importance has arisen since certification of the SEIR in February 2020 that shows that the Approved Project would have new significant effects, the Approved Project would have substantially more severe effects, mitigation measures or alternatives previously determined to be infeasible would be feasible, or mitigation measures or alternatives that are considerably different from those analyzed in the SEIR would substantially reduce one or more significant effects on the environment.

As described briefly in Section 1.1.2, Purpose of this Addendum to the Certified Final Subsequent Environmental Impact Report, and described further in Section 2, Project Description, the proposed changes compared to the Approved Project previously analyzed in the SEIR include:

- increasing new wind turbine generation capacities from between 2.3 and 4.0 MW to up to 5.9 MW (while retaining overall generating capacity of 50.0 MW in the Approved Project); and
- increasing blade lengths from 67.2 m to up to 79.7 m, rotor diameters from 137 m to up to 163.0 m, rotor swept area from 14,741 m² to up to 20,867 m², tower (hub) heights from 85 m to up to 110 m, and total height (from ground to top of blade) from 150 m to 189.5 m.

The proposed changes may include reducing the number of new wind turbines from 16 to 13 (Figures 1-1 and 1-2).

As described further in Section 2, Project Description, and Section 3, Environmental Analysis, none of the provisions described in Section 15162 of the 2025 CEQA Guidelines under which an SEIR would be prepared have occurred. The differences between the Approved Project previously analyzed in the certified Final SEIR and the proposed changes constitute change as described in Section 15164 of the 2025 CEQA Guidelines and an addendum to the certified Final SEIR shall be prepared.

1.3 Scope and Content of this Addendum to the Certified Final Subsequent Environmental Impact Report

This addendum references previously prepared technical studies, previously prepared analyses, the previously certified Final SEIR, assorted documents, and other sources. Information from these references is briefly summarized in the appropriate section(s) and the relationship between these references and the certified Final SEIR is also described, as appropriate.

In compliance with Sections 15162 and 15164 of the 2025 CEQA Guidelines, this addendum evaluates the environmental effects that would occur due to the proposed changes against the environmental effects of the Approved Project previously analyzed in the certified Final SEIR. The environmental effects due to the proposed changes are analyzed to the degree of specificity appropriate, in compliance with Section 15146 of the 2025 CEQA Guidelines.

As described further in Section 3.3, Effects Found Not to Be Significant, the following environmental factors analyzed in the certified Final SEIR are not evaluated further in this addendum because no impacts were identified and the proposed changes would not have the potential to result in impacts beyond those identified for the Approved Project:

- Agricultural and Forestry Resources,

- Land Use and Planning,
- Mineral Resources,
- Population and Housing,
- Public Services, and
- Recreation.

As described further in Section 3.3, Effects Found Not to Be Significant, the following environmental factors analyzed in the certified Final SEIR are also dismissed from further evaluation in this addendum because no significant impacts were identified and the proposed changes would not increase the likelihood of impacts on these environmental factors:

- Energy,
- Noise,
- Tribal Cultural Resources, and
- Utilities and Service Systems.

As described further in Section 3, Environmental Analysis, the following environmental factors analyzed in the certified Final SEIR are further evaluated in this addendum to determine whether the proposed changes would have the potential to result in impacts beyond those identified for the Approved Project:

- Aesthetics;
- Air Quality;
- Biological Resources;
- Cultural Resources;
- Geology, Soils, Mineral Resources, and Paleontological Resources;
- Greenhouse Gas Emissions;
- Hazards and Hazardous Materials;
- Hydrology and Water Quality;
- Transportation; and
- Wildfire.

1.4 Organization of this Addendum to the Certified Final Subsequent Environmental Impact Report

This addendum is organized into the following sections:

- Section 1, Introduction, includes background information on the certified Final SEIR and purpose of this addendum, an overview of CEQA and review of the proposed changes, scope and content of this addendum, and organization of this addendum.
- Section 2, Project Description, includes existing conditions, an overview and detailed descriptions of the proposed changes to the Approved Project, planned cumulative wind power development, and project-related approvals, agreements, and permits.

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- Section 3, Environmental Analysis, includes background information on environmental review of the proposed changes, a summary of environmental impacts from the certified Final SEIR, an overview of the effects found not to be significant, and detailed evaluations of environmental factors analyzed in the certified Final SEIR that may have the potential to result in impacts beyond those identified in the certified Final SEIR due to the proposed changes.
- Section 4, Preparers, includes a list of Alameda County Community Development Agency and Jacobs individuals who contributed to the preparation of this addendum.

2. Project Description

This section includes existing conditions, an overview and detailed descriptions of the proposed changes to the Approved Project, planned cumulative wind power development, and project-related approvals, agreements, and permits.

2.1 Overview of the Proposed Changes to the Approved Project

The Applicant proposes changes to the wind turbines as evaluated in the certified Final SEIR to increase the following:

- new wind turbine generation capacities to up to 5.9 MW;
- blade lengths to up to 79.7 m;
- rotor diameters to up to 163.0 m;
- rotor swept area to up to 20,867 m²;
- tower (hub) heights to up to 110 m; and
- total height (from ground to top of blade) to 189.5 m.

The proposed changes would retain the 2,416-acre site and overall generating capacity of 50.0 MW in the Approved Project (which were reductions from the 2,600-acre site and overall generating capacity of 109.5 MW as evaluated in the certified Final SEIR) and may reduce wind turbines installed to 13 (which were reductions from 40 wind turbines as evaluated in the certified Final SEIR and 16 wind turbines in the Approved Project) (Figures 1-1 and 1-2).

With the exception of the proposed changes described further in Section 2.3, construction, O&M, and decommissioning activities would generally be the same as those evaluated in the certified Final SEIR. Agency discretionary actions and approvals would remain the same as those identified for the Approved Project. An overview of project modifications from the PEIR, SEIR, Approved Project, and this addendum to the certified Final SEIR are shown in Table 2-1, Project Modification Overview.

2.2 Existing Conditions

This section includes background information on the existing conditions, including the location of the Approved Project, the project site conditions, general plan designation and zoning, and surrounding land uses, as evaluated in the certified Final SEIR.

Table 2-1. Project Modification Overview

Turbine Model	PEIR Maximum	SEIR Maximum	2020 Amendment	2025 Proposed Amendment
Project Total Capacity (MW)	N/A	144.5	50.0	50.0
Maximum Number of Turbines	N/A	40	16	16 ^[a]
Maximum Turbine Nameplate (MW)	3.0	4.0	4.0	5.9

Turbine Model	PEIR Maximum	SEIR Maximum	2020 Amendment	2025 Proposed Amendment
Maximum Blade Length (ft)	205 feet	220	220	262
Maximum Rotor Diameter (ft)	410 feet	449	449	535
Maximum Turbine Rotor-Swept Area (ft ²)	131,955	158,671	158,671	224,611
Tower Type	Tubular	Tubular	Tubular	Tubular
Maximum Tower (Hub) Height (ft)	315	279	279	360
Maximum Total Height (from Ground to Top of Blade) (ft)	502	492	492	614

Note

^[a] The proposed changes may include reducing the maximum number of turbines from 16 to 13.

2.2.1 Project Location

The project site is located on 11 of the 15 privately owned noncontiguous parcels in the APWRA as evaluated in the certified Final SEIR, as well as an additional parcel (Table 2-2 and Figure 2-1). The project site is located in the eastern Altamont Pass area of Alameda County, north and south of Altamont Pass Road, east and west of Mountain House Road, north of Grant Line Road, west of the Delta-Mendota Canal, northwest of Mountain House Road, west of Bethany Reservoir, and southeast of the intersection of Christensen and Bruns roads.

Table 2-2. Assessor Parcel Numbers, Acreages, and Proposed Uses^[a]

Assessor Parcel Number	Proposed Use
99B-6325-1-3	Wind turbines and associated facilities
99B-6325-1-4	Access and setback
99B-7300-1-5	Wind turbines and associated facilities
99B-7350-2-15	Wind turbines and associated facilities
99B-7350-2-5	Access and setback
99B-7375-1-7	Wind turbines and associated facilities
99B-7400-1-5	Wind turbines and associated facilities
99B-7500-3-1	Wind turbines and associated facilities
99B-7500-3-2	Wind turbines and associated facilities
99B-7750-3-5	Upgrade existing facilities
99B-7750-3-7	Upgrade existing facilities and place collection line

Assessor Parcel Number	Proposed Use
99B-7750-8-4	Upgrade existing facilities and place collection line
99B-7600-1-1	Wind turbines and associated facilities
99B-7750-6	Wind turbines and associated facilities
99B-7750-11	Access
Total	Approved Project

Note

^[a] The existing generation-tie line and substation facilities, including those located within APNs 99B-7750-3-5, 99B-7750-3-7, and 99B-7750-8-4, would be upgraded as part of the Approved Project, consistent with that evaluated in the certified Final SEIR. The placement of a collection line within APNs 99B-7750-3-7 and 99B-7750-8-4 are subject to final design.

2.2.2 Project Site Conditions and Land Uses

Project site conditions are generally the same as those evaluated in the certified Final SEIR. The project site is generally characterized by rolling foothills of annual grasslands and is mostly treeless. The western portion of the project site is steeper and the eastern portion is flatter, as it slopes toward the floor of the central valley. Elevations above sea level range from approximately 600 feet to 1,200 feet.

Land uses within the project site and surrounding APWRA are the same as those evaluated in the certified Final SEIR. Land uses consist of cattle-grazed lands that also support the operation of wind turbines and ancillary facilities. The project site has historically supported the production of wind energy, as further described in the following paragraph; however, approximately half of the project site has not contained wind turbines for approximately 25 years.

As evaluated in the certified Final SEIR, there are existing wind turbines and foundations within the project site; the existing wind turbine foundations may be removed, if in conflict with new project components. The existing gravel roads are between 12 and 20 feet wide; primary access to the project site is through locked gates off of Altamont Pass Road and Mountain House Road. The existing meteorological towers are located in the southern portion of the project site, and monitor and they record meteorological data such as wind direction, wind speed, and atmospheric pressure. The existing power collection system from historical and current wind power developments remain throughout the project site. Power collection system components include pad-mounted transformers, underground cables, overhead cables on wooden poles, assorted circuit breakers and switches, electrical metering and protection devices, and substations. Several existing Pacific Gas and Electric Company transmission lines bisect the project site.

The Applicant has lease agreements with the landowners to operate the new wind turbines while agricultural activities (such as cattle handling and staging areas) continue.

2.2.3 General Plan Designation and Zoning

Land within the project site is planned and managed according to the Alameda County General Plan. The Alameda County General Plan is split into three area plans. The project site is located within the East County Area Plan (ECAP) and is designated as Large Parcel Agriculture. Wind power development is a conditionally permitted use, and existing wind power developments are present within the project site and surrounding APWRA.

The project site is zoned A (agriculture) and is intended to promote implementation of general plan land use proposals (or designations) for agricultural and non-urban uses.

2.3 Planned Cumulative Wind Power Development

Planned cumulative wind power development was evaluated in the PEIR (Section 5.4.1, Approach to Impact Analysis, and Section 5.4.2, Analysis of Cumulative Impacts) and described in the certified Final SEIR. The PEIR provided detailed descriptions of the cumulative background for each of the environmental factors and used a combination of the plans/projections and list approaches, using the ECAP land use designations and known other relevant projects in the APWRA.

Wind power development in the APWRA since certification of the PEIR includes the following projects (Alameda County 2023a):

- Patterson Pass: Approved (PEIR) for a total of 19.8 MW (unbuilt)
- Golden Hills: Operational (PEIR) for a total of 85.9 MW
- Golden Hills North: Operational (tiered under PEIR) for a total of 46 MW
- Mulqueeney Ranch: Approved (tiered under PEIR with SEIR and SEIR Addendum) for a total of 80 MW
- Rooney Ranch: Approved (tiered under PEIR) for a total of 25.1 MW
- Summit Wind: Operational (tiered under PEIR) for a total of 57.5 MW

No new wind power developments have been proposed since certification of the Final PEIR. Therefore, the planned cumulative wind power development remains the same as described in the certified Final SEIR.

2.4 Project-Related Approvals, Agreements, and Permits

Project-related approvals, agreements, and permits were identified in the certified Final SEIR. The discretionary actions and approvals are not anticipated to change with the proposed changes evaluated in this addendum. The ECBZA will consider this addendum and use the results of the evaluations in their decision on the Applicant's request to modify the approved CUP.

3. Environmental Analysis

This section includes background information on environmental review of the proposed changes, a summary of environmental impacts from the certified Final SEIR, an overview of the effects found not to be significant, and detailed evaluations of environmental factors analyzed in the certified Final SEIR that may have the potential to result in impacts beyond those identified for the Approved Project due to the proposed changes.

3.1 Environmental Review of the Proposed Changes

As described in Section 1.2, the differences between the Approved Project analyzed in the certified Final SEIR and the proposed changes constitute change as described in Section 15164 of the 2025 CEQA Guidelines. An addendum to the certified Final SEIR shall be prepared when modifications to the Approved Project are proposed and the changes would not result in any new significant environmental effects and would not substantially increase the severity of previously identified significant effects.

This addendum provides analysis supported by substantial evidence to support Alameda County's determination that the proposed changes do not meet the provisions described in Section 15162 of the 2025 CEQA Guidelines under which an SEIR would be prepared. Section 3.3, Effects Found Not to Be Significant, through Section 3.12, Wildfire, evaluate the potential for the proposed changes to result in impacts on the environmental factors analyzed in the certified Final SEIR.

Table 3-1 compares potential environmental impacts of the Approved Project with the proposed changes identified in this addendum, and notes whether there is a change in impacts. Applicable mitigation measures from the certified Final SEIR that apply to the proposed changes are also incorporated into the environmental analysis for each of the environmental factors evaluated in this addendum, as appropriate. All CEQA impact determinations in the certified Final SEIR would remain the same with the proposed changes to the Approved Project. As described further in Sections 3.2 through 3.12, although some environmental impacts would be less or more than those identified for the Approved Project, the proposed changes would not change the CEQA impact determinations in the certified Final SEIR.

Table 3-1. Comparison of the Potential Environmental Impacts of the Approved Project with the Proposed Changes Identified in this Addendum

Environmental Factor	Potential Environmental Impacts in the Approved Project	Potential Environmental Impacts of the Proposed Changes to the Approved Project Identified in this Addendum	Change in CEQA Impact Determination
Aesthetics	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact with Mitigation Incorporated	No
Agricultural and Forestry Resources	No Impact	No Impact	No
Air Quality	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact with Mitigation Incorporated	No

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Environmental Factor	Potential Environmental Impacts in the Approved Project	Potential Environmental Impacts of the Proposed Changes to the Approved Project Identified in this Addendum	Change in CEQA Impact Determination
Biological Resources	Significant and Unavoidable Impact	Significant and Unavoidable Impact	No
Cultural Resources	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact with Mitigation Incorporated	No
Energy	Less Than Significant Impact	Less Than Significant Impact	No
Geology, Soils, and Paleontology	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact with Mitigation Incorporated	No
Greenhouse Gas Emissions	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact with Mitigation Incorporated	No
Hazards and Hazardous Materials	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact with Mitigation Incorporated	No
Hydrology and Water Quality	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact with Mitigation Incorporated	No
Land Use and Planning	No Impact	No Impact	No
Mineral Resources	No Impact	No Impact	No
Noise	Less Than Significant Impact	Less Than Significant Impact	No
Population and Housing	No Impact	No Impact	No
Public Services	No Impact	No Impact	No
Recreation	No Impact	No Impact	No
Transportation	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact with Mitigation Incorporated	No
Tribal Cultural Resources	Less Than Significant Impact	Less Than Significant Impact	No
Utilities and Service Systems	Less Than Significant Impact	Less Than Significant Impact	No
Wildfire	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact with Mitigation Incorporated	No

As described in Section 1.3, the following environmental factors analyzed in the certified Final SEIR are not evaluated further in this addendum because no impacts were identified and the proposed changes would not have the potential to result in impacts beyond those identified for the Approved Project:

- Agricultural and Forestry Resources,
- Land Use and Planning,
- Mineral Resources,
- Population and Housing,
- Public Services, and
- Recreation.

The tables for each of the environmental factors further evaluated in this addendum, beginning in Section 3.3, Aesthetics, identify the issues in the 2025 CEQA Guidelines (due to the passage of time between certification of the Final SEIR and preparation of this addendum), where in the certified Final SEIR the issue was discussed, if the certified Final SEIR identified a significant impact and mitigation measures, and if mitigation measures from the certified Final SEIR apply to the proposed changes. The environmental analysis for each of the environmental factors further evaluated in this addendum identifies whether the proposed changes or changes in the circumstances under which the proposed changes would be undertaken would result in any new significant environmental effects or substantially increase the severity of previously determined significant impacts and determines whether there is any new information of substantial importance requiring preparation of new environmental analysis.

The column headings in the tables for each of the environmental factors further evaluated in this addendum (from Section 3.3 through Section 3.12) are summarized in Sections 3.1.1 through 3.1.5.

3.1.1 Where in the Certified Final SEIR is this Topic Discussed?

The answer to this question identifies the section(s) in the certified Final SEIR in which the issue was discussed. A summary of the environmental analysis from the certified Final SEIR and new environmental analysis in this addendum due to the proposed changes is provided in the respective Environmental Analysis sections of Sections 3.3.1 through 3.12.1.

3.1.2 Did the Certified Final SEIR Identify a Significant Impact and Mitigation Measures for this Topic?

The answer to this question is “yes” or “no.” If “yes,” the mitigation measures for the topic are summarized and described further in the Applicable Mitigation Measures sections of Sections 3.3 through 3.12.

3.1.3 Do Any Certified Final SEIR Mitigation Measures Apply to the Proposed Changes to the Approved Project for This Topic?

The answer to this question is “yes” or “not applicable.” If “yes,” the mitigation measures for the topic are summarized and described further in the Applicable Mitigation Measures sections of Sections 3.3 through 3.12.

3.1.4 Would the Proposed Changes to the Approved Project or Changes in Circumstances Result in New Significant Impacts or Substantially More Severe Impacts?

The answer to this question is "yes" or "no." If "yes," additional environmental analysis is provided in the Environmental Analysis section of Sections 3.3 through 3.12.

3.1.5 Is There Any New Information of Substantial Importance Requiring Preparation of New Analysis?

The answer to this question is "yes" or "no." If "yes," additional environmental analysis is provided in the Environmental Analysis sections of Sections 3.3 through 3.12.

3.2 Effects Found Not to Be Significant

As previously described in Sections 1.3 and 2.1, the proposed changes would not have the potential to cause significant impacts to the environmental factors described in the following sections.

3.2.1 Agricultural and Forestry Resources

The certified Final SEIR determined the Approved Project would result in no impact on agricultural resources. A review of the California Department of Conservation's Farmland Mapping & Monitoring Program shows no change to agricultural designations in the project site as was described in the certified Final SEIR (California Department of Conservation 2022). The proposed changes to the Approved Project do not include changes to the site layout or ground disturbance. Therefore, no impact on agricultural resources would result from the proposed changes to the Approved Project.

3.2.2 Energy

The proposed changes to the Approved Project do not include any changes to construction equipment, construction duration, or construction methods from those evaluated in the certified Final SEIR. With the exception of different turbine models, the proposed changes to the Approved Project do not include any changes to operational equipment, operational duration, and operational methods from those evaluated in the certified Final SEIR. Therefore, construction and operational energy uses for the proposed changes to the Approved Project would be similar to those evaluated in the certified Final SEIR. The certified Final SEIR determined the implementation of PEIR Mitigation Measure AQ-2a, PEIR Mitigation Measure AQ-2b, and 2019 New Mitigation Measure AQ-2c would be required to reduce impacts on energy resources. With implementation of these mitigation measures, impacts would remain less than significant and consistent with those determined in the certified Final SEIR.

The following mitigation measures were required for this topic in the certified Final SEIR and would apply to the proposed changes to the Approved Project:

- **PEIR Mitigation Measure AQ-2a:** Reduce construction-related air pollutant emissions by implementing applicable BAAQMD Basic Construction Mitigation Measures
- **PEIR Mitigation Measure AQ-2b:** Reduce construction-related air pollutant emissions by implementing measures based on BAAQMD's Additional Construction Mitigation Measures

- **2019 NEW Mitigation Measure AQ-2c:** Reduce construction-related air pollutant emissions to below BAAQMD NO_x thresholds

Appendix A of this addendum provides the full text of these mitigation measures.

3.2.3 Land Use and Planning

The certified Final SEIR determined the Approved Project would result in no impact to land use. As described in Section 2.2.2, the land uses in the project site and surrounding APWRA are the same as those evaluated in the certified Final SEIR and consist of cattle-grazed lands that also support the operation of wind turbines and ancillary facilities. Similarly, and as described in Section 2.2.3, the project site is located within the Alameda County General Plan's East County Area Plan (ECAP) and is designated as Large Parcel Agriculture. Wind power development is a conditionally permitted use, and existing wind power developments are present within the project site and surrounding APWRA. The Alameda County zoning designation on the project site is A (Agricultural), which is consistent with the zoning designation described in the certified Final SEIR (Alameda County Community Development Agency 2023b). The proposed changes to the Approved Project do not include changes to the site layout or proposed land uses. Therefore, no impact on land use would result from the proposed changes to the Approved Project.

3.2.4 Mineral Resources

The certified Final SEIR states there are no known mineral resources in the project site. No new designated mineral resources were identified in local or statewide plans, and no mining is known to occur in the area. The proposed changes to the Approved Project do not include changes to the site layout or ground disturbance. Therefore, the proposed changes to the Approved Project would not result in impacts on known mineral resources that would be of value to the region and the residents of the state or have impacts on a locally important mineral resource recovery site.

3.2.5 Noise

The potential for noise impacts was analyzed in the certified Final SEIR, which found that there would be no impact related to Approved Project activities in the vicinity of a private airstrip or an airport land use plan or within 2 miles of a public airport or public use airport resulting in exposure of people residing or working in the project site to excessive noise because the nearest airstrip, the Byron Airport, is located approximately 3 miles north of the project site. The certified Final SEIR similarly concluded that the generation of excessive ground-borne vibration or ground-borne noise would be less than significant and that the generation of increased ambient noise levels in the vicinity of the project site in excess of applicable standards was less than significant with mitigation incorporated. The proposed changes to the Approved Project occur within the same site, utilize the same construction equipment, and would implement the same mitigation measures, the impacts of the proposed changes on noise and vibration would be consistent with those analyzed in the certified Final SEIR and would remain less than significant.

3.2.6 Population and Housing

The certified Final SEIR determined the Approved Project would result in no impact on population and housing from induced unplanned population growth in the area or displace existing people or housing. Existing conditions on the project site are similar to those evaluated in the certified Final SEIR, and would not induce unplanned population growth or displace people or housing. The proposed changes to the Approved Project do not include elements that would create a substantial population growth or displace a

substantial number of existing people or housing. Therefore, the impacts on population and housing from the proposed changes to the Approved Project would be consistent with those in the certified Final SEIR.

3.2.7 Public Services

The certified Final SEIR determined the Approved Project would result in no impact on public services. Current conditions on the project site are similar to those evaluated in the certified Final SEIR. The public services in the project site, including fire protection, law enforcement, schools, and parks identified in the certified Final SEIR have not changed. The proposed changes to the Approved Project would not result in substantial adverse physical impacts associated with a new facility or alterations to existing government facility. Therefore, the impacts on public services from proposed changes to the Approved Project would be consistent with those in the certified Final SEIR.

3.2.8 Recreation

The proposed changes to the Approved Project do not include changes to construction methods, the site layout, or proposed land uses. The certified Final SEIR determined the implementation of PEIR Mitigation Measure TRA-1 would be required to reduce impacts from oversized construction vehicles on recreationalists utilizing local access roads (that is, Altamont Pass, West Grant Line, and Mountain House roads). With implementation of these mitigation measures, impacts on recreational resources would remain consistent with those determined in the certified Final SEIR.

3.2.9 Tribal Cultural Resources

The proposed changes to the Approved Project do not include changes to the site layout or areas of proposed ground disturbance. Therefore, impacts on tribal cultural resources would remain consistent with those determined in the certified Final SEIR.

3.2.10 Utilities and Service Systems

The proposed changes to the Approved Project do not include changes to the site layout, ground disturbance, energy use, potable and non-potable water use, telecommunications use, sewer use, solid waste use, or overall energy output capacity. Therefore, impacts on utilities and service systems would remain consistent with those determined in the certified Final SEIR.

3.3 Aesthetics

Questions: Would the Approved Project:	Where in the Certified Final SEIR is this Topic Discussed?	Did the Certified Final SEIR Identify a Significant Impact and Mitigation Measures for this Topic?	Do Any Certified Final SEIR Mitigation Measures Apply to the Proposed Changes to the Approved Project for this Topic?	Would the Proposed Changes to the Approved Project or Changes in Circumstances Result in New Significant Impacts or Substantially More Severe Impacts?	Is There Any New Information of Substantial Importance Requiring Preparation of New Analysis?
a) Have a substantial adverse effect on a scenic vista?	Section 3.1	<p>Yes – Less than significant with mitigation</p> <p>PEIR Mitigation Measure AES-1: Limit construction to daylight hours</p> <p>2019 Updated PEIR Mitigation Measure AES-2a: Require site development review</p> <p>PEIR Mitigation Measure AES-2b: Maintain site free of debris and restore abandoned roadways</p> <p>PEIR Mitigation Measure AES-2c: Screen surplus parts and materials</p>	Yes – Mitigation measures will continue apply to project changes	No	No
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	Section 3.1	<p>Yes – Less than significant with mitigation</p> <p>2019 Updated PEIR Mitigation Measure AES-2a: Require site development review</p> <p>PEIR Mitigation Measure AES-2b: Maintain site free of debris and restore abandoned roadways</p>	Yes – Mitigation measures will continue apply to project changes	No	No

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Questions: Would the Approved Project:	Where in the Certified Final SEIR is this Topic Discussed?	Did the Certified Final SEIR Identify a Significant Impact and Mitigation Measures for this Topic?	Do Any Certified Final SEIR Mitigation Measures Apply to the Proposed Changes to the Approved Project for this Topic?	Would the Proposed Changes to the Approved Project or Changes in Circumstances Result in New Significant Impacts or Substantially More Severe Impacts?	Is There Any New Information of Substantial Importance Requiring Preparation of New Analysis?
		PEIR Mitigation Measure AES-2c: Screen surplus parts and materials			
c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	Section 3.1	Yes – Less than significant with mitigation 2019 Updated PEIR Mitigation Measure AES-2a: Require site development review PEIR Mitigation Measure AES-2b: Maintain site free of debris and restore abandoned roadways PEIR Mitigation Measure AES-2c: Screen surplus parts and materials	Yes – Mitigation measures will continue apply to project changes	No	No
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Section 3.1	Yes – Less than significant with mitigation PEIR Mitigation Measure AES-5: Analyze shadow flicker distance and mitigate effects or incorporate changes into Project design to address shadow flicker	Yes – Mitigation measures will continue apply to project changes	No	No

3.3.1 Environmental Analysis

The certified Final SEIR concluded that impacts related to scenic vistas, scenic highways, shadow flicker, and visual character or quality would be less than significant with mitigation. Impacts related to light and glare would be less than significant. The proposed changes to the Approved Project would occur within the same site and would result in the installation and operation of up to 16 wind turbines compared to the 40 turbines considered in the certified Final SEIR. The dimensions of the turbines proposed would differ, with the newly proposed turbines being larger than those analyzed in the certified Final SEIR. Table 2-1 in Section 2.1 provides a comparison of the turbines analyzed in the certified Final SEIR to those currently proposed.

Since the SEIR was certified, no new scenic vistas have been designated by the County near the project site. Furthermore, no new scenic highways have been designated by the State of California or the County near the project site. Thus, the potential for an adverse effect on a scenic vista or damage to scenic resources along a scenic highway would be consistent with what was assumed in the certified Final SEIR and remain less than significant with mitigation.

Although the total turbine height would noticeably increase by 25%, that potential visual impact would be offset by the large reduction in the number of turbines constructed, which may be further reduced from 16 to 13 based on a proposed increase to the individual turbine nameplate capacity. Fewer, larger turbines would have the effect of reducing the number of visual intrusions on an otherwise largely open, natural landscape. Additionally, the revised site layout generally locates the proposed turbines away from areas that the certified Final SEIR identified as most visually impactful, such as locations where turbines were not previously installed and scenic resources. Taken together, the proposed changes would not degrade the visual character and quality of the site and its surroundings compared to the findings of the certified Final SEIR. Impacts would remain less than significant with mitigation.

Under 14 Code of Federal Regulations § 77.9, the Approved Project would be required to notify the Federal Aviation Administration (FAA) for temporary components (for example, cranes) and permanent components (for example, wind turbines) exceeding 200 feet in height above ground level for potential marking and nighttime lighting requirements (FAA 2023). The certified Final SEIR indicates that although the PEIR concluded that lighting required by the FAA in the APWRA would be shielded and directed downward to reduce glare, and that the color of new towers and rotors would be neutral and non-reflective, the taller fourth-generation turbines more recently installed in the APWRA and not considered in the PEIR featured more noticeable FAA-required lighting. The proposed changes to the Approved Project may be required to utilize similar lighting per turbine as evaluated in the certified SEIR. The certified Final SEIR determined that impacts resulting from the creation of a new source of substantial light or glare that would adversely affect day or nighttime views in the area would be less-than-significant. Temporary construction equipment would be the same as that evaluated in the certified Final SEIR. Fewer turbines would be constructed under the proposed changes to the Approved Project, which would result in equal or fewer aviation safety-related lights required by the FAA as compared to those considered in the certified Final SEIR. Therefore, impacts resulting from the creation of a new source of substantial light or glare that would adversely affect day or nighttime views in the area would be less-than-significant, consistent with the determination in the certified Final SEIR.

A mitigation measure was identified in the certified Final SEIR to require a shadow flicker analysis be conducted for wind turbines proposed near residences. The findings of the certified Final SEIR related to

shadow flicker would not change based on the proposed changes, and the mitigation measure would continue to apply.

3.3.2 Applicable Mitigation Measures from the Certified Final Subsequent Environmental Impact Report

The following mitigation measures were required for this topic in the certified Final SEIR and would apply to the proposed changes:

- **PEIR Mitigation Measure AES-1:** Limit construction to daylight hours
- **2019 Updated PEIR Mitigation Measure AES-2a:** Require site development review
- **PEIR Mitigation Measure AES-2b:** Maintain site free of debris and restore abandoned roadways
- **PEIR Mitigation Measure AES-2c:** Screen surplus parts and materials
- **PEIR Mitigation Measure AES-5:** Analyze shadow flicker distance and mitigate effects or incorporate changes into Project design to address shadow flicker

Appendix A of this addendum provides the full text of these mitigation measures.

3.3.3 Conclusion

No new mitigation measures would be necessary to ensure that the proposed changes to the Approved Project would not result in additional significant environmental impacts or substantially more severe aesthetic impacts. Thus, the proposed changes would not change the conclusions reached in the certified Final SEIR. No further analysis regarding this topic is required.

3.4 Air Quality

Questions: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Approved Project:	Where in the Certified Final SEIR is this Topic Discussed?	Did the Certified Final SEIR Identify a Significant Impact and Mitigation Measures for this Topic?	Do Any Certified Final SEIR Mitigation Measures Apply to the Proposed Changes to the Approved Project for this Topic?	Would the Proposed Changes to the Project or Changes in Circumstances Result in New Significant Impacts or Substantially More Severe Impacts?	Is There Any New Information of Substantial Importance Requiring Preparation of New Analysis?
a) Conflict with or obstruct implementation of the applicable air quality plan?	Section 3.3.2	No. Impact is less than significant. No mitigation is required.	No	No	No
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	Section 3.3.2	Project construction emissions would be significant without mitigation, and less than significant with mitigation. The project operation would have less than significant impacts, and no mitigation measures are required.	Yes. The following mitigation measures apply to the proposed changes: PEIR Mitigation Measures AQ-2a and AQ-2b, 2019 New Mitigation Measure AQ-2c	No	No
c) Expose sensitive receptors to substantial pollutant concentrations?	Section 3.3.2	Project construction would cause significant impacts on sensitive receptors without mitigation. The impacts are less than significant with mitigation. The project operation would have less-than-significant impacts, and no mitigation measures are required.	Yes. The following mitigation measures apply to the proposed changes: PEIR Mitigation Measures AQ-2a and AQ-2b, 2019 New Mitigation Measure AQ-2c	No	No

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Questions: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Approved Project:	Where in the Certified Final SEIR is this Topic Discussed?	Did the Certified Final SEIR Identify a Significant Impact and Mitigation Measures for this Topic?	Do Any Certified Final SEIR Mitigation Measures Apply to the Proposed Changes to the Approved Project for this Topic?	Would the Proposed Changes to the Project or Changes in Circumstances Result in New Significant Impacts or Substantially More Severe Impacts?	Is There Any New Information of Substantial Importance Requiring Preparation of New Analysis?
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	Section 3.3.2	No. Impacts are less than significant. No mitigation measures are required.	No	No	No

3.4.1 Environmental Analysis

As described in the certified Final SEIR, the PEIR concluded that neither construction nor operation of the Approved Project would conflict with the goals of either the Bay Area Air Quality Management District (BAAQMD) or the San Joaquin Valley Air Pollution Control District (SJVAPCD) air quality attainment plans or result in objectionable odors adversely affecting a substantial number of people. Because the Approved Project evaluated in the certified Final SEIR is consistent with the assumptions used in the PEIR and because the proposed changes in the certified Final SEIR would not increase construction and operation activities from what were analyzed in the PEIR, these impacts would remain less than significant. Additionally, the certified Final SEIR concluded that neither construction nor operation of the Approved Project would result in significant odor impacts. Odor emissions would be primarily limited to the construction period and would be temporary and spatially dispersed over the project area. Neither the Approved Project evaluated in the certified Final SEIR nor the proposed changes would affect the potential to generate odors during construction or operation. Thus, the Approved Project's potential to create objectionable odors due to the proposed changes would be consistent with what was assumed in the certified Final SEIR and would remain less than significant. No further analysis of these topics is required.

The certified Final SEIR concluded that maximum daily unmitigated reactive organic gas (ROG) and nitrogen oxides (NO_x) from construction of the Approved Project would contribute to the exceedance of BAAQMD's significance thresholds, resulting in a significant impact. The certified Final SEIR also found that fugitive dust from construction activities would constitute a significant impact without application of best management practices (BMPs). With implementation of BMPs, PEIR Mitigation Measures AQ-2a and AQ-2b, and 2019 New Mitigation Measure AQ-2c, the construction emissions from the Approved Project would have a less-than-significant impact. The Approved Project with proposed changes would have shorter construction duration and/or less construction activities compared to those analyzed in the certified Final SEIR because of the reduced number of turbines. Therefore, construction emissions from the Approved Project with the proposed changes would be lower than those estimated in the certified Final SEIR. The impacts from construction emissions would remain less-than-significant with implementation of BMPs and mitigation measures.

As described in the certified Final SEIR, the project site falls under the jurisdiction of the BAAQMD, but some construction-related emissions would occur in areas of the San Joaquin Valley Air Basin under the jurisdiction of the SJVAPCD due to anticipated transportation of some equipment and materials through San Joaquin County. The certified Final SEIR concluded that receptor exposure to pollutant concentrations, including regional criteria pollutants, localized particulate matter (PM), and localized diesel particulate matter (DPM) resulting from construction of the Approved Project, would be a less-than-significant impact with implementation of PEIR Mitigation Measures AQ-2a and AQ-2b, and 2019 New Mitigation Measure AQ-2c, which would reduce both criteria pollutants and DPM. Because the construction activities and the resulting emissions from the changes to the Approved Project are expected to be less compared to those analyzed in the certified Final SEIR because of the reduced number of turbines, these impacts would be lower than what was assumed in the certified Final SEIR and would remain less than significant with mitigation.

With respect to estimated emissions from operation of the Approved Project, the certified Final SEIR stated that these emissions would be exclusively in the San Francisco Bay Area Air Basin (SFBAAB) and would begin following completion of construction. As shown in Section 3.2 of the certified Final SEIR, operation emissions of the Approved Project would not exceed BAAQMD's thresholds of significance. Accordingly, the certified Final SEIR found that cumulative impacts during operation in the SFBAAB would be less than significant. Because operation of the Approved Project with the proposed changes would not exceed the

Approved Project evaluated in the certified Final SEIR, these impacts would be consistent with what was assumed in the certified Final SEIR and would remain less than significant with mitigation.

3.4.2 Applicable Mitigation Measures from the Certified Final Subsequent Environmental Impact Report

The following mitigation measures were required for this topic in the certified Final SEIR and would apply to the proposed changes:

- **PEIR Mitigation Measure AQ-2a:** Reduce construction-related air pollutant emissions by implementing applicable BAAQMD Basic Construction Mitigation Measures
- **PEIR Mitigation Measure AQ-2b:** Reduce construction-related air pollutant emissions by implementing measures based on BAAQMD's Additional Construction Mitigation Measures
- **2019 NEW Mitigation Measure AQ-2c:** Reduce construction-related air pollutant emissions to below BAAQMD NO_x thresholds

Appendix A of this addendum provides the full text of these mitigation measures.

3.4.3 Conclusion

The proposed changes would not change the conclusions reached in the certified Final SEIR. No additional mitigation measures beyond those adopted in the certified Final SEIR (PEIR Mitigation Measures AQ-2a and AQ-2b, and 2019 NEW Mitigation Measure AQ-2c) would be necessary to ensure that the proposed changes would not result in any additional significant environmental impacts or substantially more severe air quality impacts. Because there would be no additional significant environmental impacts or substantially more severe environmental impacts related to air quality, the findings of the certified Final SEIR would not change. No further analysis regarding this topic is required.

3.5 Biological Resources

Questions: Would the Project:	Where in the Certified Final SEIR is this Topic Discussed?	Did the Certified Final SEIR Identify a Significant Impact and Mitigation Measures for this Topic?	Do Any Certified Final SEIR Mitigation Measures Apply to the Proposed Changes to the Approved Project for this Topic?	Would the Proposed Changes to the Approved Project or Changes in Circumstances Results in New Significant Impacts or Substantially More Severe Impacts?	Is There Any New Information of Substantial Importance Requiring Preparation of New Analysis?
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	3.4	Yes	Yes	No	No
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	3.4	Yes	Yes	No	No
c) Have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	3.4	Yes	Yes	No	No

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Questions: Would the Project:	Where in the Certified Final SEIR is this Topic Discussed?	Did the Certified Final SEIR Identify a Significant Impact and Mitigation Measures for this Topic?	Do Any Certified Final SEIR Mitigation Measures Apply to the Proposed Changes to the Approved Project for this Topic?	Would the Proposed Changes to the Approved Project or Changes in Circumstances Results in New Significant Impacts or Substantially More Severe Impacts?	Is There Any New Information of Substantial Importance Requiring Preparation of New Analysis?
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	3.4	Yes	Yes	No	No
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	3.4	Yes	Yes	No	No
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	3.4	No	No	No	No

3.5.1 Environmental Analysis

The certified Final SEIR for the Approved Project provided a detailed analysis of a 144.5-MW, 40-turbine project based upon a range of turbine sizes and dimensions.

The certified Final SEIR concluded that the Environmentally Superior Alternative was what it referred to as the “Smaller Turbine – Pre-Microsited Layout” and described a 109.5-MW, 40-turbine project with turbines of between 2.3 and 2.8 MW. This alternative was ultimately chosen and approved under Resolution No. Z-20-02 before being appealed and reduced to 16 turbines rated between 2.3 and 4.0 MW for a maximum project capacity of 50 MW on 11 parcels.

However, the certified Final SEIR fully analyzed a 144.5-MW project, and only described the selected alternative as compared with the full project and its resulting analysis. The alternative discussion made no attempt to modify the conclusions drawn from the analysis of the 144.5-MW project with regard to the significance of Approved Project effects on biological resources, other than it incorporated qualitative improvements that were expected to reduce impacts on biological resources, especially avian and bat fatalities, but in ways that were not quantifiable. This analysis describes the Approved Project, the comparative text of the “Smaller Turbine – Pre-Microsited Layout” for the certified Final SEIR, and describes the changes from the earlier environmental analysis.

All proposed changes would occur within the 2,600 acre area analyzed in the certified Final SEIR (SEIR Project Site) and within the reduced, final 2,400 acre site approved in both the preferred alternative and Resolution No. Z-20-02. The overall project capacity would be reduced from 144.5 MW as evaluated in the certified Final SEIR to 50 MW, reduced from the preferred alternative capacity of 109.5 MW, and consistent with the final, reduced capacity of final Resolution No. Z-20-02. Refer to Figure 1-2 for updated turbine locations and elements of the updated proposed project.

With the exception of the proposed changes described in Section 2, operations and maintenance (O&M) and decommissioning activities would generally be the same as those evaluated in the certified Final SEIR. Agency discretionary actions and approvals would remain the same as those identified in the certified Final SEIR. An overview of project modifications from the PEIR, certified Final SEIR, Approved Project, and this addendum to the certified Final SEIR are shown in Table 2-1 in Section 2.1.

The certified Final SEIR estimated permanent impacts of approximately 23.36 acres, and these changes result in an increase in permanent impacts on 33.6 acres. The certified Final SEIR estimated temporary impacts of approximately 224.24 acres, and these changes result in a reduction of these impacts on 85.96 acres. The certified Final SEIR estimated total project impacts at 247.6 acres, and these changes result in an overall decrease to 119.56 acres.

The certified Final SEIR summarizes the impact mechanisms that were analyzed to assess project-related impacts on biological resources. The proposed project changes do not change the impact mechanisms described in the certified Final SEIR. The impact assumptions described in the certified Final SEIR have changes. The certified Final SEIR assumed repower activities, including decommissioning, would occur over a 6- to 9-month period. This assumption is updated to a 6- to 18-month period.

The certified Final SEIR was published February 3, 2020. Since its publication, Jacobs' staff have conducted several additional field studies between 2022 and 2024, including floristic surveys for potentially occurring rare plants, habitat and land cover mapping surveys, aquatic resources delineation, burrowing owl and special-status bird surveys, and bat roost surveys. Survey dates and personnel are presented in Table 3-2.

Table 3-2. Jacobs Biological Resources Survey Summary

Survey Type	Dates	Surveyor Names
Floristic surveys for potential rare plants, baseline vegetation and target invasive plant surveys, habitat and land cover mapping	October 19, 24–27, 31, 2022 November 1–3, 5, 2022 March 15–30, 2023 April 2, 2023 July 19–21, 2023 March 6, 7, 22, 2024 April 2, 2024	Kyle Brown, Pim Lulikitnont-Lee, Scott Lindemann, David Rasmussen, Danny Rivas, Gabrielle Smith, Jack Gordon, Sunny Lee, Sean O'Neil, and Samuel Wentworth, Greg Davis, and Amber Anderson
Aquatic resources delineation	October 31, 2022 November 2–4, 8, 2022 March 24, 2023	Pim Lulikitnont-Lee, Scott Lindemann, and Steve Long
Reconnaissance-level survey – wetland, vernal pool, and aquatic features assessment	November 16, 2022 February 14, 2023	Amber Anderson, Scott Lindemann, and Sean O'Neil
Burrowing owl and special-status bird surveys	June 2023 March and April, 2024	Scott Lindemann and Sean O'Neil
Bat roost surveys	Habitat Assessment: May 1–3, 2023 Emergence Surveys: July 23–24, 2023 Acoustic Surveys: July 23–24, 2023	Kay Nicholson and Leeann McDougall

Special-Status Plants

Impacts on special-status plant species considered in the certified Final SEIR were all concluded to be less than significant with mitigation, including full avoidance of impacts on large-flowered fiddleneck, diamond-petaled California poppy, and caper-fruited tropidocarpum.

Floristic surveys were conducted to identify whether any potentially occurring special-status plant species were present onsite in compliance with mitigation measure BIO-1a. Special-status plants were observed during these surveys: Congdon's tar plant (*Centromadia parryi* ssp. *congdonii*; CRPR 1B.1), San Joaquin spearscale (*Extriplex joaquinana*; CRPR 1B.2), and caper-fruited tropidocarpum (*Tropidocarpum capparideum*; CRPR 1B.1). The detailed methods and findings of floristic rare plant surveys are presented in the *Sand Hill Wind Repowering Project Rare Plant Report* provided in Appendix B. Mitigation measure BIO-1c specifies activity exclusion zones around these populations if construction activities take place within 250 feet of these occurrences. Congdon's tar plant and San Joaquin spear scale were found within 250 feet of the collection line workspace, and caper-fruited tropidocarpum was found within both the collection line workspace and a proposed access road to Turbine 26. Mitigation measure BIO-1d states that if impacts on special-status species are unavoidable, they will be mitigated at a 2:1 ratio through "the acquisition, protection, and subsequent management in perpetuity of other existing occurrences," including the preparation of a long-term management plan. However, BIO-1d also states that all impacts on caper-fruited tropidocarpum will be avoided. As such, potential impacts on special-status plant species

identified during rare plant surveys will be avoided through shrinking, relocating, or implementing alternative construction methods for access routes and work areas and establishing exclusion areas for special status plant species where no ground disturbance will occur.

Reviews of databases for rare plant records were reconducted in March 2025. Findings were largely the same as the certified Final SEIR with four species described in the SEIR and Biological Resources Evaluation (BRE) that were not returned in the updated occurrence record search results and 10 species with new records returned by the updated search results. Of these only four species met the PEIR definition for special status plants and only two species may have suitable habitat within the 477.89-acre rare plants Biological Study Area (BSA). However, due to the floristic nature of the surveys, all species observed were identified, and none of these additional species were observed during surveys during their period of identifiable phenology (species list available in *Sand Hill Wind Repowering Project Rare Plant Report* in Appendix B). Therefore, none of these species are expected to occur within the BSA. Differences in species occurrence records are presented in Table 3-3a and Table 3-3b. Full updated search results are presented in Appendix B.

Changes to taxonomy, listing status, and presence of newly observed occurrences for special-status species in updated desktop review of occurrence records will not change the significance findings for impacts on special-status plants. Impacts on special-status species observed during rare plant surveys will be avoided by project activities, and therefore will likewise not result in changes to the significance findings of these impacts.

Table 3-3a. Summary of Species with Occurrence Records in Previous Reports that Were Not Returned in March 2025 Desktop Review

Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
<i>Amsinckia lunaris</i>	bent-flowered fiddleneck	-	-	1B.1	Annual herb found in coastal bluff scrub, cismontane woodland, and valley and foothill grassland from 10 to 1,650 feet. Known in Alameda, Contra Costa, Colusa, Lake, Marin, Napa, San Benito, Santa Clara, Santa Cruz, San Mateo, and Yolo Counties. Blooms March through June (CDFW 2025, CNPS 2025).	March to June	Absent/potential to occur. Suitable habitat is present within the BSA. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2025).
<i>Atriplex coronata</i> var. <i>vallicola</i>	Lost Hills crownscale	-	-	1B.2	Annual herb found in alkaline soils (often clay) within chenopod scrub, valley and foothill grasslands, and vernal pools from 5 to 1,935 feet. Known in Fresno, Kern, Kings, Merced, Monterey, San Benito, San Luis Obispo, and Tulare counties (CDFW 2025, CNPS 2025).	March to October	Absent/likely to occur. The alkali wetlands within the BSA provide suitable habitat for this species. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. This species is not tracked in the CNDDDB; however, it has been documented within the Clifton Court Forebay 7.5-minute USGS quadrangle and near the intersection of Altamont Pass Road and Dyer Road (Calflora 2024).
<i>Centromadia parryi</i> ssp. <i>rudis</i>	Parry's rough tarplant	-	-	4.2	Annual herb found in valley and foothill grassland and vernal pools from 0 to 330 feet. Known in Butte, Colusa, Glenn, Lake, Merced, Modoc,	May to November	Absent/potential to occur. Alkali wetlands within the BSA provide suitable habitat for this species. This species is presumed to be absent from the BSA

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Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
					Sacramento, San Joaquin, Solano, Stanislaus, and Yolo counties. Blooms May through October (CDFW 2025, CNPS 2025).		given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA.
<i>Lasthenia conjugens</i>	Contra Costa goldfields	E	-	1B.1	Annual herb found in alkaline playas and vernal pools from 0 to 1,540 feet. Blooms March through June (CDFW 2025, CNPS 2025).	May to July (August to September)	Absent/potential to occur. Alkali wetlands within the BSA provide suitable habitat for this species. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA.

Table 3-3b. Summary of Species with Occurrence Records Returned in March 2025 Desktop Review that Were Not Included in Previous Reports

Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
<i>Arctostaphylos manzanita</i> ssp. <i>laevigata</i>	Contra Costa manzanita	-	-	1B.2	An evergreen shrub found in rocky chaparral from 1,640 to 3,610 feet. Known from 10 occurrences in Contra Costa County. Blooms January through March and uncommonly into April (CDFW 2025, CNPS 2025).	January to March	Absent. There is no suitable habitat within the BSA to support this species.
<i>Cicuta maculata</i> var. <i>bolanderi</i>	Bolander's water-hemlock	-	-	1B.1	Perennial herb found in coastal fresh or brackish marshes and swamps from 0 to 650 feet. Known in California in Contra Costa, Marin, Sacramento, and Solano Counties. Presumed extirpated in Santa Barbara County. Blooms July through September (CDFW 2025, CNPS 2025).	July to September	Absent. There is no suitable habitat within the BSA to support this species.
<i>Eriogonum umbellatum</i> var. <i>bahiiforme</i>	bay buckwheat	-	-	4.3	A perennial shrub that grows primarily in ultramafic rocky areas from 2,300 to 7,200 feet. Known in over 20 counties in California. Blooms July through September (CDFW 2025, CNPS 2025).	July to September	Absent. There is no suitable ultramafic substrates within the BSA to support this species.
<i>Galium andrewsii</i> ssp. <i>gatense</i>	phlox-leaf serpentine bedstraw	-	-	4.2	Perennial herb found on rocky serpentine substrates in chaparral, cismontane woodland, and lower montane coniferous forest from 490 to 4,755 feet. Blooms April through July (CDFW 2025, CNPS 2025).	April to July	Absent. There are no suitable serpentine substrates within the BSA to support this species.

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Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
<i>Lessingia tenuis</i>	spring lessingia	-	-	4.3	An annual herb found in coastal chaparral from 150 to 6,000 feet. Known in Alameda, Kern, Kings, Monterey, San Benito, San Bernardino, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Stanislaus, and Ventura Counties. Blooms May through July (CDFW 2025, CNPS 2025).	May to July	Absent. There is no suitable habitat within the BSA to support this species.
<i>Microseris sylvatica</i>	sylvan microseris	-	-	4.2	Perennial herb found in chaparral, cismontane woodland, Great Basin scrub, pinyon and juniper woodland, and valley and foothill grassland from 150 to 4,920 feet. Blooms March through June (CDFW 2025, CNPS 2025).	March to June	Absent/potential to occur. Suitable habitat is present within the BSA; however, this species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024.
<i>Navarretia cotulifolia</i>	cotula navarretia	-	-	4.2	Annual herb found on adobe clay sites in chaparral, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal scrub, and lower montane coniferous forest from 15 to 6,005 feet. Blooms May through June (CNPS 2025).	May to June	Absent. There is no suitable habitat within the BSA to support this species.
<i>Phacelia phacelioides</i>	Mt. Diablo phacelia	-	-	1B.2	Annual herb found on rocky sites within chaparral and cismontane woodland from 1,640 to 4,495 feet. Blooms April through May (CDFW 2025, CNPS 2025).	April to May	Absent. There is no suitable habitat within the BSA to support this species.

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Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
<i>Piperia michaelii</i>	Michael's rein orchid	-	-	4.2	A perennial plant found generally in dry areas, coastal scrub, woodland, and mixed evergreen forests above 2,100 feet. Known in over 20 counties in California. Blooms April through August (CDFW 2025, CNPS 2025).	April to August	Absent. There is no suitable habitat within the BSA to support this species.

[a] Status abbreviations:

Federal Designations:

(E) Federally Listed as Endangered; (T) Federally Listed as Threatened

State Designations:

(E) State Listed as Endangered; (R) Rare

California Native Plant Society (CNPS) California Rare Plant Rank (CRPR):

(1A) Presumed extinct in California

(1B) Rare, threatened, or endangered in California and elsewhere

(2B) Rare, threatened, or endangered in California, but more common elsewhere

(3) More information is needed

(4) Limited distribution

Threat Rank:

0.1 Seriously threatened in California (more than 80% of occurrences threatened/high degree and immediacy of threat)

0.2 Moderately threatened in California (20 to 80% of occurrences threatened/moderate degree and immediacy of threat)

0.3 Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

[b] Potential for occurrence classification:

Present: Species determined to be present within the BSA during focused or protocol-level surveys.

Likely to occur: The species has a strong likelihood to be found in the BSA, but it has not been directly observed to date during project surveys. The likelihood that a species may occur is based on the following considerations: (1) suitable habitat that meets the life history requirements of the species is present within the BSA; and (2) records of sightings are documented on or near the BSA. The main assumption is that records of occurrence have been documented within or near the BSA, the BSA falls within the range of the species, and suitable habitat is present, but it is undetermined whether the habitat is currently occupied.

Potential to occur: There is a possibility that the species can be found in the BSA, but it has not been directly observed to date. The likelihood that a species may occur is based on the presence of suitable habitat that meets the life history requirements of the species in the BSA. The main assumption is that the BSA falls within the range of the species, suitable habitat is present, but no records of sighting are located within or near the BSA, and it is undetermined whether the habitat is currently occupied.

Unlikely to occur: The species is not likely to occur in the BSA based on the lack of suitable habitat and features that are required to satisfy the life history requirements of the species.

Absent: Suitable habitat does not exist in the BSA, the species is restricted to or known to be present only within a specific area outside the project footprint, or focused or protocol-level surveys did not detect the species.

Impacts on all plants evaluated in the certified Final SEIR (Impact BIO-1 and Impact BIO-2) were determined to be less than significant with mitigation. In compliance with PEIR mitigation measure BIO-1a, protocol-level rare plant surveys were conducted from 2022 to 2024 to determine the presence or absence of potentially occurring rare plant species. As described above, three special-status plant species were identified in the BSA: Congdon's tar plant, San Joaquin spearscale, and caper-fruited tropidocarpum. Through implementation of PEIR mitigation measures BIO-1b, BIO-1c, and BIO-1e potential impacts on Congdon's tar plant and San Joaquin spearscale will be avoided. As it relates to potential impacts on Congdon's tar plant, it is assumed that modifications to culvert design and associated grading areas at one access road location will avoid impacts on this species. Caper-fruited tropidocarpum was identified within the grading area for a proposed access road to Turbine 26, as well as along a collection line path. Impacts on this species will remain "less than significant with mitigation" because the Approved Project is expected to adjust the access road to Turbine 26 and a collection line path to avoid these plants. In the event this is not possible, potential impacts on this species will need to be re-assessed.

There have been changes to the rare plant rank and taxonomic treatment of some of the species considered in the certified Final SEIR. Chaparral harebell was moved from *Campanula exigua* to *Ravenella exigua* in 2020. The California Rare Plant Rank (CRPR) did not change for this species. Palmate-bracted bird's-beak was renamed from *Chloropyron palmatus* to *Chloropyron palmatum* in 2009. The listing status and CRPR did not change for this species. Chaparral ragwort (*Senecio aphanactis*) was moved from CRPR 2B.2 to 1B.2 in February 2025. No other rare plant species evaluated had taxonomic, listing status, or CRPR changes.

Sensitive Communities

The changes to the Approved Project footprint described earlier resulted in a significant total reduction of potential impacts on upland and aquatic habitat as compared with certified Final SEIR Table 3.4-5. Most anticipated upland habitat impacts consist of nonnative annual grassland, consistent with the certified Final SEIR.

Permitted anticipated permanent and temporary impacts on wetlands (including alkali wetlands) stream beds, and other water features, have been reduced when compared to wetland and other aquatic impacts of each type as described in the certified Final SEIR Table 3.4-5, with the exception of a required additional small impact at one pond near the entrance of the Project. As the pond impact is 0.032 acre (0.02 permanent/ 0.012 temporary), it is not a significant change in the context of an overall reduction of all other types of impacts included with the certified Final SEIR.

Terrestrial Wildlife

There have been listing status changes to special-status wildlife since completion of the certified Final SEIR. These changes are summarized in Table 3-4.

Table 3-4. Special-Status Wildlife Listing Status Changes Since the Certified Final SEIR

Scientific Name	Common Name	Previous Status	Current Status
<i>Actinemys marmorata</i>	Western Pond Turtle	CDFW SSC	CDFW SSC, FESA Proposed Threatened
<i>Athene cunicularia</i>	Western burrowing owl	CDFW SSC	CDFW SSC, CESA Candidate Endangered

Scientific Name	Common Name	Previous Status	Current Status
<i>Bombus crotchii</i>	Crotch's bumblebee	None	CESA Candidate Endangered
<i>Danaus plexippus</i>	monarch butterfly	None	FESA Proposed Threatened
<i>Rana boylei</i>	foothill yellow-legged frog	CDFW SSC, CESA Candidate Threatened	FESA Threatened, CESA Endangered
<i>Spea hammondi</i>	spadefoot toad	CDFW SSC	CDFW SSC, FESA Candidate Threatened

Notes:

- = not listed

BSA = biological study area

C = Candidate

CDFW = California Department of Fish and Wildlife

CESA = California Endangered Species Act

FESA = Federal Endangered Species Act

SSC = CDFW Species of Special Concern

Western pond turtle (*Actinemys marmorata*) was recently listed as federally proposed threatened, and remains a CDFW Species of Special Concern. Western pond turtle was considered for a variety of impacts in the certified Final SEIR, including direct take as a result of construction and lowered reproduction potential. Although a small, new project impact is proposed at the edge of one stock pond that would constitute habitat for western pond turtle, overall aquatic impacts, and as a result, western pond turtle habitat impacts are reduced below those described in the certified Final SEIR. Therefore, impacts on this species and its habitat are expected to remain less than significant with mitigation as described in the certified Final SEIR. Therefore, this change did not require additional analysis.

Western burrowing owl (*Athene cunicularia hypugaea*) is now a candidate for listing under CESA and remains a Species of Special Concern. This species was considered for a variety of impacts in the certified Final SEIR, including construction-related disturbance, direct take as a result of operations, and loss of foraging and breeding habitat. Based upon the reduction in facility build-out capacity and overall project disturbance size from the certified Final SEIR, these impacts are anticipated to be similar to those in the certified Final SEIR, including that impacts of avian and bat fatalities (possibly including Western burrowing owl) would be significant and unavoidable. The other impact types evaluated are expected to be less than significant with mitigation, consistent with the certified Final SEIR. Therefore, this change did not require additional analysis.

Crotch's bumblebee (*Bombus crotchii*) has become a candidate for listing under CESA since issuance of the certified Final SEIR and was not considered under the PEIR; therefore, there are no species-specific mitigation measures for Crotch's bumblebee. Crotch's bumblebee-specific surveys have not been conducted. Crotch's bumblebee was considered for inclusion in the Project's CDFW Incidental Take Permit, but ultimately rejected from inclusion based upon lack of suitable habitat present within the Project footprint and barriers to movement between known occurrences and the Project site. Due to an overall reduction of upland grassland impacts compared with the certified Final SEIR, no new analysis is believed necessary. Impacts on this species and its habitat are expected to be less than significant with the mitigation measures already included in the certified Final SEIR, and no new mitigation measures from the PEIR would be included. Additionally, the Project components covered by the Project's Streambed Alteration Agreement will be subject to generic but inclusive bumblebee monitoring requirements. Therefore, this change did not require additional analysis.

Monarch butterfly (*Danaus plexippus*) was federally proposed for listing as a candidate species in December 2024, but at the time of writing this document, it was not yet listed as a candidate. This species was not considered in the certified Final SEIR nor the PEIR; therefore, there are no species-specific mitigation measures within the PEIR for monarch butterflies. Specific larval host plant surveys were not conducted, but narrow leaf milk weed (*Asclepias fascicularis*) was observed during rare plant and habitat surveys. However, due to overall reduction of impacts, and otherwise no change to impact assumptions, no new analysis is believed necessary. Impacts on this species and its habitat would be less than significant with the mitigation measures already included in certified Final SEIR, including restoration of areas temporarily impacted by construction. Therefore, this change did not require additional analysis.

Foothill yellow-legged frog (*Rana boylei*) was recently federally listed as threatened and CESA endangered and remains a CDFW Species of Special Concern. However, foothill yellow-legged frog was considered in the certified Final SEIR. As stated in the certified Final SEIR, the Project area does not provide suitable habitat for foothill-yellow legged frog because there are no rocky, woodland streams that run through the Project area. The Project is not expected to have impacts on foothill yellow-legged frogs as a result of a reduced footprint compared with the certified Final SEIR; therefore, no new analysis is necessary.

Western spadefoot toad (*Spea hammondi*) has recently become a candidate for federal listing as threatened, and remains a CDFW Species of Special Concern. However, western spadefoot was considered in the certified Final SEIR, and was expected to have impacts that would be less than significant with mitigation. Due to the overall reduction of impacts, including a reduction in impacts on potential breeding habitats, no new analysis is necessary. Impacts on this species and its habitat are expected to remain less than significant with mitigation as described in the certified Final SEIR.

The certified Final SEIR considered vernal pool branchiopods, curved-foot hygrotus diving beetle, California tiger salamander, western spadefoot, California red-legged frog, and foothill yellow-legged frog, western pond turtle, Blainville's horned lizard, Alameda whipsnake, San Joaquin coachwhip, western burrowing owl occupied habitat, tricolored blackbird foraging habitat, San Joaquin kit fox, and American badger. The certified Final SEIR concluded that impacts on these species would be less than significant with mitigation. Because the proposed changes would result in a reduced overall Approved Project footprint and similar overall impacts on habitat types, the impacts are anticipated to be similar to those considered in the certified Final SEIR, and would remain less than significant with mitigation. No new analysis for these species is necessary.

The certified Final SEIR indicates that updated avian and bat fatality information from the PEIR was available for the analysis performed for avian biological resources. Similarly, additional information has been published since completion of the certified Final SEIR, namely additional golden eagle monitoring within the APWRA and additional fatality monitoring results from repowered APWRA projects.

Additionally, project-specific avian and bat surveys have been performed. Bat roost surveys were conducted to identify maternity roosts or hibernacula present within 1 mile of all proposed turbine locations (Appendix B). No special-status bat, such as pallid bat (*Antrozous pallidus*) or Townsend's big-eared bat (*Corynorhinus townsendii*), was detected during these roost surveys; however, limited detections suggest other bat species are present and may be roosting in the project area during the summer, including Mexican free-tailed bat (*Tadarida brasiliensis*) and myotis species (*Myotis californicus* and/or *M. yumanensis*). No potential hibernacula were found during the roost survey.

Surveys for Western burrowing owl, Golden Eagle, Swainson's hawk, nesting raptors, and tricolored blackbird confirm that these species are nesting and foraging within or near the proposed facility. Western burrowing owl have also been observed over-wintering within the Approved Project area. Presence of

these species is consistent with the assumptions of the certified Final SEIR, and does not warrant additional analysis.

The certified Final SEIR analyzed the per MW per year rates of bird and bat fatalities based upon other APWRA repowered facility fatality monitoring data and avian adjusted fatality rates (certified Final SEIR Table 3.4-4), and then scaled this information to the total buildout capacity of the project in an effort to estimate reasonably projected take of the facility (certified Final SEIR Tables 3.4-8 and 3.4-10). As a basis for comparison with theoretical pre-repowered take rates, since most facilities did not have documented take rates, the same calculation was performed using the pre-repowered rates used in the PEIR and calculated in the *Altamont Pass Wind Resource Area Bird Fatality Study, Monitoring Years 2005-2013* (ICF 2016). These rates were then scaled to the pre-repower facility size in MW. Before repowering, Sand Hill comprised four different turbine models and was an approximately 23.1-MW facility (Smallwood and Bell 2020). This analysis was applied to certain species and groups identified as the *focal species* in the PEIR. The certified Final SEIR analyzed this information for the proposed 144.5-MW facility, and qualitatively compared this information for the preferred alternative of 109.5-MW capacity. This information was not published for the proposed final 50-MW facility in the final Resolution No. Z-20-02. This information is therefore calculated for the 50-MW proposed facility in this analysis for comparison purposes, and presented in Tables 3-5, 3-6, and 3-7. However, the reduced buildout capacity of the final proposed project did not warrant this recalculation. Although the estimated rates of fatality are lower than those considered in the final SEIR, the conclusion remains the same: that the avian and bat fatalities would be significant and unavoidable, and that employing the PEIR mitigation measures to reduce avian and bat fatalities will reduce avian and bat impacts, but not to a less than significant level.

This analysis presents the rates of all the repowered facilities that have published fatality monitoring results in the APWRA (Table 3-5) and applies the method used in the PEIR to calculate average annual mortality rates (fatalities per MW per year), but it uses new data generated since approval of the PEIR, including updated average annual mortality rates for the full initial (that is, prior to implementation of adaptive management) monitoring periods of the Vasco Winds project (3 years), the Golden Hills project (3 years), Golden Hills North project (3 years), and the Summit Wind Repowering Project (2 years) (Insignia Environmental 2012; Brown et al. 2013; ICF 2016; H. T. Harvey & Associates 2021 and 2022; WEST 2022, 2023 and 2023a). Although the turbines at Diablo Winds and Buena Vista are considered “new-generation” turbines, their overall facility capacities and turbines are too different from those proposed for Sand Hill to reasonably be considered “comparable.” Therefore, they are included in Table 3-4 for comparison purposes, but their rates were excluded from the calculations to estimate the range of potential Sand Hill fatalities. This method is intended to show the full range of all repowered project fatality rates, but allows the average and weighted average calculations to demonstrate the likely range of fatalities resulting from inclusion of only the projects most similar to the Sand Hill Project.

Vasco Winds comprises thirty-four 2.3-MW turbines (ICF 2013). Golden Hills North comprises twenty 2.3 MW turbines (H. T. Harvey & Associates 2022). Golden Hills comprises forty-eight 1.79-MW turbines. Summit Winds comprises twenty-three 2.5 MW turbines. Although there is considerable range in turbine sizes among these four projects, they are all considered new-generation turbines relative to the rest of the turbines installed in the APWRA with turbine sizes the most comparable to that of the Approved Project.

Additionally, in light of the larger body of data available since approval of the PEIR, this analysis considers metrics not previously used in the PEIR when calculating total fatalities for species and species groups:

- The number of fatalities based on an average of the mortality rates for all comparable studies
- The number of fatalities based on a weighted average of the mortality rates for all comparable studies

The average is calculated by simply averaging the mortality rates for the comparable repowering projects considered. The weighted average is calculated by considering each year of fatality monitoring for each wind energy facility used in the calculations. For example, Vasco Winds completed 3 years of fatality monitoring, and each year is considered in the calculated estimates. Using this method, projects with more monitoring years are given more “weight” compared to projects with fewer monitoring years. Table 3-5, (updated from Table 3.4-10 in the PEIR) presents updated mortality rates for Vasco Winds and the addition of mortality rates for Golden Hills, Golden Hills North, and Summit Winds. For each species or species group, the nonrepowered rate (as calculated and provided in the PEIR) is presented, followed by the average mortality rates (monitoring efforts vary between 1 and 3 years) for each project.

Because the use of scent detection dogs during fatality monitoring results in far greater numbers of bat fatalities detected, the calculations for predicted bat fatalities were also updated to reflect fatalities/MW/year using monitoring reports only for facilities where scent detection dogs had been used (Table 3-7).

Table 3-5. Annual Adjusted Fatality Rates (Fatalities per MW per Year) for Nonrepowered and Repowered APWRA Turbines

Species/ Group	Nonrepowered ^[a]	Diablo Winds ^[b]	Buena Vista ^[c]	Vasco Winds ^[d]	Golden Hills ^[e]	Golden Hills North ^[f]	Summit Winds ^[g]
American Kestrel	0.59 (0.5902)	0.09	0.15	0.28 (-0.02)	0.1	0.19	0.12
Barn Owl	0.24 (0.2145)	0.02	0.00	0.02 (-0.01)	0.02	0.01	0 (none found)
Burrowing Owl	0.78 (0.7754)	0.84	–	0.06 (+0.01)	0.19	0.04	0 (none found)
Golden Eagle	0.08 (0.0807)	0.01	0.04	0.04 (+0.01)	0.14 ^[e]	0.08 ^[f]	0.03
Loggerhead Shrike	0.19 (0.1879)	0.00	–	0.02 (NA)	0.05	0	–
Prairie Falcon	0.02 (0.0201)	–	0.00	0.01 (NA)	0.01	0.01	–
Red-tailed Hawk	0.44 (0.4391)	0.20	0.10	0.21 (-0.04)	0.52	0.27	0.22
Tricolored Blackbird ^[g]	–	–	–	0.02 (+0.02)	0.03	0.01	–
White-tailed Kite ^[g]	–	–	–	–	0.02	–	–
Swainson's Hawk	0.00 (0.0014)	–	–	–	–	0	–
All Raptors	2.43 (2.4313)	1.21	0.31	0.64 (0.00)	1.12	0.75	0.46

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Species/ Group	Nonrepowered ^[a]	Diablo Winds ^[b]	Buena Vista ^[c]	Vasco Winds ^[d]	Golden Hills ^[e]	Golden Hills North ^[f]	Summit Winds ^[g]
All Native Non-raptors	4.50 (4.5046)	2.51	1.01	1.94	5.25	4.42	0.1.03 ^[g]

^[a] Average of 2005 to 2011 bird years (as reported in Table 3.4-10 of the PEIR). The numbers in parenthesis are the estimates out to four significant digits that were used to calculate baseline mortality rates in the PEIR and extrapolated to the pre-repowered capacity of Sand Hill, approximately 23.1 MW.

^[b] Average of 2005 to 2009 bird years (as reported in Table 3.4-10 of the PEIR).

^[c] Average of 3 years (2007 to 2009) (as reported in Table 3.4-10 of the PEIR).

^[d] Average of 3 years as reported in Brown et al. 2016. Numbers in parentheses represent the change since the numbers reported in Table 3.4-10 of the PEIR.

^[e] Average of all 3 years as reported in H. T. Harvey & Associates Table 20, adjusted estimates derived using GenEst (2021). H. T. Harvey reported the 'unadjusted fatality counts with off-plot incidental finds included' metric to be the more accurate mortality indices for golden eagles; this rate would be 0.12 if used.

^[f] Average of all 3 years as reported in H. T. Harvey & Associates Table 10, adjusted estimates derived using GenEst (2022). H. T. Harvey reported the 'unadjusted fatality counts with off-plot incidental finds included' metric to be the more accurate mortality indices for golden eagles; this rate would be 0.07 if used.

^[g] First two years of monitoring as reported in WEST 2022, 2023, and 2023a. Only West 2022 and 2023a published a 'All native non-raptors' rate, and therefore this rate only represents the first year of monitoring data.

Mortality rates reflect annual fatalities per MW. "-" denotes that no fatalities were detected. "0.00" signifies that although fatalities were detected, the rate is lower than two significant digits. In both cases, a rate of "0.0" is substituted as the fatality rate to calculate a projected take rate.

NA = Not Available

Table 3-6. Estimated Annual Adjusted Fatalities at the Proposed 50 MW Sand Hill Facility Calculated for Using the Nonrepowered and Comparable Repowered APWRA Facility Rates

Species/ Group	Nonrepowered Sand Hill at Nonrepowered Rate ^[a]	Estimated 50 MW Sand Hill Adjusted Fatalities using the:					
		Vasco Winds Rate ^[d]	Golden Hills Rate ^[e]	Golden Hills North Rate ^[f]	Summit Winds Rate ^[g]	Average of Comparable Facility Rates	Weighted Average of Comparable Facility Rates
American Kestrel	13.6	14.0	5.0	9.5	6	8.6	8.8
Barn Owl	5.5	1.0	1.0	0.5	-	0.8	0.8
Burrowing Owl	18.0	3.0	9.5	2.0	0.0	3.6	4.0
Golden Eagle	1.8	2.0	-	-	1.5	3.6	3.8
Loggerhead Shrike	4.4	1.0	2.5	0.0	-	1.2	1.2
Prairie Falcon	0.5	0.5	0.5	0.5	0.0	0.5	0.5
Red-tailed Hawk	10.2	10.5	26.0	13.5	11.0	15.3	15.6
Tricolored Blackbird ^[g]	-	1.0	1.5	0.5	-	1.0	1.0

Species/ Group	Nonrepowered Sand Hill at Nonrepowered Rate ^[a]	Estimated 50 MW Sand Hill Adjusted Fatalities using the:					
		Vasco Winds Rate ^[d]	Golden Hills Rate ^[e]	Golden Hills North Rate ^[f]	Summit Winds Rate ^[g]	Average of Comparable Facility Rates	Weighted Average of Comparable Facility Rates
White-tailed Kite ^[g]	-	-	1.0	-	-	1.0	1.0
Swainson's Hawk	0.0	-	-	0.0	-	0.0	0.0
All Raptors	56.1	32.0	56.0	37.5	22.8	37.0	38.4
All Native Non-raptors	104.0	97.0	262.5	221.0	51.5	158	179.3

^[a] Average estimated annual fatalities using the nonrepowered rate in the PEIR extrapolated to the pre-repowered capacity of Sand Hill, approximately 23.1 MW.

^[d] Average of 3 years as reported in Brown et al. 2016. Numbers in parentheses represent the change since the numbers reported in Table 3.4-10 of the PEIR.

^[e] Average of all 3 years as reported in H. T. Harvey & Associates Table 20, adjusted estimates derived using GenEst (2021). H. T. Harvey reported the 'unadjusted fatality counts with off-plot incidental finds included' metric to be the more accurate mortality indices for golden eagles; this rate would be 0.12 if used.

^[f] Average of all 3 years as reported in H. T. Harvey & Associates Table 10, adjusted estimates derived using GenEst (2022). H. T. Harvey reported the 'unadjusted fatality counts with off-plot incidental finds included' metric to be the more accurate mortality indices for golden eagles; this rate would be 0.07 if used.

^[g] First two years of monitoring as reported in WEST 2022, 2023 and 2023a. Only West 2022 and 2023a published a 'All native non-raptors' rate, and therefore this rate only represents the first year of monitoring data.

Mortality rates reflect annual fatalities per MW. In Table 3-5, "-" denotes that no fatalities were detected. "0.00" signifies that although fatalities were detected, the rate is lower than two significant digits. In both cases, a rate of "0.0" is substituted as the fatality rate to calculate a projected take rate.

Table 3-7. Estimated Range of Annual Bat Fatalities

Study Area	Capacity (MW)	Baseline Fatalities ^[a]	Predicted Fatalities ^[b]		
			Golden Hills	Golden Hills North	Summit Wind
Existing Program Area	329	87	1,826	2,922	4,191
Program Alternative 1	417	110	2,314	3,703	5,313
Program Alternative 2	450	118	2,498	3,996	5,733
Sand Hill	50	13	278	444	637

^[a] Estimates of total baseline fatalities are based on the Smallwood and Karas fatality rate of 0.263 fatality/MW/year derived from 2005 to 2007 monitoring at the APWRA.

^[b] Estimates of total predicted fatalities are based on corrected fatality rates from the Golden Hills repowering project (H. T. Harvey & Associates 2021) (5.55 fatalities/MW/year), the Golden Hills North project (Great Basin Bird Observatory and H. T. Harvey & Associates 2022) (8.88 fatalities/MW/year), and the Summit Winds project (WEST 2023, WEST 2023a) (12.74 fatalities/MW/year).

3.5.2 Applicable Mitigation Measures from the Certified Final Subsequent Environmental Impact Report

The certified Final SEIR identified the following list of mitigation measures from the PEIR as required to address the impacts of the Project on biological resources:

- **PEIR Mitigation Measure BIO-1a:** Conduct surveys to determine the presence or absence of special-status plant species
- **2019 Updated PEIR Mitigation Measure BIO-1b:** Implement best management practices to avoid and minimize impacts on special-status species
- **PEIR Mitigation Measure BIO-1c:** Avoid and minimize impacts on special-status plant species by establishing activity exclusion zones
- **PEIR Mitigation Measure BIO-1d:** Compensate for impacts on special-status plant species
- **PEIR Mitigation Measure BIO-1e:** Retain a biological monitor during ground- disturbing activities in environmentally sensitive areas
- **PEIR Mitigation Measure BIO-2:** Prevent introduction, spread, and establishment of invasive plant species
- **PEIR Mitigation Measure BIO-3a:** Conduct preconstruction surveys for habitat for special-status wildlife species
- **PEIR Mitigation Measure BIO-3b:** Implement measures to avoid, minimize, and mitigate impacts on vernal pool branchiopods and curved-footed hygrotus diving beetle
- **2019 Updated PEIR Mitigation Measure BIO-5a:** Implement best management practices to avoid and minimize effects on special-status amphibians
- **PEIR Mitigation Measure BIO-5b:** Compensate for loss of habitat for special- status amphibians
- **PEIR Mitigation Measure BIO-5c:** Restore disturbed annual grasslands
- **PEIR Mitigation Measure BIO-6:** Conduct preconstruction surveys for western pond turtle and monitor construction activities if turtles are observed
- **PEIR Mitigation Measure BIO-7a:** Implement best management practices to avoid and minimize effects on special-status reptiles
- **2019 Updated PEIR Mitigation Measure BIO-8a:** Implement measures to avoid and minimize potential impacts on special-status and non-special-status nesting birds
- **PEIR Mitigation Measure BIO-8b:** Implement measures to avoid and minimize potential impacts on western burrowing owl
- **PEIR Mitigation Measure BIO-9:** Compensate for the permanent loss of occupied habitat for western burrowing owl
- **PEIR Mitigation Measure BIO-10a:** Implement measures to avoid and minimize potential impacts on San Joaquin kit fox and American badger
- **PEIR Mitigation Measure BIO-10b:** Compensate for loss of suitable habitat for San Joaquin kit fox and American badger
- **PEIR Mitigation Measure BIO-11a:** Prepare a project-specific avian protection plan

- **PEIR Mitigation Measure BIO-11b:** Site turbines to minimize potential mortality of birds
- **PEIR Mitigation Measure BIO-11c:** Use turbine designs that reduce avian impacts
- **PEIR Mitigation Measure BIO-11d:** Incorporate avian-safe practices into design of turbine-related infrastructure
- **PEIR Mitigation Measure BIO-11e:** Retrofit existing infrastructure to minimize risk to raptors
- **PEIR Mitigation Measure BIO-11f:** Discourage prey for raptors
- **PEIR Mitigation Measure BIO-11g:** Implement postconstruction avian fatality monitoring for all repowering projects
- **2019 Updated PEIR Mitigation Measure BIO-11h:** Compensate for the loss of raptors and other avian species, including golden eagles, by contributing to conservation efforts
- **PEIR Mitigation Measure BIO-11i:** Implement an avian adaptive management program
- **PEIR Mitigation Measure BIO-12a:** Conduct bat roost surveys
- **PEIR Mitigation Measure BIO-12b:** Avoid removing or disturbing bat roosts
- **PEIR Mitigation Measure BIO-14a:** Site and select turbines to minimize potential mortality of bats
- **2019 Updated PEIR Mitigation Measure BIO-14b:** Implement postconstruction bat fatality monitoring program for all repowering projects
- **PEIR Mitigation Measure BIO-14c:** Prepare and publish annual monitoring reports on the findings of bat use of the project area and fatality monitoring results
- **PEIR Mitigation Measure BIO-14d:** Develop and implement a bat adaptive management plan
- **PEIR Mitigation Measure BIO-14e:** Compensate for expenses incurred by rehabilitating injured bats
- **2019 Updated PEIR Mitigation Measure BIO-15:** Compensate for the loss of alkali wetland/drainage habitat
- **2019 Updated PEIR Mitigation Measure BIO-18:** Compensate for the loss of wetlands and non-wetland waters

The full text of these measures is provided in Appendix A.

3.5.3 Conclusion

The certified Final SEIR adopted a number of mitigation measures from the PEIR to address impacts on biological resources (see Section 3.5.2 and Appendix A). Following review and updates of appropriate databases and field survey information, no additional measures would need to be adopted to ensure that the proposed changes to the Approved Project would not result in any additional significant environmental impacts or change the conclusions of the certified Final SEIR regarding the severity of impacts on biological resources. Therefore, the conclusions of the certified Final SEIR remain valid, and no additional analysis of this topic is required.

3.6 Cultural Resources

Questions: Would the Approved Project:	Where in the Certified Final SEIR is this Topic Discussed?	Did the Certified Final SEIR Identify a Significant Impact and Mitigation Measures for this Topic?	Do Any Certified Final SEIR Mitigation Measures Apply to the Proposed Changes to the Approved Project for this Topic?	Would the Proposed Changes to the Approved Project or Changes in Circumstances Result in New Significant Impacts or Substantially More Severe Impacts?	Is There Any New Information of Substantial Importance Requiring Preparation of New Analysis?
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	No impacts, Section 3.5	No significant impacts were identified with the implementation of mitigation measures. Impact CUL-1: Potential to cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 (no impact). Impact CUL-2: Potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 (less than significant with mitigation). Impact CUL-3: Disturbance of any human remains, including those dedicated cemeteries (less than significant with mitigation).	One mitigation measures In Section 3.5 Cultural Resources is project wide. CUL-2c, Conduct worker awareness training for archaeological resources prior to construction; and CUL-2d, Stop work if cultural resources are encountered during ground-disturbing activities, would reduce this impact to a less-than-significant level.	The proposed changes to the project will not result in any changes to the cultural study, recommendations, or impacts.	No further study is warranted.
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	No impacts, Section 3.5	No significant impacts were identified with the implementation of mitigation measures. Impact CUL-1: Potential to cause a substantial adverse change in the significance of a historical resource	One mitigation measures in Section 3.5 is project wide. CUL-2c, Conduct worker awareness training for archaeological resources prior to construction; and	The proposed changes to the project will not result in any changes to the cultural study, recommendations, or impacts.	No further study is warranted.

Addendum to the Certified Final Subsequent Environmental Impact Report

Questions: Would the Approved Project:	Where in the Certified Final SEIR is this Topic Discussed?	Did the Certified Final SEIR Identify a Significant Impact and Mitigation Measures for this Topic?	Do Any Certified Final SEIR Mitigation Measures Apply to the Proposed Changes to the Approved Project for this Topic?	Would the Proposed Changes to the Approved Project or Changes in Circumstances Result in New Significant Impacts or Substantially More Severe Impacts?	Is There Any New Information of Substantial Importance Requiring Preparation of New Analysis?
		<p>pursuant to Section 15064.5 (no impact).</p> <p>Impact CUL-2: Potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 (less than significant with mitigation).</p> <p>Impact CUL-3: Disturbance of any human remains, including those in dedicated cemeteries (less than significant with mitigation).</p>	CUL-2d, Stop work if cultural resources are encountered during ground-disturbing activities, would reduce this impact to a less-than-significant level.		
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	No impacts, Section 3.5	<p>No significant impacts were identified with the implementation of mitigation measures.</p> <p>Impact CUL-1: Potential to cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 (no impact).</p> <p>Impact CUL-2: Potential to cause a substantial adverse change in the significance of an archaeological</p>	<p>Two mitigation measures in Section 3.5 address this.</p> <p>CUL-2c, Conduct worker awareness training for archaeological resources prior to construction; and CUL-2d, Stop work if cultural resources are encountered during ground-disturbing activities, would reduce this impact to a less-than-significant level.</p>	The proposed changes to the project will not result in any changes to the cultural study, recommendations, or impacts.	No further study is warranted.

Addendum to the Certified Final Subsequent Environmental Impact Report

Questions: Would the Approved Project:	Where in the Certified Final SEIR is this Topic Discussed?	Did the Certified Final SEIR Identify a Significant Impact and Mitigation Measures for this Topic?	Do Any Certified Final SEIR Mitigation Measures Apply to the Proposed Changes to the Approved Project for this Topic?	Would the Proposed Changes to the Approved Project or Changes in Circumstances Result in New Significant Impacts or Substantially More Severe Impacts?	Is There Any New Information of Substantial Importance Requiring Preparation of New Analysis?
		resource pursuant to Section 15064.5 (less than significant with mitigation). Impact CUL-3: Disturbance of any human remains, including those in dedicated cemeteries (less than significant with mitigation).	CUL-3, Stop work if human remains are encountered during ground-disturbing activities		

3.6.1 Environmental Analysis

Cultural resources studies for the Approved Project were carried out exclusively by ICF cultural resources staff in 2018.

The certified Final SEIR concluded that the Approved Project would have no impact on historical resources, and that impacts on archaeological resources and the possible disturbance of human remains would be less than significant with mitigation. A portion of the California Aqueduct main line does intersect with the project site at two locations south of Bethany Reservoir. Segments of the California Aqueduct have been evaluated for eligibility for the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR) eligibility in other locations. The full extent of the aqueduct has been determined eligible for listing on the NRHP and CRHR at the state level of significance under NRHP/CRHR Criterion A/1 for representing a comprehensively planned and publicly sanctioned water conveyance public works project that facilitated development throughout the state. The full extent also has been determined eligible for listing under NRHP/CRHR Criterion C/3 for introducing design innovations to water conveyance infrastructure. Because Approved Project activities are not anticipated to disturb this infrastructure, evaluation of the aqueduct was not included in the scope of the 2018 survey. As stated in the certified Final SEIR, no other historical resources were identified within or near the project site during the field survey and records searches, there would be no impact on historical resources and no further analysis regarding this topic is required.

No previously undocumented archaeological resources were identified within the project site during the pedestrian survey for the certified Final SEIR. As noted in the certified Final SEIR, although the project site and surrounding APWRA may have been used by prehistoric peoples, the nature of this land use would primarily have been resource collection. Consequently, the expected range of prehistoric artifact and feature types in the project site includes projectile points and lithic tools, lithic debitage, bedrock mortars, and grinding stones. Although the area could have been used for upland resource collection activities, the project site is not located near any permanent water sources and is, therefore, expected to have moderate to low potential to contain prehistoric archaeological resources.

The proposed changes do not increase the acreage or change the footprint as evaluated in the certified Final SEIR. Thus, the likelihood of encountering archaeological resources would be the same as assumed in the certified Final SEIR.

The certified Final SEIR indicated that no known dedicated cemeteries are present within the project site, and neither the results of the records search nor the pedestrian surveys indicated the presence of human remains within the project site. However, as noted in the certified Final SEIR, there is always the possibility that ground-disturbing activities during construction may uncover previously unknown buried human remains. Because the proposed changes would disturb the same acreage as evaluated in the certified Final SEIR, the likelihood of encountering human remains would be the same as was assumed in the certified Final SEIR.

3.6.2 Applicable Mitigation Measures from the Certified Final Subsequent Environmental Impact Report

The proposed changes described would not result in any changes in the location of project design elements on areas containing cultural resources. For this reason, there would be no changes to the Approved Project impacts from those presented in the certified Final SEIR.

Impact CUL-1: Potential to cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 (no impact).

Three historic resources were identified within the project site: P-01-010613 (Grant Line Road) and P-01-010947 and P-01-011395 (both historic transmission lines). These resources were not formally evaluated for eligibility in either the NRHP or the CRHR. However, Grant Line Road is an actively used roadway, and the transmission lines consist of overhead power lines. These resources would not be affected by Approved Project activities. Similarly, although a segment of the California Aqueduct is located in the project site, Approved Project-related activities would not change, disturb, or modify the aqueduct. The Project would include a generation-tie line that would cross over the aqueduct using an overhead electrical line on poles or connecting conduit to an existing bridge, or it would cross under the aqueduct using directional boring. Directional boring would not affect the aqueduct. Attaching conduit to an existing bridge would not change the function or design of the bridge and, therefore, would not affect the integrity of the overall aqueduct. Because an overhead electrical line is already present, the generation-tie line would not change the existing conditions and would not change the integrity of the overall aqueduct. Accordingly, the Approved Project would not cause a substantial adverse change in the significance of a historical resource. There would be no impact, and no mitigation is required.

Impact CUL-2: Potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 (less than significant with mitigation). No previously undocumented archaeological resources were identified within the project site during the pedestrian survey.

Although the project site and vicinity may have been used by prehistoric peoples, the nature of this land use would primarily have been resource collection. Consequently, the expected range of prehistoric artifact and feature types in the project site includes projectile points and lithic tools, lithic debitage, bedrock mortars, and grinding stones. Although the area could have been used for upland resource collection activities, the project site is located far from permanent water sources and is, therefore, expected to have moderate to low potential to contain prehistoric archaeological resources.

In the event that archaeological resources are inadvertently uncovered during construction of the Approved Project, implementation of PEIR Mitigation Measures CUL-2c and CUL-2d would reduce this impact to a less-than-significant level:

- **PEIR Mitigation Measure CUL-2c: Conduct worker awareness training for archaeological resources prior to construction.** Prior to the initiation of any site preparation and/or the start of construction, the Project applicant will ensure that all construction workers receive training overseen by a qualified professional archaeologist who is experienced in teaching nonspecialists, to ensure that forepersons and field supervisors can recognize archaeological resources (e.g., areas of shellfish remains, chipped stone or groundstone, historic debris, building foundations, human bone) in the event that any are discovered during construction.
- **PEIR Mitigation Measure CUL-2d: Stop work if cultural resources are encountered during ground-disturbing activities.** The Applicant will ensure that construction specifications include a stop-work order if prehistoric or historic-era cultural resources are unearthed during ground-disturbing activities. If such resources are encountered, the Applicant will immediately halt all activity within 100 feet of the find until a qualified archaeologist can assess the significance of the find. Prehistoric materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or tool-making debris; culturally darkened soil ("midden") containing heat-affected rocks and artifacts; stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered-stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. If the find

is determined to be potentially significant, the archaeologist, in consultation with the Native American representative (if appropriate), will develop a treatment plan that could include site avoidance, capping, or data recovery.

Impact CUL-3: Disturbance of any human remains, including those interred outside of dedicated cemeteries (less than significant with mitigation).

There are no known dedicated cemeteries within the project site, and neither the results of the records search nor the pedestrian surveys indicated that human remains are present in the project site. However, there is always the possibility that ground-disturbing activities during construction may uncover previously unknown buried human remains. This impact would be potentially significant. However, implementation of PEIR Mitigation Measure CUL-3 would reduce the impact to a less-than-significant level:

- **PEIR Mitigation Measure CUL-3: Stop work if human remains are encountered during ground-disturbing activities.** The Applicant will ensure the construction specifications include a stop-work order if human remains are discovered during construction or demolition. There will be no further excavation or disturbance of the site within a 100-foot radius of the location of such discovery, or any nearby area reasonably suspected to overlie adjacent remains. The Alameda County Coroner will be notified and will make a determination as to whether the remains are Native American. If the Coroner determines that the remains are not subject to the coroner's authority, the coroner will notify the Native American Heritage Commission, who will attempt to identify descendants of the deceased Native American. If no satisfactory agreement can be reached as to the disposition of the remains pursuant to this state law, then the landowner will re-inter the human remains and items associated with Native American burials on the property in a location not subject to further subsurface disturbance. A final report will be submitted to Alameda County. This report will contain a description of the mitigation program and its results, including a description of the monitoring and testing resources analysis methodology and conclusions and a description of the disposition/curation of the resources.

3.6.3 Conclusion

The proposed changes or changes in circumstances result in no new significant impacts or substantially more severe impacts. The analysis and findings for cultural resources have not changed from those discussed in the certified Final SEIR.

3.7 Geology and Soils

Questions: Would the Project:	Where in the Certified Final SEIR is this Topic Discussed?	Did the Certified Final SEIR Identify a Significant Impact and Mitigation Measures for this Topic?	Do Any Certified Final SEIR Mitigation Measures Apply to the Proposed Changes to the Approved Project for this Topic?	Would the Proposed Changes to the Approved Project or Changes in Circumstances Result in New Significant Impacts or Substantially More Severe Impacts?	Is There Any New Information of Substantial Importance Requiring Preparation of New Analysis?
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. ii) Strong seismic ground shaking? iii) Seismic-related ground failure, including liquefaction? iv) Landslides?	Section 3.7	Yes	Yes	No	No
b) Result in substantial soil erosion or the loss of topsoil?	Section 3.7	No	Not applicable	No	No
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the	Section 3.7	Yes	Yes	No	No

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Questions: Would the Project:	Where in the Certified Final SEIR is this Topic Discussed?	Did the Certified Final SEIR Identify a Significant Impact and Mitigation Measures for this Topic?	Do Any Certified Final SEIR Mitigation Measures Apply to the Proposed Changes to the Approved Project for this Topic?	Would the Proposed Changes to the Approved Project or Changes in Circumstances Result in New Significant Impacts or Substantially More Severe Impacts?	Is There Any New Information of Substantial Importance Requiring Preparation of New Analysis?
project, and potentially result in on or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?					
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	Section 3.7	Yes	Yes	No	No
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	The certified Final SEIR did not address this, as this topic was not included in the 2020 CEQA Guidelines. This addendum utilizes the 2025 CEQA Guidelines, which includes this topic for analysis.	No	No	No	No
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Section 3.7	Yes	Yes	No	No

3.7.1 Environmental Analysis

The certified Final SEIR concluded that potential adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides would be less than significant with mitigation (certified SEIR Impact GEO-1). The Approved Project is located on the same site, with the same layout, and would involve the same ground disturbance as what was evaluated in the certified Final SEIR. Compliance with existing building safety requirements and implementation of PEIR Mitigation Measure GEO-1, which would require a site-specific geotechnical investigation and the implementation of design recommendations in a subsequent geotechnical report, would result in a reduction of potential adverse effects to a less than significant level. Therefore, consistent with the certified Final SEIR, potential adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides would be less than significant with mitigation under the Approved Project. No further analysis of these impacts is required.

The certified Final SEIR concluded that impacts from potential soil erosion or the loss of topsoil would be less than significant (certified SEIR Impact GEO-2). The Approved Project is located on the same site, with the same layout, and would involve the same ground disturbance as what was evaluated in the certified Final SEIR. Compliance with federal and local regulations that would apply to the Approved Project, such as the Stormwater Pollution Prevention Plan (SWPPP) and Stormwater Management Plan, and PEIR reclamation plan measures, would result in less-than-significant impacts from the Approved Project. Therefore, consistent with the certified Final SEIR, impacts from potential soil erosion or the loss of topsoil would be less than significant under the Approved Project. No further analysis of these impacts is required.

The certified Final SEIR concluded that impacts from the placement of Approved Project-related facilities on a geologic unit or soil that is unstable or that would become unstable as a result of the Approved Project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse would be less than significant with mitigation (certified SEIR Impact GEO-3). The Approved Project is located on the same site, with the same layout, and would involve the same ground disturbance as what was evaluated in the certified Final SEIR. Compliance with existing building safety requirements and implementation of PEIR Mitigation Measure GEO-1, which would require a site-specific geotechnical investigation and the implementation of design recommendations in a subsequent geotechnical report, would result in a reduction of potential adverse effects to a less-than-significant level. Therefore, consistent with the certified Final SEIR, impacts from the placement of Approved Project-related facilities on a geologic unit or soil that is unstable or that would become unstable as a result of the Approved Project, and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse would be less than significant with mitigation under the Approved Project. No further analysis of these impacts is required.

The certified Final SEIR concluded that impacts from the placement of Approved Project-related facilities on expansive soil, creating substantial direct or indirect risks to life or property would be less than significant with mitigation (certified SEIR Impact GEO-4). The Approved Project is located on the same site, with the same layout, and would involve the same ground disturbance as what was evaluated in the certified Final SEIR. Compliance with existing building safety requirements and implementation of PEIR Mitigation Measure GEO-1, which would require a site-specific geotechnical investigation and the implementation of design recommendations in a subsequent geotechnical report, would result in a reduction of potential adverse effects to a less-than-significant level. Therefore, consistent with the certified Final SEIR, impacts from the placement of Approved Project-related facilities on expansive soil,

creating substantial direct or indirect risks to life or property would be less than significant with mitigation under the Approved Project. No further analysis of these impacts is required.

The Approved Project does not include the installation of septic tanks or alternative wastewater disposal systems for the disposal of wastewater. No sewer or septic systems are present at the project site. Portable restroom facilities would be utilized temporarily during construction. Therefore, no impact would result from soils incapable of adequately supporting septic tanks or alternative wastewater disposal systems. No further analysis of these impacts is required.

The certified Final SEIR concluded that impacts from direct or indirect destruction of a unique paleontological resource or site or unique geologic feature would be less than significant with mitigation (certified SEIR Impact GEO-5). The Approved Project is located on the same site, with the same layout, and would involve the same ground disturbance as what was evaluated in the certified Final SEIR. Implementation of PEIR Mitigation Measures GEO-7a, GEO-7b, and GEO-7c would require a qualified professional paleontologist to monitor significant ground-disturbing activities, training of construction personnel in recognizing fossil material, and a work stoppage if substantial fossil remains are encountered during construction, resulting in a reduction of potential adverse effects on unique paleontological or geologic resources to a less-than-significant level. Therefore, consistent with the certified Final SEIR, impacts from direct or indirect destruction of a unique paleontological resource or site or unique geologic feature would be less than significant with mitigation under the Approved Project. No further analysis of these impacts is required.

3.7.2 Applicable Mitigation Measures from the Certified Final Subsequent Environmental Impact Report

The following mitigation measures from the Final SEIR are applicable:

- **PEIR Mitigation Measure GEO-1:** Conduct site-specific geotechnical investigation and implement design recommendations in subsequent geotechnical report.
- **PEIR Mitigation Measure GEO-7a:** Retain a qualified professional paleontologist to monitor significant ground-disturbing activities.
- **PEIR Mitigation Measure GEO-7b:** Educate construction personnel in recognizing fossil material.
- **PEIR Mitigation Measure GEO-7c:** Stop work if substantial fossil remains are encountered during construction.

Appendix A of this addendum provides the full text of these mitigation measures.

3.7.3 Conclusion

No amended or additional mitigation measures beyond those adopted in the certified Final SEIR would be necessary to reduce Approved Project impacts, as they relate to geology and soils, to a less-than-significant level. The proposed changes would not result in a change to the conclusions reached in the certified Final SEIR. Because there would be no new significant environmental impacts or more severe environmental impacts related to geology and soils, the findings of the certified Final SEIR would not change for the Approved Project. No further analysis regarding this topic is required.

3.8 Greenhouse Gas Emissions

Questions: Would the Project:	Where in the Certified Final SEIR is this Topic Discussed?	Did the Certified Final SEIR Identify a Significant Impact and Mitigation Measures for this Topic?	Do Any Certified Final SEIR Mitigation Measures Apply to the Proposed Changes to the Approved Project for this Topic?	Would the Proposed Changes to the Approved Project or Changes in Circumstances Result in New Significant Impacts or Substantially More Severe Impacts?	Is There Any New Information of Substantial Importance Requiring Preparation of New Analysis?
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	3.8.2	No	No.	No	No
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	3.8.2	Significant impacts without mitigation. The impacts are less than significant with mitigation.	Yes. The following mitigation measures apply to the proposed changes: 2019 Updated PEIR Mitigation Measure GHG-2a, PEIR Mitigation Measures GHG-2b, 2c, and 2d	No	No

3.8.1 Environmental Analysis

The greenhouse gas (GHG) analysis in the certified Final SEIR found that construction and operation of the Approved Project would generate a total of 145 metric tons carbon dioxide emissions (CO₂e) annually, and that the annual GHG reductions from offsetting grid electricity would total 50,274 metric tons CO₂e. The certified Final SEIR concluded that the wind energy generated by the Approved Project would reduce GHG emissions by approximately 50,128 metric tons CO₂e during its first year of operation. This would more than offset emissions generated by construction and operation of the Approved Project. The Approved Project would continue to yield emissions reductions until 2045, which is when state law requires the statewide grid to be 100% renewable. The total generating capacity of the Approved Project with the proposed changes would be lower compared to that evaluated in the certified Final SEIR. The Approved Project with the proposed changes would still displace and offset emissions from grid electricity and would decrease GHG emissions. Therefore, GHG emission impacts would remain less than significant with the proposed changes.

As stated in the certified Final SEIR, the Approved Project's wind energy would directly support the decarbonization of the electric power sector, helping California to meet the GHG reduction goals contained in Senate Bill (SB) 32, SB 100, and Executive Order (EO) B-55-18. Nevertheless, the certified Final SEIR shows that, although measures included in the Assembly Bill (AB) 32 Scoping Plan, the 2017 Scoping Plan, and the Alameda County Community Climate Action Plan (CCAP) are necessarily broad and the Approved Project is generally consistent with the goals and desired outcomes of these plans, emissions generated by Approved Project construction activities could potentially conflict with applicable measures in the AB 32 Scoping Plan, the 2017 Scoping Plan, and the Alameda County CCAP. However, the certified Final SEIR concluded that the Approved Project would have less-than-significant impacts with implementation of the proposed mitigation measures. Because the proposed changes would not increase construction activities, as with the Approved Project evaluated in the certified Final SEIR, implementation of best available control technology for heavy-duty vehicles (2019 Updated PEIR Mitigation Measure GHG-2a) would limit GHG emissions, while the installation of low leak rate circuit breakers and monitoring (PEIR Mitigation Measure GHG-2b) would increase operational efficiencies and reduce GHG emissions. The use of recycled building materials and compliance with the construction and demolition debris management ordinance (PEIR Mitigation Measures GHG-2c), as also indicated in the certified Final SEIR, would also reduce GHG emissions associated with material production and landfill waste, respectively. Thus, the proposed changes effects on GHG emissions would be consistent with what was concluded in the certified Final SEIR.

3.8.2 Applicable Mitigation Measures from the Certified Final Subsequent Environmental Impact Report

The following PEIR mitigation measures were required for this topic in the certified Final SEIR and would apply to the proposed changes to the Approved Project: 2019 Updated PEIR Mitigation Measure GHG-2a: Implement best available control technology for heavy-duty vehicles.

- **PEIR Mitigation Measure GHG-2b:** Install low SF₆ leak rate circuit breakers and monitoring
- **PEIR Mitigation Measure GHG-2c:** Require new construction to use building materials containing recycled content
- **PEIR Mitigation Measure GHG-2d:** Comply with construction and demolition debris management ordinance

Appendix A of this addendum provides the full text of these mitigation measures.

3.8.3 Conclusion

The proposed changes would not change the impact conclusions in the certified Final SEIR. No additional mitigation measures beyond those adopted in the certified Final SEIR (2019 Updated PEIR Mitigation Measure GHG-2a and PEIR Mitigation Measures GHG-2b, GHG-2c, and GHG-2d) would be necessary to ensure that the proposed changes would not result in any additional significant impacts on GHG emissions. Because there would be no additional significant environmental impacts or more severe environmental impacts related to GHG emissions, the findings of the certified Final SEIR would not change. No further analysis regarding this topic is required.

3.9 Hazards and Hazardous Materials

Questions: Would the Project:	Where in the Certified Final SEIR is this Topic Discussed?	Did the Certified Final SEIR Identify a Significant Impact and Mitigation Measures for this Topic?	Do Any Certified Final SEIR Mitigation Measures Apply to the Proposed Changes to the Approved Project for this Topic?	Would the Proposed Changes to the Approved Project or Changes in Circumstances Result in New Significant Impacts or Substantially More Severe Impacts?	Is There Any New Information of Substantial Importance Requiring Preparation of New Analysis?
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Section 3.9	No	Not applicable	No	No
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	Section 3.9	No	Not applicable	No	No
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Section 3.9	No	Not applicable	No	No
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	Section 3.9	Yes	Yes	No	No

Addendum to the Certified Final Subsequent Environmental Impact Report

Questions: Would the Project:	Where in the Certified Final SEIR is this Topic Discussed?	Did the Certified Final SEIR Identify a Significant Impact and Mitigation Measures for this Topic?	Do Any Certified Final SEIR Mitigation Measures Apply to the Proposed Changes to the Approved Project for this Topic?	Would the Proposed Changes to the Approved Project or Changes in Circumstances Result in New Significant Impacts or Substantially More Severe Impacts?	Is There Any New Information of Substantial Importance Requiring Preparation of New Analysis?
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	Section 3.9	No	Not applicable	No	No
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Section 3.9	Yes	Yes	No	No
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	Section 3.9	No	Not applicable	No	No
h) During normal operation, would the effects of bending and stress on rotor blades over time lead to potential blade failure and become a potential blade throw hazard?	Section 3.9	Yes	Yes	No	No

3.9.1 Environmental Analysis

The certified Final SEIR concluded that potential impacts resulting from the creation of a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials would be less than significant (certified SEIR Impact HAZ-1). The Approved Project would implement the same transportation, usage, and disposal of hazardous material with those considered in the certified Final SEIR. The Approved Project is located on the same site, with the same layout, as what was evaluated in the certified Final SEIR and no additional public or environmental resources have been introduced to the site or adjacent areas. As with the project considered in the certified Final SEIR, the Approved Project would develop a Hazardous Materials Business Plan (HMBP) and implement construction BMPs to minimize potential impacts in the event of an unanticipated accidental release. Therefore, consistent with the certified Final SEIR, impacts resulting from the creation of a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials would remain less than significant under the Approved Project. No further analysis of these impacts is required.

Potential impacts resulting from the creation of a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous material into the environment were determined to be less than significant in the certified Final SEIR (certified SEIR Impact HAZ-2). The Approved Project would be exposed to the same reasonably foreseeable upset and accident conditions involving the release of hazardous material into the environment as those considered in the certified Final SEIR. The Approved Project is located on the same site, with the same layout, as what was evaluated in the certified Final SEIR, and no additional public or environmental resources have been introduced to the site or adjacent areas. Similar to the project considered in the certified Final SEIR, the Approved Project would develop an HMBP and implement construction BMPs to minimize potential impacts from an accidental release. Therefore, consistent with the certified Final SEIR, impacts resulting from the creation of a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous material into the environment would remain less than significant under the Approved Project. No further analysis of these impacts is required.

The certified Final SEIR determined that potential impacts related to hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school would be less than significant (certified SEIR Impact HAZ-3). No public or private K–12 schools are located within 0.25 mile of the Approved Project area. The nearest school is approximately 0.80 mile east of the Approved Project. No plans for a proposed school within 0.25 mile of the Approved Project area were identified. Therefore, consistent with the certified Final SEIR, no impacts related to hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school would result under the Approved Project. No further analysis of these impacts is required.

The certified Final SEIR determined that potential impacts from the project being located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 would result in a less-than-significant hazard to the public and the environment, with the implementation of mitigation (certified SEIR Impact HAZ-4). A records search was reconducted for the Approved Project, using the California Department of Toxic Substances Control's EnviroStor website as well as the State Water Resources Control Board's GeoTracker website. Consistent with the certified Final SEIR, the area searched encompassed a 0.25-mile radius around the Approved Project area and identified one record: Aquachlor (Cleanup Program Site T06019781960) located approximately 0.15 mile south of the Approved Project area (Altamont Pass Road) and approximately 0.4 mile east of proposed Turbine #9.

Soil contamination of an unknown substance was reported on September 18, 2005. The case was closed as of September 13, 2006 (SWRCB 2025a). The certified Final SEIR identified the Byron Power Company (Cleanup Program Site T10000003401) site as being located approximately 0.18 mile north of the project; however, this site was determined to be approximately 0.3 mile north of the Approved Project. In the case of Byron Power Company, groundwater contamination of petroleum hydrocarbons was reported on July 29, 2011. The case was closed as of May 20, 2014 (SWRCB 2025b).

Implementation of 2019 Updated PEIR Mitigation Measure HAZ-4 would require the preparation of a Phase I Environmental Site Assessment to identify potential contamination within and adjacent to the Approved Project area, and remediation, if necessary. Any contaminated material produced or encountered during the Approved Project construction or operation would be properly disposed of, according to state regulations and best practices. Implementation of 2019 Updated PEIR Mitigation Measure HAZ-4 would reduce the potential impact from ground contamination to a less-than-significant level. Therefore, consistent with the certified Final SEIR, impacts from the Approved Project being located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 would remain less than significant with the implementation of mitigation under the Approved Project. No further analysis of these impacts is required.

The certified Final SEIR determined that impacts from project components being located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, resulting in a safety hazard or excessive noise for people residing or working in the project area are less than significant (certified SEIR Impact HAZ-5). The Approved Project area is not within 2 miles of a public airport. The nearest airport is the Byron Airport, located approximately 2.5 miles north of the Approved Project. Although a small portion of the Approved Project area near Turbine No. 29, as described in the certified Final SEIR, is located within the Influence Area for Byron Airport, no portions of the Approved Project design elements are within the Influence Area for Byron Airport (Shutt Moen Associates 2000). Under 14 Code of Federal Regulations § 77.9, the Approved Project would be required to notify the FAA for temporary components (for example, cranes) and permanent components (for example wind turbines) exceeding 200 feet in height above ground level for potential marking and nighttime lighting requirements, ensuring that aircraft could identify and avoid the structures. Therefore, consistent with the certified Final SEIR, impacts from the Approved Project components being located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, resulting in a safety hazard or excessive noise for people residing or working in the project area would remain less than significant under the Approved Project. No further analysis of these impacts is required.

Potential impacts resulting from impairment of implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan were determined to be less than significant with the implementation of mitigation in the certified Final SEIR (certified SEIR Impact HAZ-6). The Approved Project is proposing the same site layout and construction transportation routes as analyzed in the certified Final SEIR. With the implementation of PEIR Mitigation Measure TRA-1, a construction traffic control plan would be prepared. Therefore, consistent with the certified Final SEIR, impacts resulting from the impairment of implementation of, or physical interference with, an adopted emergency response plan or emergency evacuation plan would be less than significant with the implementation of mitigation under the proposed changes. No further analysis of these impacts is required.

The certified Final SEIR determined that potential exposure of people or structures, either directly or indirectly, to a significant risk involving wildland fires would be less than significant (certified SEIR Impact HAZ-7). The Approved Project includes the same layout as evaluated in the certified Final SEIR and the

existing on-site conditions still consist primarily of grassland and grazing land. Construction equipment, construction methods, and operations would be consistent with those described in the certified Final SEIR. In the unlikely event of a fire igniting during construction, construction crews would have immediate access to insipient stage fire suppression equipment. Additionally, the California Department of Forestry and Fire Protection (CAL FIRE) and the Alameda County Fire Department would continue to provide fire protection services to the area in and around the Approved Project area during construction and operation. Consistent with the certified Final SEIR, impacts resulting from the exposure of people or structures, either directly or indirectly, to a significant risk involving wildland fires would be less than significant under the Approved Project. No further analysis of these impacts is required.

Although not a topic in the 2025 CEQA Guidelines, the PEIR and the certified Final SEIR included an analysis of whether, during normal operation, the effects of bending and stress on rotor blades over time would lead to potential blade failure and become a potential blade throw hazard. The certified Final SEIR determined that, during normal operation, the effects of bending and stress on rotor blades over time that could lead to blade failure and become a potential blade throw hazard would be a less-than-significant impact with the implementation of mitigation (certified SEIR Impact HAZ-8). The Approved Project would continue to be subject to the Alameda County turbine setback requirements, which are based on total turbine height (refer to Section 2, Project Description). Precise turbine locations for the Approved Project would be determined during the Alameda County-required micro-siting process and would be compliant with Alameda County turbine setback requirements. Further, 2019 New Mitigation Measure HAZ-8 would require turbines to be located a minimum of 1.25 times the total turbine height from public roads and would require the preparation of a blade throw study. As a result, and consistent with the certified Final SEIR, the effects of bending and stress on rotor blades over time, during normal operation, that could lead to blade failure and become a potential blade throw hazard would be less than significant with the implementation of mitigation under the Approved Project.

3.9.2 Applicable Mitigation Measures from the Certified Final Subsequent Environmental Impact Report

The following PEIR mitigation measures were required for this topic in the certified Final SEIR and would apply to the proposed changes to the Approved Project:

- **2019 Updated PEIR Mitigation Measure HAZ-4:** Perform a Phase I Environmental Site Assessment prior to construction activities and remediate if necessary.
- **PEIR Mitigation Measure TRA-1:** Develop and implement a construction traffic control plan.
- **2019 NEW Mitigation Measure HAZ-8:** Site Turbines at least 1.25 times TTH from Public Roads and Prepare a Blade Throw Study if Necessary.

Appendix A of this addendum provides the full text of these mitigation measures.

3.9.3 Conclusion

No amended or additional mitigation measures beyond those adopted in the certified Final SEIR would be necessary to reduce the Approved Project impacts, as they relate to hazards and hazardous materials, to a less-than-significant level. The proposed changes would not result in a change to the conclusions reached in the certified Final SEIR. Because there would be no new significant environmental impacts or more severe environmental impacts related to hazards or hazardous materials, the findings of the certified Final SEIR would not change for the Approved Project. No further analysis regarding this topic is required.

3.10 Hydrology and Water Quality

Questions: Would the Project:	Where in the Certified Final SEIR is this Topic Discussed?	Did the Certified Final SEIR Identify a Significant Impact and Mitigation Measures for this Topic?	Do Any Certified Final SEIR Mitigation Measures Apply to the Proposed Changes to the Approved Project for this Topic?	Would the Proposed Changes to the Approved Project or Changes in Circumstances Result in New Significant Impacts or Substantially More Severe Impacts?	Is There Any New Information of Substantial Importance Requiring Preparation of New Analysis?
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	Section 3.10	Yes – Less than significant PEIR Mitigation Measure WQ-1: Comply with NPDES requirements	Yes – Mitigation measure will continue apply to project changes	No	No
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of basin?	Section 3.10	No	No	No	No
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i) result in substantial erosion or siltation on- or offsite? ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	Section 3.10	Yes – Less than significant PEIR Mitigation Measure WQ-1: Comply with NPDES requirements	Yes – Mitigation measure will continue apply to project changes	No	No

Addendum to the Certified Final Subsequent Environmental Impact Report

Questions: Would the Project:	Where in the Certified Final SEIR is this Topic Discussed?	Did the Certified Final SEIR Identify a Significant Impact and Mitigation Measures for this Topic?	Do Any Certified Final SEIR Mitigation Measures Apply to the Proposed Changes to the Approved Project for this Topic?	Would the Proposed Changes to the Approved Project or Changes in Circumstances Result in New Significant Impacts or Substantially More Severe Impacts?	Is There Any New Information of Substantial Importance Requiring Preparation of New Analysis?
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) iv) impede or redirect flood flows?					
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	Section 3.10	Yes – Less than significant PEIR Mitigation Measure WQ-1: Comply with NPDES requirements	Yes – Mitigation measure will continue apply to project changes	No	No
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	Section 3.10	Yes – Less than significant PEIR Mitigation Measure WQ-1: Comply with NPDES requirements	Yes – Mitigation measure will continue apply to project changes	No	No

NPDES = National Pollutant Discharge Elimination System

3.10.1 Environmental Analysis

The proposed changes would occur within the same project site. It is anticipated that there would be a reduction in number of turbines because of the increase in turbine nameplate capacity. With the reduction in the number of turbines, the area of disturbance will also be reduced, and ground disturbance will not be beyond that considered in the certified Final SEIR. Therefore, the changes to the Approved Project would not substantially interfere with groundwater recharge such that the Approved Project would impede sustainable groundwater management of the basin; no further analysis of this topic is required.

Per the certified Final SEIR, Approved Project drainage has been considered in the design and no turbines would be constructed within existing drainage areas; therefore, the Approved Project would not substantially alter the existing drainage pattern in the area. Earth-disturbing activities associated with the Approved Project have the potential for increased erosion and sedimentation; however, appropriate erosion control devices (for example, earth berm, silt fences, straw bales) would be installed to manage water runoff. Additionally, operation of the Approved Project is not anticipated to result in a substantial amount of runoff that would degrade surface or groundwater quality. Implementing BMPs and PEIR Mitigation Measure WQ-1, Comply with NPDES requirements, would result in a less-than-significant impact.

Construction of the Approved Project would be required to comply with the NPDES stormwater Construction General Permit. New and expanded roads would be gravel and would not introduce new impervious surfaces. Compacted gravel roads have runoff potential like that of Hydrologic Soil Group D soils. Consequently, the additional graveled roads would not result in a net increase in runoff potential compared with existing native soils where the new gravel would be placed. Because runoff would not increase because of additional gravel roads, there would not be an increase in flooding onsite or offsite. Because the project site is not within a 100-year flood zone, the area is not subject to flood flows and, in the event of a flood, new features would not substantially obstruct or redirect flood flows, as similar features are already present onsite. There would be no impact.

Construction could generate polluted runoff because soil would be stripped, bare areas exposed, and sedimentation from stormwater could result. However, excavation would be temporary and short term during the construction period, and implementation of PEIR Mitigation Measure WQ-1 and BMPs provided in the SWPPP would ensure that Approved Project-related stormwater runoff would not affect water quality and that there would be no increase in the rate of polluted runoff. Implementation of PEIR Mitigation Measure WQ-1 would reduce this impact to a less-than-significant level.

Further, the proposed increase to the individual turbine nameplate capacity from 4MW to 5.9MW may result in a reduction in the number of turbines constructed by the Approved Project from 16 to 13. A reduction in the number of turbines constructed by the Approved Project from 16 to 13 would result in reduced potential impacts. Because the proposed changes would occur within the same project site and would not involve an increase in construction activities, disturbed acreage, or development of new facilities beyond what was considered in the certified Final SEIR, the effects of the proposed changes on hydrology and water quality would be consistent with those assumed in the certified Final SEIR.

3.10.2 Applicable Mitigation Measures from the Certified Final Subsequent Environmental Impact Report

The same PEIR mitigation measure (PEIR Mitigation Measure WQ-1: Comply with NPDES requirements) included in the certified Final SEIR, required to minimize any potential impacts to hydrology and water

quality, would apply to the proposed changes to the Approved Project. Appendix A of this addendum provides the full text of this mitigation measure.

3.10.3 Conclusion

The proposed changes would not change the conclusions reached in the certified Final SEIR and proposed changes would not result in any additional significant impacts related to hydrology and water quality. No additional mitigation measures beyond what was adopted in the certified Final SEIR (PEIR Mitigation Measure WQ-1) would be necessary. No further analysis regarding this topic is required.

3.11 Transportation/Traffic

Questions: Would the Project:	Where in the Certified Final SEIR is This Topic Discussed?	Did the Certified Final SEIR Identify a Significant Impact and Mitigation Measures for this Topic?	Do Any Certified Final SEIR Mitigation Measures Apply to the Proposed Changes to the Approved Project for this Topic?	Would the Proposed Changes to the Approved Project or Changes in Circumstances Result in New Significant Impacts or Substantially More Severe Impacts?	Is There Any New Information of Substantial Importance Requiring Preparation of New Analysis?
a) Conflict with program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	3.16	Yes – PEIR Mitigation Measure TRA-1: Develop and implement a construction traffic control plan	Yes – PEIR Mitigation Measure TRA-1: Develop and implement a construction traffic control plan	No	No
b) Would the project conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?	3.16	No	No	No	No
c) Substantially increase hazards due to a geometric design feature (for example, sharp curves or dangerous intersections) or incompatible uses (for example, farm equipment)?	3.16	Yes – PEIR Mitigation Measure TRA-1: Develop and implement a construction traffic control plan	Yes – PEIR Mitigation Measure TRA-1: Develop and implement a construction traffic control plan	No	No
d) Result in inadequate emergency access?	3.16	Yes – PEIR Mitigation Measure TRA-1: Develop and implement a construction TCP	Yes – PEIR Mitigation Measure TRA-1: Develop and implement a construction TCP	No	No

3.11.1 Environmental Analysis

Senate Bill (SB) 743 was signed into law in California in 2013, requiring the Governor's Office of Planning and Research (OPR) to identify new metrics for identifying and mitigating transportation impacts within CEQA. Prior to SB 743, level of service (LOS) was used as the performance metric for identifying impacts under CEQA. SB 743 replaced this metric with a vehicle miles traveled (VMT) approach in order to better align CEQA transportation impact analyses and mitigation outcomes with state goals related to GHG emission reductions, encouragement of infill development, and improvement of public health through development of multimodal transportation networks. In December 2018, OPR released the Technical Advisory on Evaluating Transportation Impacts in CEQA to provide guidance for assessing VMT, thresholds of significance, and mitigation measures (OPR 2018).

CEQA Guidelines Section 15064.3(b) provides guidance on determining the significance of transportation impacts based on VMT. Additionally, the California Department of Transportation (Caltrans) has developed guidelines for VMT analysis, including the Vehicle Miles Traveled–Focused Transportation Impact Study Guide (Caltrans 2020a), Transportation Analysis Under CEQA (Caltrans 2020b), and Transportation Analysis Framework Under CEQA (Caltrans 2020c). Section 5.3.3 of the Transportation Analysis Under CEQA guidance states, "Generally, a qualitative analysis of VMT impacts associated from the construction of the Proposed Project would be appropriate... Vehicle trips used for construction purposes would be temporary, and any generated VMT would generally be minor and limited to construction equipment and personnel and would not result in long-term trip generation."

The 2025 State CEQA Guidelines Section 15064.3(b) provides guidance on determining the significance of transportation impacts based on VMT, pursuant to SB 743, and directs that transportation projects that "reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact." The Approved Project would not add capacity beyond the original design capacity of the roadway. Due to the nature of the Approved Project, a quantitative VMT assessment is not required by CEQA, and a qualitative assessment for construction of the Approved Project is provided.

Construction of the Approved Project would result in a temporary increase in VMT during the Approved Project's construction phase due to the additional trips made by construction workers and transportation of construction material and equipment. This increase in VMT would be temporary and localized. Construction of the Approved Project would not add capacity to the existing roadway. Once the Approved Project is constructed and in operation, the temporary construction-related increase in VMT would no longer occur.

Operation of the Approved Project is not anticipated to result in permanent long-term changes to the surrounding circulation system. The Approved Project would not increase capacity and would not lead to a measurable and substantial increase in vehicle travel. Therefore, construction and operation of the Approved Project would not conflict or be inconsistent with Section 15064.3(b) of the 2025 CEQA Guidelines and would result in less than significant impacts related to VMT.

The proposed changes would occur within the same project site and would not involve an increase in facilities or turbines constructed by the Approved Project (likely a decrease in turbine numbers because of an increase in the individual turbine nameplate capacity) and, therefore, would not generate additional traffic or VMT. No further analysis of this topic is required.

Regarding any conflict with a program, plan, ordinance, or policy addressing the circulation system, the certified Final SEIR concluded that traffic would increase on the local roads as a result of construction of the Approved Project. The increase in traffic is temporary in duration and would be mitigated to a less-

than-significant impact with the implementation of PEIR Mitigation Measure TRA-1, Develop and implement a construction TCP. Additionally, there are no public transit services or pedestrian or bicycle facilities on the Approved Project access routes. Oversized construction vehicles could potentially disrupt the movement of bicycles traveling on the shoulders of some local access roads (that is, Altamont Pass, West Grant Line, and Mountain House roads), and lane or road closures associated with material deliveries could temporarily disrupt bicycle access. PEIR Mitigation Measure TRA-1b would reduce potential conflicts between oversized and/or delivery vehicles and bicycles, and therefore would reduce this impact to a less-than-significant level. The proposed changes are not expected to generate additional traffic beyond that analyzed in the certified Final SEIR, and the associated traffic could cause similar conditions.

As stated in the certified Final SEIR, traffic safety hazards could increase with the presence of large, slow-moving construction and delivery vehicles. Some of the larger vehicles could exceed roadway load and size limits. Permits from Caltrans District 4 and other relevant jurisdictions would be required for such vehicles. Additionally, large, slow-moving construction and delivery vehicles and temporary road and lane closures could delay or obstruct the movement of emergency vehicles. Compliance with permit requirements and implementation of PEIR Mitigation Measure TRA-1 would reduce potential conflicts between roadway users and construction equipment and vehicles, reducing this impact to a less-than-significant level.

3.11.2 Applicable Mitigation Measures from the Certified Final Subsequent Environmental Impact Report

The same PEIR mitigation measure (PEIR Mitigation Measure TRA-1: Develop and implement a construction traffic control plan) included in the certified Final SEIR, required to minimize any potential impacts on transportation and traffic, would apply to the proposed changes to the Approved Project. Appendix A of this addendum provides the full text of this mitigation measure.

3.11.3 Conclusion

The proposed changes would not change the conclusions reached in the certified Final SEIR, and proposed changes would not result in any additional significant impacts related to transportation and traffic. No additional mitigation measures beyond what was adopted in the certified Final SEIR (PEIR Mitigation Measure TRA-1) would be necessary. No further analysis regarding this topic is required.

3.12 Wildfire

Questions: Would the Project:	Where in the Certified Final SEIR is this Topic Discussed?	Did the Certified Final SEIR Identify a Significant Impact and Mitigation Measures for this Topic?	Do Any Certified Final SEIR Mitigation Measures Apply to the Proposed Changes to the Approved Project for this Topic?	Would the Proposed Changes to the Approved Project or Changes in Circumstances Result in New Significant Impacts or Substantially More Severe Impacts?	Is There Any New Information of Substantial Importance Requiring Preparation of New Analysis?
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	Section 3.19	Yes	Yes	No	No
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	Section 3.19	No	Not applicable	No	No
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	Section 3.19	No	Not applicable	No	No
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	Section 3.19	No	Not applicable	No	No

3.12.1 Environmental Analysis

The certified Final SEIR concluded that impacts from potential impairment of an adopted emergency response plan or emergency evacuation plan would be less than significant with mitigation (certified SEIR Impact WF-1). The proposed changes are located on the same site, with the same layout, and would involve no greater construction and operational vehicular traffic on roadways than what was evaluated in the certified Final SEIR. Consistent with the Approved Project evaluated in the certified Final SEIR, construction equipment, delivery vehicles, and temporary road and lane closures required for construction of the Approved Project could result in delays along roadways used for emergency evacuation. Adherence to applicable Alameda County and Caltrans traffic permits, along with implementation of PEIR Mitigation Measure TRA-1, which would require the development of a construction TCP, would reduce impacts to a less-than-significant level. Therefore, consistent with the certified Final SEIR, impacts from potential impairment of an adopted emergency response plan or emergency evacuation plan would be less than significant with mitigation under the Approved Project. No further analysis of these impacts is required.

The certified Final SEIR concluded that impacts from exacerbation of wildfire risks associated with pollutant concentrations or uncontrolled spread of wildfire would be less than significant (certified SEIR Impact WF-2). The Approved Project is located on the same site, with the same layout, and would utilize the same construction and operational equipment and methods as evaluated in the certified Final SEIR. The certified Final SEIR described the Approved Project as within an area of moderate wildfire risk and outside of high or very high fire hazard severity zones. A review of fire hazard severity zones for the Approved Project, using 2024 data, shows the project site entirely within a high fire hazard severity zone. However, the Approved Project would use the same standard O&M procedures and control mechanisms to shut down equipment in the event of an electrical malfunction, fire, or mechanical problem as described in the certified Final SEIR. In the unlikely event of a fire igniting during construction, construction crews would have immediate access to insipient stage fire suppression equipment. The Approved Project would comply with all fire requirements, such as the Altamont Pass Wind Farms Fire Requirements. Additionally, CAL FIRE and the Alameda County Fire Department would continue to provide fire protection services to the area in and around the Approved Project during construction and operation. Therefore, consistent with the certified Final SEIR, impacts from exacerbation of wildfire risks associated with pollutant concentrations or uncontrolled spread of wildfire would be less than significant under the Approved Project. No further analysis of these impacts is required.

The certified Final SEIR concluded that impacts from Approved Project-related installation or maintenance of associated infrastructure that may exacerbate fire risk or result in temporary or ongoing environmental impacts would be less than significant (certified SEIR Impact WF-3). The Approved Project would employ the same construction methods, standard O&M procedures, and control mechanisms to shut down equipment in the event of an electrical malfunction, fire, or mechanical problem as described in the certified Final SEIR. Therefore, consistent with the certified Final SEIR, impacts from Approved Project-related installation or maintenance of associated infrastructure that may exacerbate fire risk or result in temporary or ongoing environmental impacts would be less than significant under the Approved Project. No further analysis of these impacts is required.

The certified Final SEIR concluded that impacts from exposure of people or structures to significant risks such as downslope or downstream flooding or landslide as a result of runoff, post-fire slope instability, or drainage changes would be less than significant (certified SEIR Impact WF-4). The Approved Project is located on the same site, with the same layout, and the same existing conditions as evaluated in the certified Final SEIR. There are no substantial changes to the number or locations of people or structures within or adjacent to the project site. Therefore, consistent with the certified Final SEIR, impacts from

exposure of people or structures to significant risks such as downslope or downstream flooding or landslide as a result of runoff, post-fire slope instability, or drainage changes would be less than significant under the Approved Project. No further analysis of these impacts is required.

3.12.2 Applicable Mitigation Measures from the Certified Final Subsequent Environmental Impact Report

The following PEIR mitigation measures were required for this topic in the certified Final SEIR and would apply to the proposed changes to the Approved Project.

- **PEIR Mitigation Measure TRA-1:** Develop and implement a construction traffic control plan.

Appendix A of this addendum provides the full text of these mitigation measures.

3.12.3 Conclusion

No amended or additional mitigation measures beyond those adopted in the certified Final SEIR would be necessary to reduce impacts due to the proposed changes, as they relate to wildfire, to a less-than-significant level. The proposed changes would not result in a change to the conclusions reached in the certified Final SEIR. Because there would be no new significant environmental impacts or more severe environmental impacts related to wildfire, the findings of the certified Final SEIR would not change for the Approved Project. No further analysis regarding this topic is required.

4. Preparers

This section lists Alameda County Community Development Agency and Jacobs individuals who contributed to the preparation of this addendum.

4.1 Alameda County Community Development Agency

Albert Lopez, Planning Director

4.2 Jacobs

Joe Aguirre, Environmental Planner

Mark Bastasch, Principal Acoustical Engineer

Gloriella Cardenas, Cultural Resources Specialist

Clarice Ericsson, Publications Technician

Karin Fashingbauer, Project Manager

Kevin Grant, Visual Resources Planner

Jasmin Mejia, Senior Technical Consultant

Anthony Nardo, GIS Analyst

Christy Payne, Wildlife Biologist

Maliheh Rostami, Environmental Planner

Yassaman Sarvian, Senior Environmental Planner

Erika Sawyer, Project Manager

Sam Schoevaars, Environmental Planner

Cinamon Vann, Technical Editor

Hong Zhuang, Senior Air Quality Specialist

5. References

Alameda County Community Development Agency. 2014. *Altamont Pass Wind Resource Area Repowering Final Program Environmental Impact Report*. Available online at:

https://www.acgov.org/cda/planning/landuseprojects/documents/apwra/Complete_Final_Program_EIR.pdf. Published October.

Alameda County Community Development Agency. 2023a. Current Development Projects- Wind Turbine Projects. Available online at:

<https://www.acgov.org/cda/planning/landuseprojects/windturbineproject.htm>. Accessed on April 3, 2025.

Alameda County Community Development Agency. 2023b. Zoning. Available online at:

<https://acgov.org/cda/planning/ordinance/ordinance-links.htm>. Accessed on March 24, 2025.

Association of Environmental Professionals (AEP). 2020. California Environmental Quality Act Statute & Guidelines. Available online at: https://www.califaep.org/docs/2020_ceqa_book.pdf. Effective January 1.

Brown, K., K. S. Smallwood, and B. Karas. 2013. *Vasco Avian and Bat Monitoring Project 2012–2013 Annual Report*. Final. September. Prepared by Ventus Environmental Solutions, Portland, OR. Prepared for NextEra Energy Resources, Livermore, CA.

California Air Resources Board (CARB). 2018. Facts About Truck and Bus Regulation: Compliance Requirements Summary. Updated November 30.

California Department of Conservation. 2022. Farmland Mapping & Monitoring Program. Available online at: <https://www.conservation.ca.gov/dlrp/fmmp>. Accessed on March 24, 2025.

California Department of Fish and Wildlife (CDFW). 2025. "California Natural Diversity Database." Biogeographic Data Branch. <https://www.wildlife.ca.gov/data/cnddb>. Accessed March 27, 2025.

California Department of Transportation (Caltrans). 2020a. Vehicle Miles Traveled-Focused: Transportation Impact Study Guide. May. Available online at: <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-05-20-approved-vmt-focused-tisg-a11y.pdf>

California Department of Transportation (Caltrans). 2020b. Transportation Analysis under CEQA: First Edition. Evaluating Transportation Impacts of State Highway System Projects. September. Available online at: <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-09-10-1st-edition-tac-fnl-a11y.pdf>

California Department of Transportation (Caltrans). 2020c. Transportation Analysis Framework: First Edition. Evaluating Transportation Impacts of State Highway System Projects. September. Available online at: <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-09-10-1st-edition-taf-fnl-a11y.pdf>

California Native Plant Society (CNPS). 2025. Online Inventory of Rare, Threatened and Endangered Plants of California. <http://www.rareplants.cnps.org/advanced.html>. Accessed March 27, 2025.

California Office of Planning and Research (OPR). 2018. Technical Advisory on Evaluating Transportation Impacts in CEQA. April. Available online at: https://opr.ca.gov/docs/20180416-743_Technical_Advisory_4.16.18.pdf

East County Board of Zoning Adjustments. 2020a. Resolution No. Z-20-01 of the East County Board of Zoning Adjustments Adopted at the Hearing of February 13, 2020 Certifying the Subsequent Environmental Impact Report for the Sand Hill Wind Project, Conditional Use Permit PLN2017-00201, in Compliance with the California Environmental Quality Act. Available online at:

https://www.acgov.org/cda/planning/landuseprojects/documents/Reso-Z-20-01-to-certify-Sand-Hill-SEIR_PLN2017-00201_2-13-20.pdf. Certified February 13.

East County Board of Zoning Adjustments. 2020b. Resolution No. Z-20-02 of the East County Board of Zoning Adjustments Adopted at the Hearing of February 13, 2020 Approving Conditional Use Permit PLN2017-00201. Available online at:

https://www.acgov.org/cda/planning/landuseprojects/documents/Reso-Z-20-02_Sand-Hill-Wind-CUP_PLN2017-00201_2-13-20.pdf. Approved February 13.

East County Board of Zoning Adjustments. 2020c. Resolution Certifying the Final Subsequent Environmental Impact Report and Approving Conditional Use Permit PLN2017-00201, Sand Hill Wind Project Adopted at the Board of Supervisors of the County of Alameda Hearing of December 15, 2020. Available online at: https://www.acgov.org/cda/planning/landuseprojects/documents/BOSResoR-2020-555_SandHillWind_PLN2017-00201_12-15-20_FNL.pdf. Certified and amended December 15.

Federal Aviation Administration (FAA). 2023. Notification of Proposed Construction or Alteration on Airport Part 77. Accessed on April 2, 2025. Available online at:

<https://www.faa.gov/airports/central/engineering/part77>

Golden Gate Audubon Society. 2020. Appeal of Board of Zoning Adjustment's February 13, 2020 Resolution to Certify the Subsequent Environmental Impact Report and Approve Conditional Use Permit Application No. PLN2017-00201. Available online at:

<https://www.acgov.org/cda/planning/landuseprojects/documents/Appeal-GGAS-to-AlCounty-Sand-Hill-Feb-24-2020.pdf>. Appealed February 24.

Great Basin Bird Observatory and H. T. Harvey & Associates. 2022. Golden Hills North Wind Energy Center Postconstruction Fatality Monitoring Final 3-Year Report. Draft - January 2, 2022. Prepared for Golden Hills North Wind, LLC, Livermore, CA.

H. T. Harvey & Associates. 2021. Golden Hills Wind Energy Center Postconstruction Fatality Monitoring Project: Final 3-Year Report. Final – April 12, 2021. Prepared for Golden Hills Wind, LLC, Livermore, CA.

H.T. Harvey & Associates. 2021. Golden Hills Wind Energy Center Postconstruction Fatality Monitoring Project: Final 3-Year Report. Prepared for Golden Hills Wind, LLC. 12 April.

ICF International. 2016. *Final Report Altamont Pass Wind Resource Area Bird Fatality Study, Monitoring Years 2005–2013*. April. M107. (ICF 00904.08.) Sacramento, CA. Prepared for Alameda County Community Development Agency, Hayward, CA.

ICF International. 2019. *Sand Hill Wind Project Draft Subsequent Environmental Impact Report*. Available online at: <https://www.acgov.org/cda/planning/landuseprojects/documents/Sand-Hill-Wind-Project-Draft-Subsequent-EIR.pdf>. Published August.

ICF International. 2020. Sand Hill Wind Project Final Subsequent Environmental Impact Report. Available online at:

https://www.acgov.org/cda/planning/landuseprojects/documents/Sand_Hill_Wind_Project_Final_SEIR_2020-02-03.pdf. Published February.

Insignia Environmental. 2012. *Final Report for the Buena Vista Avian and Bat Monitoring Project*, February 2008 to January 2011. April. Prepared for Contra Costa County, Martinez, CA.

Shutt Moen Associates. 2000. Contra Costa Airport Land Use Compatibility Plan. Available online at: <https://www.contracosta.ca.gov/4307/Airport-Land-Use-Commission-ALUC>. Accessed March 24, 2025.

Smallwood, K.S. and Bell, D.A. (2020), Effects of Wind Turbine Curtailment on Bird and Bat Fatalities. *Jour. Wild. Mgmt.*, 84: 685-696. <https://doi.org/10.1002/jwmg.21844>

Society of Vertebrate Paleontology (SVP). 2010. *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*. Available online at: https://vertpaleo.org/wp-content/uploads/2021/01/SVP_Impact_Mitigation_Guidelines.pdf. Accessed March 28, 2025.

State Water Resources Control Board. 2025a. *GeoTracker: Aquachlor (T06019781960)*. Available online at: https://geotracker.waterboards.ca.gov/profile_report?global_id=T06019781960. Accessed March 18.

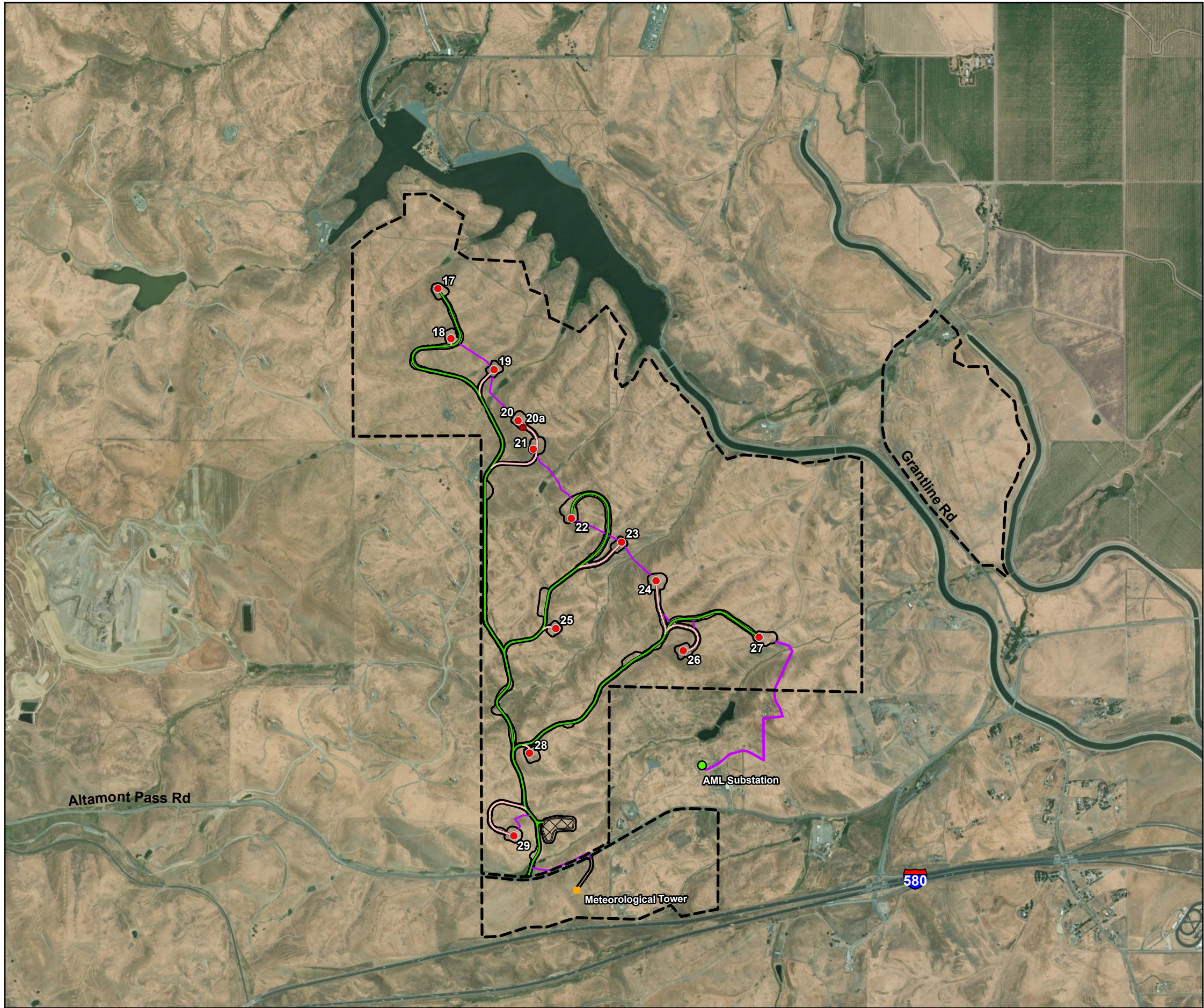
State Water Resources Control Board. 2025b. *GeoTracker: Byron Power Company (T10000003401)*. Available online at: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003401. Accessed March 18.

Western EcoSystems Technology, Inc. (WEST). 2022. Post-construction Fatality Monitoring at the Summit Wind Repower Project, Alameda County, California. September 1, 2021, to August 31, 2022. Prepared for Greenbacker Renewable Energy Corporation. November 29, 2022.

Western EcoSystems Technology, Inc. (WEST). 2023a. Post-construction Monitoring at the Summit Wind Repower Project, Alameda County, California. September 1, 2021 to August 31, 2022. Prepared for Greenbacker Renewable Energy Corporation. November 29, 2022. Revised July 2023.

Western EcoSystems Technology, Inc. (WEST). 2023. *Post-construction Monitoring at the Summit Wind Repower Project, Alameda County, California*. September 2, 2022, to September 1, 2023. Prepared for Greenbacker Renewable Energy Corporation. November 30, 2023.

Figures



- Legend**
- Project Area
 - Turbine
 - Alternate Turbine
 - Turbine Gravel Apron
 - Grading
 - Laydown Area
 - Primary Road
 - Secondary Road
 - Collection Line Workspace
 - Meteorological Tower Work Area

Source:
1. ESRI World Imagery (2021)

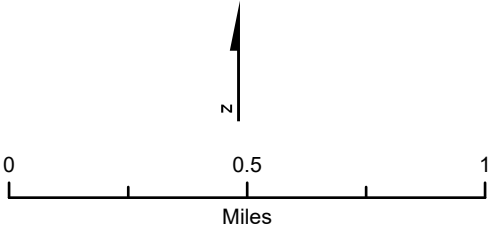
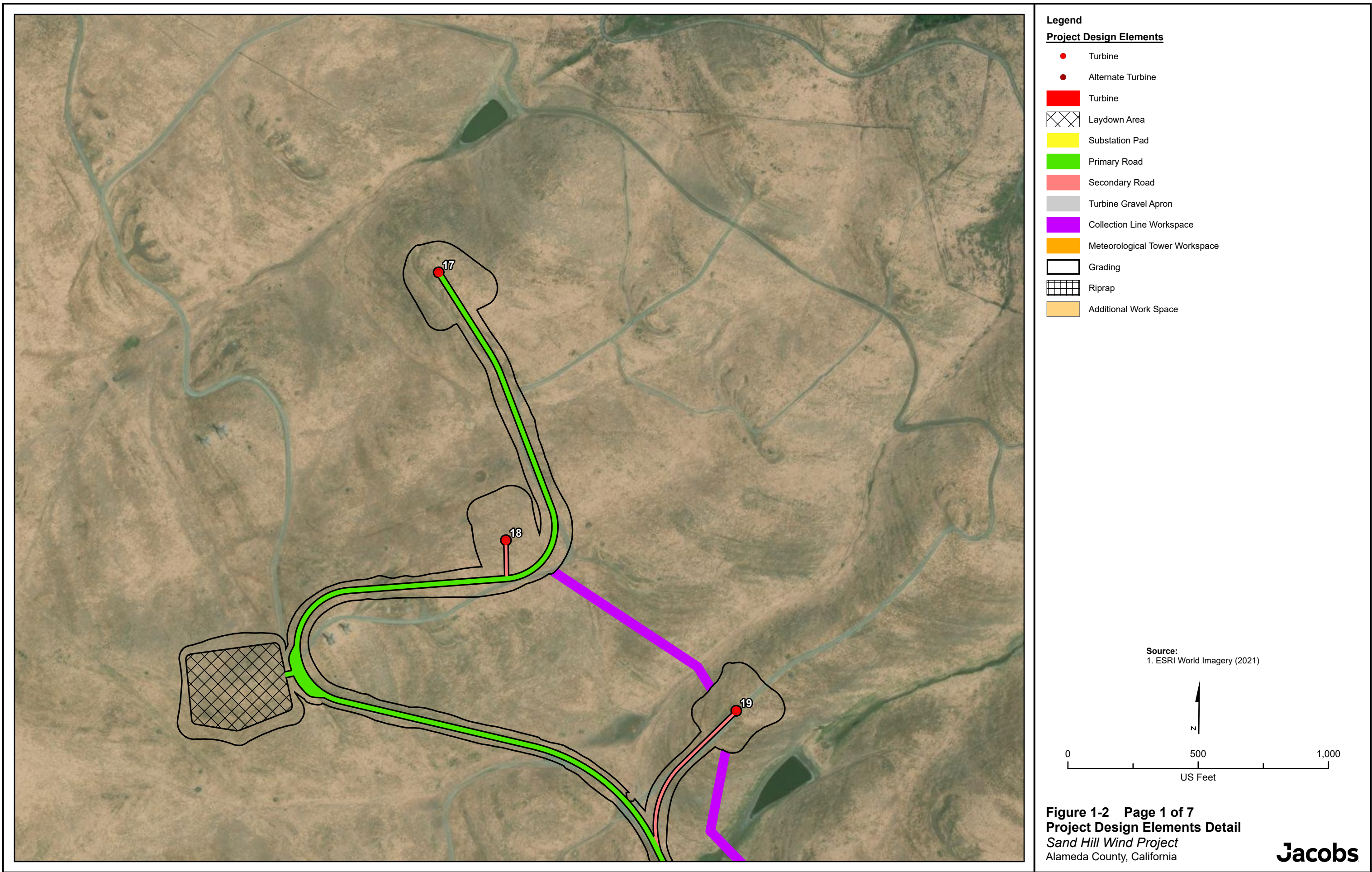
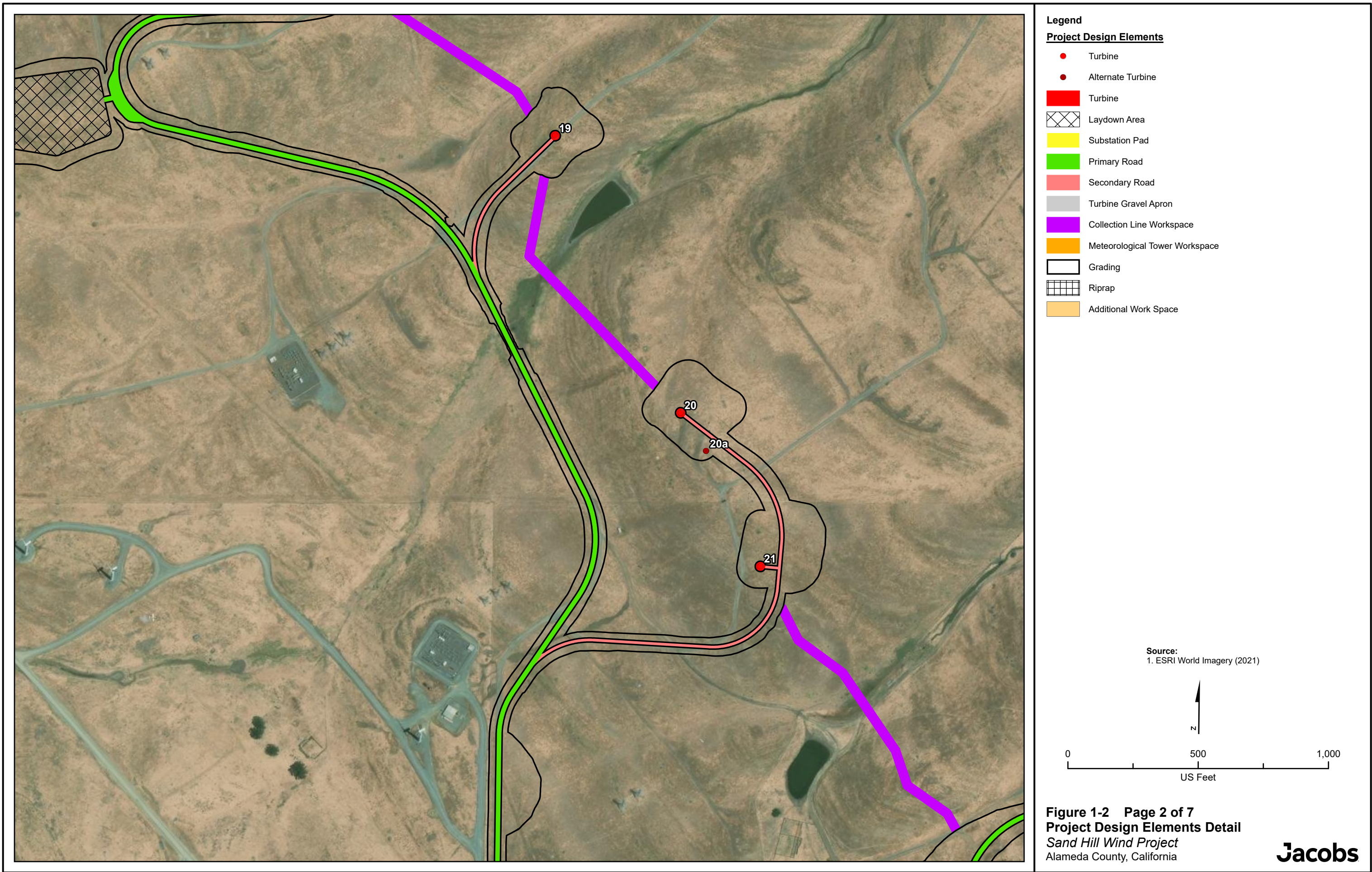
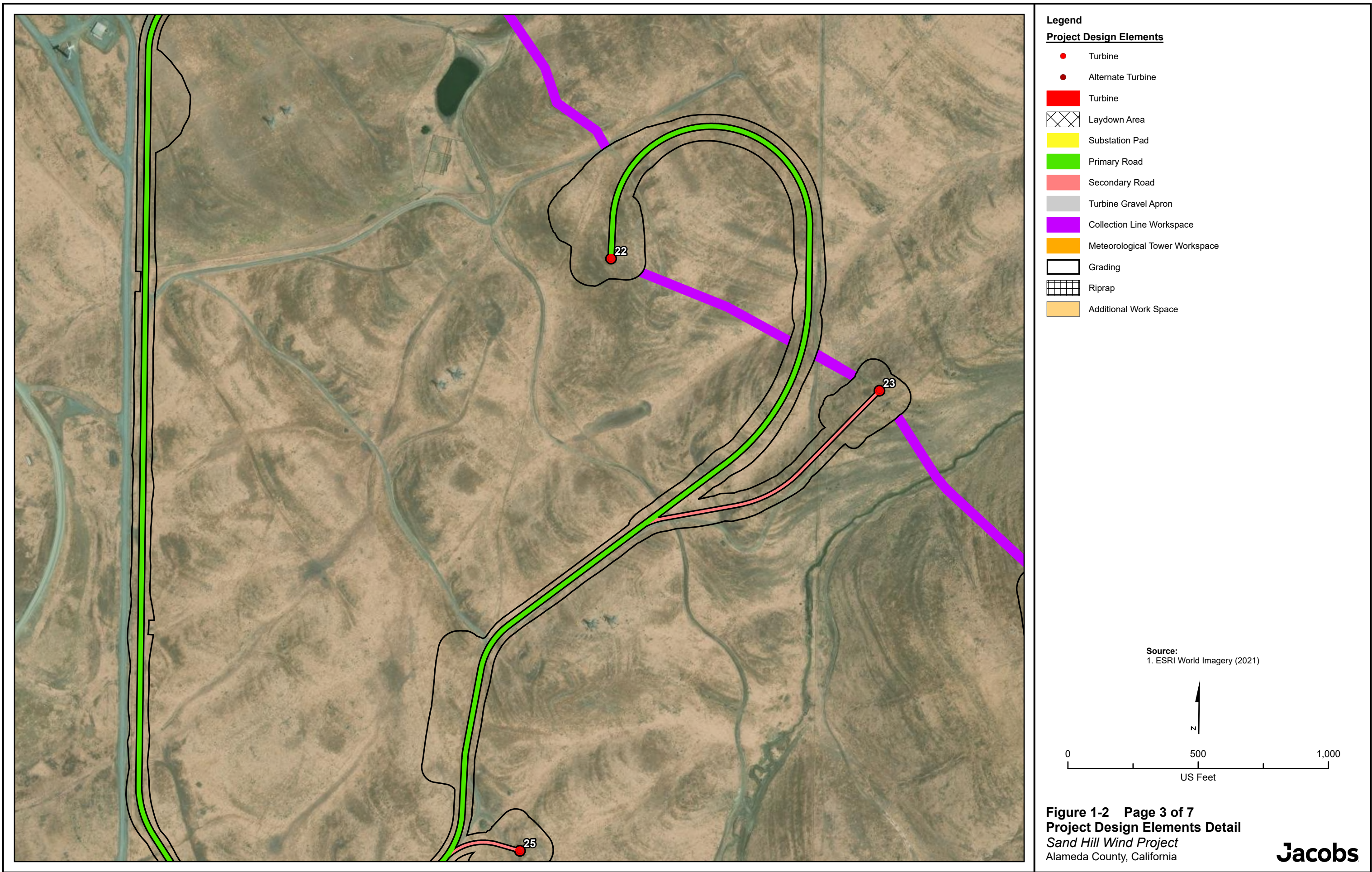


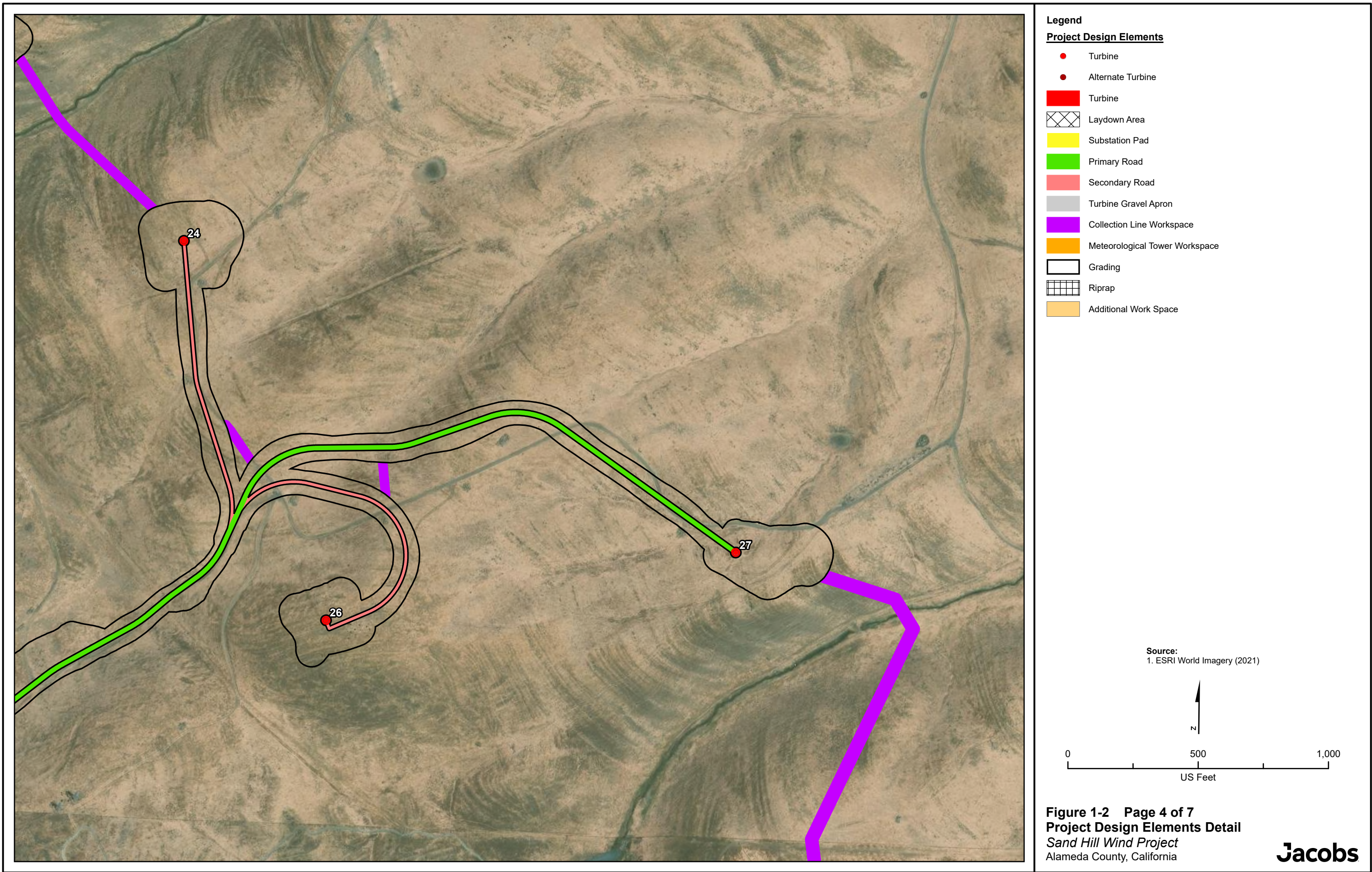
Figure 1-1
Project Design Elements Overview
Sand Hill Wind Project
Alameda County, California

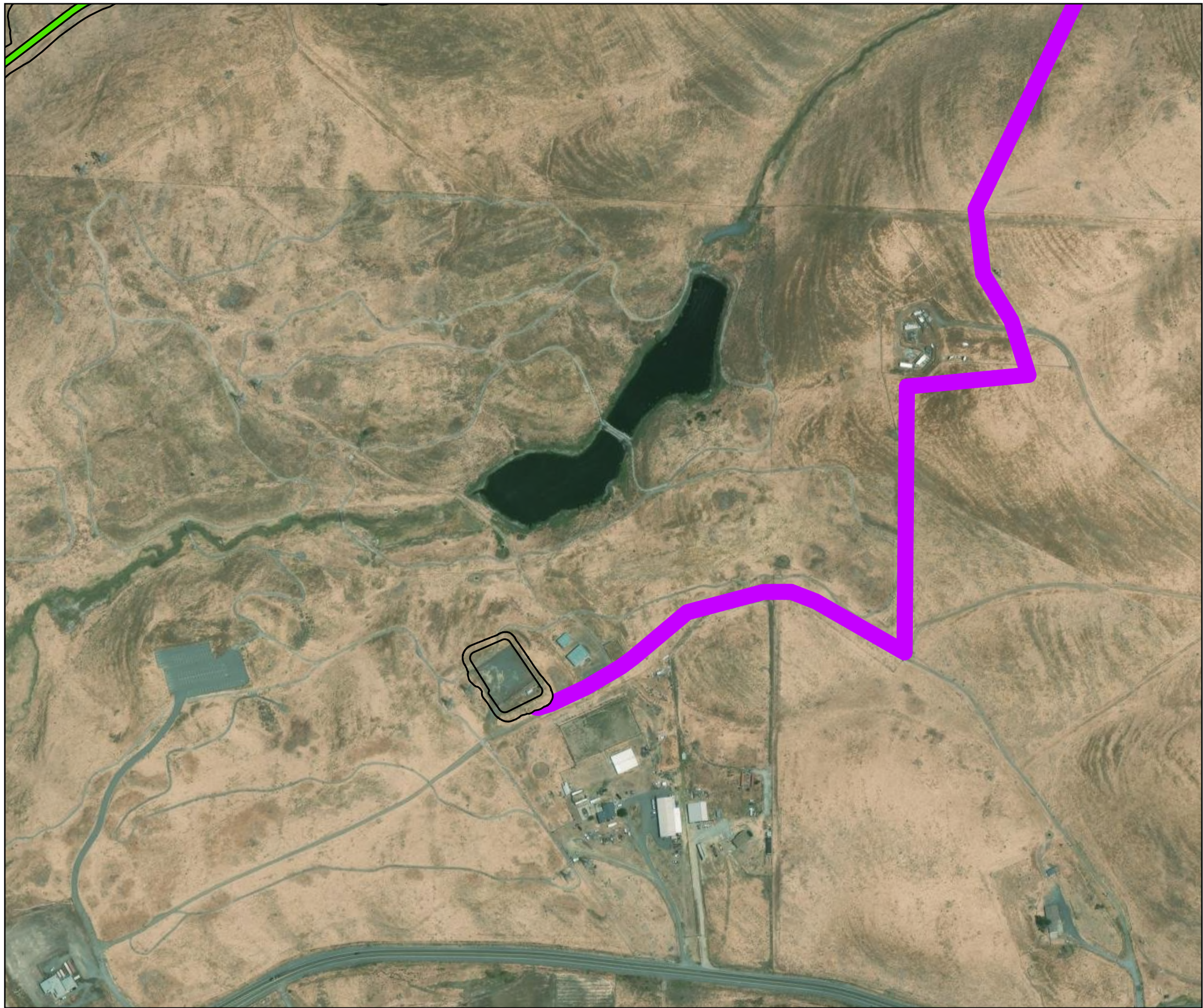
Jacobs











- Legend**
- Project Design Elements**
- Turbine
 - Alternate Turbine
 - Turbine
 - Laydown Area
 - Substation Pad
 - Primary Road
 - Secondary Road
 - Turbine Gravel Apron
 - Collection Line Workspace
 - Meteorological Tower Workspace
 - Grading
 - Riprap
 - Additional Work Space

Source:
1. ESRI World Imagery (2021)

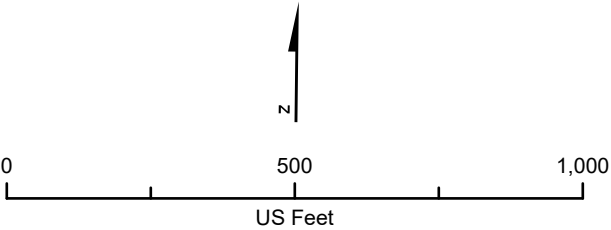
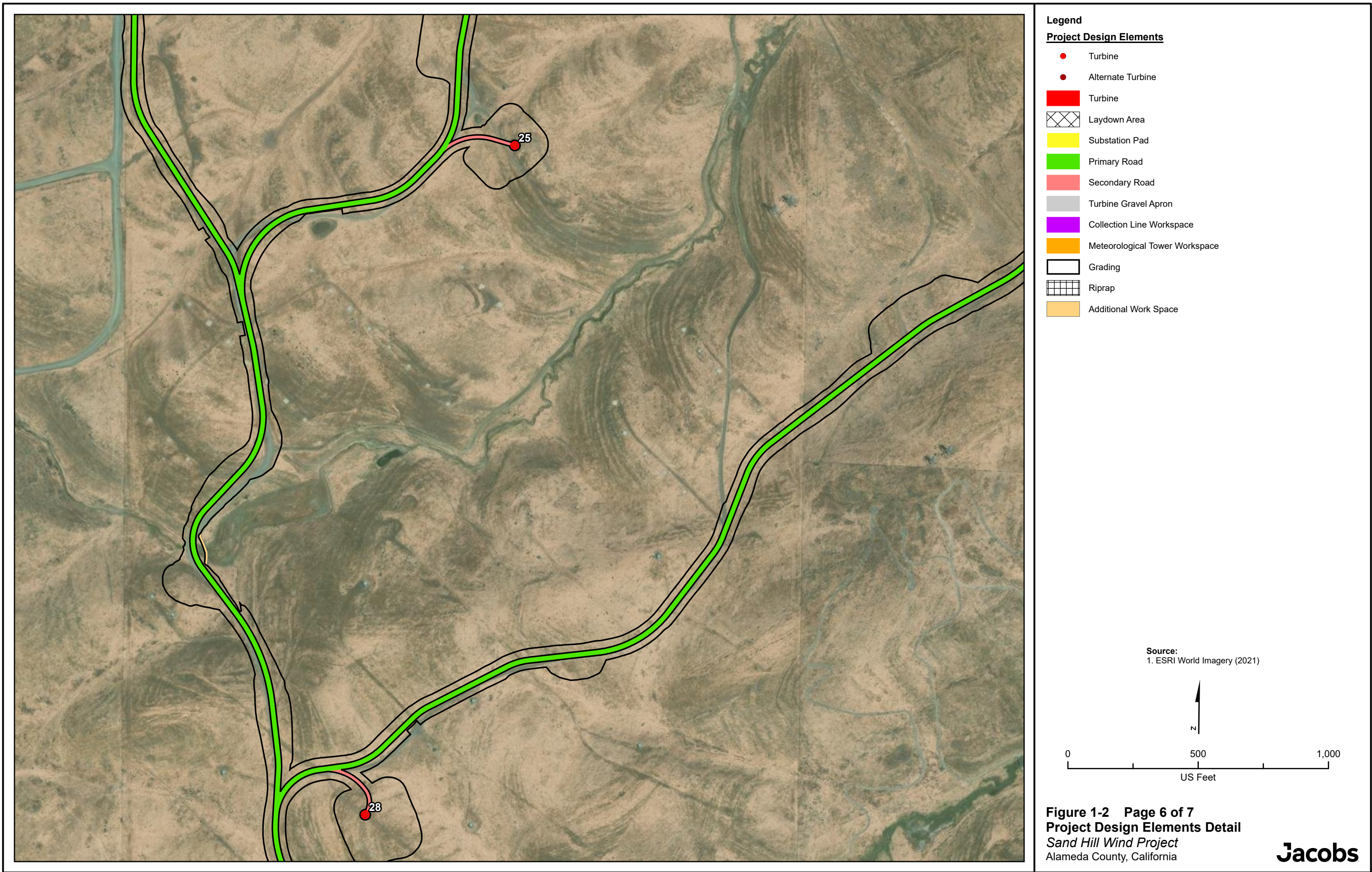
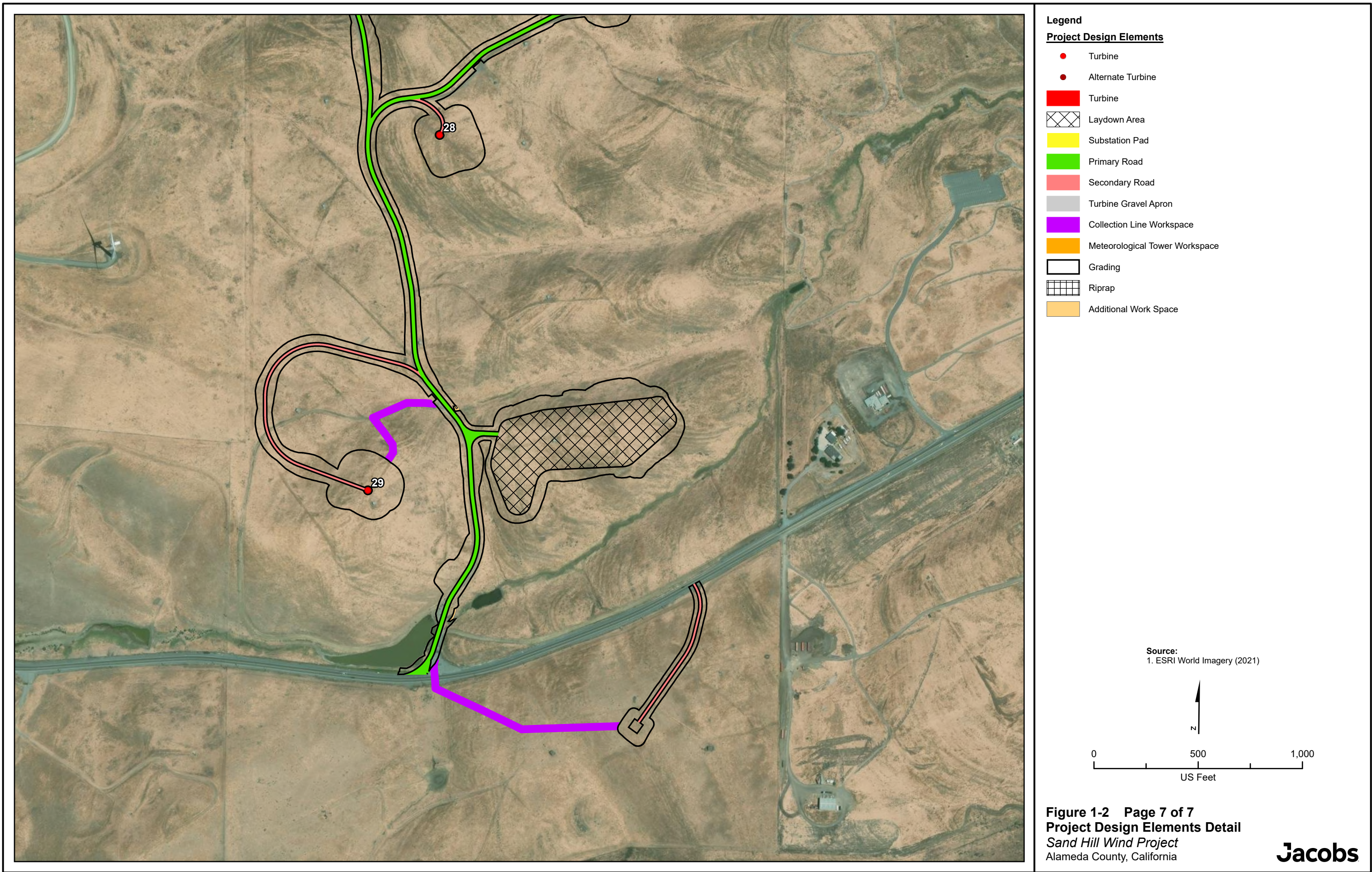
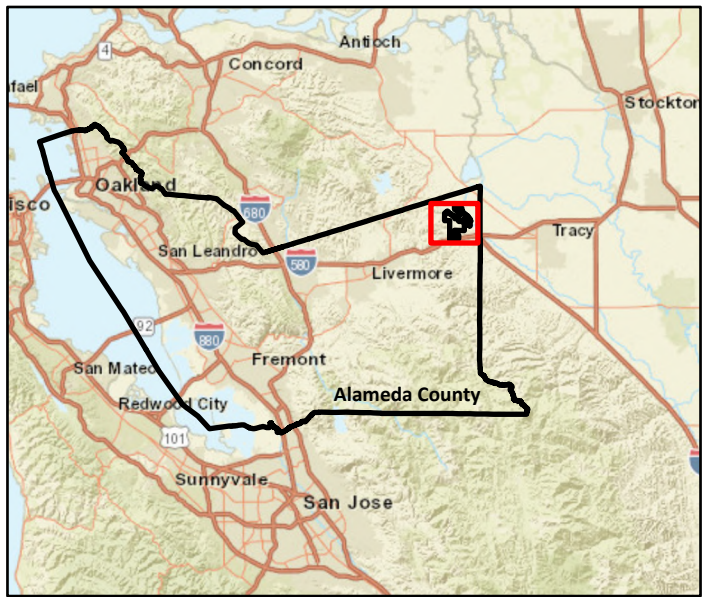
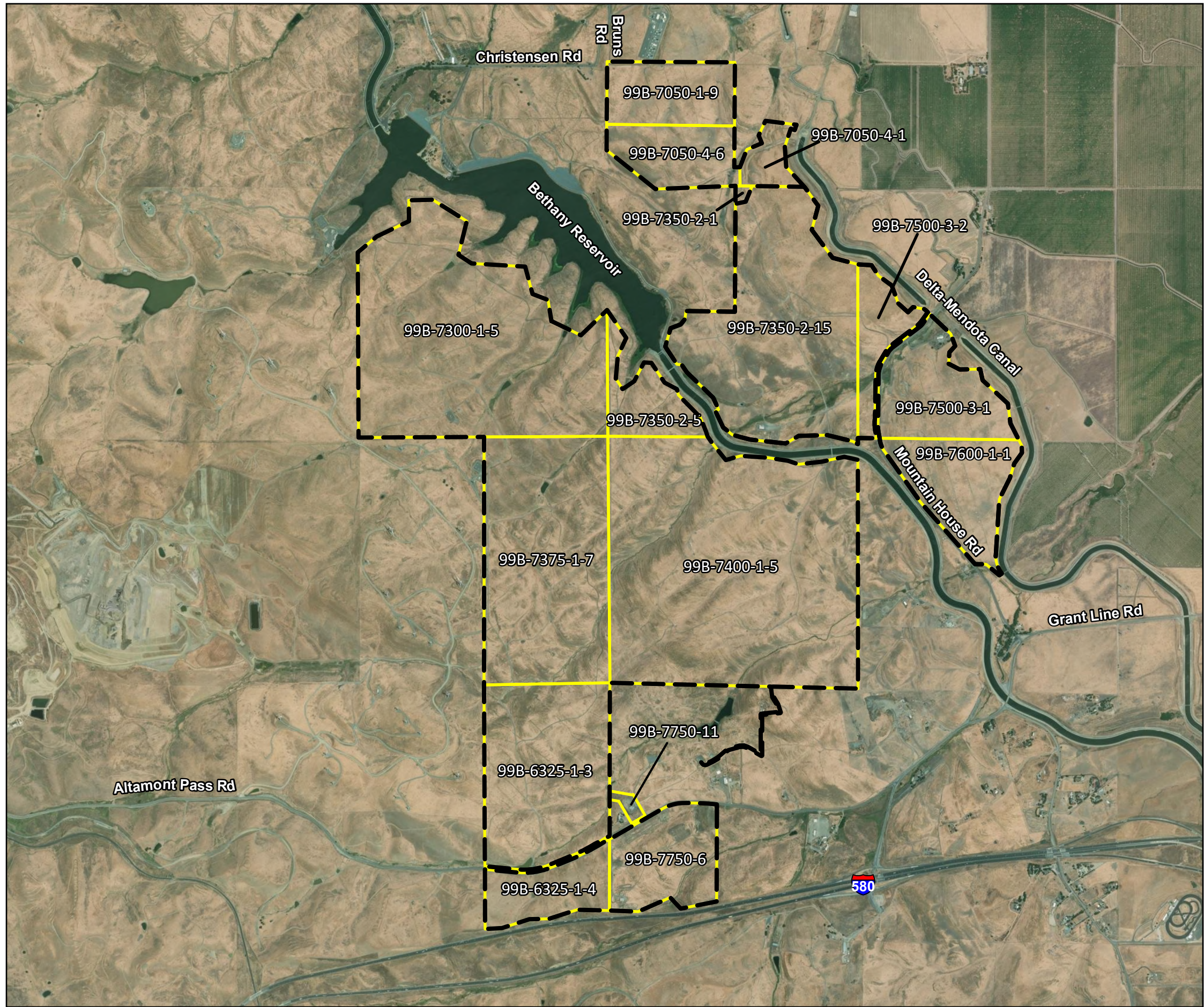


Figure 1-2 Page 5 of 7
Project Design Elements Detail
Sand Hill Wind Project
Alameda County, California

Jacobs

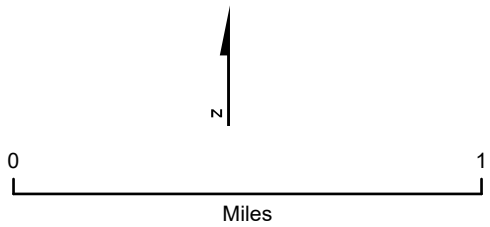






Legend

- Alameda County Assessor Parcel Numbers
- Project Area



Source:
1) ESRI Aerial Photography

Figure 2-1
Project Location
Sand Hill Wind Project
Alameda County, California

Jacobs

Appendices

Appendix A. Applicable Mitigation Measures from the Certified Final Subsequent Environmental Impact Report

Aesthetics

PEIR Mitigation Measure AES-1: Limit construction to daylight hours

Major construction activities will not be undertaken between sunset and sunrise or on weekends. Construction activity is specifically prohibited from using high-wattage lighting sources to illuminate work sites after sunset and before sunrise, with the exception of nighttime deliveries under the approved transportation control plan or other construction activities that require nighttime work for safety considerations.

2019 Updated PEIR Mitigation Measure AES-2a: Require site development review

New turbines along ridgelines or hilltops that have not previously been developed with commercial-scale wind turbines or where wind turbines were not part of the visual baseline as of 2010 will not be allowed, unless a separate Site Development Review is completed that determines that the visual effects will be substantially avoided by distance from public view points (e.g., more than 2,000 feet), intervening terrain, screening landscaping, or compensatory improvements to equivalent and nearby (radius of 1 mile) scenic features, as approved by the Planning Director.

PEIR Mitigation Measure AES-2b: Maintain site free of debris and restore abandoned roadways

Project sites will be cleaned of all derelict equipment, wind turbine components not required for the project, and litter and debris from old turbines and past turbine operations. Such litter and debris may include derelict turbines, obsolete anemometers, unused electrical poles, and broken turbine blades. In addition, abandoned roads that are no longer in use on such parcels will be restored and hydroseeded to reclaim the sites and remove their visual traces from the viewscape, except in cases where the resource agencies (USFWS and CDFW) recommend that the features be left in place for resource protection. All parcels with new turbines will be maintained in such a manner through the life of project operations and until the parcels are reclaimed in accordance with the approved reclamation plan.

PEIR Mitigation Measure AES-2c: Screen surplus parts and materials

Surplus parts and materials that are kept onsite will be maintained in a neat and orderly fashion and screened from view. This can be accomplished by using a weatherproof camouflage material that can be draped over surplus parts and materials stockpiles. Draping materials will be changed out to accommodate for seasonal variations so that surplus materials are camouflaged in an effective manner when grasses are both green and brown.

PEIR Mitigation Measure AES-5: Analyze shadow flicker distance and mitigate effects or incorporate changes into Project design to address shadow flicker

Where shadow flicker could result from the installation of wind turbines proposed near residences (i.e., within 500 meters [1,640 feet] in a generally east or west direction to account for seasonal variations), the project applicant will prepare a graphic model and study to evaluate shadow flicker impacts on nearby residences. No shadow flicker in excess of 30 minutes in a given day or 30 hours in a given year will be permitted. If it is determined that existing setback requirements as established by the County are not sufficient to prevent shadow flicker impacts on residences, Alameda County will require an increase in the required setback distances to ensure that residences are not affected. If any residence is affected by shadow flicker within the 30-minute/30-hour thresholds, the applicant will implement measures to minimize the effect, such as relocating the turbine, providing opaque window coverings, window awnings, landscape buffers, or a combination of these features to reduce flicker to acceptable limits for the affected receptor; or shutting down the turbine during the period shadow flicker would occur. Such measures may be undertaken in consultation with the owner of the affected residence. If the shadow flicker study indicates that any given turbine would result in shadow flicker exceeding the 30-minute/30-hour thresholds and the property owner is not amenable to window coverings, window awnings, or landscaping and the turbine cannot be shut down during the period of shadow flicker, then the turbine will be relocated to reduce the effect to acceptable limits.

Air Quality

PEIR Mitigation Measure AQ-2a: Reduce construction-related air pollutant emissions by implementing applicable BAAQMD Basic Construction Mitigation Measures

The Project proponents will require all contractors to comply with the following requirements for all areas with active construction activities.

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered as needed to maintain dust control onsite—approximately two times per day.
- All haul trucks transporting soil, sand, or other loose material offsite will be covered.
- All visible mud or dirt track-out onto adjacent public roads will be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads will be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved will be completed as soon as possible. Building pads will be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage will be provided for construction workers at all access points.
- All construction equipment will be maintained and properly tuned in accordance with manufacturer's specifications. All equipment will be checked by a certified visible emissions evaluator.
- Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person will respond and take corrective action within 48 hours. The air district's phone number will also be visible to ensure compliance with applicable regulations.

PEIR Mitigation Measure AQ-2b: Reduce construction-related air pollutant emissions by implementing measures based on BAAQMD's Additional Construction Mitigation Measures

The Project proponents will require all contractors to comply with the following requirements for all areas with active construction activities.

- During construction activities, all exposed surfaces will be watered at a frequency adequate to meet and maintain fugitive dust control requirements of all relevant air quality management entities.
- All excavation, grading, and/or demolition activities will be suspended when average wind speeds exceed 20 mph, as measured at the Livermore Municipal Airport.
- Wind breaks (e.g., trees, fences) will be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50% air porosity.
- Vegetative ground cover (e.g., fast-germinating native grass seed) will be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
- If feasible and practicable, the simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time will be limited.
- Construction vehicles and machinery, including their tires, will be cleaned prior to leaving the construction area to remove vegetation and soil. Cleaning stations will be established at the perimeter of the construction area.
- Site accesses to a distance of 100 feet from the paved road will be treated with a 6- to 12-inch compacted layer of wood chips, mulch, or gravel.
- Sandbags or other erosion control measures will be installed to prevent silt runoff to public roadways from sites with a slope greater than 1%.
- The idling time of diesel powered construction equipment will be minimized to 2 minutes.
- The Project will develop a plan demonstrating that the offroad equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a Project-wide fleet-average 20% NO_x reduction and 45% PM reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.
- Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).
- All construction equipment, diesel trucks, and generators will be equipped with BACT for emission reductions of NO_x and PM.
- All contractors will use equipment that meets ARB's most recent certification standard for offroad heavy-duty diesel engines.

2019 NEW Mitigation Measure AQ-2c: Reduce construction-related air pollutant emissions to below BAAQMD NO_x thresholds

The Project proponents will ensure construction-related emissions do not exceed BAAQMD's construction NO_x threshold of 54 pounds per day. In addition to implementing PEIR Mitigation Measures AQ-2a and AQ-2b, the Project proponents will coordinate with BAAQMD (or other governmental entity) to purchase NO_x credits to offset remaining NO_x construction and operations emissions exceeding BAAQMD thresholds.

The Project proponents will track construction activity, estimate emissions, and enter into a construction mitigation contract with BAAQMD or other governmental entity to offset NO_x emissions that exceed BAAQMD NO_x maximum daily threshold of 54 pounds per day.

The maximum daily emissions will be calculated on a daily basis by determining total construction-related NO_x emissions for each calendar day. BAAQMD (or other government entity) will use the mitigation fees provided by the Project proponents to implement emissions reduction efforts that offset Project NO_x emissions that exceed the BAAQMD threshold.

This mitigation includes the following specific requirements:

- The Project proponents will require construction contractors to provide daily construction activity monitoring data for all construction activities associated with the Project to estimate actual construction emissions, including the effect of equipment emissions reduction measures. The Project proponents will submit the daily construction activity monitoring data and an estimate of actual daily construction emissions to the lead agency and BAAQMD (or other governmental entity) for review by the 15th day of each month for the prior construction month. The lead agency will examine the construction and operational activity monitoring to ensure it is representative, and BAAQMD (or other government entity) will examine the emissions estimate to ensure it is calculated properly.
- After acceptance of the emissions estimates by BAAQMD (or other governmental entity) for the prior month, the Project proponents will submit mitigation fees to BAAQMD (or other governmental entity) to fund offsets for the portion of daily emissions that exceed the maximum daily NO_x threshold. The mitigation fees will be based on the mitigation contract with BAAQMD (see discussion below) but will not exceed the emissions-reduction Project cost-effectiveness limit set for the Carl Moyer Program for the year in which mitigation fees are paid. The current Carl Moyer Program cost-effectiveness limit is \$30,000 per weighted ton of criteria pollutants (NO_x + ROG + [20*PM]). An administrative fee of 5% will be paid by the Project proponents to BAAQMD (or other governmental entity) to implement the program.
- The mitigation fees will be used by BAAQMD (or other governmental entity) to fund projects that are eligible for funding under the Carl Moyer Program guidelines or other BAAQMD (or other governmental entity) emissions-reduction incentive programs that meet the Carl Moyer Program cost-effectiveness threshold and are real, surplus, quantifiable, and enforceable.
- The Project proponents will enter into a mitigation contract with BAAQMD (or other governmental entity) for the emissions-reduction incentive program. The mitigation contract will include the following:
 - Identification of appropriate offsite mitigation fees required for the Project.
 - Timing for submission of mitigation fees.
 - Processing of mitigation fees paid by the Project proponents.
 - Verification of emissions estimates submitted by the Project proponents.
 - Verification that offsite fees are applied to appropriate mitigation programs within the SFBAAB.

The mitigation fees will be submitted within 4 weeks of BAAQMD (or other governmental entity) acceptance of an emissions estimate provided by the Project proponents showing that the maximum daily NO_x threshold was exceeded (when measured on a daily basis).

Biological Resources

PEIR Mitigation Measure BIO-1a: Conduct surveys to determine the presence or absence of special-status plant species

Project proponents will conduct surveys for the special-status plant species within and adjacent to all Project sites. All surveys will be conducted by qualified biologists in accordance with the appropriate protocols.

Special-status plant surveys will be conducted in accordance with Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (California Department of Fish and Game 2009) during the season that special-status plant species would be evident and identifiable—i.e., during their blooming season. No more than 3 years prior to ground-disturbing repowering activities and during the appropriate identification periods for special-status plants (Table 3.4-2), a qualified biologist (as determined by Alameda County) will conduct field surveys within decommissioning work areas, proposed construction areas, and the immediately adjacent areas to determine the presence of habitat for special-status plant species. The Project proponent will submit a report documenting the survey results to Alameda County for review and approval prior to conducting any repowering activities. The report will include the location and description of all proposed work areas, the location and description of all suitable habitat for special-status plant species, and the location and description of other sensitive habitats (e.g., vernal pools, wetlands, riparian areas). Additionally, the report will outline where additional species and/or habitat-specific mitigation measures are required. This report will provide the basis for any applicable permit applications where incidental take of listed species may occur.

2019 Updated PEIR Mitigation Measure BIO-1b: Implement best management practices to avoid and minimize impacts on special-status species

The Project proponents will ensure that the following BMPs, in accordance with practices established in the EACCS, will be incorporated into individual project design and construction documents.

- Employees and contractors performing ground-disturbing activities, including decommissioning and reclamation functions will receive environmental sensitivity training. Training will include review of environmental laws, mitigation measures, permit conditions, and other requirements that must be followed by all personnel to reduce or avoid effects on special-status species during construction activities.
- Environmental tailboard trainings will take place on an as-needed basis in the field. These trainings will include a brief review of the biology of the covered species and guidelines that must be followed by all personnel to reduce or avoid negative effects on these species during decommissioning and reclamation activities. Directors, managers, superintendents, and the crew leaders will be responsible for ensuring that crewmembers comply with the guidelines.
- Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas to the extent practicable.
- Off-road vehicle travel outside the Project footprint will be avoided, and minimized to the extent possible within the Project footprint.
- Material will be stockpiled only in areas that do not support special-status species or sensitive habitats.
- Grading will be restricted to the minimum area necessary.

- Prior to ground-disturbing activities in sensitive habitats, Project construction boundaries and access areas will be flagged and temporarily fenced during construction to reduce the potential for vehicles and equipment to stray into adjacent habitats.
- Vehicles or equipment will not be refueled within 100 feet of a wetland, stream, or other waterway unless a bermed and lined refueling area (i.e., a created berm made of sandbags or other removable material) is constructed.
- Erosion control measures will be implemented to reduce sedimentation in nearby aquatic habitat when activities are the source of potential erosion. Plastic monofilament netting (erosion control matting) or similar material containing netting will not be used at the project. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.
- Significant earth moving-activities will not be conducted in riparian areas within 24 hours of predicted storms or after major storms (defined as 1- inch of rain or more).
- The following will not be allowed at or near work sites for project activities: trash dumping, firearms, open fires (such as barbecues) not required by the activity, hunting, and pets (except for safety in remote locations).

PEIR Mitigation Measure BIO-1c: Avoid and minimize impacts on special- status plant species by establishing activity exclusion zones

Where surveys determine that a special-status plant species is present in or adjacent to a Project area, direct and indirect impacts of the project on the species will be avoided through the establishment of activity exclusion zones, within which no ground-disturbing activities will take place, including construction of new facilities, construction staging, or other temporary work areas. Activity exclusion zones for special-status plant species will be established around each occupied habitat site, the boundaries of which will be clearly marked with standard orange plastic construction exclusion fencing or its equivalent. The establishment of activity exclusion zones will not be required if no construction-related disturbances will occur within 250 feet of the occupied habitat. The size of activity exclusion zones may be reduced through consultation with a qualified biologist and with concurrence from CDFW based on site-specific conditions.

PEIR Mitigation Measure BIO-1d: Compensate for impacts on special-status plant species

All Project proponents will avoid or minimize temporary and permanent impacts on special-status plants that occur on the Project site and will compensate for impacts on special-status plant species. Although all impacts on large-flowered fiddleneck, diamond-petaled California poppy, and caper-fruited tropidocarpum will be avoided, impacts on other special-status plant species will be avoided to the extent feasible, and any unavoidable impacts will be addressed through compensatory mitigation.

Where avoidance of impacts on a special-status plant species is infeasible, loss of individuals or occupied habitat of a special-status plant species occurrence will be compensated for through the acquisition, protection, and subsequent management in perpetuity of other existing occurrences at a 2:1 ratio (occurrences impacted: occurrences preserved). The Project proponent will provide detailed information to the County and CDFW on the location of the preserved occurrences, quality of the preserved habitat, feasibility of protecting and managing the areas in- perpetuity, responsibility parties, and other pertinent information. The preserved habitat will be confirmed to support populations of the impacted species and will be preserved in perpetuity via deed restriction, establishment of a conservation easement, or similar preservation mechanism. A qualified botanist or plant ecologist will prepare a Preservation Plan or Long-Term Management Plan for the site containing at a minimum: a monitoring plan and performance criteria for the preserved plant population; a description of remedial measures to be performed in the event that performance criteria are not met; a description of maintenance activities to be conducted on the site,

including weed control, trash removal, irrigation, and control of herbivory by livestock and wildlife; and an adequate funding mechanism to ensure long-term management of the preserved habitat. If suitable occurrences of a special-status plant species are not available for preservation, then the Project will be redesigned to remove features that would result in impacts on that species.

PEIR Mitigation Measure BIO-1e: Retain a biological monitor during ground- disturbing activities in environmentally sensitive areas

The Project proponent will retain a qualified biologist (as determined by Alameda County) to conduct periodic monitoring of decommissioning, repowering, and reclamation activities that occur adjacent to sensitive biological resources (e.g., special-status species, sensitive vegetation communities, wetlands). Monitoring will occur during initial ground disturbance where sensitive biological resources are present and weekly thereafter or as determined by the County in coordination with a qualified biologist. The biologist will assist the crew, as needed, to comply with all project implementation restrictions and guidelines. In addition, the biologist will be responsible for ensuring that the Project proponent or its contractors maintain exclusion areas adjacent to sensitive biological resources, and for documenting compliance with all biological resources– related mitigation measures.

PEIR Mitigation Measure BIO-2: Prevent introduction, spread, and establishment of invasive plant species

To avoid and minimize the introduction and spread of invasive nonnative plant species, the Project proponent will implement the following BMPs.

- Construction vehicles and machinery will be cleaned prior to entering the construction area to remove vegetation and soil. Cleaning stations will be established at the perimeter of the construction area or at a nearby offsite location (no more than 1 mile from the project construction entry point).
- Vehicles will be washed only at approved areas. No washing of vehicles will occur at job sites.
- To discourage the introduction and establishment of invasive plant species, seed mixtures and straw used within natural vegetation will be either rice straw or weed-free straw, as allowed by state and federal regulation of stormwater runoff.

In addition, the Project proponent will prepare and implement erosion and sediment control plans to control short-term and long-term erosion and sedimentation effects and to restore soils and vegetation in areas affected by construction activities (2019 Updated PEIR Mitigation Measures BIO-1b and PEIR Mitigation Measure WQ-1). Prior to initiating any construction activities that will result in temporary impacts on natural communities, a restoration and monitoring plan will be developed for temporarily affected habitats in each project area (PEIR Mitigation Measure BIO-5c). Restoration and monitoring plans will be submitted to the County and CDFW for approval. These plans will include methods for restoring soil conditions and revegetating disturbed areas, seed mixes, monitoring and maintenance schedules, adaptive management strategies, reporting requirements, and success criteria. Following completion of project construction, the Project proponent will implement the revegetation plans to restore areas disturbed by project activities to a condition of equal or greater habitat function than occurred prior to the disturbance.

PEIR Mitigation Measure BIO-3a: Conduct preconstruction surveys for habitat for special-status wildlife species

No more than 3 years prior to ground-disturbing repowering activities, a qualified biologist (as determined by Alameda County) will conduct field surveys within decommissioning, repowering, and restoration work areas and their immediate surroundings to determine the presence of habitat for special-status wildlife species. The project proponent will submit a report documenting the survey results to Alameda County for

review prior to conducting any repowering activities. The report will include the location and description of all proposed work areas, the location and description of all suitable habitat for special-status wildlife species, and the location and description of other sensitive habitats (e.g., vernal pools, wetlands, riparian areas). Additionally, the report will outline where additional species- and/or habitat-specific mitigation measures are required. This report may provide the basis for any applicable permit applications where incidental take may occur.

PEIR Mitigation Measure BIO-3b: Implement measures to avoid, minimize, and mitigate impacts on vernal pool branchiopods and curved-footed hygrotus diving beetle

Where suitable habitat for listed vernal pool branchiopods and curved-footed hygrotus diving beetle are identified within 250 feet (or another distance as determined by a qualified biologist based on topography and other site conditions) of proposed work areas, the following measures will be implemented to ensure that the repowering projects do not have adverse impacts on listed vernal pool branchiopods or curved-footed hygrotus diving beetle. These measures are based on measures from the EACCS, with some modifications and additions. Additional conservation measures or conditions of approval may be required in applicable project permits (e.g., ESA incidental take permit).

- Avoid all direct impacts on sandstone rock outcrop vernal pools.
- Ground disturbance will be avoided from the first day of the first significant rain (1 inch or more) until June 1, or until pools remain dry for 72 hours and no significant rain is forecast on the day of such ground disturbance.
- If vernal pools, clay flats, alkaline pools, ephemeral stock tanks (or ponds), sandstone pools, or roadside ditches are present within 250 feet of the work area (or another appropriate distance as determined by a qualified biologist on the basis of topography and other site conditions), the biologist will stake and flag an exclusion zone prior to construction activities. The width of the exclusion zone will be based on site conditions and will be the maximum practicable distance that ensures protection of the feature from direct and indirect effects of the project. Exclusion zones will be established around features whether they are wet or dry at the time. The exclusion zone will be fenced with orange construction zone and erosion control fencing (to be installed by construction crew).
- No herbicide will be applied within 100 feet of exclusion zones, except when applied to cut stumps or frilled stems or injected into stems. No broadcast applications will be allowed.
- Avoid modifying or changing the hydrology of aquatic habitats.
- Minimize the work area for stream crossings and conduct work during the dry season (June 1 through the first significant rain of the fall/winter).
- Install utility collection lines across perennial creeks by boring under the creek.

Where impacts cannot be avoided or minimized, compensatory mitigation will be undertaken in accordance with mitigation ratios and requirements developed under the East Alameda County Conservation Strategy. In the event that an incidental take permit is required, compensatory mitigation will be undertaken in accordance with the terms of the permit in consultation with USFWS.

2019 Updated PEIR Mitigation Measure BIO-5a: Implement best management practices to avoid and minimize effects on special-status amphibians

All project proponents will ensure that BMPs and other appropriate measures, in accordance with measures developed for the EACCS, be incorporated into the appropriate design and construction documents. Implementation of some of these measures will require that the project proponent obtain incidental take permits from USFWS (California red-legged frog and California tiger salamander) and from

CDFW (California tiger salamander only) before construction begins. Additional conservation measures or conditions of approval may be required in applicable project permits (e.g., ESA or CESA incidental take authorization). The applicant will comply with the State of California State Water Resources Control Board NPDES construction general requirements for stormwater.

- Ground-disturbing activities will be limited to dry weather between April 15 and October 31. No ground-disturbing work will occur during wet weather. Wet weather is defined as when there has been 0.25 inch of rain in a 24-hour period. Ground disturbing activities halted due to wet weather may resume when precipitation ceases and the National Weather Service 72-hour weather forecast indicates a 30% or less chance of precipitation. No ground-disturbing work will occur during a dry-out period of 48 hours after the above referenced wet weather.
- Where applicable, barrier fencing will be installed around the worksite to prevent amphibians from entering the work area. Barrier fencing will be removed within 72 hours of completion of work. The need and location of barrier fencing will be identified by a qualified biologist in cooperation with the County and/or any applicable resource agencies with the purpose of protecting dispersing special-status amphibians.
- Before construction begins, a qualified biologist will locate appropriate relocation areas and prepare a relocation plan for special-status amphibians that may need to be moved during construction. The proponent will submit this plan to USFWS and CDFW for review a minimum of 2 weeks prior to the start of construction.
- A qualified biologist will conduct preconstruction surveys (i.e., visual surveys of the ground surface and areas within burrows visible from the surface) immediately prior to ground-disturbing activities (including equipment staging, vegetation removal, grading). The biologist will survey the work area and all suitable habitats within 300 feet of the work area. If individuals (including adults, juveniles, larvae, or eggs) are found, work will not begin until USFWS and/or CDFW is contacted to determine if moving these life-stages is appropriate. If relocation is deemed necessary, it will be conducted in accordance with the relocation plan. Incidental take permits are required for relocation of California tiger salamander (USFWS and CDFW) and California red-legged frog (USFWS). Relocation of western spadefoot and foothill yellow-legged frog requires a letter from CDFW authorizing this activity.
- No monofilament plastic will be used for erosion control.
- All Project activity will terminate 30 minutes before sunset and will not resume until 30 minutes after sunrise during the migration/active season from November 1 to June 15. Sunrise and sunset times are established by the U.S. Naval Observatory Astronomical Applications Department for the geographic area where the Project is located.
- Vehicles will not exceed a speed limit of 15 mph on unpaved roads within natural land cover types, or during offroad travel.
- Trenches or holes more than 6 inches deep will be provided with one or more escape ramps constructed of earth fill or wooden planks and will be inspected by a qualified biologist prior to being filled. Any such features that are left open overnight will be searched each day prior to construction activities to ensure no covered species are trapped. Work will not continue until trapped animals have moved out of open trenches.
- Work crews or the onsite biological monitor will inspect open trenches, pits, and under construction equipment and material left onsite in the morning and evening to look for amphibians that may have become trapped or are seeking refuge.
- If special-status amphibians are found in the work area during construction and cannot or do not move offsite on their own, a qualified biologist who is USFWS and/or CDFW-approved under a

biological opinion and/or incidental take permit for the specific project, will trap and move special-status amphibians in accordance with the relocation plan. Relocation of western spadefoot and foothill yellow-legged frog requires a letter permit from CDFW authorizing this activity.

PEIR Mitigation Measure BIO-5b: Compensate for loss of habitat for special- status amphibians

Where impacts on aquatic and upland habitat for special-status amphibians cannot be avoided or minimized, compensatory mitigation will be undertaken in accordance with mitigation ratios and requirements developed under the East Alameda County Conservation Strategy. In the event that take authorization is required, compensatory mitigation will be undertaken in accordance with the terms of the authorization in consultation with USFWS and/or CDFW.

PEIR Mitigation Measure BIO-5c: Restore disturbed annual grasslands

Within 30 days prior to any ground disturbance, a qualified biologist will prepare a Grassland Restoration Plan in coordination with CDFW and subject to CDFW approval, to ensure that temporarily disturbed annual grasslands and areas planned for the removal of permanent roads and turbine pad areas are restored to preproject conditions. The Grassland Restoration Plan will include but not be limited to the following measures.

- Gravel will be removed from areas proposed for grassland restoration.
- To the maximum extent feasible, topsoil will be salvaged from within onsite work areas prior to construction. Imported fill soils will be limited to weed-free topsoil similar in texture, chemical composition, and pH to soils found at the restoration site.
- Where appropriate, restoration areas will be seeded (hydroseeding is acceptable) to ensure erosion control. Seed mixes will be tailored to closely match that of reference site(s) within the program area and should include native or naturalized, noninvasive species sourced within the Project area or from the nearest available location.
- Reclaimed roads will be restored in such a way as to permanently prevent vehicular travel.

The plan will include a requirement to monitor restoration areas annually (between March and October) for up to 3 years following the year of restoration. The restoration will be considered successful when the percent cover for restored areas is 70% absolute cover of the planted/seeded species compared to the percent absolute cover of nearby reference sites. No more than 5% relative cover of the vegetation in the restoration areas will consist of invasive plant species rated as "high" in Cal-IPC's California Invasive Plant Inventory Database (<http://www.cal-ipc.org>). Remedial measures prescribed in the plan will include supplemental seeding, weed control, and other actions as determined necessary to achieve the long-term success criteria. Monitoring may be extended if necessary to achieve the success criteria or if drought conditions preclude restoration success. Other performance standards may also be required as they relate to special-status species habitat; these will be identified in coordination with CDFW and included in the plan. The Project proponent will provide evidence that CDFW has reviewed and approved the Grassland Restoration Plan. Additionally, the Project proponent will provide annual monitoring reports to the County by January 31 of each year, summarizing the monitoring results and any remedial measures implemented (if any are necessary) during the previous year.

PEIR Mitigation Measure BIO-6: Conduct preconstruction surveys for western pond turtle and monitor construction activities if turtles are observed

If it is determined through preconstruction surveys conducted pursuant to Mitigation Measure BIO-3a that suitable aquatic or upland habitat for western pond turtle is present within proposed work areas, the

following measures, consistent with measures developed for the EACCS, will be implemented to ensure that the proposed project does not have a significant impact on western pond turtle.

- One week before and within 24 hours of beginning work in suitable aquatic habitat, a qualified biologist (one who is familiar with different species of turtles) will conduct surveys for western pond turtle. The surveys should be timed to coincide with the time of day and year when turtles are most likely to be active (during the cooler part of the day between 8 a.m. and 12 p.m. during spring and summer). Prior to conducting the surveys, the biologist should locate the microhabitats for turtle basking (logs, rocks, brush thickets) and determine a location to quietly observe turtles. Each survey should include a 30-minute wait time after arriving onsite to allow startled turtles to return to open basking areas. The survey should consist of a minimum 15-minute observation period for each area where turtles could be observed.
- If western pond turtles are observed during either survey, a biological monitor will be present during construction activities in the aquatic habitat where the turtle was observed. The biological monitor also will be mindful of suitable nesting and overwintering areas in proximity to suitable aquatic habitat and will periodically inspect these areas for nests and turtles.
- If one or more western pond turtles are found in the work area during construction and cannot or do not move offsite on their own, a qualified biologist will remove and relocate the turtle to appropriate aquatic habitat outside and away from the construction area. Relocation of western pond turtle requires a letter from CDFW authorizing this activity.

PEIR Mitigation Measure BIO-7a: Implement best management practices to avoid and minimize effects on special-status reptiles

Where suitable habitat for Blainville's horned lizard, Alameda whipsnake, or San Joaquin coachwhip is identified in proposed work areas, all project proponents will ensure that BMPs and other appropriate measures, in accordance with measures developed for the EACCS, be incorporated into the appropriate design and construction documents. Implementation of some of these measures will require that the project proponent obtain incidental take permits from USFWS and CDFW (Alameda whipsnake) before construction begins. Additional conservation measures or conditions of approval may be required in applicable project permits (i.e., ESA incidental take permit).

- A qualified biologist will conduct preconstruction surveys immediately prior to ground-disturbing activities (e.g., equipment staging, vegetation removal, grading) associated with the program. If any Blainville's horned lizards, Alameda whipsnakes, or San Joaquin coachwhips are found, work will not begin until they are moved out of the work area to a USFWS- and/or CDFW-approved relocation site. Incidental take permits from USFWS and CDFW are required for relocation of Alameda whipsnake. Relocation of Blainville's horned lizard and San Joaquin coachwhip requires a letter from CDFW authorizing this activity.
- No monofilament plastic will be used for erosion control.
- Where applicable, barrier fencing will be used to exclude Blainville's horned lizard, Alameda whipsnake, and San Joaquin coachwhip. Barrier fencing will be removed within 72 hours of completion of work.
- Work crews or an onsite biological monitor will inspect open trenches and pits and under construction equipment and materials left onsite for special-status reptiles each morning and evening during construction.
- Ground disturbance in suitable habitat will be minimized.

- Vegetation within the proposed work area will be removed prior to grading. Prior to clearing and grubbing operations, a qualified biologist will clearly mark vegetation within the work area that will be avoided. Vegetation outside the work area will not be removed. Where possible hand tools (e.g., trimmer, chain saw) will be used to trim or remove vegetation. All vegetation removal will be monitored by the qualified biologist to minimize impacts on special-status reptiles.
- If special-status reptiles are found in the work area during construction and cannot or do not move offsite on their own, a qualified biologist who is USFWS- and/or CDFW-approved under an incidental take permit for the specific project will trap and move the animal(s) to a USFWS and/or CDFW-approved relocation area. Incidental take permits from USFWS and CDFW are required for relocation of Alameda whipsnake. Relocation of Blainville's horned lizard and San Joaquin coachwhip requires a letter from CDFW authorizing this activity.

2019 Updated PEIR Mitigation Measure BIO-8a: Implement measures to avoid and minimize potential impacts on special-status and non-special-status nesting birds

Where suitable habitat is present for raptors within 1 mile (within 2 miles for golden eagles) and for tree/shrub- and ground-nesting migratory birds (non-raptors) within 50 feet (1,300 feet for tricolored blackbird) of proposed work areas, the following measures will be implemented to ensure that the proposed project does not have a significant impact on nesting special-status and non-special-status birds.

- Remove suitable nesting habitat (shrubs and trees) during the non-breeding season (September 1–January 31) for nesting birds.
- To the extent feasible, avoid construction activities in or near suitable or occupied nesting habitat during the breeding season of birds (generally February 1–August 31).
- If construction activities (including vegetation removal, clearing, and grading) will occur during the nesting season for migratory birds, a qualified biologist will conduct a preconstruction nesting bird surveys within 7 days prior to construction activities. The construction area and a 1-mile buffer will be surveyed for tree-nesting raptors (except for golden eagles), a 500-foot buffer will be surveyed for northern harrier, and a 1,300-foot buffer will be surveyed for tricolored blackbird if potential tricolored blackbird nesting substrates are present (i.e., flooded, thorny, or spiny vegetation such as cattails, tules, willows, blackberries, thistles, or nettles), and a 50-foot buffer will be surveyed for all other bird species.
- Surveys to locate eagle nests within 2 miles of construction will be conducted during the breeding season prior to construction. A 1-mile no-disturbance buffer will be implemented for construction activities to protect nesting eagles from disturbance. Through coordination with USFWS, the no-disturbance buffer may be reduced to 0.5 mile if construction activities are not within line-of-sight of the nest.
- If an active nest (other than golden eagle) is identified near a proposed work area and work cannot be conducted outside the nesting season (February 1–August 31), a no-activity zone will be established around the nest by a qualified biologist in coordination with USFWS and/or CDFW. Fencing and/or flagging will be used to delineate the no-activity zone. To minimize the potential to affect the reproductive success of the nesting pair, the extent of the no-activity zone will be based on the distance of the activity to the nest, the type and extent of the proposed activity, the duration and timing of the activity, the sensitivity and habituation of the species, and the dissimilarity of the proposed activity to background activities. The no-activity zone will be large enough to avoid nest abandonment and will be between 50 feet and 1 mile from the nest, or as otherwise required by USFWS and/or CDFW.

PEIR Mitigation Measure BIO-8b: Implement measures to avoid and minimize potential impacts on western burrowing owl

Where suitable habitat for western burrowing owl is in or within 500 feet of proposed work areas, the following measures will be implemented to avoid or minimize potential adverse impacts on burrowing owls.

- To the maximum extent feasible (e.g., where the construction footprint can be modified), construction activities within 500 feet of active burrowing owl burrows will be avoided during the nesting season (February 1– August 31).
- A qualified biologist will conduct preconstruction take avoidance surveys for burrowing owl no less than 14 days prior to and within 24 hours of initiating ground-disturbing activities. The survey area will encompass the work area and a 500-foot buffer around this area.
- If an active burrow is identified near a proposed work area and work cannot be conducted outside the nesting season (February 1–August 31), a no-activity zone will be established by a qualified biologist in coordination with CDFW. The no-activity zone will be large enough to avoid nest abandonment and will extend a minimum of 250 feet around the burrow.
- If burrowing owls are present at the site during the non-breeding season (September 1–January 31), a qualified biologist will establish a no-activity zone that extends a minimum of 150 feet around the burrow.
- If the designated no-activity zone for either breeding or non-breeding burrowing owls cannot be established, a wildlife biologist experienced in burrowing owl behavior will evaluate site-specific conditions and, in coordination with CDFW, recommend a smaller buffer (if possible) and/or other measure that still minimizes disturbance of the owls (while allowing reproductive success during the breeding season). The site-specific buffer (and/or other measure) will consider the type and extent of the proposed activity occurring near the occupied burrow, the duration and timing of the activity, the sensitivity and habituation of the owls, and the dissimilarity of the proposed activity to background activities.
- If burrowing owls are present in the direct disturbance area and cannot be avoided during the non-breeding season (generally September 1 through January 31), burrowing owls may be excluded from burrows through the installation of one-way doors at burrow entrances. A burrowing owl exclusion plan, prepared by the project proponent, must be approved by CDFW prior to exclusion of owls. One-way doors (e.g., modified dryer vents or other CDFW-approved method) will be left in place for a minimum of 1 week and monitored daily to ensure that the owl(s) have left the burrow(s). Excavation of the burrow will be conducted using hand tools.
- During excavation of the burrow, a section of flexible plastic pipe (at least 3 inches in diameter) will be inserted into the burrow tunnel to maintain an escape route for any animals that may be inside the burrow. Owls will be excluded from their burrows as a last resort and only if other avoidance and minimization measures cannot be implemented.
- Avoid destruction of unoccupied burrows outside the work area and place visible markers near burrows to ensure that they are not collapsed.
- Conduct ongoing surveillance of the project site for burrowing owls during project activities. If additional owls are observed using burrows within 500 feet of construction, the onsite biological monitor will determine, in coordination with CDFW, if the owl(s) are or would be affected by construction activities and if additional exclusion zones are required.

PEIR Mitigation Measure BIO-9: Compensate for the permanent loss of occupied habitat for western burrowing owl

If construction activities would result in the removal of occupied burrowing owl habitat (determined during preconstruction surveys described in PEIR Mitigation Measure BIO-8a), this habitat loss will be mitigated by permanently protecting mitigation land through a conservation easement or by implementing alternative mitigation determined through consultation with CDFW as described in its Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012:11–13). The project proponent will work with CDFW to develop the compensation plan, which will be subject to County review and approval.

PEIR Mitigation Measure BIO-10a: Implement measures to avoid and minimize potential impacts on San Joaquin kit fox and American badger

Where suitable habitat is present for San Joaquin kit fox and American badger in and adjacent to proposed work areas, the following measures, consistent with measures developed in the EACCS, will be implemented to ensure that proposed projects do not have a significant impact on San Joaquin kit fox or American badger.

Implementation of some of these measures will require that the project proponent obtain incidental take permits from USFWS and CDFW (San Joaquin kit fox) before construction begins. Implementation of state and federal requirements contained if such authorization may constitute compliance with corresponding measures in the PEIR.

- To the maximum extent feasible, suitable dens for San Joaquin kit fox and American badger will be avoided.
- All project proponents will retain qualified approved biologists (as determined by USFWS) to conduct a preconstruction survey for potential San Joaquin kit fox dens (U.S. Fish and Wildlife Service 2011). Resumes of biologists will be submitted to USFWS for review and approval prior to the start of the survey.
- Preconstruction surveys for American badgers will be conducted in conjunction with San Joaquin kit fox preconstruction surveys.
- As described in U.S. Fish and Wildlife Service 2011, the preconstruction survey will be conducted no less than 14 days and no more than 30 days before the beginning of ground disturbance, or any activity likely to affect San Joaquin kit fox. The biologists will conduct den searches by systematically walking transects through the project area and a buffer are to be determined in coordination with USFWS and CDFW. Transect distance should be based on the height of vegetation such that 100% visual coverage of the project area is achieved. If a potential or known den is found during the survey, the biologist will measure the size of the den, evaluate the shape of the den entrances, and note tracks, scat, prey remains, and recent excavations at the den site. The biologists will also determine the status of the dens and map the features. Dens will be classified in one of the following four den status categories defined by USFWS (U.S. Fish and Wildlife Service 2011).
 - Potential den: Any subterranean hole within the species' range that has entrances of appropriate dimensions and for which available evidence is sufficient to conclude that it is being used or has been use by a kit fox. Potential dens include (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, ground squirrel) that otherwise has appropriate characteristics for kit fox use; or an artificial structure that otherwise has appropriate characteristics for kit fox use.

- Known den: Any existing natural den or artificial structure that is use or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records; past or current radiotelemetry or spotlighting data; kit fox sign such as tracks, scat, and/or prey remains; or other reasonable proof that a given den is being or has been used by a kit fox (USFWS discourages use of the terms active and inactive when referring to any kit fox den because a great percentage of occupied dens show no evidence of use, and because kit foxes change dens often, with the result that the status of a given den may change frequently and abruptly).
- Known natal or pupping den: Any den that is used, or has been used at any time in the past, by kit foxes to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt or vegetation at one or more entrances. A natal den, defined as a den in which kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two; therefore, for purposes of this definition either term applies.
- Known atypical den: Any artificial structure that has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.

Written results of the survey including the locations of any potential or known San Joaquin kit fox dens will be submitted to USFWS within 5 days following completion of the survey and prior to the start of ground disturbance or construction activities.

- After preconstruction den searches and before the commencement of repowering activities, exclusion zones will be established as measured in a radius outward from the entrance or cluster of entrances of each den. Repowering activities will be prohibited or greatly restricted within these exclusion zones. Only essential vehicular operation on existing roads and foot traffic will be permitted. All other repowering activities, vehicle operation, material and equipment storage, and other surface-disturbing activities will be prohibited in the exclusion zones. Barrier fencing will be removed within 72 hours of completion of work. Exclusion zones will be established using the following parameters.
 - Potential and atypical dens: A total of four or five flagged stakes will be placed 50 feet from the den entrance to identify the den location.
 - Known den: Orange construction barrier fencing will be installed between the work area and the known den site at a minimum distance of 100 feet from the den. The fencing will be maintained until construction-related disturbances have ceased. At that time, all fencing will be removed to avoid attracting subsequent attention to the den.
 - Natal/pupping den: USFWS will be contacted immediately if a natal or pupping den is discovered in or within 200 feet of the work area.
- Any occupied or potentially occupied badger den will be avoided by establishing an exclusion zone consistent with a San Joaquin kit fox potential burrow (i.e., four or five flagged stakes will be placed 50 feet from the den entrance).
- In cases where avoidance is not a reasonable alternative, limited destruction of potential San Joaquin kit fox dens may be allowed as follows.
 - Natal/pupping dens: Natal or pupping dens that are occupied will not be destroyed until the adults and pups have vacated the dens and then only after consultation with USFWS. Removal of natal/pupping dens requires incidental take authorization from USFWS and CDFW.

- Known dens: Known dens within the footprint of the activity must be monitored for 3 days with tracking medium or an infrared camera to determine current use. If no kit fox activity is observed during this period, the den should be destroyed immediately to preclude subsequent use. If kit fox activity is observed during this period, the den will be monitored for at least 5 consecutive days from the time of observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged by partially plugging its entrance(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied will the den be excavated under the direction of a biologist. If the fox is still present after 5 or more consecutive days of monitoring, the den may be excavated when, in the judgment of the biologist, it is temporarily vacant, such as during the fox's normal foraging activities. Removal of known dens requires incidental take authorization from USFWS and CDFW.
- Potential dens: If incidental take permits have been received (from USFWS and CDFW), potential dens can be removed (preferably by hand excavation) by biologist or under the supervision of a biologist without monitoring, unless other restrictions were issued with the incidental take permits. If no take authorizations have been issued, the potential dens will be monitored as if they are known dens. If any den was considered a potential den but was later determined during monitoring or destruction to be currently or previously used by kit foxes (e.g., kit fox sign is found inside), then all construction activities will cease and USFWS and CDFW will be notified immediately.
- Nighttime work will be minimized to the extent possible. The vehicular speed limit will be reduced to 10 miles per hour during nighttime work.
- Pipes, culverts, and similar materials greater than 4 inches in diameter will be stored so as to prevent wildlife species from using these as temporary refuges, and these materials will be inspected each morning for the presence of animals prior to being moved.
- A representative appointed by the project proponent will be the contact for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured, or entrapped kit fox. The representative will be identified during environmental sensitivity training (Mitigation Measure BIO-1b) and his/her name and phone number will be provided to USFWS and CDFW. Upon such incident or finding, the representative will immediately contact USFWS and CDFW.
- The Sacramento USFWS office and CDFW will be notified in writing within 3 working days of the accidental death or injury of a San Joaquin kit fox during project-related activities. Notification must include the date, time, and location of the incident, and any other pertinent information.

PEIR Mitigation Measure BIO-10b: Compensate for loss of suitable habitat for San Joaquin kit fox and American badger

Where permanent impacts on habitat for San Joaquin kit fox and American badger cannot be avoided or minimized, compensatory mitigation will be undertaken in accordance with mitigation ratios and requirements developed under the EACCS (Appendix C). In the event that incidental take permits are required for San Joaquin kit fox, compensatory mitigation will be undertaken in accordance with the terms of permits in consultation with USFWS and CDFW.

PEIR Mitigation Measure BIO-11a: Prepare a project-specific avian protection plan

All project proponents will prepare a project-specific APP to specify measures and protocols consistent with the program-level mitigation measures that address avian mortality. The project-specific APPs will include, at a minimum, the following components.

- Information and methods used to site turbines to minimize risk.

- Documentation that appropriate turbine designs are being used.
- Documentation that avian-safe practices are being implemented on project infrastructure.
- Methods used to discourage prey for raptors.
- A detailed description of the postconstruction avian fatality monitoring methods to be used (consistent with the minimum requirements outlined in Mitigation Measure BIO-11g).
- Methods used to compensate for the loss of raptors (consistent with the requirements of 2019 Updated PEIR Mitigation Measure BIO-11h).

Each project applicant will prepare and submit a draft project-specific APP to the County. The draft APP will be reviewed by the TAC for consistency and the inclusion of appropriate mitigation measures that are consistent with the PEIR and recommended for approval by the County. Each project applicant must have an approved Final APP prior to commercial operation.

PEIR Mitigation Measure BIO-11b: Site turbines to minimize potential mortality of birds

Siting of turbines—using analyses of landscape features and location-specific bird use and behavior data to identify locations with reduced collision risk—may result in reduced fatalities (Smallwood et al. 2009). All project proponents will conduct a siting process and prepare a siting analysis to select turbine locations to minimize potential impacts on bird and bat species. Proponents will utilize existing data as well as collect new site-specific data as part of the siting analysis.

Project proponents will utilize currently available guidelines such as the Alameda County SRC guidelines for siting wind turbines (Alameda County SRC 2010) and/or other currently available research or guidelines to conduct siting analysis.

Additionally, project proponents will use the results of previous siting efforts to inform the analysis and siting methods as appropriate such that the science of siting continues to be advanced. All project proponents will collect field data that identify or confirm the behavior, utilization, and distribution patterns of affected avian and bat species prior to the installation of turbines. Project proponents will collect and utilize available existing information, including but not necessarily limited to: siting reports and monitoring data from previously installed projects; published use and abundance studies and reports; and topographic features known to increase collision risk (trees, riparian areas, water bodies, and wetlands).

Project proponents will also collect and utilize additional field data as necessary to inform the siting analysis for golden eagle. As required in 2019 Updated Mitigation Measure BIO-8a, surveys will be conducted to locate golden eagle nests within 2 miles of proposed project areas. Siting of turbines within 2 miles of an active or alternative golden eagle nest or active golden eagle territory will be based on a site-specific analysis of risk based on the estimated eagle territories, conducted in consultation with USFWS.

Project proponents will utilize methods (i.e., computer models) to identify dangerous locations for birds and bats based on site-specific risk factors informed by the information discussed above. The project proponents will compile the results of the siting analyses for each turbine and document these in the project-level APP, along with the specific location of each turbine.

PEIR Mitigation Measure BIO-11c: Use turbine designs that reduce avian impacts

Use of turbines with certain characteristics is believed to reduce the collision risk for avian species. Project proponents will implement the design-related measures listed below.

- Turbine designs will be selected that have been shown or that are suspected to reduce avian fatalities, based on the height, color, configuration, or other features of the turbines.

- Turbine design will limit or eliminate perching opportunities. Designs will include a tubular tower with internal ladders; external catwalks, railings, or ladders will be prohibited.
- Turbine design will limit or eliminate nesting or roosting opportunities. Openings on turbines will be covered to prevent cavity-nesting species from nesting in the turbines.
- Lighting will be installed on the fewest number of turbines allowed by FAA regulations, and all pilot warning lights will fire synchronously. Turbine
- lighting will employ only red or dual red-and-white strobe, strobe-like, or flashing lights (U.S. Fish and Wildlife Service 2012a). All lighting on turbines will be operated at the minimum allowable intensity, flashing frequency, and quantity allowed by FAA (Gehring et al. 2009; U.S. Fish and Wildlife Service 2012a). Duration between flashes will be the longest allowable by the FAA.

PEIR Mitigation Measure BIO-11d: Incorporate avian-safe practices into design of turbine-related infrastructure

The Project proponent will apply the following measures when designing and siting turbine-related infrastructure. These measures will reduce the risk of bird electrocution and collision.

- Permanent meteorological stations will avoid use of guy wires. If it is not possible to avoid using guy wires, the wires will be at least 4/0 gauge to ensure visibility and will be fitted with bird deterrent devices.
- All permanent meteorological towers will be unlit unless lighting is required by FAA. If lighting is required, it will be operated at the minimum allowable intensity, flashing frequency, and quantity allowed by FAA.
- To the extent possible, all powerlines will be placed underground. However, lines may be placed aboveground immediately prior to entering the substation. All aboveground lines will be fitted with bird flight diverters or visibility enhancement devices (e.g., spiral damping devices). When lines cannot be placed underground, appropriate avian protection designs must be employed. As a minimum requirement, the collection system will conform with the most current edition of the Avian Power Line Interaction Committee guidelines to prevent electrocutions.
- Lighting will be focused downward and minimized to limit skyward illumination. Sodium vapor lamps and spotlights will not be used at any facility (e.g., laydown areas, substations) except when emergency maintenance is needed. Lighting at collection facilities, including substations, will be minimized using downcast lighting and motion- detection devices. The use of high-intensity lighting; steady-burning or bright lights such as sodium vapor, quartz, or halogen; or other bright spotlights will be minimized. Where lighting is required it will be designed for the minimum intensity required for safe operation of the facility. Green or blue lighting will be used in place of red or white lighting.

PEIR Mitigation Measure BIO-11e: Retrofit existing infrastructure to minimize risk to raptors

Any existing power lines in a specific project area that are owned by the wind project operator and that are associated with electrocution of an eagle or other raptor will be retrofitted within 30 days to make them raptor-safe according to Avian Power Line Interaction Committee guidelines. All other existing structures to remain in a project area during repowering will be retrofitted, as feasible, according to specifications of PEIR Mitigation Measure BIO-11c prior to repowered turbine operation.

PEIR Mitigation Measure BIO-11f: Discourage prey for raptors

The Project proponent will apply the following measures when designing and siting turbine-related infrastructure. These measures are intended to minimize opportunities for fossorial mammals to become established and thereby create a prey base that could become an attractant for raptors.

- Rodenticide will not be utilized on the Project site to avoid the risk of raptors scavenging the remains of poisoned animals.
- Boulders (rocks more than 12 inches in diameter) excavated during project construction may be placed in aboveground piles in the project area so long as they are more than 500 meters (1,640 feet) from any turbine. Existing rock piles created during construction of first- and second-generation turbines will also be moved at least 500 meters (1,640 feet) from turbines.
- Gravel will be placed around each tower foundation to discourage small mammals from burrowing near turbines.

PEIR Mitigation Measure BIO-11g: Implement postconstruction avian fatality monitoring for all repowering projects

A postconstruction monitoring program will be conducted at each repowering project for a minimum of 3 years beginning on the commercial operation date (COD) of the project. Monitoring may continue beyond 3 years if construction is completed in phases. Moreover, if the results of the first 3 years indicate that baseline fatality rates (i.e., nonrepowered fatality rates) are exceeded, monitoring will be extended until the average annual fatality rate has dropped below baseline fatality rates for 2 years, and to assess the effectiveness of adaptive management measures specified in Mitigation Measure BIO-11i. An additional 2 years of monitoring will be implemented at year 10 (i.e., the tenth anniversary of the COD).

Project proponents will provide access to qualified third parties authorized by the County to conduct any additional monitoring after the initial 3-year monitoring period has expired and before and after the additional 2-year monitoring period, provided that such additional monitoring utilizes scientifically valid monitoring protocols.

A technical advisory committee (TAC) will be formed to oversee the monitoring program and to advise the County on adaptive management measures that may be necessary if fatality rates substantially exceed those predicted for the project (as described below in Mitigation Measure BIO-11i). The TAC will have a standing meeting, which will be open to the public, every 6 months to review monitoring reports produced by operators in the program area. In these meetings, the TAC will discuss any issues raised by the monitoring reports and recommend to the County next steps to address issues, including scheduling additional meetings, if necessary.

The TAC will comprise representatives from the County (including one or more technical consultants, such as a biostatistician, an avian biologist, and a bat biologist), and wildlife agencies (CDFW, USFWS). Additional TAC members may also be considered (e.g., a representative from Audubon, a landowner in the program area, a representative of the operators) at the discretion of the County. The TAC will be a voluntary and advisory group that will provide guidance to the County Planning Department. To maintain transparency with the public, all TAC meetings will be open to the public, and notice of meetings will be given to interested parties.

The TAC will have three primary advisory roles: (1) to review and advise on project planning documents (i.e., project-specific APPs) to ensure that project-specific mitigation measures and compensatory mitigation measures described in this PEIR are appropriately and consistently applied, (2) to review and

advise on monitoring documents (protocols and reporting) for consistency with the mitigation measures, and (3) to review and advise on implementation of the adaptive management plans.

Should fatality monitoring reveal that impacts exceed the baseline thresholds established in this PEIR, the TAC will advise the County on requiring implementation of adaptive management measures as described in Mitigation Measure BIO-11i. The County will have the decision-making authority, as it is the organization issuing the CUPs. However, the TAC will collaboratively inform the decisions of the County.

Operators are required to provide for avian use surveys to be conducted within the project area boundaries for a minimum of 30 minutes duration. Surveyors will be qualified and trained and subject to approval by the County.

Carcass surveys will be conducted at every turbine for projects with 20 or fewer turbines. For projects with more than 20 turbines, such surveys will be required at a minimum of 20 turbines, and a sample of the remaining turbines may be selected for carcass searches. The operator will be required to demonstrate that the sampling scheme and sample size are statistically rigorous and defensible. Where substantial variation in terrain, land cover type, management, or other factors may contribute to significant variation in fatality rates, the sampling scheme will be stratified to account for such variation. The survey protocol for sets and subsets of turbines, as well as proposed sampling schemes that do not entail a search of all turbines, must be approved by the County in consultation with the TAC prior to the start of surveys.

The search interval will not exceed 14 days for the minimum of 20 turbines to be surveyed; however, the search interval for the additional turbines (i.e., those exceeding the 20-turbine minimum) that are to be included in the sampling scheme may be extended up to 28 days or longer if recommended by the TAC.

The estimation of detection probability is a rapidly advancing field. Carcass placement trials, broadly defined, will be conducted to estimate detection probability during each year of monitoring. Sample sizes will be large enough to potentially detect significant variation by season, carcass size, and habitat type.

Operators will be required to submit copies of all raw data forms to the County annually, will supply raw data in a readily accessible digital format to be specified by the County, and will prepare raw data for inclusion as appendices in the annual reports. The intent is to allow the County to conduct independent analyses and meta-analyses of data across the APWRA, and to supply these data to the regulatory agencies if requested.

Annual reports submitted to the County will provide a synthesis of all information collected to date. Each report will provide an introduction; descriptions of the study area, methods, and results; a discussion of the results; and any suitable recommendations. Reports will provide raw counts of fatalities, adjusted fatality rates, and estimates of project-wide fatalities on both a per MW and per turbine basis.

2019 Updated PEIR Mitigation Measure BIO-11h: Compensate for the loss of raptors and other avian species, including golden eagles, by contributing to conservation efforts

Discussion

Several options to compensate for impacts on raptors are currently available. Some are targeted to benefit certain species, but they may also have benefits for other species. For example, USFWS's Eagle Conservation Plan (ECP) Guidelines currently outline a compensatory mitigation strategy for golden eagles using the retrofit of high-risk power poles (poles known or suspected to electrocute and kill eagles).

The goal of this strategy is to eliminate hazards for golden eagles. However, because the poles are also dangerous for other large raptors (e.g., red-tailed hawk, Swainson's hawk), retrofitting them can benefit such species as well as eagles.

Similarly, although the retrofitting of electrical poles may have benefits for large raptors, such an approach may provide minimal benefits for smaller raptors such as American kestrel and burrowing owl. Consequently, additional measures would be required components of an overall mitigation package to compensate for impacts on raptors in general.

The Secretary of the Interior in the prior federal administration issued Order 3330 in October 2013, outlining a "landscape-scale" approach to mitigation policies and practices of the Department of the Interior to provide for mutual benefit to multiple species when adopting strategies aimed at individual species, thereby benefitting the ecological landscape as a whole. The Order was intended for use by federal agencies, and thus the County was not required to take any particular action; however, the PEIR indicated confidence that such an approach would likely have the greatest mitigation benefits, especially when considering ongoing and long-term impacts from wind energy projects. In 2017, Secretary of the Interior Ryan Zinke, acting on a presidential executive order, revoked Order 3330 and several other related environmental directives, primarily to ensure that federal policy did not burden the development or use of domestic oil, natural gas, coal, or nuclear energy resources. However, the County still considers it to be in its interest to promote policies that benefit one species that also have high potential for benefit to additional species, or to a whole ecological system or habitat.

With these considerations in mind, the PEIR outlined several options that are currently available to compensate for impacts on raptors. The options discussed below are currently considered acceptable approaches to compensation for impacts on raptors. Although not every option is appropriate for all species, it is hoped that as time proceeds, a more comprehensive approach to mitigation will be adopted to benefit a broader suite of species than might benefit from more species-specific measures. The County recognizes that the science of raptor conservation and the understanding of wind-wildlife impacts are continuing to evolve and that the suite of available compensation options may consequently change over the life of the proposed projects.

Conservation Measures

To promote the conservation of raptors and other avian species, project proponents will compensate for raptor fatalities estimated within their project areas. Mitigation will be provided in 10-year increments, with the first increment based on the estimates (raptors/MW/year) provided in this PEIR for the Vasco Winds Project (Table 3.4-8) or the project-specific EIR for future projects. The Vasco Winds fatality rates were selected because the Vasco turbines are the most similar to those likely to be proposed for future repowering projects and consequently represent the best available fatality estimates. Each project proponent will conduct postconstruction fatality monitoring for at least 3 years beginning at project startup (date of commercial operation) and again for 2 years at year 10, as required under Mitigation Measure BIO-11g, to estimate the average number of raptors taken each year by each individual project. The project proponent will compensate for this number of raptors in subsequent 10-year increments for the life of the project (i.e., three 10-year increments) as outlined below. Mitigation Measure BIO-11g also requires additional fatality monitoring at year 10 of the project. The results of the first 3 years of monitoring and/or the monitoring at year 10 may lead to revisions of the estimated average number of raptors taken, and mitigation provided may be adjusted accordingly on a one-time basis within each of the first two 10-year increments, based on the results of the monitoring required by Mitigation Measure BIO-11g, in consultation with the TAC.

Prior to the start of operations, project proponents will submit for County approval an avian conservation strategy, as part of the project-specific APP outlined in Mitigation Measure BIO-11a, outlining the estimated number of raptor fatalities based on the number and type of turbines being constructed, and the type or types of compensation options to be implemented. Project proponents will use the avian conservation strategy to craft an appropriate strategy using a balanced mix of the options presented below, as well as considering new options suggested by the growing body of knowledge during the course of the project lifespan, as supported by a Resource Equivalency Analysis (REA) (see example in Appendix C) or similar type of compensation assessment acceptable to the County that demonstrates the efficacy of proposed mitigation for impacts on raptors.

The County Planning Director, in consultation with the TAC, will consider, based on the REA, whether the proposed avian conservation strategy is adequate, including consideration of whether each avian mitigation plan incorporates a landscape-scale approach such that the conservation efforts achieve the greatest possible benefits. Compensation measures as detailed in an approved avian conservation strategy must be implemented within 1 year of the date of commercial operations. Avian conservation strategies will be reviewed and may be revised by the County every 10 years, and on a one-time basis in each of the two 10-year increments based on the monitoring required by Mitigation Measure BIO-11g.

- Retrofitting high-risk electrical infrastructure. USFWS's ECP Guidelines outline a compensatory mitigation strategy using the retrofit of high-risk power poles (poles known or suspected to electrocute and kill eagles). USFWS has developed an REA (U.S. Fish and Wildlife Service 2013) as a tool to estimate the compensatory mitigation (number of retrofits) required for the take of eagles. The REA takes into account the current understanding of eagle life history factors, the effectiveness of retrofitting poles, the expected annual take, and the timing of implementation of the pole retrofits. The project proponents may need to contract with a utility or a third-party mitigation account (such as the National Fish and Wildlife Foundation) to retrofit the number of poles needed as demonstrated by a project-specific REA. If contracting directly, the project proponent will consult with utility companies to ensure that high-risk poles have been identified for retrofitting. Proponents will agree in writing to pay the utility owner/operator to retrofit the required number of power poles and maintain the retrofits for 10 years and will provide the County with documentation of the retrofit agreement. The first retrofits will be based on the estimated number of eagle fatalities as described above in this measure or as developed in the project-specific EIR for future projects. Subsequent numbers of retrofits required for additional 10-year durations will be based on the results of project-specific fatality monitoring as outlined in PEIR Mitigation Measure BIO-11g. If fewer eagle fatalities are identified through the monitoring, the number of future required retrofits may be reduced through a project-specific REA. Although retrofitting poles has not been identified as appropriate mitigation for other large raptors, they would likely benefit from such efforts, as they (particularly red-tailed and Swainson's hawks) constitute the largest non-eagle group to suffer electrocution on power lines (Avian Power Line Interaction Committee 2006).
- Measures outlined in an approved Eagle Conservation Plan and Bird and Bat Conservation Strategy. Project proponents may elect to apply for eagle incidental take permits from USFWS. The eagle incidental take permit process currently involves preparation of an ECP and a Bird and Bat Conservation Strategy (BBCS). The ECP specifies avoidance and minimization measures, advanced conservation practices, and compensatory mitigation for eagles— conditions that meet USFWS's criteria for issuance of a permit. The BBCS outlines measures being implemented by the applicant to avoid and minimize impacts on migratory birds, including raptors. If eagle incidental take permits are obtained by project proponents, those permit terms, including the measures outlined in the approved ECP and BBCS, may constitute an appropriate conservation measure for estimated take of golden eagles and other raptors, provided such terms are deemed by the County to be comparable to or more protective of raptors than the other options listed herein.

- Contribute to raptor conservation efforts. Project proponents will contribute funds, in an amount equal to the average cost to rehabilitate one raptor at the California Raptor Center, affiliated with the UC Davis School of Veterinary Medicine – which receives more than 200 injured or ill raptors annually (Stedman pers. comm.) – per raptor fatality, in 10-year increments to local and/or regional conservation efforts designed to protect, recover, and manage lands for raptors, or to conduct research involving methods to reduce raptor fatalities or increase raptor productivity. Ten-year installments are more advantageous than more frequent installments for planning and budgeting purposes.

The funds will be contributed to an entity or entities engaged in these activities, such as the East Bay Regional Park District and the Livermore Area Regional Park District. Conservation efforts may include constructing and installing nest boxes and perches, conducting an awareness campaign to reduce the use of rodenticide, and conducting research to benefit raptors. The specific conservation effort to be pursued will be submitted to the County for approval as part of the avian conservation strategy review process. The donation receipt will be provided to the County as evidence of payment.

The first contributions for any given project will be based on the estimated number of raptor fatalities as described above in this measure or as developed in the project-specific EIR for future projects. Funds for subsequent 10-year installments will be provided on the basis of the average annual raptor fatality rates determined through postconstruction monitoring efforts, allowing for a one-time adjustment within each 10-year increment after the results of the monitoring efforts are available. If fewer raptor fatalities are detected through the monitoring effort, the second installment amount may be reduced to account for the difference between the first estimated numbers and the monitoring results. In the event of such an adjustment, and on each ten-year anniversary, projected costs shall be adjusted for inflation (from the base amount described above) according to the CPI through the remainder of the ten-year term or the subsequent ten-year term. Review shall occur at the time that monitoring reports are accepted by the Planning Director showing a change in total raptor fatalities for the project. All eight raptor species listed in Table 3.4-4 shall be accounted for in estimating the payment.

- Contribute to regional conservation of raptor habitat. Project proponents may address regional conservation of raptor habitat by funding the acquisition of conservation easements within the APWRA or on lands in the same eco-region outside the APWRA, subject to County approval, for the purpose of long-term regional conservation of raptor habitat. Lands proposed for conservation must be well-managed grazing lands similar to those on which the projects have been developed. Project proponents will fund the regional conservation and improvement of lands (through habitat enhancement, lead abatement activities, elimination of rodenticides, and/or other measures) using a number of acres equivalent to the conservation benefit of the raptor recovery and conservation efforts described above, or as determined through a project-specific REA (see example REA in Appendix C). The conservation lands must be provided for compensation of a minimum of 10 years of raptor fatalities, as 10-year increments will minimize the transaction costs associated with the identification and conservation of lands, thereby increasing overall cost effectiveness. The conservation easements will be held by an organization whose mission is to purchase and/or otherwise conserve lands, such as The Trust for Public Lands, The Nature Conservancy, California Rangeland Trust, or the East Bay Regional Parks District. The project proponents will obtain approval from the County regarding the amount of conserved lands, any enhancements proposed to increase raptor habitat value, and the entity holding the lands and/or conservation easement.
- Other Conservation Measures Identified in the Future. As noted above, additional conservation measures for raptors may become available in the future. Conservation measures for raptors are currently being developed by USFWS and nongovernmental organizations (e.g., American Wind

Wildlife Institute)—for example, activities serving to reduce such fatalities elsewhere, and enhancing foraging and nesting habitat. Additional options for conservation could include purchasing credits at an approved mitigation bank, credits for the retirement of windfarms that are particularly dangerous to birds or bats, the curtailment of prey elimination programs, and hunter-education programs that remove sources of lead from the environment. Under this option, the project proponent may make alternative proposals to the County for conservation measures—based on an REA or similar compensation assessment—that the County may accept as mitigation if they are deemed by the County to be comparable to or more protective of raptor species than the other options described herein.

PEIR Mitigation Measure BIO-11i: Implement an avian adaptive management program

If fatality monitoring described in Mitigation Measure BIO-11g results in an estimate that exceeds the preconstruction baseline fatality estimates (i.e., estimates at the nonrepowered turbines as described in this PEIR) for any focal species or species group (i.e., individual focal species, all focal species, all raptors, all non-raptors, all birds combined), project proponents will prepare a project-specific adaptive management plan within 2 months following the availability of the fatality monitoring results. These plans will be used to adjust operation and mitigation to the results of monitoring, new technology, and new research to ensure that the best available science is used to minimize impacts to below baseline. Project-specific adaptive management plans will be reviewed by the TAC, revised by project proponents as necessary, and approved by the County. The TAC will take current research and the most effective impact reduction strategies into account when reviewing adaptive management plans and suggesting measures to reduce impacts. The project-specific adaptive management plans will be implemented within 2 months of approval by the County. The plans will include a stepped approach whereby an adaptive measure or measures are implemented, the results are monitored for success or failure for a year, and additional adaptive measures are added as necessary, followed by another year of monitoring, until the success criteria are achieved (i.e., estimated fatalities are below the baseline). Project proponents should use the best measures available when the plan is prepared in consideration of the specific adaptive management needs. For example, if only one threshold is exceeded, such as golden eagle fatalities, the plan and measures used will target that species. As set forth in other agreements in the APWRA, project proponents may also focus adaptive management measures on individual or multiple turbines if those turbines are shown to cause a significantly disproportionate number of fatalities.

In general, the following types of measures will be considered by the TAC, in the order they are presented below; however, the TAC may recommend any of these or other measures that are shown to be successful in reducing the impact.

ADMM-1: Visual Modifications. The project proponent could paint a pattern on a proportion of the turbine blades. The proportion and the pattern of the blades to be painted will be determined by the County in consultation with the TAC. USFWS recommends testing measures to reduce motion smear—the blurring of turbine blades due to rapid rotation that renders them less visible and hence more perilous to birds in flight. Suggested techniques include painting blades with staggered stripes or painting one blade black. The project proponent will conduct fatality studies on a controlled number of painted and unpainted turbines. The project proponent will coordinate with the TAC to determine the location of the painted turbines, but the intent is to implement this measure in areas that appear to be contributing most to the high number of fatalities detected.

ADMM-2: Anti-Perching Measures. The County will consult with the TAC regarding the use of anti-perching measures to discourage bird use of the area. The TAC will use the most recent research and information available to determine, on a case-by-case basis, if anti-perching measures will be an effective strategy to reduce impacts. If determined to be feasible, anti-perching devices will be installed on artificial

structures, excluding utility poles, within 1 mile of project facilities (with landowner permission) to discourage bird use of the area.

ADMM-3: Prey Reduction. The project proponent will implement a prey reduction program around the most hazardous turbines. Examples of prey reduction measures may include changes in grazing practices to make the area less desirable for prey species, active reduction through direct removal of prey species, or other measures provided they are consistent with management goals for threatened and endangered species.

ADMM-4: Implementation of Experimental Technologies. Project proponents can deploy experimental technologies at their facilities to test their efficacy in reducing turbine-related fatalities. Examples may include, but are not limited to, visual deterrents, noise deterrents, and active radar systems.

ADMM-5: Turbine Curtailment. If postconstruction monitoring indicates patterns of turbine-caused fatalities—such as seasonal spikes in fatalities, topographic or other environmental features associated with high numbers of fatalities, or other factors that can potentially be manipulated and that suggest that curtailment of a specific turbine's operation would result in reducing future avian fatalities—the project operator can curtail operations of the offending turbine or turbines.

Curtailment restrictions would be developed in coordination with the TAC and based on currently available fatality data, use data, and research.

ADMM-6: Cut-in Speed Study. Changes in cut-in speed could be conducted to see if changing cut-in speeds from 3 meters per second to 5 meters per second (for example) would significantly reduce avian fatalities. The proponent will coordinate with the TAC in determining the feasibility of the measure for the particular species affected as well as the amount of the change in the cut-in speed.

ADMM-7: Real-Time Turbine Curtailment. The project proponent can employ a real-time turbine curtailment program designed in consultation with the TAC. The intent would be to deploy a biologist to monitor onsite conditions and issue a curtailment order when raptors are near operating turbines. Alternatively, radar, video, or other monitoring measures could be deployed in place of a biological monitor if there is evidence to indicate that such a system would be as effective and more efficient than use of a human monitor.

PEIR Mitigation Measure BIO-12a: Conduct bat roost surveys

Prior to development of any repowering project, a qualified bat biologist will conduct a roost habitat assessment to identify potential colonial roost sites of special-status and common bat species within 750 feet of the construction area. If suitable roost sites are to be removed or otherwise affected by the proposed project, the bat biologist will conduct targeted roost surveys of all identified sites that would be affected. Because bat activity is highly variable (both spatially and temporally) across the landscape and may move unpredictably among several roosts, several separate survey visits may be required. Surveys will be repeated at different times of year if deemed necessary by the bat biologist to determine the presence of seasonally active roosts (hibernacula, migratory stopovers, maternity roosts). Appropriate field methods will be employed to determine the species, type, and vulnerability of the roost to construction disturbance. Methods will follow best practices for roost surveys such that species are not disturbed and adequate temporal and spatial coverage is provided to increase likelihood of detection.

Roost surveys may consist of both daylight surveys for signs of bat use and evening/night visit(s) to conduct emergence surveys or evaluate the status of night roosts. Survey timing should be adequate to account for individual bats or species that might not emerge until well after dark.

Methods and approaches for determining roost occupancy status should include a combination of the following components as the biologist deems necessary for the particular roost site.

- Passive and/or active acoustic monitoring to assist with species identification.
- Guano traps to determine activity status.
- Night-vision equipment.
- Passive infrared camera traps.

At the completion of the roost surveys, a report will be prepared documenting areas surveyed, methods, results, and mapping of high-quality habitat or confirmed roost locations.

PEIR Mitigation Measure BIO-12b: Avoid removing or disturbing bat roosts

- Active bat roosts will not be disturbed, and will be provided a minimum buffer of 500 feet where preexisting disturbance is moderate or 750 feet where preexisting disturbance is minimal. Confirmation of buffer distances and determination of the need for a biological monitor for active maternity roosts or hibernacula will be obtained in consultation with CDFW. At a minimum, when an active maternity roost or hibernaculum is present within 750 feet of a construction site, a qualified biologist will conduct an initial assessment of the roost response to construction activities and will recommend buffer expansion if there are signs of disturbance from the roost.
- Structures (natural or artificial) showing evidence of significant bat use within the past year will be left in place as habitat wherever feasible. Should such a structure need to be removed or disturbed, CDFW will be consulted to determine appropriate buffers, timing and methods, and compensatory mitigation for the loss of the roost.
- All project proponents will provide environmental awareness training to construction personnel, establish buffers, and initiate consultation with CDFW if needed.
- Artificial night lighting within 500 feet of any roost will be shielded and angled such that bats may enter and exit the roost without artificial illumination and the roost does not receive artificial exposure to visual predators.
- Tree and vegetation removal will be conducted outside the maternity season (April 1–September 15) to avoid disturbance of maternity groups of foliage-roosting bats.
- If a maternity roost or hibernaculum is present within 500 feet of the construction site where preexisting disturbance is moderate or within 750 feet where preexisting disturbance is minimal, a qualified biological monitor will be onsite during groundbreaking activities.

PEIR Mitigation Measure BIO-14a: Site and select turbines to minimize potential mortality of bats

The Project proponent will use the best information available to site turbines and to select from turbine models in such a manner as to reduce bat collision risk. The siting and selection process will take into account bat use of the area and landscape features known to increase collision risk (trees, edge habitats, riparian areas, water bodies, and wetlands). Measures include but are not limited to siting turbines the greatest distance feasible up to 500 meters (1,640) feet from still or flowing bodies of water, riparian habitat, known roosts, and tree stands (California Bat Working Group 2006:6).

To generate site-specific “best information” to inform turbine siting and operation decisions, a bat habitat assessment and roost survey will be conducted in the project area to identify and map habitat of potential significance to bats, such as potential roost sites (trees and shrubs, significant rock formations, artificial structures) and water sources. Turbine siting decisions will incorporate relevant bat use survey data and

bat fatality records published by other projects in the APWRA. Roost surveys will be carried out according to the methods described in PEIR Mitigation Measure-BIO-12a.

2019 Updated PEIR Mitigation Measure BIO-14b: Implement postconstruction bat fatality monitoring program for all repowering projects

A scientifically defensible, postconstruction bat fatality monitoring program will be implemented to estimate actual bat fatalities and determine if additional mitigation is required. Bat-specific modifications to the 3-year postconstruction monitoring program described in PEIR Mitigation Measure BIO-11g, developed in accordance with CEC 2007 and with appropriate recommendations from California Bat Working Group guidelines (2006), will be implemented.

In addition to the requirements outlined in PEIR Mitigation Measure BIO-11g, the following three bat-specific requirements will be added.

- Include on the TAC at least one biologist with significant expertise in bat research and wind energy impacts on bats.
- Perform postconstruction bat fatality monitoring using trained dogs with handlers. In order to optimize monitoring success, these efforts should also include searching to a maximum radius around wind turbines that includes all deposited carcasses, searching along transects spaced closely together, and searching frequently.
- Recognizing that most bat fatalities in the APWRA are recorded from September through November, it is appropriate to concentrate search efforts during that period, while still maintaining some level of search effort throughout the year.
- Conduct bat acoustic surveys concurrently with fatality monitoring in the Project area to estimate nightly, seasonal, or annual variations in relative activity and species use patterns, and to contribute to the body of knowledge on seasonal bat movements and relationships between acoustic bat activity and turbine fatality. Should emerging research support the approach, these data may be used to generate site-specific predictive models to increase the precision and effectiveness of mitigation measures (e.g., the season specific, multivariate models described by Weller and Baldwin 2011:11). Acoustic bat surveys will be designed, and data analysis conducted by qualified biologists with significant experience in acoustic bat survey techniques. Methods will be informed by the latest available guidelines (California Energy Commission guidelines, 2007); California Bat Working Group guidelines, 2006), except where best available science supports technological or methodological updates. High-quality, sensitive acoustic equipment will be used to produce data of sufficient quality to generate species identifications. Survey design and methods will be scientifically defensible and will include, at a minimum, the following elements.
 - Acoustic detectors will be installed at multiple stations to adequately sample range of habitats in the Project area for both resident and migratory bats. The number of detector arrays installed per project site will incorporate emerging research on the density of detectors required to adequately meet sampling goals and inform mitigation approaches (Weller and Baldwin 2011:10).
 - Acoustic detector arrays will sample multiple airspace heights including as close to the repowered rotor swept area as possible. Vertical structures used for mounting may be preexisting or may be installed for the Project (e.g., temporary or permanent meteorological towers).
 - Surveys will be conducted such that data are collected continuously from early July to early November to cover the activity transition from maternity to migration season and determine if there is elevated activity during migration. Survey season may be adjusted to more accurately

reflect the full extent of the local migration season and/or season(s) of greatest local bat fatality risk, if scientifically sound data support doing so.

- Anticipated adaptive management goals, such as determining justifiable timeframes to reduce required periods of cut-in speed adjustments, will be reviewed with the TAC and incorporated in designing the acoustic monitoring and data analysis program.

Modifications to the fatality search protocol will be implemented to obtain better information on the number and timing of bat fatalities (e.g., Johnston et al. 2013:85). Modifications will include decreases in the transect width and search interval for a period of time coinciding with high levels of bat mortality, i.e., the fall migration season (roughly August to early November, or as appropriate in the view of the TAC). The nature of bat-specific transect distance and search intervals will be determined in consultation with the TAC and will be guided by scientifically sound and pertinent data on rates of bat carcass detection at wind energy facilities (e.g., Johnston et al. 2013:54–55) and site-specific data from APWRA repowering project fatality monitoring programs as these data become available.

Other methods to achieve the goals of the bat fatality monitoring program while avoiding prohibitive costs may be considered subject to approval by the TAC, if these methods have been peer reviewed and evidence indicates the methods are effective. For example, if project proponents wish to have the option of altering search methodology to a newly developed method, such as searching only roads and pads (Good et al. 2011:73), a statistically robust field study to index the results of the methodology against standard search methods will be conducted concurrently to ensure site-specific, long-term validity of the new methods.

Finally, detection probability trials will utilize bat carcasses to develop bat-specific detection probabilities. Care should be taken to avoid introducing novel disease reservoirs; such avoidance will entail using onsite fatalities or using carcasses obtained from within a reasonably anticipated flight distance for that species.

PEIR Mitigation Measure BIO-14c: Prepare and publish annual monitoring reports on the findings of bat use of the project area and fatality monitoring results

Annual reports of bat use results and fatality monitoring will be produced within 3 months of the end of the last day of fatality monitoring. Special-status bat species records will be reported to CNDDB.

PEIR Mitigation Measure BIO-14d: Develop and implement a bat adaptive management plan

In concert with 2019 Updated PEIR Mitigation Measure BIO-14b, the Project proponent will develop adaptive management plans to ensure appropriate, feasible, and current incorporation of emerging information. The goals of the adaptive management plans are to ensure that the best available science and emerging technologies are used to assess impacts on bats, and that impacts are minimized to the greatest extent possible while maximizing energy production. The project-specific adaptive management plans will be used to adjust operation and mitigation to incorporate the results of Project area monitoring and new technology and research results when sufficient evidence exists to support these new approaches. These plans will be reviewed by the TAC and approved by the County. All adaptive management measures will be implemented within a reasonable timeframe, sufficient to allow the measures to take effect in the first fall migration season following the year of monitoring in which the adaptive management threshold was crossed. ADMMs may be modified by the County in consultation with the TAC to take into account current research, site-specific data, and the most effective impact reduction strategies. ADMMs will include a scientifically defensible, controlled research component and minimum post-implementation monitoring time to evaluate the effectiveness and validity of the measures. The minimum monitoring time will consist of three sequential fall seasons of the bat-specific mortality monitoring program covering the 3–4 months of the year in which the highest bat mortality has been observed: likely August– November. The start and

end dates of the 3–4 months of bat-specific mortality monitoring period will be based on existing fatality data and in consultation with the TAC.

Determining a fatality threshold to trigger adaptive management is not straightforward, as insufficient information exists on the status and vitality of the populations of migratory bat species subject to mortality in the APWRA. The low estimate of anticipated bat fatality rates is from the Vasco Winds project in the APWRA. Applying this rate programmatically would result in an estimate of 21,000 bats killed over the 30-year life of the program. The high estimate is from the Montezuma Hills Wind Resource Area. Applying this rate programmatically would result in an estimate of 49,050 bats killed over the 30-year life of the program. Bats are slow to reproduce, and turbines may be more likely to kill adult bats than juveniles, suggesting that a conservative approach is warranted. Accordingly, an initial adaptive management threshold will be established using the low fatality estimates, or 1.679 fatalities/MW/year, to ensure that the most conservative trigger for implementation of adaptive management measures is adopted.

If postconstruction fatality monitoring results in a point estimate for the bat fatality rate that exceeds the 1.679 fatalities/MW/year threshold by a statistically significant amount, then, in consultation with the TAC, ADMM-7 and ADMM-8 (described below) for bats will be implemented.

It is important to note that neither the high nor the low estimate speaks to the ability of bat populations to withstand the associated levels of take. The initial fatality rate threshold triggering adaptive management may be modified by the TAC if appropriate and if such adaptation is supported by the best available science.

The TAC may direct implementation of adaptive management measures for other appropriate reasons, such as an unexpectedly and markedly high fatality rate observed for any bat species, or special-status species being killed in unexpectedly high numbers.

ADMMs for bats may be implemented using a stepped approach until necessary fatality reductions are reached, and monitoring methods must be revised as needed to ensure accurate measurement of the effectiveness of the ADMMs. Additional ADMMs for bats should be developed as new technologies or science supports doing so.

ADMM-7: Seasonal Turbine Cut-in Speed Increase. Cut-in speed increases offer the most promising and immediately available approach to reducing bat fatalities at fourth-generation wind turbines. Reductions in fatalities of 53–87% were observed when increasing modern turbine cut-in speed to 5.0–6.5 m/s (Arnett et al. 2009:3; Good et al. 2012:iii). A recent study in the APWRA documented significant reductions in fatalities using curtailment during the peak migration period (Smallwood and Bell 2019). Work at a site in Wisconsin has shown that a site-specific, real-time curtailment algorithm using wind speed and bat activity information can yield 74–92% fatality reductions at a 3.2% cost in revenue from the turbines (Hayes et al. 2019). Other curtailment studies, also performed in sites outside the APWRA, have shown comparable effectiveness (e.g. Hein et al. 2014). While implementing this measure immediately upon a project's commencement would likely reduce bat fatalities, that assumption is not yet supported by conclusive data. Moreover, without establishing baseline fatality at repowered projects, there would be no way to determine the effectiveness of the approach or whether the costs of increased cut-in speeds (and consequent power generation reductions) were providing fatality reductions. However, although strategies for curtailing turbines hold great promise, developing thresholds is difficult. This is especially true when supporting data are limited or unreliable (Arnett et al. 2013). Accordingly it will be necessary to develop and test a curtailment strategy appropriate for the proposed project.

Cut-in speed increases will be implemented as outlined below, with effectiveness assessed annually.

- The Project proponent will increase cut-in speed to 5.0 m/s from sunset to sunrise during peak migration season (generally August–October). If this is ineffective, the Project proponent will increase turbine cut-in speed by annual increments of 0.5 m/s until target fatality reductions are achieved.
- The Project proponent may refine site-specific migration start dates on the basis of pre- and postconstruction acoustic surveys and ongoing review of dates of fatality occurrences for migratory bats in the APWRA.
- The Project proponent may request a shorter season of required cut-in speed increases with substantial evidence that similar levels of mortality reduction could be achieved. Should resource agencies and the TAC find there is sufficient support for a shorter period (as low as 8 weeks), evidence in support of this shorter period will be documented for the public record and the shorter period may be implemented.
- The Project proponent may request shorter nightly periods of cut-in speed increases with substantial evidence from defensible onsite, long-term postconstruction acoustic surveys indicating predictable nightly timeframes when target species appear not to be active. Target species are here defined as migratory bats or any other species appearing repeatedly in the fatality records.
- The Project proponent may request exceptions to cut-in speed increases for particular weather events or wind patterns if substantial evidence is available from onsite acoustic or other monitoring to support such exceptions (i.e., all available literature and onsite surveys indicate that bat activity ceases during specific weather events or other predictable conditions).
- In the absence of defensible site-specific data, mandatory cut-in speed increases will commence on August 1 and continue through October 31, and will be in effect from sunset to sunrise.

ADMM-8: Emerging Technology as Mitigation. The Project proponent may request, with consultation and approval from agencies, replacement or augmentation of cut-in speed increases with developing technology or another mitigation approach that has been proven to achieve similar bat fatality reductions.

The Project proponent may also request the second tier of adaptive management to be the adoption of a promising but not fully proven technology or mitigation method. These requests are subject to review and approval by the TAC and must include a controlled research component designed by a qualified principal investigator so that the effectiveness of the method may be accurately assessed.

Some examples of such emerging technologies and research areas that could be incorporated in adaptive management plans are listed below.

- The use of acoustic deterrents (Arnett et al. 2013:1).
- The use of altitude-specific radar, night vision and/or other technology allowing bat use monitoring and assessment of at-risk bat behavior (Johnston et al. 2013: 90-91) if research in these areas advances sufficiently to allow effective application of these technologies.
- Application of emerging peer-reviewed studies on bat biology (such as studies documenting migratory corridors or bat behavior in relation to turbines) that support specific mitigation methods.

PEIR Mitigation Measure BIO-14e: Compensate for expenses incurred by rehabilitating injured bats

The cost of reasonable, licensed rehabilitation efforts for any injured bats taken to wildlife care facilities from the program area will be assumed in full by Project proponents.

2019 Updated PEIR Mitigation Measure BIO-15: Compensate for the loss of alkali wetland/drainage habitat

If alkali wetland/drainage habitat is filled or disturbed as part of the repowering project, the project proponent will compensate for the loss of this habitat to ensure no net loss of habitat functions and values. Compensation ratios will be based on site-specific information and determined through coordination with state and federal agencies (CDFW, USFWS, USACE). Unless specified otherwise by a resource agency, the compensation will be at a minimum 1:1 ratio (1 acre restored or created for every 1 acre filled) and may be a combination of onsite restoration/ creation, offsite restoration, and mitigation credits. A restoration and monitoring plan will be developed and implemented. The plan will describe how alkali wetland/drainage habitat will be created and monitored.

2019 Updated PEIR Mitigation Measure BIO-18: Compensate for the loss of wetlands and non-wetland waters

If wetlands or non-wetland waters are filled or disturbed as part of a project, the project proponent will compensate for the loss to ensure no net loss of habitat functions and values. Compensation ratios will be based on site-specific information and determined through coordination with state and federal agencies (CDFW, USFWS, USACE). The compensation will be at a minimum 1:1 ratio (1 acre restored or created for every 1 acre filled) and may be a combination of onsite restoration/creation, offsite restoration, and mitigation credits. A restoration and monitoring plan will be developed and implemented. The plan will describe how wetlands will be created and monitored.

Cultural Resources

PEIR Mitigation Measure CUL-2c: Conduct worker awareness training for archaeological resources prior to construction

Prior to the initiation of any site preparation and/or the start of construction, the Project applicant will ensure that all construction workers receive training overseen by a qualified professional archaeologist who is experienced in teaching nonspecialists, to ensure that forepersons and field supervisors can recognize archaeological resources (e.g., areas of shellfish remains, chipped stone or groundstone, historic debris, building foundations, human bone) in the event that any are discovered during construction.

PEIR Mitigation Measure CUL-2d: Stop work if cultural resources are encountered during ground-disturbing activities

The Project applicant will ensure that construction specifications include a stop-work order if prehistoric or historic-era cultural resources are unearthed during ground-disturbing activities. If such resources are encountered, the Project applicant will immediately halt all activity within 100 feet of the find until a qualified archaeologist can assess the significance of the find. Prehistoric materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or tool-making debris; culturally darkened soil ("midden") containing heat-affected rocks and artifacts; stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered-stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. If the find is determined to be potentially significant, the archaeologist, in consultation with the Native American representative (if appropriate), will develop a treatment plan that could include site avoidance, capping, or data recovery.

PEIR Mitigation Measure CUL-3: Stop work if human remains are encountered during ground-disturbing activities

The Project applicant will ensure the construction specifications include a stop-work order if human remains are discovered during construction or demolition. There will be no further excavation or disturbance of the site within a 100-foot radius of the location of such discovery, or any nearby area reasonably suspected to overlie adjacent remains. The Alameda County Coroner will be notified and will make a determination as to whether the remains are Native American. If the Coroner determines that the remains are not subject to the coroner's authority, the coroner will notify the Native American Heritage Commission, who will attempt to identify descendants of the deceased Native American. If no satisfactory agreement can be reached as to the disposition of the remains pursuant to this state law, then the landowner will re-inter the human remains and items associated with Native American burials on the property in a location not subject to further subsurface disturbance. A final report will be submitted to Alameda County. This report will contain a description of the mitigation program and its results, including a description of the monitoring and testing resources analysis methodology and conclusions and a description of the disposition/curation of the resources.

Geology and Soils

PEIR Mitigation Measure GEO-1: Conduct site-specific geotechnical investigation and implement design recommendations in subsequent geotechnical report

Prior to construction activities at any site, the Project proponent will retain a geotechnical firm with local expertise in geotechnical investigation and design to prepare a site-specific geotechnical report. This report will be prepared by a licensed geotechnical engineer or engineering geologist and will be submitted to the County building department as part of the approval process. This report will be based on data collected from subsurface exploration, laboratory testing of samples, and surface mapping and will address the following issues.

- Potential for surface fault rupture and turbine site location: The geotechnical report will investigate the Greenville, Corral Hollow-Carnegie, and the Midway faults (as appropriate to the location) and determine whether they pose a risk of surface rupture. Turbine foundations and power collection systems will be sited according to recommendations in this report.
- Strong ground shaking: The geotechnical report will analyze the potential for strong ground shaking in Project area and provide turbine foundation design recommendations, as well as recommendations for power collection systems.
- Slope failure: The geotechnical report will investigate the potential for slope failure (both seismically and nonseismically induced) and develop site-specific turbine foundation and power collection system plans engineered for the terrain, rock and soil types, and other conditions present at the Project area in order to provide long-term stability.
- Expansive soils: The geotechnical report will assess the soil types in the Project area and determine the best engineering designs to accommodate the soil conditions.
- Unstable cut or fill slopes: The geotechnical report will address geologic hazards related to the potential for grading to create unstable cut or fill slopes and make site-specific recommendations related to design and engineering.

PEIR Mitigation Measure GEO-7a: Retain a qualified professional paleontologist to monitor significant ground-disturbing activities

The applicant will retain a qualified professional paleontologist as defined by the SVP's Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (2010) to monitor activities with the potential to disturb sensitive paleontological resources. Data gathered during detailed Project design will be used to determine the activities that will require the presence of a monitor. In general, these activities include any ground-disturbing activities involving excavation deeper than 3 feet in areas with high potential to contain sensitive paleontological resources. Recovered fossils will be prepared so that they can be properly documented. Recovered fossils will then be curated at a facility that will properly house and label them, maintain the association between the fossils and field data about the fossils' provenance, and make the information available to the scientific community.

PEIR Mitigation Measure GEO-7b: Educate construction personnel in recognizing fossil material

The applicant will ensure that all construction personnel receive training provided by a qualified professional paleontologist experienced in teaching non-specialists to ensure that they can recognize fossil materials in the event any are discovered during construction.

PEIR Mitigation Measure GEO-7c: Stop work if substantial fossil remains are encountered during construction

If substantial fossil remains (particularly vertebrate remains) are discovered during earth disturbing activities, activities within 100 feet of the find will stop immediately until a state-registered professional geologist or qualified professional paleontologist can assess the nature and importance of the find and a qualified professional paleontologist can recommend appropriate treatment. Treatment may include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection and may also include preparation of a report for publication describing the finds. The applicant will be responsible for ensuring that recommendations regarding treatment and reporting are implemented.

Greenhouse Gas Emissions

2019 Updated PEIR Mitigation Measure GHG-2a: Implement best available control technology for heavy-duty vehicles

The applicant will require existing trucks/trailers to be retrofitted with the best available technology and/or ARB-approved technology consistent with the ARB Truck and Bus Regulation (California Air Resources Board 2018). The ARB Truck and Bus Regulation applies to all diesel-fueled trucks and buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds.

The applicant must replace lighter trucks (GVWR of 14,001 to 26,000 pounds) with engines that are 20 years or older with newer trucks. The Project has the option to install a PM filter retrofit on a lighter truck by 2014 to make the truck exempt from replacement until January 1, 2020, and any lighter truck equipped with a PM filter retrofit prior to July 2011 would receive credit toward the compliance requirements for a heavier truck or bus in the same fleet.

The applicant is required to meet the engine model year schedule shown below for heavier trucks (GVWR greater than 26,000 pounds). To comply with the schedule, the applicant will install the best available PM filter on 1996 model year and newer engines and would replace the vehicle 8 years later. The applicant will replace trucks with 1995 model year and older engines. Replacements with 2010 model year or newer engines meets the final requirements, but the applicant could also replace trucks with used trucks that

would have a future compliance date on the schedule. For example, a replacement with a 2007 model year engine complies until 2023. By 2023 all trucks and buses must have 2010 model year engines with few exceptions.

Engine Model Year Schedule for Heavier Trucks

Engine Model	Requirement from January 1
Pre-1994	No requirements until 2015, then 2010 engine
1994–1995	No requirements until 2016, then 2010 engine
1996–1999	PM filter from 2012 to 2020, then 2010 engine
2000–2004	PM filter from 2013 to 2021, then 2010 engine
2005–2006	PM filter from 2014 to 2022, then 2010 engine
2007–2009	No requirements until 2023, then 2010 engine
2010	Meets final requirements

PEIR Mitigation Measure GHG-2b: Install low SF6 leak rate circuit breakers and monitoring

The applicant will ensure that any new circuit breaker installed at a substation has a guaranteed SF6 leak rate of 0.5% by volume or less. The applicant will provide Alameda County with documentation of compliance, such as specification sheets, prior to installation of the circuit breaker. In addition, the applicant will monitor the SF6-containing circuit breakers at the substation consistent with Scoping Plan Measure H-6 for the detection and repair of leaks.

PEIR Mitigation Measure GHG-2c: Require new construction to use building materials containing recycled content

The applicant will require the construction of all new substation and other permanent buildings to incorporate materials for which the sum of post-consumer recycled content plus one-half of the post-industrial content constitutes at least 10% of the total value of the materials in the Project.

PEIR Mitigation Measure GHG-2d: Comply with construction and demolition debris management ordinance

The applicant will comply with the County's revised Green Building Ordinance regarding construction and demolition debris as follows: (1) 100% of inert waste and 50% wood/vegetative/scrap metal not including Alternative Daily Cover (ADC) and unsalvageable material will be put to other beneficial uses at landfills, and (2) 100% of inert materials (concrete and asphalt) will be recycled or put to beneficial reuse.

Hazards and Hazardous Materials

2019 Updated PEIR Mitigation Measure HAZ-4: Perform a Phase I Environmental Site Assessment prior to construction activities and remediate if necessary

Prior to construction, the Project proponent will conduct a Phase I environmental site assessment in conformance with the American Society for Testing and Materials Standard Practice E1527-13. All environmental investigation, sampling, and remediation activities associated with properties in the Project

area will be conducted under a work plan approved by the regulatory oversight agency and will be conducted by the appropriate environmental professional consistent with Phase I site assessment requirements as detailed below. The results of any investigation and/or remediation activities conducted in the Project area will be included in the Project-level EIR.

A Phase I environmental site assessment should, at a minimum, include the components listed below.

- An onsite visit to identify current conditions (e.g., vegetative dieback, chemical spill residue, presence of above- or underground storage tanks).
- An evaluation of possible risks posed by neighboring properties.
- Interviews with persons knowledgeable about the site's history (e.g., current or previous property owners, property managers).
- An examination of local planning files to check prior land uses and any permits granted.
- File searches with appropriate agencies (e.g., State Water Resources Control Board, fire department, County health department) having oversight authority relative to water quality and groundwater and soil contamination.
- Examination of historical aerial photography of the site and adjacent properties.
- A review of current and historic topographic maps of the site to determine drainage patterns.
- An examination of chain-of-title for environmental liens and/or activity and land use limitations.

If the Phase I environmental site assessment indicates likely site contamination, a Phase II environmental site assessment will be performed (also by an environmental professional).

A Phase II environmental site assessment would comprise the following.

- Collection of original surface and/or subsurface samples of soil, groundwater, and building materials to analyze for quantities of various contaminants.
- An analysis to determine the vertical and horizontal extent of contamination (if the evidence from sampling shows contamination).

If contamination is uncovered as part of Phase I or II environmental site assessments, remediation will be required. If materials such as asbestos-containing materials, lead-based paint, or PCB-containing equipment are identified, these materials will be properly managed and disposed of prior to or during the demolition process.

Any contaminated soil identified on a Project site must be properly disposed of in accordance with DTSC regulations in effect at the time.

Hazardous wastes generated by the proposed Project will be managed in accordance with the California Hazardous Waste Control Law (HSC, Division 20, Chapter 6.5) and the Hazardous Waste Control Regulation (Title 22, CCR, Division 4.5).

If, during construction/demolition of structures, soil or groundwater contamination is suspected, the construction/demolition activities will cease and appropriate health and safety procedures will be implemented, including the use of appropriate personal protective equipment (e.g., respiratory protection, protective clothing, helmets, goggles).

2019 NEW Mitigation Measure HAZ-8: Site Turbines at least 1.25 times TTH from Public Roads and Prepare a Blade Throw Study if Necessary

The Project proponent will re-site or remove any proposed turbines that are less than 1.25 times TTH. Turbines re-sited at least 2.5 times TTH from public roads would meet standard setback requirements and no further action would be necessary. Turbines re-sited less than 2.5 times TTH from public roads, would require preparation of a blade throw study. The blade throw study must be prepared by a qualified professional engineer, subject to approval by the Planning Director.

PEIR Mitigation Measure TRA-1: Develop and implement a construction traffic control plan

Prior to starting construction-related activities, the Applicant shall prepare and implement a Traffic Control Plan (TCP) that will reduce or eliminate impacts associated with the proposed Project. The TCP shall adhere to Alameda County, San Joaquin County, and Caltrans requirements, and must be submitted for review and approval of the County Public Works Department prior to implementation. The TCP shall include the following elements. The County and Caltrans may require additional elements to be identified during their review and approval of the TCP.

- Schedule construction hours to minimize concentrations of construction workers commuting to/from the project site during typical peak commute hours (7 a.m. to 9 a.m. and 4 p.m. to 6 p.m.).
- Limit truck access to the project site during typical peak commute hours (7 a.m. to 9 a.m. and 4 p.m. to 6 p.m.).
- Require that written notification be provided to contractors regarding appropriate haul routes to and from the Project area, as well as the weight and speed limits on local county roads used to access the Project area.
- Provide access for emergency vehicles to and through the Project area at all times.
- When lane/road closures occur during delivery of oversized loads, provide advance notice to local fire, police, and emergency service providers to ensure that alternative evacuation and emergency routes are designated to maintain service response times.
- Provide adequate onsite parking for construction trucks and worker vehicles.
- Require suitable public safety measures in the Project area and at the entrance roads, including fences, barriers, lights, flagging, guards, and signs, to give adequate warning to the public of the construction and of any dangerous conditions that could be encountered as a result thereof.
- Complete road repairs on local public roads as needed during construction to prevent excessive deterioration. This work may include construction of temporary roadway shoulders to support any necessary detour lanes.
- Repair or restore the road right-of-way to its original condition or better upon completion of the work.
- Coordinate Project-related construction activities, including schedule, truck traffic, haul routes, and the delivery of oversized or overweight materials, with Alameda County, Caltrans, and affected cities and counties to identify and minimize overlap with other area construction projects.

Hydrology and Water Quality

PEIR Mitigation Measure WQ-1: Comply with NPDES requirements

Project contractors will obtain coverage under the Construction General Permit before the onset of any construction activities, because the Project would disturb 1 acre or more. A SWPPP will be developed by a

qualified engineer or erosion control specialist in accordance with the appropriate Water Board's requirements for NPDES compliance and implemented prior to the issuance of any grading permit. The SWPPP will be kept onsite during construction activities and will be made available upon request to representatives of the Regional Water Boards.

Compliance and coverage with the local stormwater management programs and Construction General Permit will require controls of pollutant discharges that utilize BMPs and technology to reduce erosion and sediments to meet water quality standards. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater and other nonpoint-source runoff. Measures range from source control, such as reduced surface disturbance, to the treatment of polluted runoff, such as detention basins.

BMPs to be implemented as part of the Storm Water Management Program and Construction General Permit (and SWPPP) may include the following practices.

- Temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) will be employed to control erosion from disturbed areas.
- Use a dry detention basin (which is typically dry except after a major rainstorm, when it will temporarily fill with stormwater), designed to decrease runoff during storm events, prevent flooding, and allow for off-peak discharge. Basin features will include maintenance schedules for the periodic removal of sediments, excessive vegetation, and debris that may clog basin inlets and outlets.
- Cover or apply nontoxic soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more) that could contribute sediment to waterways.
- Enclose and cover exposed stockpiles of dirt or other loose, granular construction materials that could contribute sediment to waterways.
- Ensure that no earth or organic material will be deposited or placed where it may be directly carried into a stream, marsh, slough, lagoon, or body of standing water.
- Prohibit the following types of materials from being rinsed or washed into the streets, shoulder areas, or gutters: concrete, solvents and adhesives, thinners, paints, fuels, sawdust, dirt, gasoline, asphalt and concrete saw slurry, and heavily chlorinated water.
- Ensure that grass or other vegetative cover will be established on the construction site as soon as possible after disturbance.

The contractor will select a combination of BMPs (consistent with the Construction General Permit) that is expected to minimize runoff and remove contaminants from stormwater discharges. The final selection of BMPs will be subject to approval by the San Francisco Bay Regional Water Board and the Central Valley Water Board.

The contractor will verify that a notice of intent has been filed with the State Water Board and that a SWPPP has been developed before allowing construction to begin. The contractor will perform inspections of the construction area, to verify that the BMPs specified in the SWPPP are properly implemented and maintained. The contractor will notify the appropriate Regional Water Board immediately if there is a noncompliance issue and will require compliance. If necessary, the contractor or their agent will require that additional BMPs be designed and implemented if those originally constructed do not achieve the identified performance standard.

Transportation/Traffic

PEIR Mitigation Measure TRA-1: Develop and implement a construction traffic control plan

Prior to starting construction-related activities, the Applicant shall prepare and implement a Traffic Control Plan (TCP) that will reduce or eliminate impacts associated with the proposed Project. The TCP shall adhere to Alameda County, San Joaquin County, and Caltrans requirements, and must be submitted for review and approval of the County Public Works Department prior to implementation. The TCP shall include the following elements. The County and Caltrans may require additional elements to be identified during their review and approval of the TCP.

- Schedule construction hours to minimize concentrations of construction workers commuting to/from the project site during typical peak commute hours (7 a.m. to 9 a.m. and 4 p.m. to 6 p.m.).
- Limit truck access to the project site during typical peak commute hours (7 a.m. to 9 a.m. and 4 p.m. to 6 p.m.).
- Require that written notification be provided to contractors regarding appropriate haul routes to and from the Project area, as well as the weight and speed limits on local county roads used to access the Project area.
- Provide access for emergency vehicles to and through the Project area at all times.
- When lane/road closures occur during delivery of oversized loads, provide advance notice to local fire, police, and emergency service providers to ensure that alternative evacuation and emergency routes are designated to maintain service response times.
- Provide adequate onsite parking for construction trucks and worker vehicles.
- Require suitable public safety measures in the Project area and at the entrance roads, including fences, barriers, lights, flagging, guards, and signs, to give adequate warning to the public of the construction and of any dangerous conditions that could be encountered as a result thereof.
- Complete road repairs on local public roads as needed during construction to prevent excessive deterioration. This work may include construction of temporary roadway shoulders to support any necessary detour lanes.
- Repair or restore the road right-of-way to its original condition or better upon completion of the work.

Coordinate Project-related construction activities, including schedule, truck traffic, haul routes, and the delivery of oversized or overweight materials, with Alameda County, Caltrans, and affected cities and counties to identify and minimize overlap with other area construction projects.

Wildfire

PEIR Mitigation Measure TRA-1: Develop and implement a construction traffic control plan

Prior to starting construction-related activities, the Applicant shall prepare and implement a Traffic Control Plan (TCP) that will reduce or eliminate impacts associated with the proposed Project. The TCP shall adhere to Alameda County, San Joaquin County, and Caltrans requirements, and must be submitted for review and approval of the County Public Works Department prior to implementation. The TCP shall include the following elements. The County and Caltrans may require additional elements to be identified during their review and approval of the TCP.

- Schedule construction hours to minimize concentrations of construction workers commuting to/from the project site during typical peak commute hours (7 a.m. to 9 a.m. and 4 p.m. to 6 p.m.).
- Limit truck access to the project site during typical peak commute hours (7 a.m. to 9 a.m. and 4 p.m. to 6 p.m.).
- Require that written notification be provided to contractors regarding appropriate haul routes to and from the Project area, as well as the weight and speed limits on local county roads used to access the Project area.
- Provide access for emergency vehicles to and through the Project area at all times.
- When lane/road closures occur during delivery of oversized loads, provide advance notice to local fire, police, and emergency service providers to ensure that alternative evacuation and emergency routes are designated to maintain service response times.
- Provide adequate onsite parking for construction trucks and worker vehicles.
- Require suitable public safety measures in the Project area and at the entrance roads, including fences, barriers, lights, flagging, guards, and signs, to give adequate warning to the public of the construction and of any dangerous conditions that could be encountered as a result thereof.
- Complete road repairs on local public roads as needed during construction to prevent excessive deterioration. This work may include construction of temporary roadway shoulders to support any necessary detour lanes.
- Repair or restore the road right-of-way to its original condition or better upon completion of the work.

Coordinate Project-related construction activities, including schedule, truck traffic, haul routes, and the delivery of oversized or overweight materials, with Alameda County, Caltrans, and affected cities and counties to identify and minimize overlap with other area construction projects.

Appendix B. Rare Plant Report



Sand Hill Wind Repowering Project Rare Plant Report

Document No.: 240724202356_fc8b8278
Version: Final

Viracocha Wind, LLC

Sand Hill Wind Repowering Project
July 2024



Sand Hill Wind Repowering Project Rare Plant Report

Client Name:	Viracocha Wind, LLC	
Project Name:	Sand Hill Wind Repowering Project	
Project No.:	D3545000	Project Manager: Karin Fashingbauer
Document No.:	240724202356_fc8b8278	Prepared By: Greg Davis
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Jacobs Engineering Group Inc.

2201 Broadway Street,
4th floor
Oakland, CA
94612
United States

T +1.510.457.0027
F +1.510.457.0037
www.jacobs.com

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Acronyms and Abbreviations

APWRA	Altamont Pass Wind Resource Area
BSA	Biological Study Area
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
EO	Elemental Occurrence
IPaC	Information for Planning and Consultation
NRCS	Natural Resources Conservation Service
PEIR	Program Environmental Impact Report
Project	Sand Hill Wind Repowering Project
USFWS	United States Fish and Wildlife Service

1. Introduction

This report provides the methods and results of focused rare plant surveys that were conducted in 2022, 2023, and 2024 for the Sand Hill Wind Repowering Project (Project). Jacobs completed surveys within a 477.89-acre Biological Study Area (BSA), which includes the Project footprint along with a variable-distance survey buffer.

The purpose of the surveys was to determine the presence or absence of special-status plant populations within the BSA, which satisfies Mitigation Measure (MM) BIO-1a of the Altamont Pass Wind Resource Area (APWRA) Repowering Final Program Environmental Impact Report (PEIR, ICF 2014).

1.1 Project Location

The Project is located in the Altamont Pass between the cities of Livermore (located 9.6 miles southwest) and Tracy (located 9.9 miles east) in Alameda County, California (Figure 1-1). The Project is in the APWRA. The proposed Project footprint is located in unincorporated eastern Alameda County, north of I-580, south of Christensen Road, east of the City of Livermore, and west of the City of Mountain House. Site access is available from Altamont Pass Road (primary entrance) or Mountain House Road. The approximate center of the Project is located at latitude 37.754861° and longitude 121.608912° (World Geodetic System Datum 1984), near the approximate address of 14698 Altamont Pass Road.

The Project is in the Clifton Court Forebay and Midway USGS 7.5-minute quadrangles, and within California Public Land Survey Township 2 South, Range 3 East, Sections 11, 13–14, and 23–24.

1.2 Project Description

The Project will use fourth generation turbines with generating capacities between 2.3 and 4.0 megawatts (MW), with a ranging rotor diameter of 489 to 492 feet (149 to 150 meters), a tower height of 344 to 354 feet (105 to 108 meters), and a maximum total turbine height of 591 to 599 feet (180 to 182.5 meters). The Project will develop approximately 50 MW in generating capacity. The Project also includes the installation of power collection lines and replacement of the existing 'AML' Substation. Figure 1-2 at the end of this section displays the Project design elements including cut and fill areas, laydown areas, roads, collection line workspace, turbines, and other ancillary facilities.

1.3 Environmental Setting

This section describes the regional and local environmental setting of the Project, including vegetation, climate, and soils.

1.3.1 Regional Setting

The Project is located within the Eastern Hills ecological subsection consisting of hills and low mountains in the drier eastern and southeastern parts of the Diablo Range, including some hills south of that range (Miles and Goudey 1998). This ecological subsection stretches from east of the Livermore-San Ramon Valley south-southeast to the Cholame Valley. This area is generally characterized by rolling foothills of annual grassland; the mostly treeless region is steeper on the west and flatter to the east where it slopes toward the floor of the Central Valley. The Project is in the U.S. Department of Agriculture's Major Land Resources Area – 15 (Central California Coast Range within the Land Resource Region C – California Subtropical Fruit, Truck, and Specialty Crop Region) (NRCS 2022).

Historically, the APWRA and surrounding area have been used for cattle ranching during the twentieth century and several generations of wind development projects have co-occupied the area. The Project is located within the APWRA, a region characterized by high velocity and reliable winds, which are generated by the regional differences in temperature between the marine influenced air of the San Francisco Bay Area and the inland areas east of the Diablo range. This region has been prioritized for wind energy development for several decades.

1.3.2 Project Setting

The Project is in the Altamont Pass between the City of Livermore and the City of Tracy. The Project is located between Altamont Pass Road to the south and Bethany Reservoir and the California Aqueduct to the north. The Golden Hills North wind energy facility borders the Project on its western side. The surrounding land use generally consists of cattle ranching and/or wind energy production.

Land use in the study area and surrounding area consists largely of cattle-grazed land on which operating wind turbines or associated ancillary facilities are currently installed. The Project generally consists of annual grassland with scattered stock ponds and ranch infrastructure such as cattle pens and barbed wire fencing that dot the landscape. The remnants of a previous wind energy facility remain on the site including concrete foundations, areas where topsoil has been cleared to mineral soil, and abandoned electrical transmission poles.

Elevations in the Project area range from approximately 300 to 660 feet above mean seal level. Slopes in the study area range from 0 percent to greater than 45 percent along some creek canyons.

1.3.2.1 Land Cover

As described in further detail in Chapter 3, the BSA contains six land cover types: non-native annual grassland, disturbed/developed areas, alkali wetland, intermittent drainages, ephemeral drainages, and ponds (see Figure 3-1 in Chapter 3). Representative photographs of land cover types are presented in Appendix A.

1.3.2.2 Climate and Hydrology

Regionally, the climate is hot and subhumid to arid (Miles and Goudey 1998). Mean annual temperatures range from 50 to 60 degrees Fahrenheit (°F) (Miles and Goudy 1998). According to the U.S. Army Corps of Engineers (USACE) Antecedent Precipitation Tool the site received an annual average of 11.8 inches of rain over a 30-year period (USACE 2024).

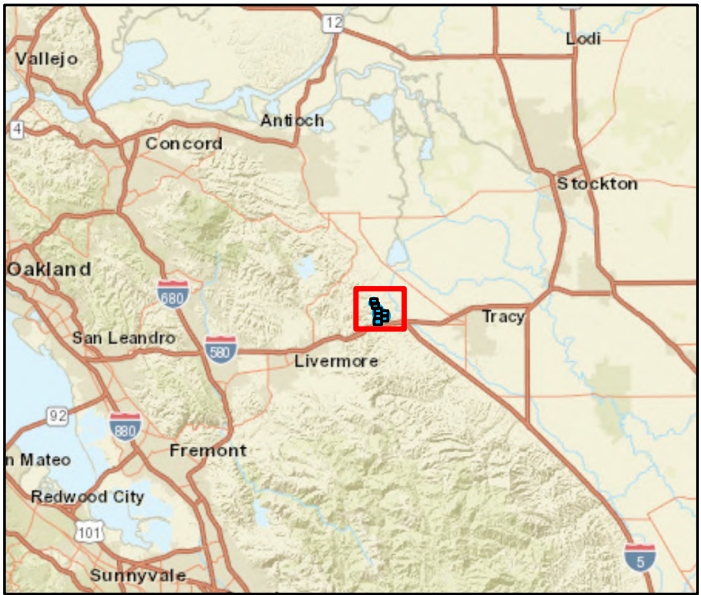
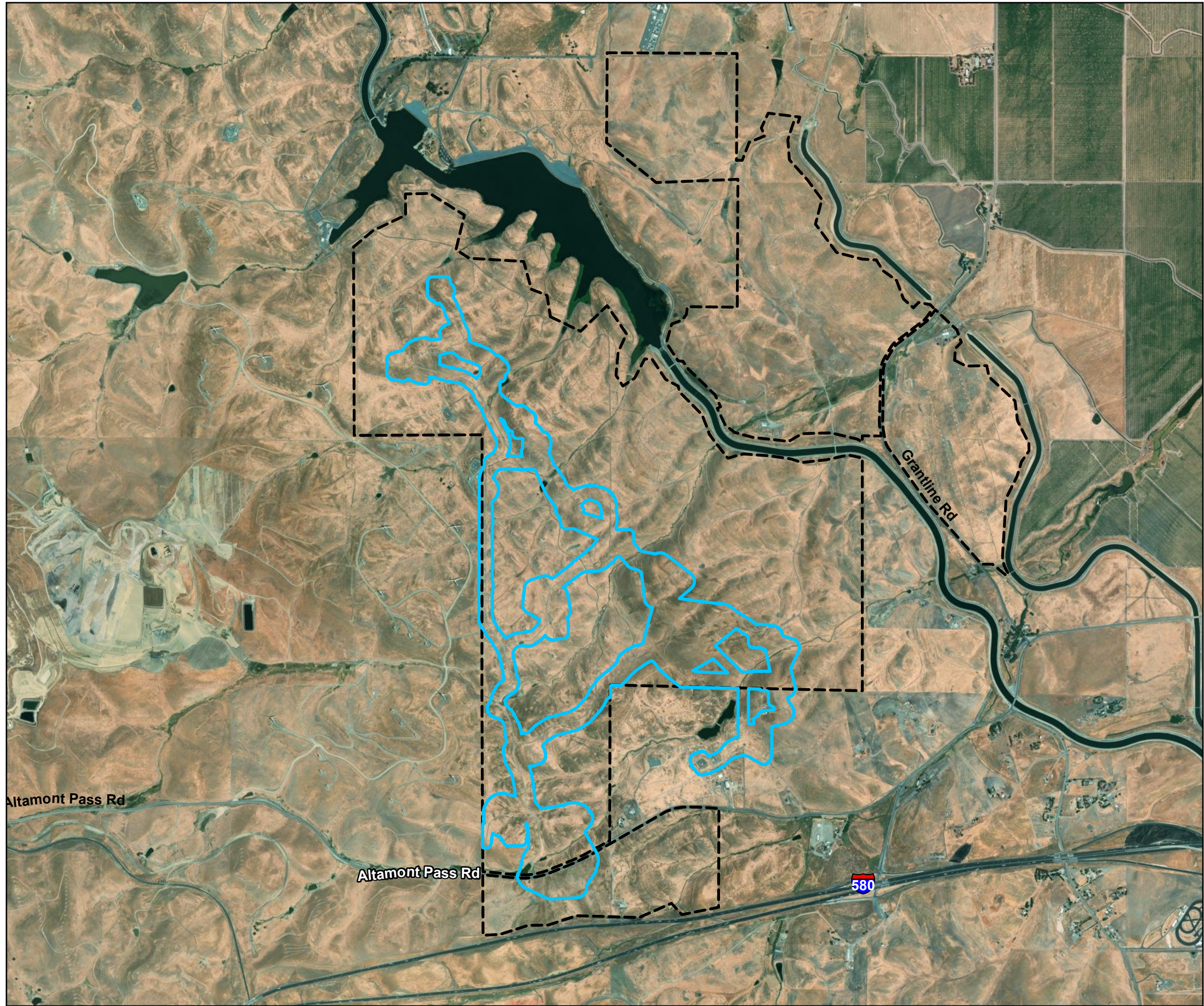
Runoff in the region is generally rapid and all but the larger streams and ponded features are dry through most of the summer. There are no natural lakes in the area, but there are a few constructed reservoirs and stock ponds. Precipitation deposited in this subwatershed flows northeast into Bethany Reservoir or the Clifton Court Forebay (USGS 2019).

1.3.2.3 Soils



Soils regionally tend to originate from sedimentary bedrocks of the Franciscan Complex and the Great Valley Sequence (Miles and Goudey 1998). Regionally, soil temperature regimes are thermic, and soil moisture regimes are mostly xeric. Soils in the study area have been mapped by NRCS as Altamont clay, Pescadero, and San Ysidro (NRCS 2024a). Of these soil types, the Altamont clay series dominates the study area. This soil displays medium to very high runoff, low permeability, and fast drainage. Table 1-1 summarizes the soil series mapped within the study area (NRCS 2024b).

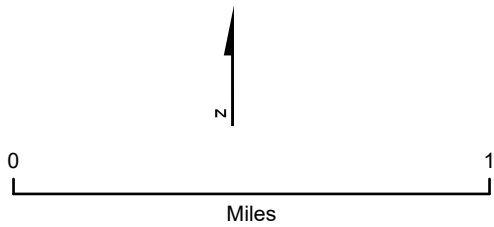
Table 1-1. Mapped Soil Series within Biological Study Area and Vicinity

Type/Series	Surface Texture	Landscape Position and Parent Material	Drainage and Permeability
Altamont	Clay	The Altamont series consists of deep, well drained soils that formed in material weathered from fine-grained sandstone and shale. These soils are on gently sloping to very steep uplands.	Runoff is medium to very high Permeability is slow Well drained
Pescadero	Silty clay loam	The Pescadero series consists of very deep, poorly drained soils that formed in alluvium from sedimentary rocks. Pescadero soils are in basins and are moderately to strongly alkaline at the soil surface. Slopes are 0 to 2 percent.	Runoff is very slow Permeability is very slow Poorly drained or ponded in concave slopes
San Ysidro	Fine sandy loam	The San Ysidro series consists of very deep, moderately well drained soils that formed in alluvium from sedimentary rocks. San Ysidro soils are on fan remnants and stream terraces and have slopes of 0 to 9 percent.	Runoff is slow to medium Permeability is very slow Moderately well drained



Legend

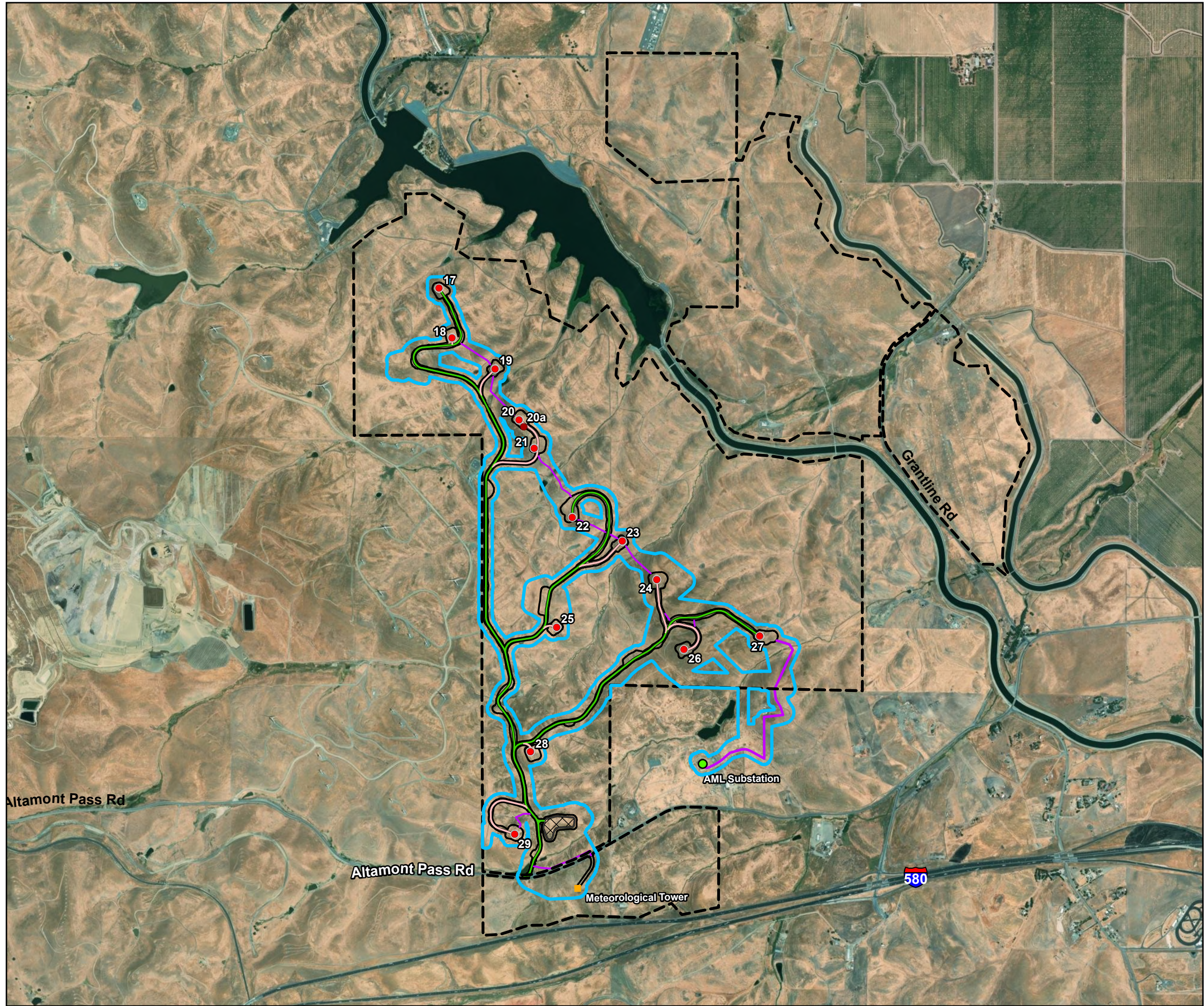
-  Project Area (2,606 Acres)
-  Biological Study Area (478 Acres)



Source:
1) ESRI Aerial Photography

Figure 1-1
Project Location
Sand Hill Wind Repowering Project
Alameda County, California

Jacobs



- Legend**
- Project Area (2,606 Acres)
 - Biological Study Area (478 Acres)
- Project Components**
- Turbine
 - Alternate Turbine
 - Turbine Gravel Apron
 - Grading
 - Laydown Area
 - Primary Road
 - Secondary Road
 - Collection Line Workspace
 - Meteorological Tower Work Area

Source:
1. ESRI World Imagery (2021)

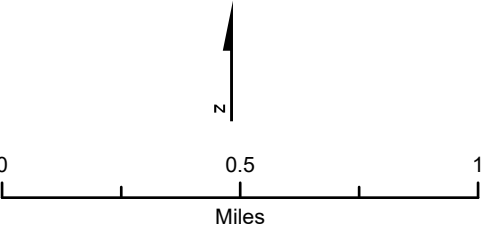


Figure 1-2
Biological Study Area / Project Design Elements
Sand Hill Wind Repowering Project
Alameda County, California

Jacobs

2. Methods

This chapter describes the methods for the pre-field investigations and focused special-status plant surveys.

2.1 Special-status Plant Species Criteria

A plant is considered to have a special-status if it meets at least one of the following criteria as defined under the APWRA Repowering Final PEIR (PEIR, ICF 2014):

- Species that are listed or proposed for listing as threatened or endangered under ESA (50 CFR 17.12); and various notices in the Federal Register.
- Species that are candidates for possible future listing as threatened or endangered under ESA (77 FR 69993, November 21, 2012).
- Species that are listed or proposed for listing by the State of California as threatened or endangered under CESA (14 CCR 670.5).
- Species that meet the definitions of rare or endangered under California Environmental Quality Act (CEQA) (State CEQA Guidelines Section 15380).
- Plants listed as rare under the California Native Plant Protection Act (California Department of Fish and Wildlife Commission 1900 et seq.).
- Plants with a California Rare Plant Rank (CRPR) of 1A, 1B, 2A, and 2B (California Native Plant Society [CNPS] 2024).

2.2 Database Queries

Prior to conducting field surveys, a list of potentially occurring special-status plant species was compiled by querying several databases, and each species was then evaluated to determine its potential to occur within the BSA. Special-status plant species identified during the database review were considered to have the potential to occur in the BSA if their known or expected geographic range includes or abuts the BSA, and if suitable habitat is present. The following databases were queried:

- California Natural Diversity Database (CNDDDB) RareFind (California Department of Fish and Wildlife [CDFW] 2024)
- CNPS Online Inventory of Rare and Endangered Plants of California (CNPS 2024)
- U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) database of federally endangered and threatened species (USFWS 2024)

The database queries were run to incorporate the Project areas for both the Rooney Ranch Wind Repowering Project and the Sand Hill Wind Repowering Project (which are collectively known as the Viracocha Wind Repowering Projects). The IPaC database search was conducted for an area that encompasses the entire combined Project BSA. The CNPS and CNDDDB database queries were performed for the Midway, Clifton Court Forebay, and Altamont 7.5-minute U.S. Geological Survey quadrangles, as well as their respective surrounding quadrangles. Results of these database searches are presented in Figure 2-1 and Table B-1 in Appendix B.

The database review identified 79 special-status vascular plant species (as defined in Section 2.1, but also including plants with a CRPR of 3 and 4) in the regional vicinity, of which 25 were considered to have

potential to occur within the BSA. These 25 plants are considered to have potential to occur because the BSA is within the potential range of the species and it contains suitable or marginally suitable habitat, or the species was determined to be present within the BSA (Figure 2-1 and Appendix B). The remaining 54 species were determined to have no potential to occur within the BSA because the BSA lacked suitable habitat, the BSA was outside of the known distributional or elevation range of the species, or the species was unlikely to occur for other reasons, as noted in Table B-1 in Appendix B.

2.3 Survey Methods

Focused botanical surveys were conducted by walking meandering transects in suitable habitat within the BSA for special-status plants. The survey dates were selected to correspond with the blooming periods of special-status plants that may occur in the Project vicinity, in accordance with standard protocols for surveying special-status plants (CDFW 2018). The focused botanical survey dates and survey personnel are presented in Table 2-1.

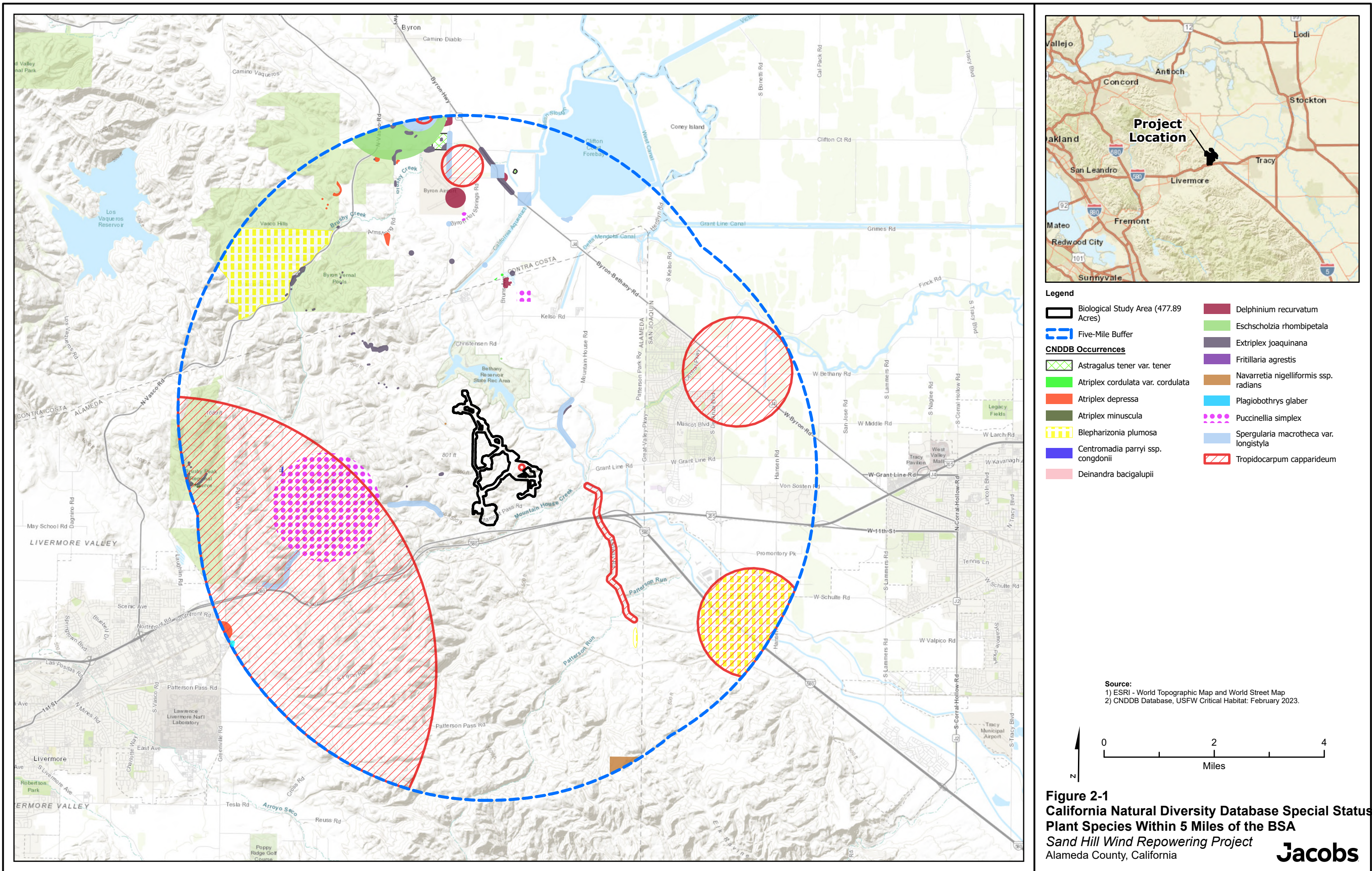
Table 2-1. Rare Plant Survey Dates and Personnel

Survey Dates	Personnel
October 25-27, 2022 November 3, 2022	Kyle Brown, Pim Laulikitnont-Lee, Scott Lindemann, David Rasmussen, Danny Rivas, Gabrielle Smith, Jack Gordon, and Samuel Wentworth
March 20-24, 2023	Kyle Brown, Pim Laulikitnont-Lee, Sam Wentworth, Sean O'Neil, Jack Gordon
July 19-21, 2023	Kyle Brown, Scott Lindemann, Sean O'Neil, Jack Gordon
March 22, 2024	Kyle Brown, Greg Davis
April 2, 2024	Kyle Brown, Amber Anderson

Surveys were floristic in nature and all vascular plant species encountered during the survey were identified to the taxonomic level necessary to determine rarity. A list of the plant species observed in the BSA is provided in Table C-1 in Appendix C. Nomenclature for scientific names used throughout this report follow the Jepson Online Interchange for California Floristics (University of California, Berkeley 2024).

2.4 Reference Site Visits

CDFW recommends conducting reference checks for special-status plants for two reasons: first, to determine if the target special-status plants are identifiable and present at the times the surveys are performed, and second, to obtain a visual image of the special-status plants, associated habitat, and associated natural communities (CDFW 2018). These reference checks are also useful for documenting the presence or absence of known special-status plant occurrences. Reference checks for lesser saltscare (*Atriplex minuscula*) and Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*) were completed concurrently with the focused surveys. Chapter 3 provides results of the reference site visits.



3. Results

The following section presents the results of the special-status plant surveys.

3.1 Land Cover

A land cover type is defined as the dominant character of the land surface discernible from aerial photographs, as determined by vegetation, water, or human uses. Land cover types are the most widely used units in analyzing ecosystem function, habitat diversity, natural communities, wetlands and streams, and covered species habitat. Land cover types within the BSA are shown on Figure 3-1. Representative photos are provided in Appendix A.

3.1.1 Non-native Annual Grassland

Non-native annual grassland land cover type occurs throughout most of the study area (Figure 3-1). Plant species composition is variable, consisting of non-native grasses as well as non-native and native herbaceous species. Dominant non-native species include:

- Wild oat (*Avena barbata*)
- Red brome (*Bromus madritensis ssp. rubens*)
- Ripgut brome (*Bromus diandrus*)
- Soft chess brome (*Bromus hordeaceus*)
- Mediterranean barley (*Hordeum marinum ssp. gussoneanum*)
- Summer mustard (*Hirschfeldia incana*)
- Black mustard (*Brassica nigra*)
- Yellow star-thistle (*Centaurea solstitialis*)
- Field bindweed (*Convolvulus arvensis*)
- California burclover (*Medicago polymorpha*)
- Short sock-destroyer (*Torilis nodosa*)
- Mediterranean linseed (*Bellardia trixago*)
- Fiddle dock (*Rumex pulcher*)

3.1.2 Disturbed/Developed Areas

Disturbed/developed areas occur throughout the study area and include dirt, gravel, and paved roads, equipment storage areas, and wind turbine foundations, pads, and infrastructure from the former wind facility (Figure 3-1). Although vegetation is mostly absent from these areas, the following ruderal and weedy species are often found in these areas:

- Milk thistle (*Silybum marianum*)
- Italian thistle (*Carduus pycnocephalus ssp. pycnocephalus*)
- Yellow star-thistle
- Stinkwort (*Dittrichia graveolens*)

Non-natural rock piles, likely associated with construction of the previous project, are located sporadically within the BSA.

3.1.3 Alkali Wetland

This land cover type occurs periodically throughout the study area, often in patches along aquatic features (Figure 3-1). This land cover type is dominated by alkali heath (*Frankenia salina*) and salt grass (*Distichlis spicata*). Other species present include:

- Iodine bush (*Allenrolfea occidentalis*)
- Alkali weed (*Cressa truxillensis*)
- Alkali mallow (*Malvella leprosa*)
- Alkali heliotrope (*Heliotropium curassavicum* var. *oculatum*)
- Common spikeweed (*Centromadia pungens* ssp. *pungens*)
- Saltbushes (*Atriplex* spp.)

Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*; CNPS CRPR 1B.1) occasionally lines the channels of alkali wetlands and other aquatic features. San Joaquin spearscale (*Extriplex joaquinana*; CNPS CRPR 1B.2) periodically occurs on the borders of alkali wetlands, often singly or in groups of 5 to 10 individuals.

3.1.4 Intermittent and Ephemeral Drainages

Intermittent and ephemeral drainages occur in low-lying areas and valley bottoms in the BSA (Figure 3-1). Some of these aquatic features are unvegetated, while others are dominated by non-native annual grassland and some halophytic vegetation as described previously in Chapter 3.1.3.

3.1.5 Ponds

Most ponds in the BSA are stock ponds for grazing cattle (Figure 3-1). A few ponds contained water during the time of the surveys in October and November, but most ponds were dry. The ponds were mostly unvegetated or supported sparse annual grassland and halophytic vegetation when dry. During the spring surveys the ponds were observed to be inundated and generally lacked emergent vegetation aside from the pond margins.

3.2 Reference Site Checks

Prior to conducting the rare plant surveys within the BSA, Jacobs team members visited nearby rare plant reference populations, where accessible, to observe plant phenology as well as to obtain a visual search image of target rare plant species. Reference sites are further discussed below.

3.2.1 Lesser Saltscale (*Atriplex minuscule*)

Prior to the fall surveys of 2022, a reference population of lesser saltscale was visited near the intersection of Dyer Road and Altamont Pass Road. This population is associated with the CNDDDB Elemental Occurrence (EO) #44. The plant was observed to be in flower/fruit and diagnostic characteristics were noted to support the surveys within the BSA. Suitable habitat and associate plants species were also noted, which included alkali heath and saltgrass growing within scalds or mostly barren areas.

3.2.2 Congdon's Tarplant (*Centomadia parryi* ssp. *congdonii*)

Prior to the fall surveys of 2022, a reference population of Congdon's tarplant was visited near the intersection of Dyer Road and Altamont Pass Road. This population is associated with the CNDDDB EO #68.

The plant was observed to be in flower/fruit and diagnostic characteristics were noted to support the surveys within the BSA. Plant species within this reference population included ruderal species such as:

- Yellow star-thistle
- Bristly ox-tongue (*Helminthotheca echioides*)
- Mediterranean barley
- Soft chess
- Saltgrass

This population is within mesic grassland in a low point between a railroad embankment, Dyer Road, and hills. More specifically, this EO is described as being on Altamont clays on fringes of alkali and freshwater seasonal wetlands, as well as on the adjacent disturbed annual grassland.

3.3 Special-Status Plant Survey Results

The following section provides further detail on the special-status plant species observed within the BSA.

3.3.1 Congdon's Tarplant (*Centromadia parryi* ssp. *congdonii*)

Several populations of Congdon's tarplant were observed within the BSA during the fall 2022 surveys. Congdon's tarplant is an annual herb in the sunflower family (Asteraceae) that is endemic to California and has a CRPR of 1B.1, which are plants that are seriously threatened and are considered rare, threatened, or endangered in California and elsewhere (CNPS 2024). This species is generally associated with alkaline soils in valley and foothill grassland. Figure 3-1 shows the four locations of Congdon's tarplant identified during the surveys, which are further described as follows.

Over 400 plants were observed within an alkali wetland and ephemeral drainage complex located between Turbines 21 and 22, however many of the plants associated with this population extend outside of the BSA (Figure 3-1, Page 2). Approximately 315 plants were documented along an intermittent drainage immediately south of Turbine 23 (Figure 3-1, Page 3). Hundreds of plants were documented near a road crossing associated with an alkali wetland and ephemeral drainage complex between Turbine 25 and Turbine 28 (Figure 3-1, Page 6). Hundreds of plants were also documented in a pond, ephemeral drainage, and alkali wetland complex at a road crossing adjacent to Altamont Pass Road (Figure 3-1, Page 7).

Plant associates observed growing along with Congdon's tarplant within the BSA included the plant species described in Chapter 3.1.4 of this report, as well as other ruderal plants. Habitat for this species correlated with the margins of aquatic resources and Altamont clay soils.

3.3.2 San Joaquin Spearscale (*Extriplex joaquinana*)

One population of this species was documented within the BSA during the fall 2022 surveys. San Joaquin spearscale is an annual herb in the goosefoot family (Chenopodiaceae) that is endemic to California and has a CRPR of 1B.2, which are plants that are moderately threatened and are considered rare, threatened, or endangered in California and elsewhere (CNPS 2024). This species is found in seasonal alkali wetlands or alkali sink scrub, commonly with saltgrass and alkali heath (*Frankenia* spp.) (CDFW 2024). Figure 3-1 shows the location of San Joaquin spearscale identified during the surveys.

Thirteen plants were observed in a pond between Turbine 21 and Turbine 22 (Figure 3-1, Page 2). Plant associates observed growing along with San Joaquin spearscale included:

- Alkali heliotrope

- Swamp pickle grass (*Crypsis schoenoides*)
- Rabbitsfoot grass (*Polypogon monspeliensis*)
- Curly dock (*Rumex crispus*)

Habitat for this species correlated with the receding margins of the pond and Altamont clay soils.

3.3.3 Caper-fruited Tropidocarpum (*Tropidocarpum capparideum*)

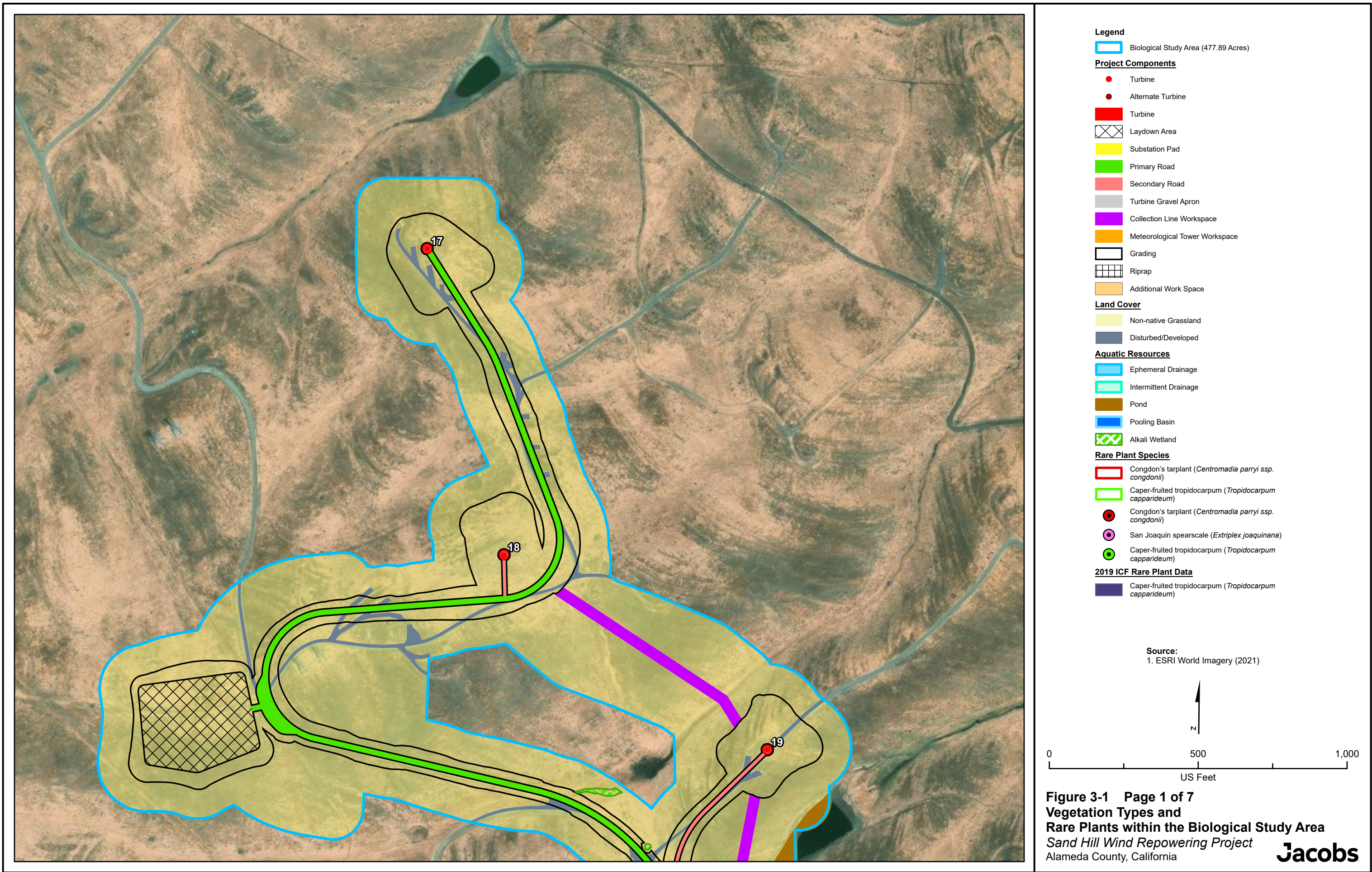
Several populations of caper-fruited tropidocarpum were observed within the BSA during the spring 2023 and 2024 surveys. Caper-fruited tropidocarpum is an annual herb in the mustard family (Brassicaceae) that is endemic to California and has a CRPR of 1B.1 (CNPS 2024). This species is generally associated with alkaline clay soils in valley and foothill grassland. Figure 3-1 shows the two locations of caper-fruited tropidocarpum identified during the surveys, which are further described below.

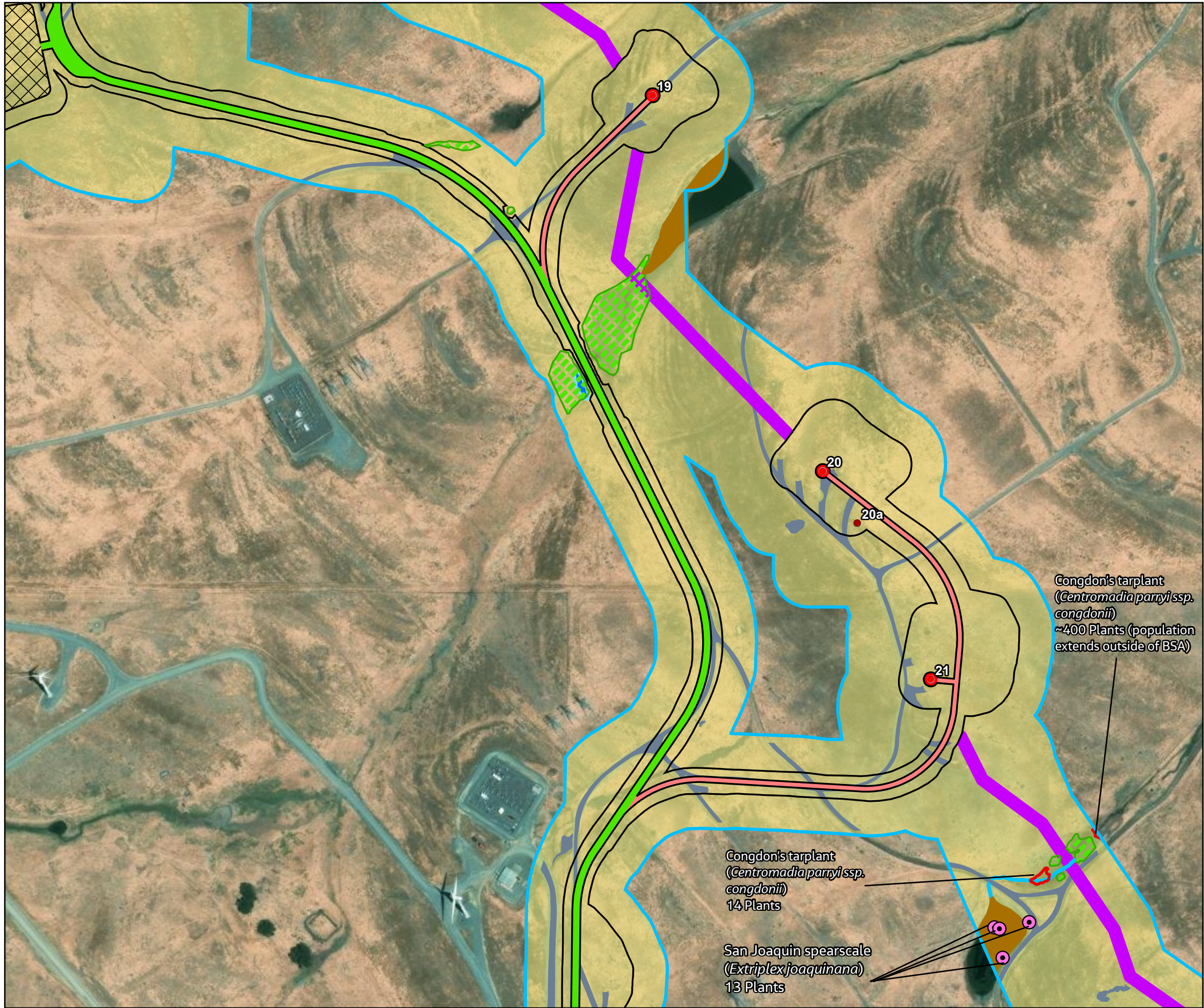
Forty-seven plants were observed growing along a proposed access road to Turbine 26 within annual grassland in 2024 (Figure 3-1, Page 4). In addition to the plants within the current Project footprint, an adjacent population of this species was previously mapped by ICF in 2019. During surveys in 2024, no plants were observed directly within the ICF-mapped 2019 polygon, but the 2019 polygon is included with other more recent survey data for avoidance. The previously mapped population roughly corresponds to the existing CNDDDB EO #27, which documented fewer than 100 plants observed in 2019 (CDFW 2024). Hundreds of plants were also documented south of Turbine 27 in 2023 on slopes above an intermittent drainage (Figure 3-1, Page 4).

Plant associates observed growing along with caper-fruited tropidocarpum within the BSA included:

- Wild oat
- Ripgut brome
- Italian ryegrass
- bugloss-flowered fiddleneck (*Amsinckia lycopsoides*)
- Greenstem filaree (*Erodium moschatum*)
- Blue dicks (*Dipterostemon capitatus*)
- California burclover

Habitat for this species correlated with annual grassland hillslopes and Altamont clay soils.





Legend

Biological Study Area (477.89 Acres)

Project Components

- Turbine
- Alternate Turbine
- Turbine
- Laydown Area
- Substation Pad
- Primary Road
- Secondary Road
- Turbine Gravel Apron
- Collection Line Workspace
- Meteorological Tower Workspace
- Grading
- Riprap
- Additional Work Space

Land Cover

- Non-native Grassland
- Disturbed/Developed

Aquatic Resources

- Ephemeral Drainage
- Intermittent Drainage
- Pond
- Pooling Basin
- Alkali Wetland

Rare Plant Species

- Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*)
- Caper-fruited tropidocarpum (*Tropidocarpum capparideum*)
- Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*)
- San Joaquin spearscale (*Extriplex joaquinana*)
- Caper-fruited tropidocarpum (*Tropidocarpum capparideum*)

2019 ICF Rare Plant Data

- Caper-fruited tropidocarpum (*Tropidocarpum capparideum*)

Source:
1. ESRI World Imagery (2021)

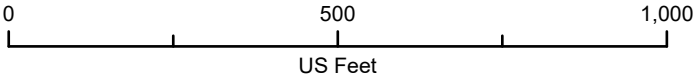
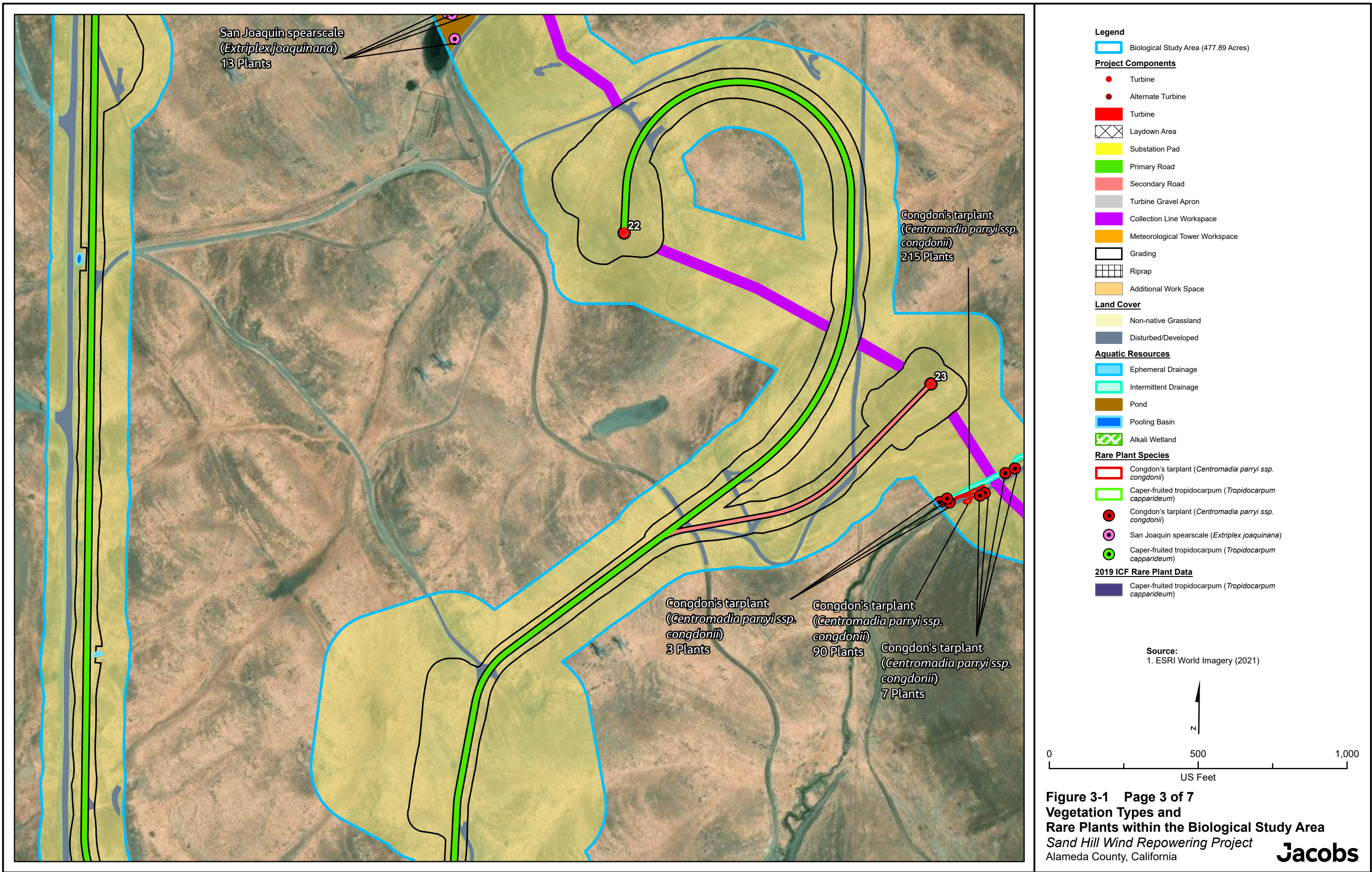
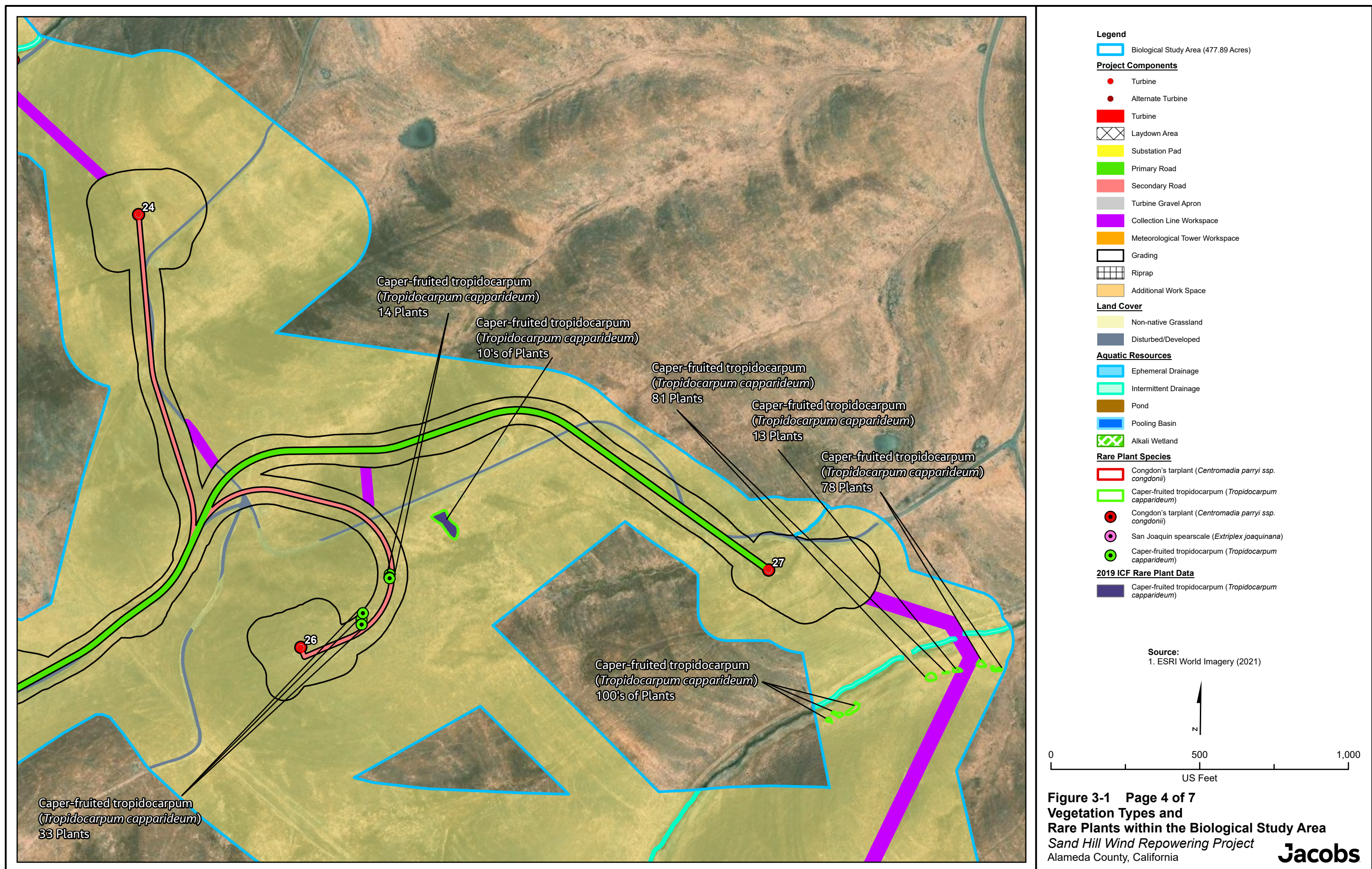
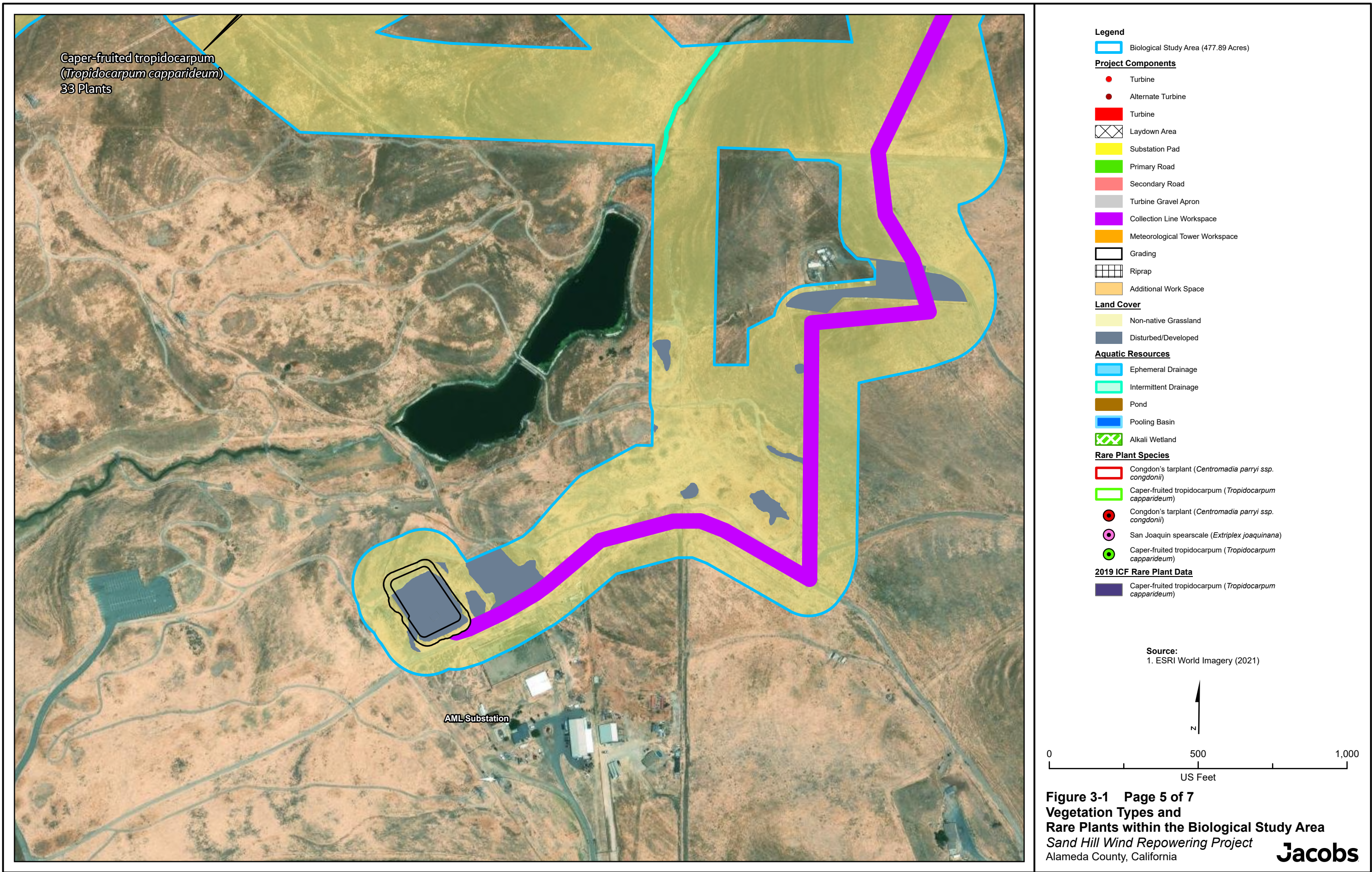


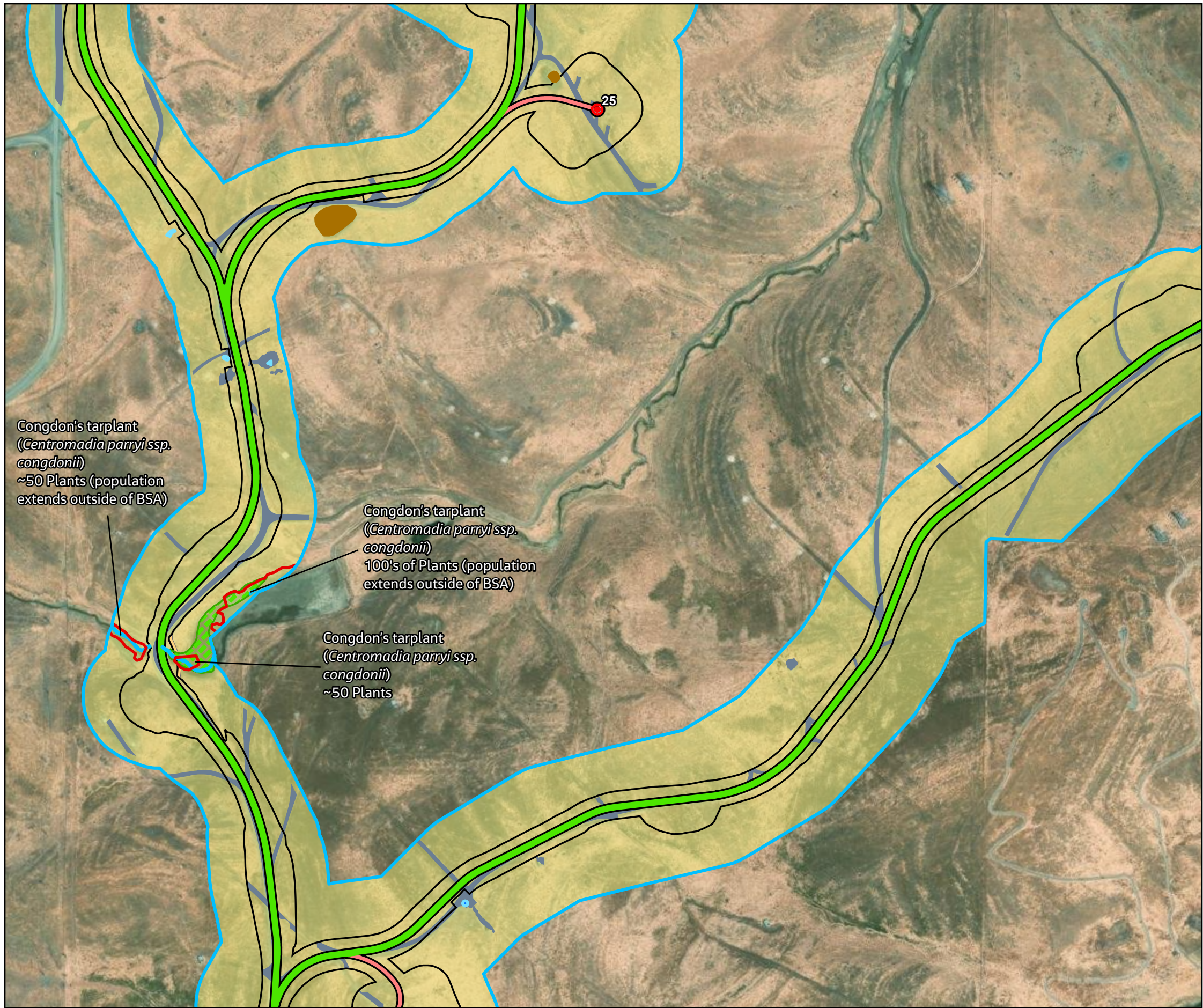
Figure 3-1 Page 2 of 7
Vegetation Types and
Rare Plants within the Biological Study Area
Sand Hill Wind Repowering Project
Alameda County, California

Jacobs









- Legend**
- Biological Study Area (477.89 Acres)**
- Project Components**
- Turbine
 - Alternate Turbine
 - Turbine
 - Laydown Area
 - Substation Pad
 - Primary Road
 - Secondary Road
 - Turbine Gravel Apron
 - Collection Line Workspace
 - Meteorological Tower Workspace
 - Grading
 - Riprap
 - Additional Work Space
- Land Cover**
- Non-native Grassland
 - Disturbed/Developed
- Aquatic Resources**
- Ephemeral Drainage
 - Intermittent Drainage
 - Pond
 - Pooling Basin
 - Alkali Wetland
- Rare Plant Species**
- Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*)
 - Caper-fruited tropidocarpum (*Tropidocarpum capparideum*)
 - Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*)
 - San Joaquin spearscale (*Extriplex joaquinana*)
 - Caper-fruited tropidocarpum (*Tropidocarpum capparideum*)
- 2019 ICF Rare Plant Data**
- Caper-fruited tropidocarpum (*Tropidocarpum capparideum*)

Source:
1. ESRI World Imagery (2021)

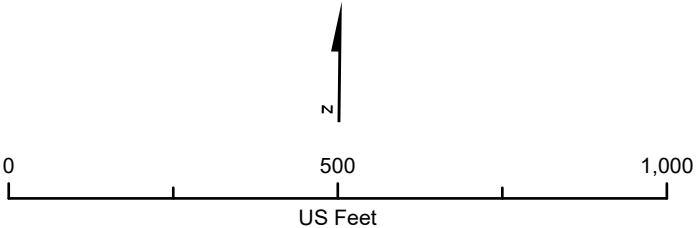
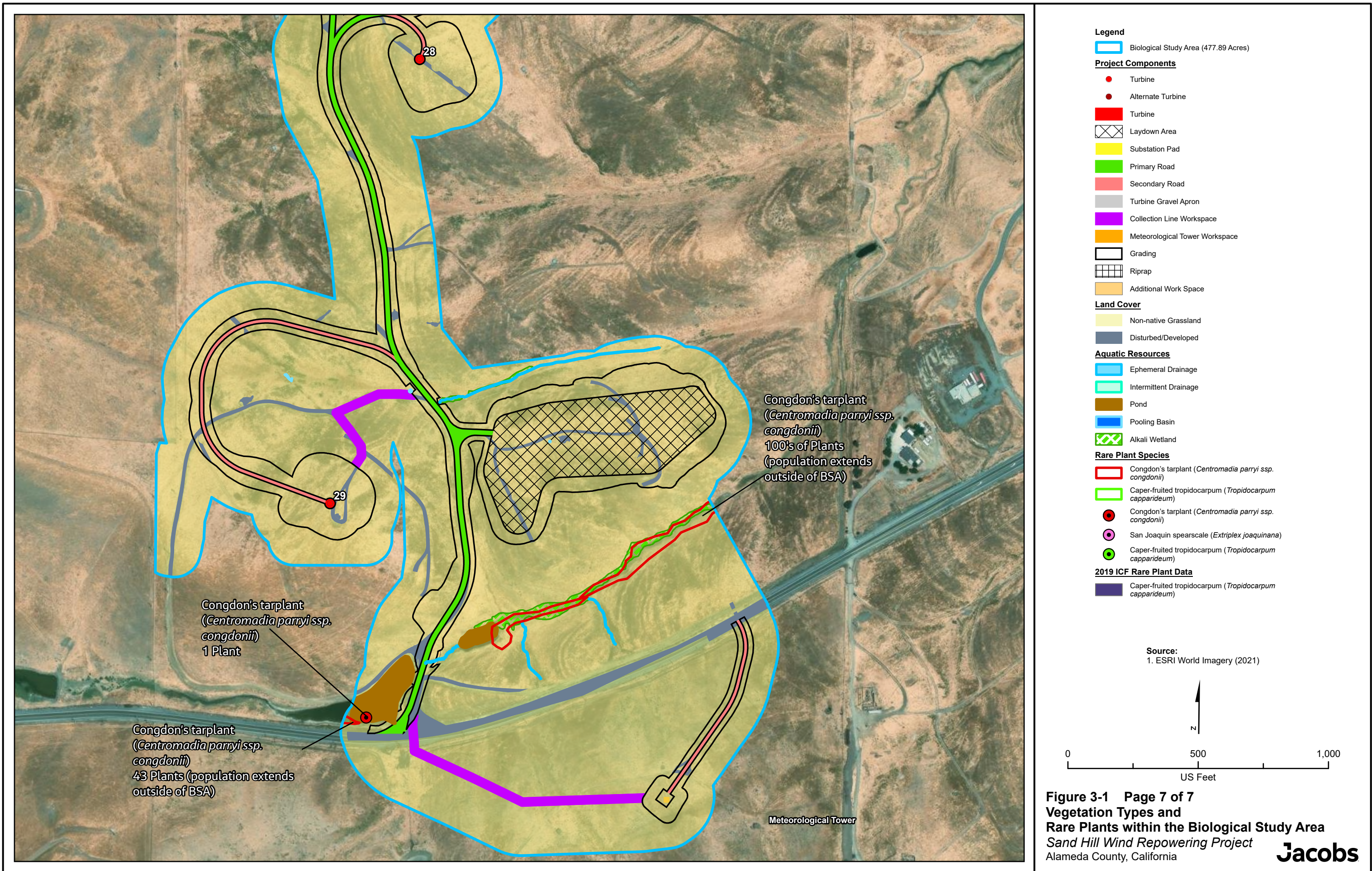


Figure 3-1 Page 6 of 7
Vegetation Types and
Rare Plants within the Biological Study Area
Sand Hill Wind Repowering Project
Alameda County, California

Jacobs



4. Discussion

The special-status plant surveys completed in compliance with MM BIO-1a have determined that the previously proposed Project design included potential impacts to a population of Congdon's tarplant at a proposed culvert installation area between Turbines 25 and 28, as well as potential impacts to populations of caper-fruited tropidocarpum at a proposed access road to Turbine 26 and along the collection line workspace near Turbine 27. As per MM BIO-1b and BIO-1d of the APWRA Repowering PEIR, all impacts on caper-fruited tropidocarpum must be avoided. Impacts on other special-status plant species are to be avoided to the extent feasible, and any unavoidable impacts addressed through compensatory mitigation. The Project footprint will be redesigned and mitigation measures will be implemented to avoid impacts to special-status plant species to ensure compliance with the PEIR (ICF 2014).

With exclusionary flagging and fencing implemented per MM BIO-1c of the APWRA Repowering PEIR, and a forthcoming redesign of the current Project footprint specifically to avoid caper-fruited tropidocarpum and Congdon's tarplant, there will be no direct impacts to these species. The access road to Turbine 26 will be redesigned to avoid any caper-fruited tropidocarpum in the area. The collection line workspace southeast of Turbine 27 will be slightly rerouted and minimized to avoid caper-fruited tropidocarpum in that area. As it relates to impacts to Congdon's tarplant, it is assumed that modifications to the culvert design and associated grading areas will avoid impacts to this species.

If initial grading has not yet been completed prior to the blooming period for each species, during the year of proposed impact, a biological monitor will be present during ground-disturbing activities to search for special-status species in compliance with MM BIO-1e. Any newly-identified population areas would also be subject to flagging and fencing, and avoidance or mitigation, as needed.

In the unlikely event that impacts to Congdon's tarplant cannot be avoided via redesign, a mitigation plan for Congdon's tarplant would be required. As per Mitigation Measure BIO-1d of the APWRA Repowering PEIR, loss of individuals or occupied habitat of a special-status plant species occurrence will be compensated for through the acquisition, protection, and subsequent management in perpetuity of other existing occurrences at a 2:1 ratio (occurrences impacted: occurrences preserved). The Project proponent would provide detailed information to the County and CDFW on the location of the preserved occurrences, quality of the preserved habitat, feasibility of protecting and managing the areas in perpetuity, responsibility parties, and other pertinent information. The preserved habitat would be confirmed to support populations of the impacted species and will be preserved in perpetuity via deed restriction, establishment of a conservation easement, or similar preservation mechanism. A qualified botanist or plant ecologist would prepare a Preservation Plan or Long-Term Management Plan for the site containing at a minimum: a monitoring plan and performance criteria for the preserved plant population; a description of remedial measures to be performed in the event that performance criteria are not met; a description of maintenance activities to be conducted on the site, including weed control, trash removal, irrigation, and control of herbivory by livestock and wildlife; and an adequate funding mechanism to ensure long-term management of the preserved habitat. If suitable occurrences of a special-status plant species are not available for preservation, then the Project would be redesigned to remove features that would result in impacts on that species.

5. References

California Department of Fish and Wildlife (CDFW). 2018. *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities*. CDFW Nongame Program. Sacramento, California.

California Department of Fish and Wildlife (CDFW). 2024. California Natural Diversity Database (CNDDB). RareFind Version 5.2.14. Desktop Commercial Subscription. Biogeographic Data Branch. Sacramento, California. Information dated June 17, 2024. <https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data>.

California Native Plant Society (CNPS). 2024. *California Native Plant Society Inventory of Rare and Endangered Plants of California*. <http://www.cnps.org/cnps/rareplants/inventory/index.php>.

ICF International (ICF). 2014. Altamont Pass Wind Resource Area Repowering Final Program Environmental Impact Report.

Miles, Scott and Charles Goudey (editors). 1998. *Ecological Subregions of California*. U.S. Department of Agriculture, Forest Service. Pacific Southwest Division. R5-EM-TP-005. San Francisco, California.

Natural Resources Conservation Service (NRCS). 2022. Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin. United States Department of Agriculture Handbook 296. https://www.nrcs.usda.gov/sites/default/files/2022-10/AgHandbook296_text_low-res.pdf.

Natural Resources Conservation Service (NRCS). 2024a. Web Soil Survey 2.0 National Cooperative Soil Survey. <http://websoilsurvey.nrcs.usda.gov/app/>.

National Resources Conservation Service (NRCS). 2024b. Official Soil Series Descriptions. <https://soilseries.sc.egov.usda.gov/>.

University of California, Berkeley. 2024. *The Jepson Online Interchange for California Floristics*. <https://ucjeps.berkeley.edu/interchange/>.

U.S. Army Corps of Engineers (USACE). 2024. The Antecedent Precipitation Tool. Version 2.0. <https://github.com/erdc/Antecedent-Precipitation-Tool>.

U.S. Fish and Wildlife Service (USFWS). 2024. Information for Planning and Consultation (IpaC). <https://ecos.fws.gov/ipac/>.

U.S. Geological Survey (USGS). 2019. USGS TNM Hydrography (NHD). Accessed June 17, 2024. <https://apps.nationalmap.gov/services/>.

Appendix A

Representative Site Photographs



Sand Hill Wind Repowering Project Rare Plant Report



Photo ID: 1	Date: October 27, 2022	
Location: Sand Hill Wind Repowering Project		
Description: View of representative alkali wetland habitat occupied by Congdon's tarplant (<i>Centromadia parryi</i> ssp. <i>congdonii</i>) between Turbine 25 and Turbine 28.		

Photo ID: 2	Date: October 26, 2022	
Location: Sand Hill Wind Repowering Project		
Description: View of San Joaquin spearscale (<i>Extriplex joaquinana</i>) within the pond south of Turbine 21.		

Sand Hill Wind Repowering Project Rare Plant Report



Photo ID: 3	Date: October 26, 2022	
Location: Sand Hill Wind Repowering Project		
Description: View of representative pond habitat that supports San Joaquin spearscale within the BSA.		

Photo ID: 4	Date: March 22, 2024	
Location: Sand Hill Wind Repowering Project		
Description: View of caper-fruited tropidocarpum (<i>Tropidocarpum capparideum</i>) in bloom and fruit near Turbine 26.		

Sand Hill Wind Repowering Project Rare Plant Report

Photo ID: 5	Date: March 22, 2024	
Location: Sand Hill Wind Repowering Project		
Description: View of representative annual grassland habitat that supports caper-fruited tropidocarpum within the BSA.		

Appendix B

Special-status Plant Species with Potential to Occur in the Biological Study Area



Table B-1. Special-status Plant Species with Potential to Occur in the Biological Study Area

Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
<i>Acanthomintha lanceolata</i>	Santa Clara thorn mint	-	-	4.2	Annual herb that occurs in arid and rocky places and often on serpentine slopes, in chaparral, cismontane woodland and coastal scrub from 260 to 600 feet. Known in Alameda, Fresno, Merced, Monterey, San Benito, San Joaquin, Santa Clara, Stanislaus, and Ventura Counties. Blooms March through June (CDFW 2024, CNPS 2024).	March to June	Absent. There is no suitable habitat within the biological study area (BSA) to support this species.
<i>Allium sharsmithiae</i>	Sharsmith's onion	-	-	1B.3	Perennial bulbiferous herb found in chaparral and cismontane woodland from 1,310 to 3,935 feet. Restricted to rocky sites derived from serpentinite. Blooms March through May (CNPS 2024)	March to May	Absent. The BSA does not contain serpentine substrates to support this species.
<i>Amsinckia grandiflora</i>	large-flowered fiddleneck	E	E	1B.1	Annual herb found in cismontane woodland and valley and foothill grassland from 500 to 1,800 feet. Known from fewer than five natural occurrences in Alameda, Contra Costa, and San Joaquin Counties. Known from only two natural populations. Blooms March through May (CDFW 2024, CNPS 2024).	March to May	Absent / Unlikely to occur. Suitable habitat is present within the BSA; however, the BSA is outside of the species' known range. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. Additionally, there are no documented CNDDDB occurrences

Sand Hill Wind Repowering Project Rare Plant Report

Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
							of this species within a 5-mile radius of the BSA (CDFW 2024).
<i>Amsinckia lunaris</i>	bent-flowered fiddleneck	-	-	1B.1	Annual herb found in coastal bluff scrub, cismontane woodland, and valley and foothill grassland from 10 to 1,650 feet. Known in Alameda, Contra Costa, Colusa, Lake, Marin, Napa, San Benito, Santa Clara, Santa Cruz, San Mateo, and Yolo Counties. Blooms March through June (CDFW 2024, CNPS 2024).	March to June	Absent / Potential to occur. Suitable habitat is present within the BSA. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2024).
<i>Androsace elongata ssp. acuta</i>	California rockjasmine	-	-	4.2	Annual herb found in chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, and valley and foothill grassland, from 490 to 4,290 feet. Known in Alameda, Contra Costa, Colusa, Fresno, Glenn, Kern, Los Angeles, Merced, Riverside, San Bernardino, San Benito, Santa Clara, San Diego, Siskiyou, San Joaquin, San Luis Obispo, San Mateo, Stanislaus, and Tehama Counties. (CNPS 2022). Blooms February through June (CDFW 2024, CNPS 2024).	February to June	Absent / Likely to occur. Suitable habitat is present within the BSA. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. This species is not tracked in the CNDDDB; however, it has been documented within the Midway 7.5-minute USGS quadrangle (Calflora 2024).

Sand Hill Wind Repowering Project Rare Plant Report

Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
<i>Arctostaphylos auriculata</i>	Mount Diablo manzanita	-	-	1B.3	Evergreen shrub found in sandstone chaparral and cismontane woodland from 440 to 2,130 feet. Known in fewer than 20 occurrences in Contra Costa County. Blooms January through March (CNDDDB 2023, CNPS 2023).	January to March	Absent. There is no suitable habitat within the BSA to support this species.
<i>Arctostaphylos manzanita ssp. laevigata</i>	Contra Costa manzanita	-	-	1B.2	An evergreen shrub found in rocky chaparral from 1,640 to 3,610 feet. Known from 10 occurrences in Contra Costa County. Blooms January through March and uncommonly into April (CDFW 2024, CNPS 2024).	January to March	Absent. There is no suitable habitat within the BSA to support this species.
<i>Aspidotis carlotta-halliae</i>	Carlotta Hall's lace fern	-	-	4.2	A perennial fern found in the Central Coast ranges and coastal hillsides, most often seen on serpentine soils from 300 to 4,360 feet. Known in Alameda, Butte, Marin, Monterey, San Benito, San Francisco, San Luis Obispo, Santa Clara, and Stanislaus Counties (CDFW 2024, CNPS 2024).	N/A	Absent. The BSA does not contain serpentine substrates to support this species.
<i>Astragalus tener var. tener</i>	Alkali milk-vetch	-	-	1B.2	Annual herb found in alkaline areas of playas, adobe clay valley and foothill grassland, and vernal pools from 3 to 200 feet. Known in Alameda, Merced, Napa, Solano, and Yolo Counties. Blooms March through June (CDFW 2024, CNPS 2024).	March to June	Absent / Likely to occur. The alkali wetlands within the BSA provide suitable habitat for this species. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys

Sand Hill Wind Repowering Project Rare Plant Report

Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
							conducted between 2022 and 2024. There are two documented CNDDDB occurrences of this species within a 5-mile radius of the BSA, although one elemental occurrence (EO) is possibly extirpated (CDFW 2024). The nearest extant EO is located approximately 4.1 miles north of the BSA (CDFW 2024).
<i>Atriplex cordulata</i> var. <i>cordulata</i>	Heartscale	-	-	1B.2	Annual herb found in saline or alkaline conditions of chenopod scrub, meadows and seeps, and sandy Valley and foothill grassland from 3 to 1,230 feet. Known in Alameda, Butte, Fresno, Glenn, Kern, Madera, Merced, San Joaquin, San Luis Obispo, Solano, Stanislaus, Tulare, and Yolo Counties. Blooms April through October (CDFW 2024, CNPS 2024).	April to October	Absent / Likely to occur. The alkali wetlands within the BSA provide suitable habitat for this species. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. There are two documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2024). The nearest EO of this species is located approximately 2.2 miles north of the BSA (CDFW 2024).

Sand Hill Wind Repowering Project Rare Plant Report

Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
<i>Atriplex coronata</i> var. <i>coronata</i>	Crownscale	-	-	4.2	Annual herb found in alkaline soils (often clay) within chenopod scrub, valley and foothill grasslands, and vernal pools from 5 to 1,935 feet. Known in Contra Costa to Kern Counties. Blooms March through October (CDFW 2024, CNPS 2024).	March to October	Absent / Likely to occur. The alkali wetlands within the BSA provide suitable habitat for this species. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. This species is not tracked in the CNDDDB; however, it has been documented within the Clifton Court Forebay 7.5-minute USGS quadrangle and near the intersection of Altamont Pass Road and Dyer Road (Calflora 2024)
<i>Atriplex depressa</i>	Brittlescale	-	-	1B.2	Annual herb found in alkaline, clay soils of chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools from 3 to 1,050 feet. Known in Alameda, Contra Costa, Colusa, Fresno, Glenn, Merced, Solano, Stanislaus, Tulare, and Yolo Counties. Blooms April through October (CDFW 2024, CNPS 2024).	April to October	Absent / Likely to occur. The alkali wetlands within the BSA provide suitable habitat for this species. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. There are seven documented CNDDDB occurrences of this species within a 5-mile

Sand Hill Wind Repowering Project Rare Plant Report

Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
							radius of the BSA (CDFW 2024). The nearest EO of this species is located approximately 2.2 miles north of the BSA (CDFW 2024).
<i>Atriplex minuscula</i>	Lesser saltscale	-	-	1B.1	An annual herbaceous species found in sandy, alkaline soils in chenopod scrub, playas, and valley and foothill grassland from 50 to 730 feet. Occurs only in California; known in Alameda, Butte, Fresno, Kern, Madera, Merced, and Tulare Counties. Presumed extirpated in Stanislaus County (CDFW 2024, CNPS 2024). Blooms April through October (CDFW 2024, CNPS 2024).	April to October	Absent / Likely to occur. The alkali wetlands and drainages within the BSA provide suitable habitat for this species. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. There are four documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2024). The nearest EO of this species is located approximately 3.1 miles west of the BSA near the intersection of Altamont Pass Road and Dyer Road (CDFW 2024).
<i>Balsamorhiza macrolepis</i>	Big-scale balsamroot	-	-	1B.2	Perennial herb found in chaparral, cismontane woodland, and valley and foothill grassland, sometimes on serpentine soils, from 295 to 5,102 feet. Known in Alameda, Amador, Butte, Colusa,	March to July	Absent / Unlikely to occur. Suitable habitat is present within the BSA; however, serpentine soils are not present. This species is presumed to be absent from

Sand Hill Wind Repowering Project Rare Plant Report

Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
					El Dorado, Lake, Mariposa, Napa, Placer, Santa Clara, Shasta, Solano, Sonoma, Tehama, and Tuolumne Counties. Blooms March through July (CDFW 2024, CNPS 2024).		the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2024).
<i>Blepharizonia plumosa</i>	Big tarplant	-	-	1B.1	Annual herb found on clay soils in valley and foothill grassland from 100 to 1,660 feet. Known in Alameda, Contra Costa, and San Joaquin, San Luis Obispo, and Stanislaus Counties. Blooms July through November (CDFW 2024, CNPS 2024).	July to November	Absent / Likely to occur. Suitable habitat and clay soils are present within the BSA. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. There are three documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2024). The nearest EO of this species is located approximately 3 miles southeast of the BSA (CDFW 2024).
<i>Calandrinia breweri</i>	Brewer's calandrinia	-	-	4.2	Annual herb found on disturbed sites in chaparral and coastal scrub from 35 to 4,005 feet. Blooms occasionally as early as	(January) March to June	Absent. There is no suitable habitat within the BSA to support this species.

Sand Hill Wind Repowering Project Rare Plant Report

Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
					January, but more commonly from March through June (CNPS 2024).		
<i>Calochortus pulchellus</i>	Mt. Diablo fairy-lantern	-	-	1B.2	Perennial bulbiferous herb found in chaparral, cismontane woodland, riparian woodland, and valley and foothill grassland from 100 to 1,550 feet. Known in Alameda, Contra Costa, and Solano Counties. Blooms April through June (CDFW 2024, CNPS 2024).	April to June	Absent / Potential to occur. Annual grassland within the BSA provides suitable habitat for this species. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2024).
<i>Carex comosa</i>	bristly sedge	-	-	2B.1	Perennial rhizomatous herb found on lake margins and other wet places within coastal prairie, marshes and swamps, and valley and foothill grassland from 0 to 2,050 feet. Blooms May through September (CDFW 2024, CNPS 2024).	May to September	Absent / Potential to occur. Aquatic resources within the BSA provide suitable habitat for this species. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2024).

Sand Hill Wind Repowering Project Rare Plant Report

Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
<i>Caulanthus lemmonii</i>	Lemmon's jewelflower	-	-	1B.2	An annual herbaceous species, flowers generally creamy white, found in pinyon and juniper woodland, chaparral, scrub, and valley and foothill grassland from 250 to 4,750 ft. Occurs only in California; known in Fresno, Kings, Kern, Merced, Monterey, Santa Barbara, San Benito, San Joaquin, San Luis Obispo, Stanislaus, and Ventura Counties. Presumed extirpated in Alameda County (CDFW 2024, CNPS 2024). Blooms February through May (CDFW 2024, CNPS 2024).	February to May	Absent / Unlikely to occur. Suitable habitat is present within the BSA; however, the BSA is outside of the species' known range. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2024).
<i>Centromadia parryi</i> ssp. <i>congdonii</i>	Condgon's tarplant	-	-	1B.1	Annual herb found on alkaline soils in Valley and foothill grassland from 0 to 800 feet. Known in Alameda, Contra Costa, Monterey, Santa Clara, San Luis Obispo, and San Mateo Counties. Presumed extirpated from Santa Cruz and Solano Counties. Blooms May through November (CDFW 2024, CNPS 2024).	May to November	Present. This species was observed in several locations throughout the BSA and was particularly associated with alkali wetlands, drainages, and ponds.
<i>Chlorogalum pomeridianum</i> var. <i>minus</i>	Dwarf soaproot	-	-	1B.2	A perennial herb that is a strict serpentine endemic within Central California chaparral habitat from 350 to 3,660 feet. Known in Alameda, Colusa, Glenn, Lake, San Luis Obispo, Santa Clara, Sonoma, and Tehama	May to August	Absent. There is no suitable habitat within the BSA to support this species.

Sand Hill Wind Repowering Project Rare Plant Report

Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
					Counties. Blooms from May to August (CDFW 2024, CNPS 2024).		
<i>Chloropyron molle ssp. hispidum</i>	Hispid salty bird's-beak	-	-	1B.1	Annual, hemiparasitic herb found in alkaline soils of meadows and seeps, playas, and valley and foothill grassland from 3 to 500 feet. Known in Alameda, Fresno, Kern, Merced, Placer, and Solano Counties. Blooms June through September (CDFW 2024, CNPS 2024).	June to September	Absent / Potential to occur. Alkali wetlands within the BSA provide suitable habitat for this species. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2024).
<i>Chloropyron palmatum</i>	Palmate-bracted bird's-beak	E	E	1B.1	Annual hemiparasitic herb found on mesic sites in alkaline soil of chenopod scrub and Valley and foothill grassland from 16 to 510 feet. Known in Alameda, Colusa, Fresno, Glenn, Madera, and Yolo Counties. Presumed extirpated in San Joaquin county. Blooms May through October (CDFW 2024, CNPS 2024).	May to October	Absent / Potential to occur. Alkali wetlands within the BSA provide suitable habitat for this species. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2024).

Sand Hill Wind Repowering Project Rare Plant Report

Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
<i>Cicuta maculata</i> var. <i>bolanderi</i>	Bolander's water-hemlock	-	-	1B.1	Perennial herb found in coastal fresh or brackish marshes and swamps from 0 to 650 feet. Known in California in Contra Costa, Marin, Sacramento, and Solano Counties. Presumed extirpated in Santa Barbara County. Blooms July through September (CDFW 2024, CNPS 2024).	July to September	Absent. There is no suitable habitat within the BSA to support this species.
<i>Cirsium fontinale</i> var. <i>campylon</i>	Mount Hamilton fountain thistle	-	-	1B.2	A perennial herb found in serpentinite seeps and streams in chaparral, cismontane woodland, and valley and foothill grasslands from 30 to 270 feet. Occurs only in California; known in Alameda, Santa Clara, Santa Cruz, and Stanislaus Counties. Blooms February through October (CDFW 2024, CNPS 2024).	February to October	Absent. There is no suitable habitat within the BSA to support this species.
<i>Clarkia breweri</i>	Fairy fans	-	-	4.2	An annual herb often found in serpentine chaparral or coastal scrub or woodland from 30 to 3,560 feet. Known in Alameda, Contra Costa, Fresno, Merced, Monterey, Napa, San Benito, Santa Clara, Santa Cruz, Sonoma, and Stanislaus Counties. Blooms April through June (CDFW 2024, CNPS 2024).	April to June	Absent. There is no suitable habitat within the BSA to support this species.
<i>Clarkia concinna</i> ssp. <i>automixa</i>	Santa Clara red ribbons	-	-	4.3	An annual herb often found in foothill woodland from 30 to 2,100 feet. Known in Alameda, Contra Costa, Fresno, Merced,	May to June	Absent. There is no suitable habitat within the BSA to support this species.

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Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
					Monterey, Napa, San Benito, Santa Clara, Santa Cruz, Sonoma, and Stanislaus Counties. Blooms May through June (CDFW 2024, CNPS 2024).		
<i>Convolvulus simulans</i>	small-flowered morning glory	-	-	4.2	An annual herb often seen on heavy, cracking, and friable clay substrates in coastal scrub or vernal pools from 98 to 2,871 feet. Known in numerous counties, primarily along coastal California or southern California. Blooms March through July (CDFW 2024, CNPS 2024).	March to July	Absent. There is no suitable habitat within the BSA to support this species.
<i>Deinandra bacigalupii</i>	Livermore tarplant	-	E	1B.1	An annual herb found in alkaline soils of meadows and seeps from 492 to 607 feet. Known from fewer than five occurrences near Livermore. Blooms June through October (CDFW 2024, CNPS 2024).	June to October	Absent / Unlikely to occur. Suitable habitat is present within the BSA; however, the BSA is outside of the species' known range. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2024).

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Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
<i>Delphinium californicum ssp. interius</i>	Hospital Canyon larkspur	-	-	1B.2	A perennial herb found in openings of chaparral, mesic cismontane woodlands and coastal scrub from 754 to 3,592 feet. Known in Alameda, Contra Costa, Merced, Monterey, San Benito, Santa Clara, San Joaquin, and Stanislaus Counties. Blooms April through June (CDFW 2024, CNPS 2024).	April to June	Absent. There is no suitable habitat within the BSA to support this species.
<i>Delphinium recurvatum</i>	recurved larkspur	-	-	1B.2	A perennial herbaceous species found in poorly drained, fine, alkaline soils in chenopod scrub, cismontane woodland, and valley and foothill grassland from 50 to 4,200 feet. Occurs only in California; known in Alameda, Contra Costa, Fresno, Glenn, Kings, Kern, Madera, Merced, Monterey, San Joaquin, San Luis Obispo, Solano, Sutter, and Tulare Counties. Presumed extirpated in Butte and Colusa Counties (CDFW 2024, CNPS 2024). Blooms March through June (CDFW 2024, CNPS 2024).	March to June	Absent / Likely to occur. Alkaline soils within the BSA provide suitable habitat for this species. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. There are four documented CNDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2024). The nearest EO of this species is located approximately 2 miles north of the BSA (CDFW 2024).
<i>Eriogonum umbellatum var. bahiiforme</i>	bay buckwheat	-	-	4.3	A perennial shrub that grows primarily in ultramafic rocky areas from 2,300 to 7,200 feet. Known in over 20 counties in	July to September	Absent. There is no suitable ultramafic substrates within the BSA to support this species.

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Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
					California. Blooms July through September (CDFW 2024, CNPS 2024).		
<i>Eriophyllum jepsonii</i>	Jepson's woolly sunflower	-	-	4.3	A subshrub found in dry, ultramafic soils in chaparral and oak woodland from 630 to 1,630 feet. Known in Alameda, Contra Costa, El Dorado, Fresno, Kern, Merced, Monterey, San Benito, Santa Clara, and Stanislaus Counties. Blooms April to June (CDFW 2024, CNPS 2024).	April to June	Absent. There are no suitable ultramafic substrates within the BSA to support this species.
<i>Eryngium jepsonii</i>	Jepson's coyote thistle	-	-	1B.2	A perennial herb found in clay soils in vernal pools surrounded by California grasslands from 6 to 900 feet. Known in Alameda, Contra Costa, Napa, San Mateo, Solano, and Yolo Counties. Blooms April through August (CNDDDB 2023, CNPS 2023).	April to August	Absent. There are no vernal pools within the BSA to support this species.
<i>Eryngium racemosum</i>	Delta button-celery	-	E	1B.1	An annual or perennial herb found in vernal mesic clay depressions of riparian scrub from 10 to 100 feet. Known in Calaveras, Contra Costa, Merced, and Stanislaus Counties. Presumed extirpated in San Joaquin County. Blooms June through October (CDFW 2024, CNPS 2024).	June to October	Absent. There is no riparian scrub habitat within the BSA to support this species.

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Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
<i>Eryngium spinosepalum</i>	Spiny-sepaled button-celery	-	-	1B.2	Annual to perennial herb found in valley and foothill grassland vernal pools (including vernal pool complexes) from 260 to 4,170 feet (Jepson eFlora 2024). Known in Contra Costa, Fresno, Kern, Madera, Merced, San Luis Obispo, Stanislaus, Tulare, and Tuolumne Counties. Blooms April through May (CDFW 2024, CNPS 2024).	April to May	Absent. There are no vernal pools within the BSA to support this species.
<i>Erysimum capitatum</i> var. <i>angustatum</i>	Contra Costa wallflower	E	E	1B.1	Perennial herb found in inland dunes from 10 to 65 feet. Blooms March through July (CDFW 2024, CNPS 2024).	March to July	Absent. There are no inland dunes within the BSA to support this species.
<i>Eschscholzia rhombipetala</i>	diamond-petaled California poppy	-	-	1B.1	Annual herb found in alkaline, clay soil of valley and foothill grassland from 0 to 3,200 feet. Known in Alameda, San Joaquin, and San Luis Obispo Counties. Blooms March through April (CDFW 2024, CNPS 2024).	March to April	Absent / Likely to occur. Alkaline clay soils within the BSA provide suitable habitat for this species. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. There are four documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2024). The nearest EO of this species is located approximately

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Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
							2 miles north of the BSA (CDFW 2024).
<i>Extriplex joaquiniana</i>	San Joaquin spearscale	-	-	1B.2	Annual herb found in alkaline chenopod scrub, meadows and seeps, playas, and valley and foothill grassland from 3 to 2,740 feet. Known in Alameda, Contra Costa, Colusa, Fresno, Glenn, Merced, Monterey, Napa, San Benito, Santa Clara, San Joaquin, San Luis Obispo, Solano, Tulare, and Yolo Counties. Blooms April through October (CDFW 2024, CNPS 2024).	April to October	Present. This species were observed within the BSA in a pond south of Turbine 21.
<i>Fritillaria agrestis</i>	stinkbells	-	-	4.2	Perennial bulbiferous herb found on clay, or sometimes serpentinite substrates in chaparral, cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland from 984 to 5,003 feet. Known in Alameda, Contra Costa, Fresno, Kern, Mendocino, Merced, Monterey, Mariposa, Placer, Sacramento, Santa Barbara, San Benito, Santa Clara, San Luis Obispo, Stanislaus, Tuolumne, Ventura, and Yuba Counties. Presumed extirpated from Santa Cruz and Mateo Counties. Blooms March through June (CDFW 2024, CNPS 2024).	March to June	Absent / Likely to occur. Suitable habitat is present within the BSA; however, this specie is presumed to be absent given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. This species is no longer tracked in CNDDb; however, there is a documented record of this species approximately 2.25 miles west of the BSA (CDFW 2024, Calflora 2024).

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Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
<i>Fritillaria falcata</i>	Talus fritillary	-	-	1B.2	Perennial bulbiferous herb found in serpentinite, often talus soils in chaparral, cismontane woodland, and lower montane coniferous forest from 984 to 5,000 feet. Known in Alameda, Monterey, San Benito, Santa Clara, and Stanislaus Counties. Blooms March through May (CDFW 2024, CNPS 2024).	March to May	Absent. There are no suitable serpentine substrates within the BSA to support this species.
<i>Galium andrewsii ssp. gatense</i>	phlox-leaf serpentine bedstraw	-	-	4.2	Perennial herb found on rocky serpentine substrates in chaparral, cismontane woodland, and lower montane coniferous forest from 490 to 4,755 feet. Blooms April through July (CDFW 2024, CNPS 2024).	April to July	Absent. There are no suitable serpentine substrates within the BSA to support this species.
<i>Helianthella castanea</i>	Diablo helianthella	-	-	1B.2	Perennial herb found in broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland from 190 to 4,300 feet. Known in Alameda, Contra Costa, and San Mateo Counties. Blooms March through June (CDFW 2024, CNPS 2024).	March to June	Absent / Unlikely to occur. Preferred suitable habitat is marginal in the BSA. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2024).

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Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
<i>Hesperovax caulescens</i>	hogwallow starfish	-	-	4.2	Annual herb found in drying, shrink-swell clay soils of shallow vernal pools, flats, slopes (sometimes serpentine), in valley and foothill grassland from 0 to 1,650 feet. Known in Alameda, Amador, Butte, Contra Costa, Colusa, Fresno, Glenn, Kern, Merced, Monterey, Sacramento, San Joaquin, San Luis Obispo, Solano, Stanislaus, Sutter, Tehama, and Yolo Counties. Presumed extirpated in Napa and San Diego Counties. Blooms March through June (CDFW 2024, CNPS 2024).	March to June	Absent / Unlikely to occur. Preferred suitable habitat is marginal in the BSA. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2024).
<i>Hesperolinon breweri</i>	Brewer's western flax	-	-	1B.2	Annual herb found in chaparral, cismontane woodland, and valley and foothill grassland from 100 to 2,950 feet. Usually found on serpentinite soils. Known in Contra Costa, Napa, and Solano Counties. Blooms May through July (CDFW 2024, CNPS 2024).	May to July	Absent / Unlikely to occur. Preferred suitable habitat is marginal in the BSA given that there are no serpentine soils present. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2024).

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Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	Woolly rose-mallow	-	-	1B.2	A perennial, rhizomatous, aquatic emergent herb found in freshwater marshes and swamps from 0 to 400 feet. Occurs in freshwater-soaked riverbanks and low peat islands in sloughs. In California, known in the Delta watershed in Butte, Contra Costa, Colusa, Glenn, Sacramento, San Joaquin, Solano, Sutter, and Yolo Counties. Blooms June through November (CDFW 2024, CNPS 2024; Jepson eFlora 2024).	June to November	Absent. There is no suitable habitat within the BSA to support this species.
<i>Hoita strobilina</i>	Loma Prieta hoita	-	-	1B.1	Perennial herb found in usually serpentinite, mesic chaparral, cismontane woodland, and riparian woodland from 98 to 2,820 feet. Known in Contra Costa, Santa Cruz, and Santa Clara Counties. Presumed extirpated from Alameda County. Blooms May through July and uncommon in August through October (CDFW 2024, CNPS 2024).	May to July (August to October)	Absent. There are no suitable serpentine substrates within the BSA to support this species.
<i>Lasthenia ferrisiae</i>	Alkali goldfields	-	-	4.2	Annual herb found in vernal pools and saline flats above 2,400 feet. Known in numerous counties across California. Blooms February through May (CDFW 2024, CNPS 2024).	February to May	Absent / Unlikely to occur. Preferred suitable habitat is marginal in the BSA. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between

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Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
							2022 and 2024. Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2024).
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	delta tule pea	-	-	1B.2	Perennial herb found in freshwater and brackish marshes, usually on marsh and slough edges, from 0 to 15 feet. Blooms May through July and occasionally from August through September (CDFW 2024, CNPS 2024).	May to July (August to September)	Absent. There is no suitable marsh or slough habitat within the BSA to support this species.
<i>Legenere limosa</i>	Legenere	-	-	1B.1	Annual herb found in vernal pools from 0 to 2,900 feet. Known in the north Coast Ranges, Central Valley, and Bay Area. Blooms April through June (CDFW 2024, CNPS 2024).	April to June	Absent. There is no suitable vernal pool habitat within the BSA to support this species.
<i>Leptosiphon ambiguus</i>	Serpentine leptosiphon	-	-	4.2	An annual herb found in serpentine soils in cismontane woodland in elevations above 3,000 feet. Known in Alameda, Contra Costa, Fresno, Lake, Merced, Monterey, San Benito, San Mateo, Santa Clara, Santa Cruz, Stanislaus, and Tehama Counties. Blooms March through June (CDFW 2024, CNPS 2024).	March to June	Absent. There are no suitable serpentine substrates within the BSA to support this species.

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Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
<i>Leptosiphon aureus</i>	bristly leptosiphon	-	-	4.2	An annual herb found in chaparral, desert chaparral, and chaparral woodlands above 2,400 feet. Known in numerous counties in California. Blooms March through June (CNDDDB 2024, CNPS 2024).	March to June	Absent. There is no suitable habitat within the BSA to support this species.
<i>Leptosyne hamiltonii</i>	Mt. Hamilton coreopsis	-	-	1B.2	Annual herb found in rocky cismontane woodland from 1,800 to 4,265 feet. Known in Alameda, Santa Clara, and Stanislaus Counties. Blooms March-May (CDFW 2024, CNPS 2024).	March to May	Absent. There is no suitable habitat within the BSA to support this species.
<i>Lessingia tenuis</i>	spring lessingia	-	-	4.3	An annual herb found in coastal chaparral from 150 to 6,000 feet. Known in Alameda, Kern, Kings, Monterey, San Benito, San Bernardino, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Stanislaus, and Ventura Counties. Blooms May through July (CDFW 2024, CNPS 2024).	May to July	Absent. There is no suitable habitat within the BSA to support this species.
<i>Lilaeopsis masonii</i>	Mason's lilaeopsis	-	R	1B.1	Rhizomatous herb found in brackish and freshwater marshes and swamps and riparian scrub from 0 to 33 feet. Known in Alameda, Contra Costa, Marin, Napa, Sacramento, San Joaquin, and Solano Counties. Blooms April through November (CDFW 2024, CNPS 2024).	April to November	Absent. There is no suitable marsh or riparian scrub habitat within the BSA to support this species.

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Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
<i>Limosella australis</i>	delta mutwort	-	-	2B.1	Stoloniferous herb found in marshes and swamps from 0 to 10 feet. Known in California in Contra Costa, Marin, Sacramento, San Joaquin, and Solano Counties. Blooms April through August (CDFW 2024, CNPS 2024).	April to August	Absent. There is no suitable marsh habitat within the BSA to support this species.
<i>Madia radiata</i>	showy madia	-	-	1B.1	Annual herb found in cismontane woodland and valley and foothill grassland from 82 to 2,952 feet. Known in Fresno, Kern, San Benito, San Luis Obispo, and Stanislaus Counties. Presumed extirpated from Contra Costa, Kings, Monterey, San Joaquin, and Santa Barbara counties (CNPS 2024). Blooms March through May (CDFW 2024, CNPS 2024).	March to May	Absent / Unlikely to occur. Suitable habitat is present within the BSA; however, the BSA is outside of the current known range. This species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. Additionally, there are no documented CNDDDB occurrences of this species within a 5-mile radius of the BSA (CDFW 2024).
<i>Malacothamnus hallii</i>	Hall's bush mallow	-	-	1B.2	Evergreen shrub found in chaparral and coastal scrub from 30 to 2,500 feet. Known in Fresno, Kern, San Benito, Santa Clara, San Luis Obispo, and Stanislaus Counties. Presumed extirpated in Contra Costa, Kings, Monterey, Santa Barbara, and San Joaquin Counties. Blooms May through	May to September (October)	Absent. There is no suitable chaparral or coastal scrub habitat within the BSA to support this species.

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Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
					September, and uncommonly into October (CDFW 2024, CNPS 2024).		
<i>Micropus amphibolus</i>	Mt. Diablo cottonweed	-	-	3.2	An annual herb found often in ultramafic soils in montane valley grassland, mixed evergreen forest, and foothill woodland. Known in 16 counties in California. Blooms March through May (CDFW 2024, CNPS 2024).	March to May	Absent. There are no suitable ultramafic soils within the BSA to support this species.
<i>Microseris sylvatica</i>	sylvan microseris	-	-	4.2	Perennial herb found in chaparral, cismontane woodland, Great Basin scrub, pinyon and juniper woodland, and valley and foothill grassland from 150 to 4,920 feet. Blooms March through June (CDFW 2024, CNPS 2024).	March to June	Absent / Potential to occur. Suitable habitat is present within the BSA; however, this species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024.
<i>Monolopia gracilens</i>	woodland woollythreads	-	-	1B.2	Annual herb found on serpentine substrates within broad-leaved upland forest (openings), chaparral (openings), cismontane woodland, North Coast coniferous forest (openings), and valley and foothill grassland from 330 to 3,935 feet. Blooms occasionally in February, but more commonly from March through July (CDFW 2024, CNPS 2024).	(February) March to July	Absent. There are no serpentine soils within the BSA to support this species.

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Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
<i>Myosurus minimus ssp. apus</i>	little mouse tail	-	-	3.1	An annual herb found in vernal pools, wet fields, and lake shores from 0 to 2,400 feet. Known in Alameda, Butte, Colusa, Contra Costa, Fresno, Kern, Lake, Los Angeles, Merced, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Solano, Tulare, Ventura, and Yolo Counties. Blooms March through June (CDFW 2024, CNPS 2024).	March to June	Absent / Potential to occur. Wetlands and pond margins within the BSA provide suitable habitat; however, this species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024.
<i>Navarretia cotulifolia</i>	cotula navarretia	-	-	4.2	Annual herb found on adobe clay sites in chaparral, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal scrub, and lower montane coniferous forest from 15 to 6,005 feet. Blooms May through June (CNPS 2024).	May to June	Absent. There is no suitable habitat within the BSA to support this species.
<i>Navarretia nigelliformis ssp. radians</i>	shining navarretia	-	-	1B.2	Annual herb found in cismontane woodland, valley and foothill grassland, and in vernal pools from 250 to 3,300 feet. Known in Alameda, Contra Costa, Colusa, Fresno, Madera, Merced, Monterey, San Benito, San Joaquin, and San Luis Obispo Counties. Blooms March through July (CDFW 2024, CNPS 2024).	March to July	Absent / Likely to occur. Suitable habitat is present within the BSA; however, this species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. There are two documented CNDDDB records of this species within a 5-mile radius of the BSA, with the nearest EO located less

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Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
							than a mile away to the west (CDFW 2024).
<i>Navarretia prostrata</i>	Prostrate vernal pool navarretia	-	-	1B.1	Annual herb found in mesic soils in coastal scrub, meadows and seeps, and in alkaline soils in valley and foothill grasslands and vernal pools from 50 to 4,000 feet. Known in Alameda, Fresno, Los Angeles, Merced, Monterey, Orange, Riverside, San Benito, Santa Clara, San Diego, and San Luis Obispo Counties. Presumed extirpated in San Bernardino County. Blooms April through July (CNDDDB 2023, CNPS 2023).	April to July	Absent / Potential to occur. Suitable habitat is present within the BSA; however, this species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. There are no documented CNDDDB records of this species within a 5-mile radius of the BSA (CDFW 2024).
<i>Oenothera deltoides</i> ssp. <i>howellii</i>	Antioch Dunes evening-primrose	E	E	1B.1	Perennial herb found in inland dunes from 0 to 100 feet. Blooms March through September (CDFW 2024, CNPS 2024).	March to September	Absent. There are no inland dunes within the BSA to support this species.
<i>Phacelia phacelioides</i>	Mt. Diablo phacelia	-	-	1B.2	Annual herb found on rocky sites within chaparral and cismontane woodland from 1,640 to 4,495 feet. Blooms April through May (CDFW 2024, CNPS 2024).	April to May	Absent. There is no suitable habitat within the BSA to support this species.
<i>Piperia michaelii</i>	Michael's rein orchid	-	-	4.2	A perennial plant found generally in dry areas, coastal scrub, woodland, and mixed evergreen forests above 2,100 feet. Known in over 20 counties in California. Blooms April through August (CDFW 2024, CNPS 2024).	April to August	Absent. There is no suitable habitat within the BSA to support this species.

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Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
<i>Plagiobothrys glaber</i>	hairless popcornflower	-	-	1A	An annual herb found in alkaline meadows and seeps, and coastal salt marshes and swamps from 49 to 590 feet. Blooms March through May. Last confirmed sighting in 1954. Possibly relocated near Antioch; identification uncertain. All collections since 1930s located in the Hollister area. Presumed extinct in California (CDFW 2024, CNPS 2024).	March to May	Absent. Suitable habitat is present within the BSA but is presumed extinct.
<i>Puccinellia simplex</i>	California alkali grass	-	-	1B.2	Annual herb found in alkaline, vernal mesic sinks, flats, and lake margins within chenopod scrub, meadows, seeps, valley and foothill grassland, and vernal pools from 7 to 3,050 feet. Known in Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Kern, Lake, Los Angeles, Madera, Merced, Napa, San Bernardino, Santa Clara, Santa Cruz, San Luis Obispo, Solano, Stanislaus, Tulare, and Yolo Counties. Presumed extirpated from Kings County. Blooms March through May (CDFW 2024, CNPS 2024).	March to May	Absent / Likely to occur. Suitable habitat is present within the BSA; however, this species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and 2024. There are three documented CNDDDB records of this species within a 5-mile radius of the BSA, with the nearest EO located less than a mile away off Altamont Pass Road (CDFW 2024).
<i>Ravenella exigua</i>	chaparral harebell	-	-	1B.2	Annual herb found in rocky (usually serpentinite) chaparral from 902 to 4,100 feet. Known in Alameda, Contra Costa,	May to June	Absent. There is no suitable habitat within the BSA to support this species.

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Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
					Merced, San Benito, Santa Clara, and Stanislaus Counties. Blooms May through June (CNDDDB 2023, CNPS 2023).		
<i>Scutellaria galericulata</i>	marsh skullcap	-	-	2B.2	Perennial rhizomatous herb found on mesic sites within lower montane coniferous forest, marshes and swamps, and meadows and seeps from 0 to 6,890 feet. Blooms June through September (CDFW 2024, CNPS 2024).	June to September	Absent. There is no suitable habitat within the BSA to support this species.
<i>Senecio aphanactis</i>	Chaparral ragwort	-	-	2B.2	Annual herb found in chaparral, cismontane woodland, and coastal scrub from 50 to 2,625 feet. Known in Alameda, Contra Costa, Fresno, Los Angeles, Merced, Monterey, Orange, Riverside, Santa Barbara, Santa Clara, Santa Catalina Island, Santa Cruz Island, San Diego, San Luis Obispo, Solano, Santa Rosa Island, and Ventura Counties. Blooms January through April (CDFW 2024, CNPS 2024).	January to April	Absent. There is no suitable habitat within the BSA to support this species.
<i>Spergularia macrotheca</i> var. <i>longistyla</i>	long styled sand spurrey	-	-	1B.2	A perennial herb found in alkaline marshes, seeps and meadows from 0 to 640 feet. Known in Alameda, Contra Costa, Fresno, Marin, Mendocino, Napa, Placer, and Solano Counties. Blooms February through May (CDFW 2024, CNPS 2024).	February to May	Absent / Likely to occur. Suitable habitat is present within the BSA; however, this species is presumed to be absent from the BSA given that it was not observed during focused rare plant surveys conducted between 2022 and

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Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
							2024. There are two documented CNDDDB records of this species within a 5-mile radius of the BSA, with the nearest EO located less than a mile away off Altamont Pass Road (CDFW 2024).
<i>Symphotrichum lentum</i>	Suisun Marsh aster	-	-	1B.2	Perennial rhizomatous herb found in brackish and freshwater marshes, most often seen along sloughs with <i>Phragmites</i> spp., <i>Scirpus</i> spp., <i>Rubus</i> spp., and <i>Typha</i> spp., from 0 to 45 feet. Blooms occasionally as early as April, but more commonly from May through November (CDFW 2024, CNPS 2024).	May to November	Absent. There is no suitable habitat within the BSA to support this species.
<i>Streptanthus albidus</i> ssp. <i>peramoenus</i>	most beautiful jewelflower	-	-	1B.2	Annual herb found in serpentine soils within chaparral, cismontane woodland, and valley and foothill grassland from 361 to 3,280 feet. Known in Alameda, Contra Costa, Monterey, Santa Clara, and San Luis Obispo Counties. Blooms March through October (CDFW 2024, CNPS 2024).	March to October	Absent. There are no suitable serpentine soils within the BSA to support this species.
<i>Trifolium hydrophilum</i>	Saline clover	-	-	1B.2	Annual herb found in salt marshes and swamps, open mesic and alkaline soils of valley and foothill grassland, and vernal pools from 0 to 985 feet. Known in the Central Valley, Bay Area, south Coast	April to June	Absent / Potential to occur. Suitable habitat is present within the BSA; however, this species is presumed to be absent from the BSA given that it was not

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Scientific Name	Common Name	Status ^[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA ^[b]
		Federal	State	CNPS			
					Ranges, and central coast. Blooms April through June (CDFW 2024, CNPS 2024).		observed during focused rare plant surveys conducted between 2022 and 2024. There are no documented CNDDDB records of this species within a 5-mile radius of the BSA (CDFW 2024).
<i>Tropidocarpum capparideum</i>	Caper-fruited tropidocarpum	-	-	1B.1	Annual herb found in alkaline hills of valley and foothill grassland from 3 to 1,500 feet. Known in Fresno, Monterey, and San Luis Obispo Counties. Presumed extirpated in Alameda, Contra Costa, Glenn, Santa Clara, and San Joaquin Counties. Blooms March through April (CDFW 2024, CNPS 2024).	March to April	Present. This species was observed in several locations within the BSA.
<i>Viburnum ellipticum</i>	Oval-leaved viburnum	-	-	2B.3	Deciduous shrub found in chaparral, cismontane woodland, and lower montane coniferous forest from 700 to 4,600 feet. Known in Contra Costa, El Dorado, Fresno, Glenn, Humboldt, Mendocino, Napa, Placer, Shasta, Sonoma, and Tehama Counties. Blooms May through June (CDFW 2024, CNPS 2024).	May to June	Absent. There is no suitable habitat within the BSA to support this species.

^[a] Status abbreviations:

Federal Designations:

(E) Federally Endangered; (T) Federally Threatened

State Designations:

(E) State Endangered; (R) Rare

California Native Plant Society (CNPS) California Rare Plant Rank (CRPR):

(1A) Presumed extinct in California

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(1B) Rare, threatened, or endangered in California and elsewhere

(2B) Rare, threatened, or endangered in California, but more common elsewhere

(3) More information is needed

(4) Limited distribution

Threat Rank:

0.1 Seriously threatened in California (more than 80% of occurrences threatened/high degree and immediacy of threat)

0.2 Moderately threatened in California (20 to 80% of occurrences threatened/moderate degree and immediacy of threat)

0.3 Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

^[b] Potential for occurrence classification:

Present: Species determined to be present within the biological study area (BSA) during focused or protocol-level surveys

Likely to occur: The species has a strong likelihood to be found in the BSA, but it has not been directly observed to date during project surveys. The likelihood that a species may occur is based on the following considerations: (1) suitable habitat that meets the life history requirements of the species is present within the BSA; and (2) records of sighting are documented on or near the BSA. The main assumption is that records of occurrence have been documented within or near the BSA, the BSA falls within the range of the species, and suitable habitat is present, but it is undetermined whether the habitat is currently occupied.

Potential to occur: There is a possibility that the species can be found in the BSA, but it has not been directly observed to date. The likelihood that a species may occur is based on the following consideration: (1) suitable habitat that meets the life history requirements of the species is present within the BSA. The main assumption is that the BSA falls within the range of the species, suitable habitat is present, but no records of sighting are located within or near the BSA and it is undetermined whether the habitat is currently occupied.

Unlikely to occur: The species is not likely to occur in the BSA based on the following consideration: (1) lack of suitable habitat and features that are required to satisfy the life history requirements of the species.

Absent: Suitable habitat does not exist in the BSA, the species is restricted to or known to be present only within a specific area outside of the project footprint, or focused or protocol-level surveys did not detect the species.

Sources:

California Department of Fish and Wildlife (CDFW). 2024. California Natural Diversity Database (CNDDDB), Biogeographic Data Branch. California Department of Fish and Wildlife. Sacramento, CA.

<https://www.wildlife.ca.gov/data/cnddb>.

California Native Plant Society (CNPS). 2024. Online Inventory of Rare, Threatened and Endangered Plants of California. <http://www.rareplants.cnps.org/advanced.html>

California Native Plant Society Calflora Database (Calflora). 2024. "What Grows Here" online application for documented ranges and occurrences of rare and endangered plants of California."

<https://www.calflora.org/>.

Jepson Flora Project (eds.) 2024. *Jepson eFlora*. <https://usjeps.berkeley.edu/eflora/>

Appendix C

List of Plant Species Observed in the Biological Study Area During Surveys



Table C-1. Plant Species Observed in the BSA During Surveys

Family	Scientific Name	Common Name	Native or Naturalized	Cal-IPC Rank
FERNS				
PTERIDACEAE				
	<i>Pentagramma triangularis</i>	goldback fern	Native	
EUDICOTS				
AMARANTHACEAE				
	<i>Amaranthus albus</i>	tumbleweed	Naturalized	
APIACEAE				
	<i>Conium maculatum</i>	poison hemlock	Naturalized	Moderate
	<i>Foeniculum vulgare</i>	fennel	Naturalized	Moderate
	<i>Lomatium utricularium</i>	common lomatium	Native	
	<i>Sanicula bipinnata</i>	poison sanicle	Native	
	<i>Sanicula bipinnatifida</i>	purple sanicle	Native	
	<i>Torilis arvensis</i>	field hedge parsley	Naturalized	Moderate
	<i>Torilis nodosa</i>	short sock-destroyer	Naturalized	
APOCYNACEAE				
	<i>Asclepias fascicularis</i>	narrow-leaf milkweed	Native	
ASTERACEAE				
	<i>Achillea millefolium</i>	yarrow	Native	
	<i>Achyraea mollis</i>	soft blow-wives	Native	
	<i>Artemisia douglasiana</i>	California mugwort	Native	
	<i>Blennosperma nanum</i> var. <i>nanum</i>	common blennosperma	Native	
	<i>Carduus pycnocephalus</i>	Italian thistle	Naturalized	Moderate
	<i>Carduus tenuiflorus</i>	Slender-flowered thistle	Naturalized	Limited
	<i>Centaurea calcitrapa</i>	purple star-thistle	Naturalized	Moderate
	<i>Centaurea melitensis</i>	Tocalote	Naturalized	Moderate

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Family	Scientific Name	Common Name	Native or Naturalized	Cal-IPC Rank
	<i>Centaurea solstitialis</i>	yellow star-thistle	Naturalized	High
	<i>Centromadia fitchii</i>	fitch's tarweed	Native	
	<i>Centromadia parryi</i> <i>ssp. congdonii</i>	Congdon's tarplant	Native	
	<i>Centromadia pungens</i> <i>ssp. pungens</i>	common spikeweed	Native	
	<i>Cirsium vulgare</i>	bull thistle	Naturalized	Moderate
	<i>Cotula coronopifolia</i>	brass buttons	Naturalized	Limited
	<i>Cynara cardunculus</i>	artichoke thistle	Naturalized	Moderate
	<i>Deinandra lobbiai</i>	threeray tarweed	Native	
	<i>Dittrichia graveolens</i>	stinkwort	Naturalized	Moderate
	<i>Erigeron canadensis</i>	horseweed	Native	
	<i>Grindelia camporum</i>	gumplant	Native	
	<i>Grindelia stricta</i>	coastal gumplant	Native	
	<i>Gutierrezia californica</i>	snakeweed	Native	
	<i>Helminthotheca echioides</i>	bristly ox-tongue	Naturalized	Limited
	<i>Hesperevax sparsiflora</i> <i>var. sparsiflora</i>	few flowered cudweed	Native	
	<i>Heterotheca grandiflora</i>	telegraph weed	Naturalized	
	<i>Holocarpha obconica</i>	San Joaquin tarweed	Native	
	<i>Holocarpha virgata</i> <i>ssp. virgata</i>	narrow tarplant	Native	
	<i>Hypochaeris glabra</i>	smooth cat's-ear	Naturalized	Limited
	<i>Hypochaeris radicata</i>	rough cat's-ear	Naturalized	Moderate
	<i>Lactuca serriola</i>	prickly lettuce	Naturalized	
	<i>Lagophylla ramosissima</i>	hare-leaf	Native	
	<i>Logfia gallica</i>	narrow cottonrose	Naturalized	
	<i>Madia gracilis</i>	gumweed madia	Native	
	<i>Matricaria discoidea</i>	pineapple weed	Native	

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Family	Scientific Name	Common Name	Native or Naturalized	Cal-IPC Rank
	<i>Micropus californicus</i> var. <i>californicus</i>	California cottontop	Native	
	<i>Pseudognaphalium</i> spp.	cudweed	Native	
	<i>Psilocarphus brevissimus</i>	woolly marbles	Native	
	<i>Psilocarphus tenellus</i>	woolly-heads	Native	
	<i>Senecio vulgaris</i>	common groundsel	Naturalized	
	<i>Silybum marianum</i>	milk thistle	Naturalized	
	<i>Sonchus oleraceus</i>	common sow thistle	Naturalized	
	<i>Wyethia</i> sp.	mules ear	Native	
	<i>Xanthium strumarium</i>	rough cocklebur	Native	
BORAGINACEAE				
	<i>Amsinckia intermedia</i>	common fiddleneck	Native	
	<i>Amsinckia lycopoides</i>	tarweed fiddleneck	Native	
	<i>Amsinckia menziesii</i>	small-flowered fiddleneck	Native	
	<i>Amsinckia tessellata</i>	bristly fiddleneck	Native	
	<i>Phacelia distans</i>	common phacelia	Native	
	<i>Pholistoma membranaceum</i>	white fiesta flower	Native	
	<i>Plagiobothrys canescens</i> var. <i>canescens</i>	valley popcornflower	Native	
	<i>Plagiobothrys humistratus</i>	dwarf popcornflower	Native	
	<i>Plagiobothrys stipitatus</i> var. <i>micranthus</i>	Great Valley popcornflower	Native	
BRASSICACEAE				
	<i>Brassica nigra</i>	black mustard	Naturalized	Moderate
	<i>Brassica rapa</i>	common mustard	Naturalized	Limited
	<i>Capsella bursa-pastoris</i>	shepherd's purse	Naturalized	
	<i>Hirschfeldia incana</i>	summer mustard	Naturalized	Moderate

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Family	Scientific Name	Common Name	Native or Naturalized	Cal-IPC Rank
	<i>Lepidium latifolium</i>	perennial pepperweed	Naturalized	High
	<i>Lepidium nitidum</i>	shining pepper grass	Naturalized	
	<i>Thysanocarpus curvipes</i>	fringepod	Native	
	<i>Tropidocarpum capparideum</i>	caper-fruited tropidocarpum	Native	
CARYOPHYLLACEAE				
	<i>Cerastium glomeratum</i>	large mouse ears	Naturalized	
	<i>Silene gallica</i>	small-flower catchfly	Naturalized	
	<i>Spergula arvensis</i>	corn spurry	Naturalized	
	<i>Sperularia marina</i>	salt marsh sand spurry	Native	
	<i>Stellaria media</i>	chickweed	Naturalized	
CHENOPODIACEAE				
	<i>Allenrolfea occidentalis</i>	iodine bush	Native	
	<i>Atriplex prostrata</i>	fat-hen	Naturalized	
	<i>Atriplex semibaccata</i>	creeping saltbush	Naturalized	Moderate
	<i>Chenopodium album</i>	lamb's quarters	Naturalized	
	<i>Cressa truxillensis</i>	alkali weed	Native	
	<i>Extriplex joaquinana</i>	San Joaquin spearscale	Native	
	<i>Salicornia sp.</i>	pickleweed	Native	
	<i>Salsola tragus</i>	Russian thistle	Naturalized	Limited
CONVOLVULACEAE				
	<i>Calystegia purpurata</i> ssp. <i>purpurata</i>	western morning glory	Native	
	<i>Convolvulus arvensis</i>	bindweed	Naturalized	
CRASSULACEAE				
	<i>Crassula connata</i>	pygmy-weed	Naturalized	

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Family	Scientific Name	Common Name	Native or Naturalized	Cal-IPC Rank
CUCURBITACEAE				
	<i>Marah fabacea</i>	California man-root	Native	
DIPSACACEAE				
	<i>Dipsacus fullonum</i>	wild teasel	Naturalized	Moderate
EUPHORBIACEAE				
	<i>Euphorbia serpillifolia</i>	thyme-leaved spurge	Native	
	<i>Croton setiger</i>	turkey-mullein	Native	
	<i>Euphorbia maculata</i>	spotted spurge	Naturalized	
	<i>Euphorbia peplus</i>	petty spurge	Naturalized	
FABACEAE				
	<i>Acmispon americanus</i>	Spanish lotus	Native	
	<i>Acmispon wrangelianus</i>	Chilean trefoil	Naturalized	
	<i>Astragalus asymmetricus</i>	San Joaquin milkvetch	Native	
	<i>Lupinus albifrons</i>	white lupine	Native	
	<i>Lupinus bicolor</i>	miniature lupine	Native	
	<i>Lupinus microcarpus</i>	chick lupine	Native	
	<i>Lupinus succulentus</i>	arroyo lupine	Native	
	<i>Medicago polymorpha</i>	Californica burclover	Naturalized	Limited
	<i>Melilotus indicus</i>	yellow indigo	Naturalized	
	<i>Trifolium depauperatum</i> var. <i>depauperatum</i>	sack clover	Native	
	<i>Trifolium fucatum</i>	bull clover	Native	
	<i>Trifolium hirtum</i>	rose clover	Naturalized	Limited
	<i>Trifolium microcephalum</i>	small-headed clover	Native	
	<i>Trifolium repens</i>	white clover	Naturalized	
	<i>Trifolium willdenovii</i>	tomcat clover	Native	
	<i>Vicia benghalensis</i>	purple vetch	Naturalized	

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Family	Scientific Name	Common Name	Native or Naturalized	Cal-IPC Rank
	<i>Vicia villosa</i>	hairy vetch	Naturalized	
FAGACEAE				
	<i>Quercus agrifolia</i>	coast live oak	Native	
	<i>Quercus lobata</i>	valley oak	Native	
FRANKENIACEAE				
	<i>Frankenia salina</i>	alkali heath	Native	
GERANIACEAE				
	<i>Erodium botrys</i>	large storkbill	Naturalized	
	<i>Erodium cicutarium</i>	redstem filaree	Naturalized	Limited
	<i>Erodium moschatum</i>	greenstem filaree	Naturalized	
	<i>Geranium dissectum</i>	cutleaf cranesbill	Naturalized	Limited
	<i>Geranium molle</i>	dovesfoot cranesbill	Naturalized	
HELIOTROPIACEAE				
	<i>Heliotropium curassavicum</i>	alkali heliotrope	Native	
LAMIACEAE				
	<i>Marrubium vulgare</i>	white horehound	Naturalized	Limited
	<i>Trichostema lanceolatum</i>	vinegar weed	Native	
LYTHRACEAE				
	<i>Lythrum hyssopifolia</i>	Hyssop's loosertrife	Naturalized	Moderate
MALVACEAE				
	<i>Malva nicaeensis</i>	bull mallow	Native	
	<i>Malva parviflora</i>	cheeseweed	Naturalized	
MONTIACEAE				
	<i>Calandrinia ciliata</i>	red maids	Native	
	<i>Claytonia perfoliata</i>	miner's lettuce	Native	
MYRSINACEAE				
	<i>Lysimachia arvensis</i>	scarlet pimpernel	Naturalized	

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Family	Scientific Name	Common Name	Native or Naturalized	Cal-IPC Rank
ONAGRACEAE				
	<i>Clarkia purpurea</i> ssp. <i>quadrivulnera</i>	purple clarkia	Native	
	<i>Epilobium brachycarpum</i>	willow herb	Native	
	<i>Epilobium canum</i>	California fuchsia	Native	
	<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	ciliated willow herb	Native	
OROBANCHACEAE				
	<i>Bellardia trixago</i>	Mediterranean lineseed	Naturalized	Limited
	<i>Castilleja densiflora</i> ssp. <i>densiflora</i>	dense owl's clover	Native	
	<i>Castilleja exserta</i>	owl's clover	Native	
	<i>Triphysaria pusilla</i>	little owl's clover	Native	
PAPAVERACEAE				
	<i>Eschscholzia californica</i>	California poppy	Native	
PHRYMACEAE				
	<i>Diplacus aurantiacus</i>	orange bush monkeyflower	Native	
	<i>Erythranthe guttata</i>	seep monkey flower	Native	
PLANTAGINACEAE				
	<i>Callitriche</i> sp.	water starwort	Native	
	<i>Plantago erecta</i>	California dropseed	Native	
	<i>Plantago lanceolata</i>	English plantain	Naturalized	Limited
POLEMONIACEAE				
	<i>Gilia clivorum</i>	many stemmed gilia	Native	
	<i>Leptosiphon androsaceus</i>	false babystars	Native	

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Family	Scientific Name	Common Name	Native or Naturalized	Cal-IPC Rank
POLYGONACEAE				
	<i>Eriogonum gracile</i>	slender buckwheat	Native	
	<i>Eriogonum nudum</i>	naked buckwheat	Native	
	<i>Rumex acetosela</i>	sheep sorrel	Naturalized	Moderate
	<i>Rumex crispus</i>	curly dock	Naturalized	Limited
PRIMULACEAE				
	<i>Primula spp.</i>	shooting star	Native	
RANUNCULACEAE				
	<i>Delphinium hesperium</i>	foothill larkspur	Native	
	<i>Ranunculus californicus</i>	California buttercup	Native	
	<i>Ranunculus muricatus</i>	spiny buttercup	Naturalized	
RUBIACEAE				
	<i>Gallium aparine</i>	cleavers	Naturalized	
	<i>Sherardia arvensis</i>	field madder	Naturalized	
SALICACEAE				
	<i>Salix laevigata</i>	red willow	Native	
	<i>Salix lasiolepis</i>	arroyo willow	Native	
SAPINDACEAE				
	<i>Aesculus californica</i>	California buckeye	Native	
SAXIFRAGACEAE				
	<i>Lithophragma parviflorum</i>	woodland star	Native	
SCROPHULARIACEAE				
	<i>Scrophularia californica</i>	California beeplant	Native	
SOLANACEAE				
	<i>Datura wrightii</i>	jimsonweed	Native	
URTICACEAE				
	<i>Urtica urens</i>	annual stinging nettle	Naturalized	

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Family	Scientific Name	Common Name	Native or Naturalized	Cal-IPC Rank
ZYGOPHYLLACEAE				
	<i>Tribulus terrestris</i>	puncture vine	Naturalized	
MONOCOTS				
AGAVACEAE				
	<i>Chlorogalum pomeridianum</i>	soaproot	Native	
ALLIACEAE				
	<i>Allium sp.</i>	onion	Native	
CYPERACEAE				
	<i>Eleocharis macrostachya</i>	spike rush	Native	
IRIDACEAE				
	<i>Sisyrinchium bellum</i>	blue-eyed grass	Native	
JUNCACEAE				
	<i>Juncus balticus</i>	Baltic rush	Native	
	<i>Juncus bufonius</i>	toad rush	Native	
LILIACEAE				
	<i>Calochortus argillosus</i>	clay mariposa	Native	
POACEAE				
	<i>Avena barbata</i>	slender wild oats	Naturalized	Moderate
	<i>Avena fatua</i>	wild oats	Naturalized	Moderate
	<i>Briza maxima</i>	rattlesnake grass	Naturalized	Limited
	<i>Bromus diandrus</i>	ripgrut brome	Naturalized	Moderate
	<i>Bromus hordeaceus</i>	softchess brome	Naturalized	Limited
	<i>Bromus madritensis</i>	foxtail brome	Naturalized	
	<i>Cynodon dactylon</i>	Bermuda grass	Naturalized	Moderate
	<i>Dactylis glomerata</i>	orchard grass	Naturalized	Limited
	<i>Distichlis spicata</i>	salt grass	Native	
	<i>Elymus caput-medusae</i>	medusahead grass	Naturalized	High
	<i>Festuca microstachys</i>	small fescue	Native	
	<i>Festuca myuros</i>	rattail grass	Naturalized	Moderate

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Family	Scientific Name	Common Name	Native or Naturalized	Cal-IPC Rank
	<i>Festuca perennis</i>	Italian fescue	Naturalized	Moderate
	<i>Hordeum brachyantherum</i>	meadow barley	Native	
	<i>Hordeum marinum</i>	seaside barley	Naturalized	Moderate
	<i>Hordeum murinum</i> <i>ssp. leporinum</i>	farmer's barley	Naturalized	Moderate
	<i>Poa annua</i>	annual blue grass	Naturalized	
	<i>Stipa pulchra</i>	purple needle grass	Native	
THEMIDIACEAE				
	<i>Brodiaea elegans</i>	harvest brodiaea	Native	
	<i>Brodiaea terrestris</i>	dwarf brodiaea	Native	
	<i>Dipterostemon capitatus</i> <i>ssp. capitatus</i>	bluedicks	Native	
	<i>Muilla maritima</i>	common muilla	Native	
	<i>Triteleia laxa</i>	Ithurriel's spear	Native	
TYPHACEAE				
	<i>Typha spp.</i>	cattail	Unknown	

Notes:

* Plants listed in bold indicate Special-status plant species

California Invasive Plant Council (Cal-IPC) Ranks:

High – These species have severe ecological impacts on physical processes. Most are widely distributed ecologically.

Moderate – These species have substantial and apparent, but generally not severe, ecological impacts. Ecological amplitude and distribution may range from limited to widespread.

Limited – These species are invasive, but their ecological impacts are minor. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

Watch – These species have been assessed as posing a high risk of becoming invasive in the future.

Appendix C. Bat Root Habitat Assessment

Bat Roost Habitat Assessment, Emergence Counts, and Acoustic Surveys

Date:	April 29, 2024	Jacobs
Project name:	Sand Hill Wind Repowering Project	155 Grand Avenue
Project no:	D3545000	Suite 800
Attention:	Katrina Smith/CDFW	Oakland, CA 94612
Prepared by:	Kay Nicholson/Jacobs Senior Biologist	United States
Copies to:	Tyler Gilmore/SALKA LLC	T +1.510.251.2426
	Jessica Otten/Jacobs	F +1.510.451.5507
	Christy Payne/Jacobs	Jacobs.com

Introduction

Mitigation measures to protect bats from impacts associated with the Sand Hill Wind Repowering Project (Sand Hill or Project) are included in the Altamont Pass Wind Resource Area Repowering Final Program Environmental Impact Report (PEIR; Alameda County Community Development Agency 2014) and the Sand Hill Wind Project Final Subsequent Environmental Impact Report Mitigation Monitoring and Reporting Program (SEIR MMRP; ICF 2020). Included is a measure (BIO-12a) to conduct a bat habitat assessment and roost surveys to identify potential colonial roost sites of special-status and common bat species within 750 feet of the construction area. Another measure (BIO-14a) requires that turbines be sited to minimize potential mortality of bats. Additionally, the Alameda County Technical Advisory Committee (TAC) provided a Written Information Request dated May 12, 2023, following Project submittal of micrositing documents in November 2022. Within this request, the TAC requested that the bat habitat assessment and roost surveys be expanded to within 1 mile of each proposed turbine, that daytime surveys of possible maternity and hibernacula roosts be conducted in late April or early May, emergence surveys at potential maternity roosts be performed in June or July, and potential hibernacula roosts in the winter.

To comply with these requirements, a preliminary desktop analysis was conducted to find features that could potentially be bat roosts. This was followed by a daytime bat roost habitat assessment in the field on May 1–3, 2023 to identify potential maternity roosts and hibernacula within the requested survey area of 1 mile from all proposed turbine sites for the Sand Hill Project. Sites that had been visited and exhibited characteristics of suitable day roosting habitat were revisited July 23–24, 2023 to conduct emergence counts and active acoustic surveys.

This memorandum provides the results of the bat roost habitat assessment and subsequent acoustic surveys and emergence counts, which fulfills a portion of the mitigation measures from the PEIR/SEIR and responds to the TAC Written Information Request relative to bat surveys and mitigation requirements.

The bat roost habitat assessment, acoustic surveys, and emergence counts were conducted by experienced Jacobs bat biologists, Kay Nicholson and Leeann McDougal. Kay Nicholson is a senior biologist with almost 20 years of experience working with the bat species found in California. Ms. Nicholson has taken several bat survey and acoustic monitoring courses from the Western Section of The Wildlife Society, Bat Conservation International, and Wildlife Acoustics; has completed numerous hours of field surveys, including conducting bat habitat assessments and roost emergence surveys, capturing bats with mist nets and harp traps, and conducting acoustic surveys; and has analyzed potential impacts to bats from various types of projects including renewable energy, bridges/culverts, and other roadway projects. Leeann McDougal is also a senior biologist with 6 years of experience conducting bat habitat assessments, emergence surveys, mist netting, and acoustic surveys. Katrina Smith of the California Department of Fish and Wildlife also attended a portion of the emergence counts.

Species Information

Bat species of particular concern for wind energy projects in California, as identified in the *California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development* (California Energy Commission and California Department of Fish and Wildlife 2007) include hoary bat (*Lasiurus cinereus*), western red bat (*Lasiurus blossevillei*), silver-haired bat (*Lasionycteris noctivagans*), and Mexican free-tailed bat (*Tadarida brasiliensis*). Postconstruction bat fatality monitoring has been conducted at nearby wind facilities in the Altamont Pass Wind Resource Area (APWRA) after similar repowering projects, including 3 years at Golden Hills (H.T. Harvey & Associates 2021), 3 years at Golden Hills North (H.T. Harvey & Associates 2022) and 2 years at Summit (WEST 2023). During these postconstruction surveys, bat carcasses were collected using scent-detection dogs, which has shown to result in many more detections and provide more reliable results compared to surveys conducted in the past by human surveyors alone. In all of these postconstruction monitoring surveys, Mexican free-tailed bat was the species hit most, followed by hoary bat, and then western red bat. The remaining fatalities were comprised of silver-haired bats, big brown bats (*Eptesicus fuscus*), California myotis (*Myotis californicus*), Yuma myotis (*Myotis yumanensis*), western mastiff bats (*Eumops perotis*), and unidentified species (H. T. Harvey & Associates 2021, Harvey & Associates 2022, and WEST 2023).

In addition to those collected by operating wind energy facilities nearby during fatality monitoring, other bat species could be present in the project area. A search of CDFW's California Natural Diversity Database and review of the topographical quadrangles (quad maps) that encompass the survey area as well as the quad maps immediately surrounding those yielded results indicating that three bat species have been recorded in this area, hoary bat, pallid bat (*Antrozous pallidus*), and Townsend's big-eared bat (*Corynorhinus townsendii*). Upon inspection of the data, all bat observations were recorded more than 1 mile from proposed turbine locations associated with the Project. A review of species range maps available on CDFW's website¹ indicates that other bat species may be present in the Project vicinity, including western small-footed bat (*Myotis ciliolabrum*), fringed myotis (*Myotis thysanoides*), big free-tailed bat (*Nyctinomops macrotis*), and canyon bat (*Parastrellus hesperus*).

Hoary bats are foliage roosters, roosting in tall, large-diameter, mature coniferous and deciduous trees with shelter above and open below, which have been found in heavy forests, open wooded glades, edges of croplands, along urban streets, and in city parks (Anderson 2002, Tuttle 1995). In California, hoary bat hibernacula occur along the coast and in southern California, while maternity colonies are found inland and north of wintering areas in woodlands and forests with medium- to large-size trees and dense foliage (CDFW 2023a).

Western red bats are also foliage roosters found in forests and woodlands, preferring similar tree roost characteristics as hoary bats, and often using cottonwood, sycamore, and willow trees in riparian areas (BCI 2021, CDFW 2023b, Lavender 2014). In California, western red bats winter in lowlands and coastal regions south of the San Francisco Bay and it is believed most individuals make short migrations to summer habitat (CDFW 2023b).

Silver-haired bats roost in coniferous, mixed conifer, and deciduous forests, requiring old growth with dead and dying snags (BCI 2023). They typically form maternity colonies in tree cavities and small hollows (BCI 2023, Bentley 2017); however, they are also known to roost in rock crevices, buildings, caves, and under bark (Bentley 2017, CDFW 2005b). In California, the silver-haired bat is typically found in coastal and montane forests, though during migration this species can be found anywhere in the state (CDFW 2005b).

Mexican free-tailed bats typically congregate in large colonies, using caves, abandoned mines, bridges, culverts, buildings, and bat houses for roosts (Sosnicki 2012, BCI 2022, CDFW 2005a). In California, this species is found throughout the state and prefers woodland, shrubland, and grassland biotic communities (CDFW 2005a).

¹ <https://wildlife.ca.gov/Data/CWHR/Life-History-and-Range>

While specific roost characteristics differ slightly among bat species, the roost preferences described for the four species above generally encapsulate the characteristics of maternity and winter roost sites for any of the bat species that could be present in the project area.

Methods

Bat Roost Habitat Assessment

Jacobs' biologists initially conducted a desktop analysis reviewing aerial imagery available in Google Earth to identify potential bat roosts (i.e., maternity roosts and hibernacula), located within 1 mile of proposed turbine locations associated with the Project. A kmz was created of polygons delineating all trees and rock outcrops observed in the aerial imagery (**Figure 1**).

In the field, the ESRI application Field Maps was used on an iPad to navigate to the pre-identified locations for on-site evaluation. Biologists also looked for other potential roosts that were not pre-identified, such as buildings or other structures that bats may use, particularly those not visible on aerial imagery because they are obscured by vegetation. Much of the survey area was on private property, so biologists coordinated with the project proponent to obtain permission to access as many locations as possible. Where there was no permission granted to access private property, potential roosts were observed from public roads to the extent possible using binoculars.

At each location visited, biologists assessed the trees, rock formations, and structures to determine suitability as a maternity roost or hibernaculum. Trees were examined for features that could be attractive to bats, such as exfoliating bark, woodpecker holes, other naturally occurring holes and crevices, and large trees with dense foliage having few to no branches near the ground. Rock outcrops, cliff faces, and boulders were examined externally for any deep crevices or holes that could be used for roosting. Many pre-identified locations were single trees that would not typically be used as a long-term roost by maternity colonies or wintering bats but could be used as a roost briefly during migration. Therefore, single trees and small groupings of trees were recorded as potential migratory roosts, as appropriate.

Larger groupings of trees exhibiting appropriate characteristics that could potentially be maternity roosts or hibernacula were recorded as potential tree roosts. Old and/or abandoned structures (i.e., barns, sheds, trailers) that were observed during the habitat assessment were recorded as potential structure roosts.

Maternity roosts could be present in the large tree groupings and old structures found in the Project area, while the old structures could also be used as hibernacula. Therefore, follow-up acoustic surveys and/or emergence counts to identify potential maternity roosts were conducted during the summer in all locations identified during the May 2023 bat roost habitat assessment as potential bat roosts. Buildings that appeared suitable as bat roosts were also surveyed during the winter to identify potential hibernacula. Methods for acoustic surveys and emergence counts are described below.

Acoustic Surveys

Ultrasonic bat detectors enable researchers to record and store bat calls for analysis to identify species or a group of species with a similar characteristic frequency (i.e., guilds). Detectors used for this research included Wildlife Acoustics Song Meter (SM) SM4BAT FS using SMM-U1 or SMM-U2 ultrasonic microphones, as well as SM Mini Bat, which has an internal ultrasonic microphone.

For long-term monitoring, acoustic bat detectors were deployed to monitor bat activity near the opening of potential rock roosts during the summer and winter survey periods, as well as near two potential structure roosts during the winter survey period. SM4BAT FS detectors were programmed to record 24 hours a day when triggered by a bat call or other ultrasonic noise.

During a nighttime emergence survey, one or more acoustic bat detectors were deployed to assist in recording as much data as possible at a potential roost location.

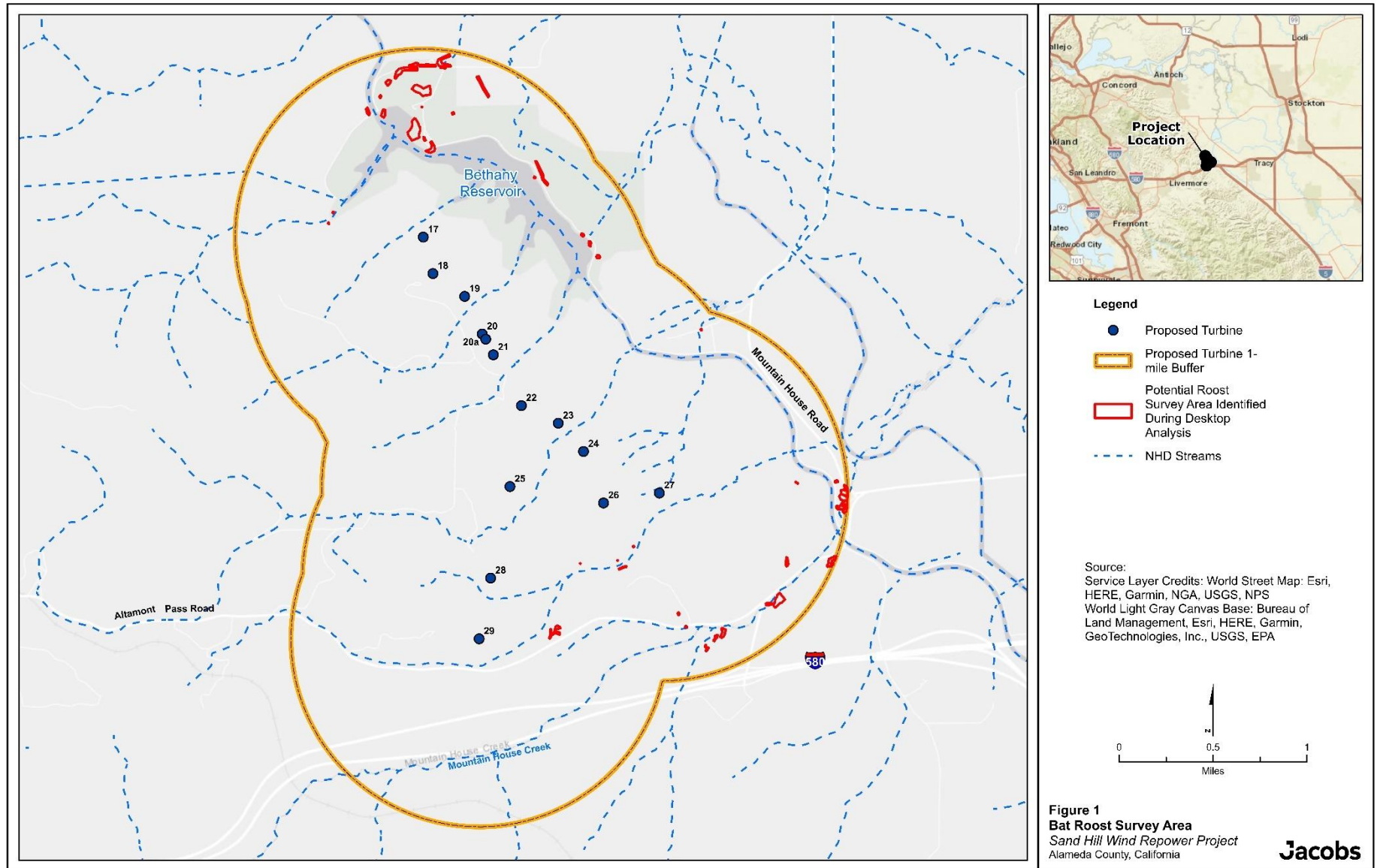


Figure 1. Survey location.

After acoustic data had been collected, call files were analyzed using Kaleidoscope Pro (version 5.6.2), an automated bat echolocation call classifier and analysis software program. The calls were first processed using the autoclassifier for California bats and then confirmed by manual vetting performed by a qualified wildlife biologist. Some bats produce calls similar to other bat species, so not every bat call can be identified to species unless diagnostic characteristics are present in the bat call. When diagnostic characteristics are not present, the bat call is assigned to a species guild. For example, California myotis and Yuma myotis are assigned together in the 50 kHz myotis species guild because the characteristic frequency of their calls is around 47 to 52 kHz and other characteristics of their calls (e.g., shape, slope, high frequency, low frequency, call duration) are very similar. Additionally, calls emitted by bats that are almost out of range for their calls to be detected may be clipped such that the beginning and or ending of the call is not recorded or enough pulses may not be recorded to see the pattern of the calls, making identification to species impossible.

Emergence Counts

Bat emergence counts were conducted during the summer at two areas identified during the habitat assessment. The bat emergence surveys began one hour before sunset and continued until at least one hour after sunset. Surveyors positioned themselves so that emerging bats would be silhouetted against the sky as they exited the potential roost (i.e., rock feature or structure) or roost area (i.e., grove of trees). Night vision goggles were used as a visual aid once it was too dark to see emerging bats with the naked eye. Surveyors were positioned as close to potential roosts as possible, but not close enough to influence emergence. Stationary camera traps and acoustic bat detectors were deployed at emergence survey areas to assist with counting emerging bats and identifying species.

Results

Bat Roost Habitat Assessment

During the field work, no evidence of bat use was observed at any tree, rock feature, or structure, so the presence of any roosts could not be confirmed. **Table 1** provides data on, and **Figure 2** identifies the locations of, potential bat roosts observed during the habitat assessment, including two groves of trees and two buildings/structures. Numerous lone trees or small groups of trees that could be potential migratory roosts were observed, though these were not the focus of this assessment and are not discussed further in this report. No rock features that would constitute suitable roosting habitat were observed.

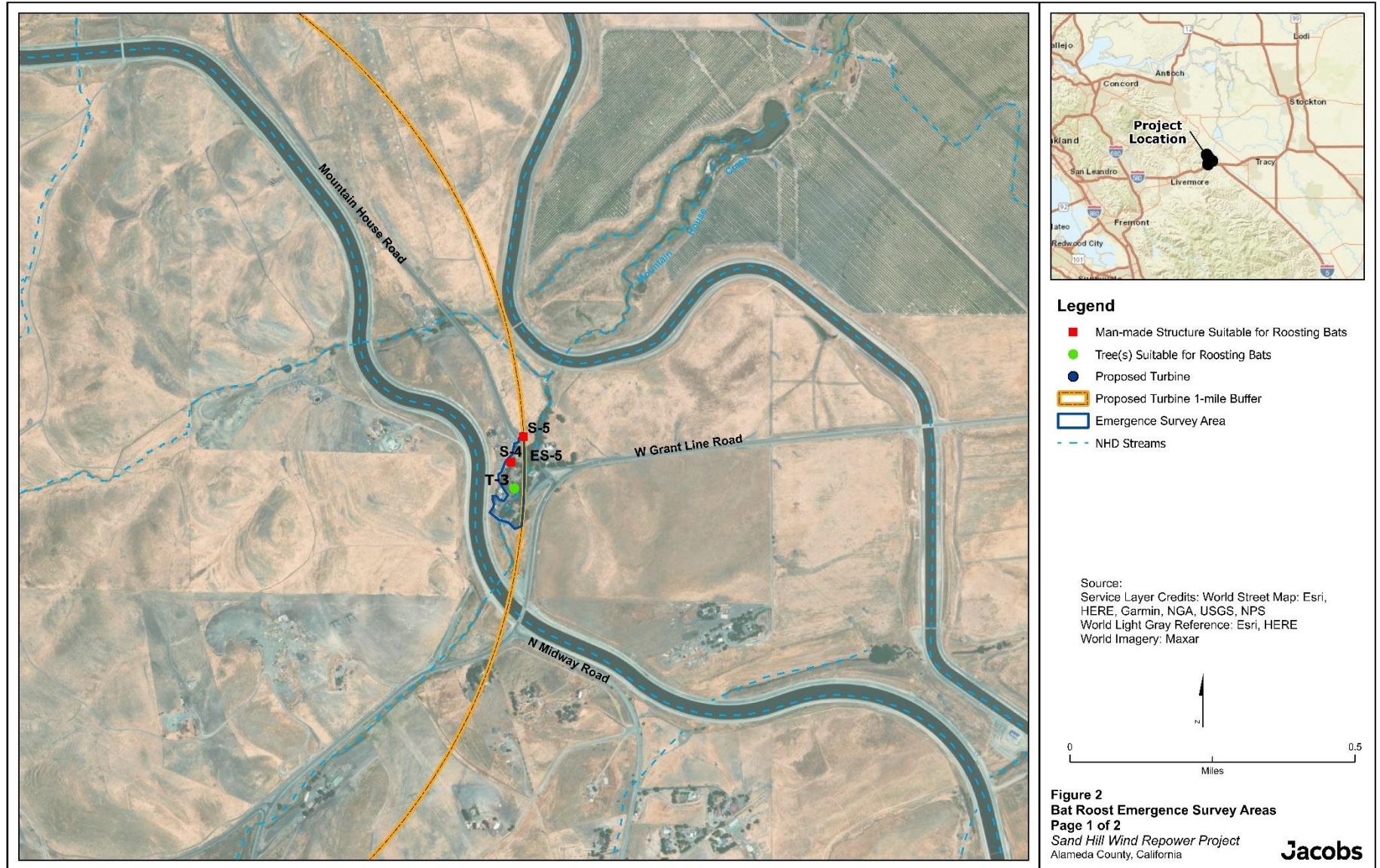


Figure 2a. Potential bat roosts.

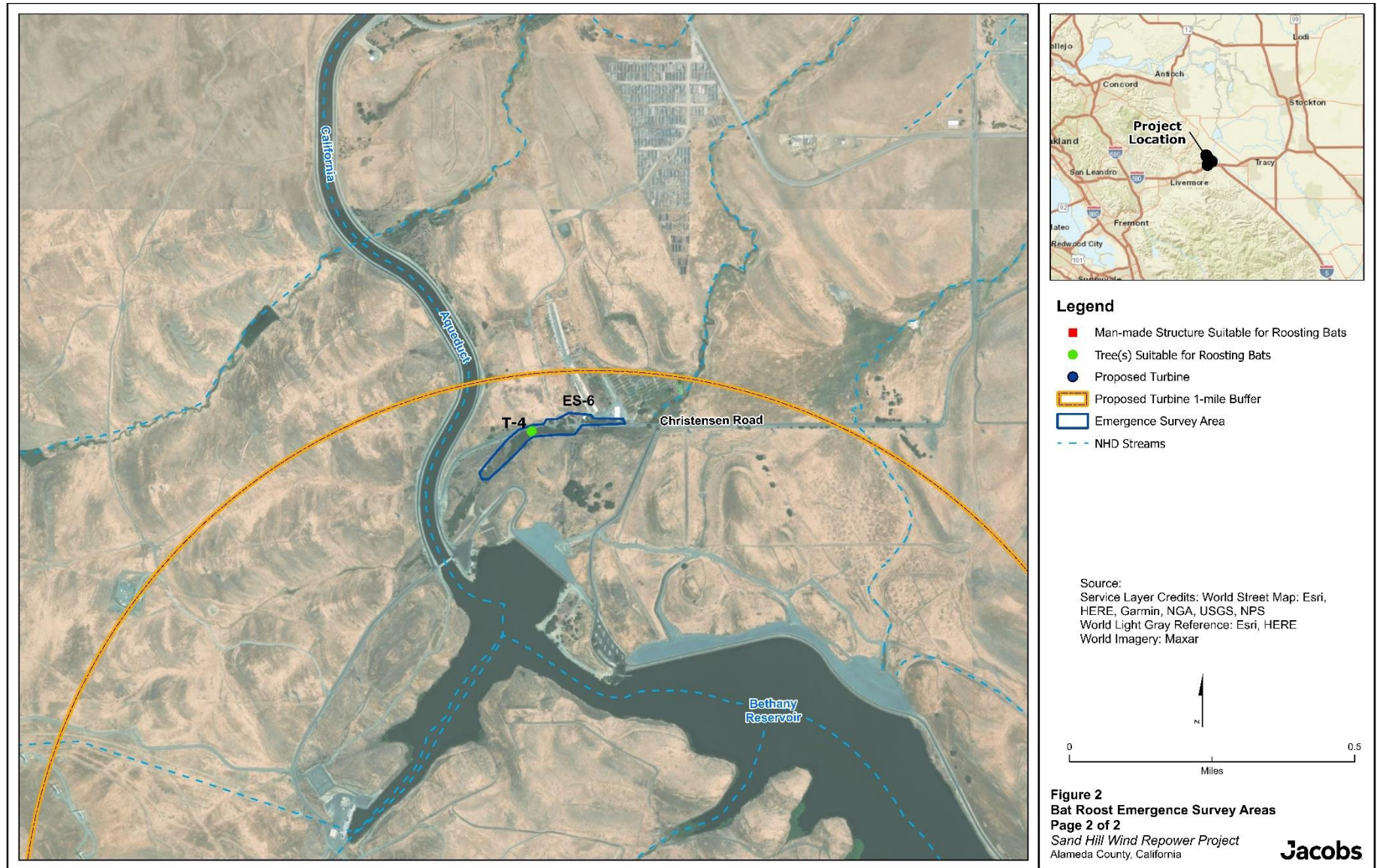


Figure 2b. Potential bat roosts.

Table 1. Potential bat roosts observed within a 1-mile buffer of the Sand Hill Wind Repowering Project proposed turbines

Roost Number	Location		Notes
	Latitude	Longitude	
Potential Tree Roosts ¹			
T-3	37.754527	-121.575869	Grove of salt cedar (<i>Tamarix</i> sp.), tree of heaven (<i>Ailanthus altissima</i>), and Peruvian pepper (<i>Schinus molle</i>) trees
T-4	37.787361	-121.618950	Grove of cottonwood (<i>Populus fremontii</i>) (at least one with dead/decaying wood), ash (<i>Fraxinus</i> sp.), and California palm (<i>Washingtonia filifera</i>) trees
Potential Structure Roosts ²			
S-4	37.754747	-121.576358	Small shed behind the Mountain House Bar & Grill
S-5	37.755379	-121.575927	Abandoned barn across the street from the Mountain House Bar & Grill
¹ Species potentially present that are known to roost in trees (hollow cavities, exfoliating bark, or among the foliage) include pallid bat, big brown bat, western mastiff bat, silver-haired bat, western red bat, hoary bat, California myotis, western small-footed myotis, big free-tailed bat			
² Species potentially present that are known to roost in buildings and other man-made structures include pallid bat, Townsend's big-eared bat, big brown bat, western mastiff bat, silver-haired bat, California myotis, western small-footed myotis, fringed myotis, Yuma myotis, big free-tailed bat, canyon bat, Mexican free-tailed bat			

Potential Tree Roosts

No woodland or forested habitat preferred by tree bats during maternity season or winter was found in the survey area. However, two locations (T-3 and T-4) within the survey area include groves of trees with features that could attract bats to roost there, though all of these are relatively small groves making them low quality potential maternity roosts or hibernacula, and therefore unlikely to be used. Locations of the two groves of trees that could be potential tree roosts are shown on the two pages comprising **Figure 2**.

T-3 is a 7.40-acre grove of mostly large pine and Peruvian pepper trees with some tree of heaven mixed in (**Photos 1–2 in Attachment A**). Mountain House Creek flows through this grove of trees, which likely attracts insects and could provide suitable foraging habitat for bats. Within this area, Mountain House Road bisects the grove of trees, and there are also residential buildings as well as the Mountain House Bar & Grill. The nearest proposed turbine associated with this project (Turbine 27 at Sand Hill) is located approximately 1 mile to the west.

T-4 is a 3.30-acre grove of mostly cottonwood and ash trees with a couple of palm trees (**Photos 3–4 in Attachment A**). These trees are located just north of Bethany Reservoir, which could attract bats to drink and forage on insects. The trees in this area are fairly young with a mostly continuous canopy and branches all the way down to the ground. However, there is a dying cottonwood that provides suitable habitat for cavity-roosting bats. While evidence of bat roosting was not observed, the snag was behind a fence on private property and foliage on live cottonwoods around it obscured much of it from view. The nearest proposed turbine associated with the Project (Turbine 17 at Sand Hill) is located approximately 0.85 mile to the south.

Potential Structure Roosts

Two structures that could potentially have bats roosting inside were observed during the habitat assessment. Observation of these structures was external only, so their use could not be confirmed during the habitat assessment. Locations of the two potential structure roosts are shown on the two pages comprising **Figure 2**.

S-4 is a small shed in a wooded area next to Mountain House Creek (**Photo 5, Attachment A**). The shed is on private property and was not viewed up close so it is unknown if there are openings in which bats can enter

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and exit the structure. The nearest proposed turbine associated with the Project (Turbine 27 at Sand Hill) is located approximately 1 mile to the west.

S-5 is an old, abandoned barn next to a wooded area along Mountain House Creek (**Photo 6, Attachment A**). The barn is in a state of disrepair with portions of a couple walls missing. Bats could easily access the barn to roost inside. Additionally, the top of the roof has areas that are peeling and bats could roost in the crevices underneath the peeling layer. The nearest proposed turbine associated with the Project (Turbine 27 at Sand Hill) is located approximately 1 mile to the west.

Summer Bat Roost Acoustic Surveys and Emergence Counts

Two emergence survey areas containing potential maternity roost habitat for bats were identified in the Project area (**Figure 2**). Results of active acoustic surveys and potential maternity roost emergence counts conducted in the summer are described in the following subsections.

Summer Acoustic Surveys

Acoustic bat detectors were set up for 2–4 hours near sunset in association with each emergence survey conducted. Detectors were elevated above the ground approximately 3 feet (using tripods or features on the landscape, such as fences) to assist in recording calls without echoes to the extent possible, while remaining close to the potential roost to minimize calls from bats flying overhead that did not come from the potential roost. **Table 2** presents the results of acoustic surveys.

In total, 229 acoustic files were recorded, of which 5 were bat call files and 224 files recorded other noise (e.g., insects, birds, surveyor movement). One file classified to species equals one bat pass. The bat passes were manually vetted and identified to species or species guild. Two bat species or guilds were recorded during the acoustic surveys and confirmed through manual vetting.

Table 2. Summer acoustic survey results

Survey Area (Roost Feature(s)) Survey Date(s)	No. of Bat Passes / No. of Nights Bat Calls Were Recorded		Total No. Bat Passes	Total No. Nights with Bat Calls
	50 kHz Myotis ¹	TABR ¹		
ES-5 (trees, S-4, S-5) 7/24/23	2 / 1	1 / 1	3	1
ES-6 (trees) 7/23/23	0 / 0	2 / 1	2	1

¹Species: 50 kHz Myotis = Yuma myotis (*Myotis yumanensis*) or California myotis (*M. californicus*), TABR = Mexican free-tailed bat (*Tadarida brasiliensis*).

The Mexican free-tailed bat was detected in both of the emergence survey areas and a myotis species was detected at ES-5.

Summer Emergence Counts

Emergence counts were conducted July 23–24, 2023. Survey locations and results are presented in **Table 3**. One bat was observed near a potential structure roost (i.e., a dilapidated barn identified as S-5) in emergence survey area 5. The bat was not seen emerging from the barn but was detected flying around the barn just after sunset and may have been roosting there. No bats were observed in any of the other emergence survey areas. No photos of bats were captured with camera traps at any of the emergence survey areas.

Table 3. Summer emergence count results

Survey Area	Surveyor(s)	Date	No. of Bats Observed by Surveyors	No. of Photos from Camera Traps
ES-5 (trees, S-4, S-5)	K. Nicholson, L. McDougall, K. Smith	7/24/2021	1	0
ES-6 (trees)	K. Nicholson, L. McDougall	7/23/2021	0	0

Winter Surveys

There are two structures within the Project's 1-mile buffer, S-4 and S-5 (a small shed and a dilapidated barn that is missing large portions of its walls, respectively). While one bat was observed near S-5 during maternity roost emergence surveys, it is not expected that either of these structures would have the thermal stability to provide the warmth required of a hibernaculum. Additionally, these two structures are approximately 1 mile from the nearest Project turbine and use of these structures would not have resulted in siting recommendations requiring any turbines to be moved. For these reasons, the two structures were not surveyed during the winter. No other potential hibernacula is present, so no winter surveys were conducted for the Project.

Discussion

Bat Roost Habitat Assessment

The habitat assessment resulted in identification of four potential roost sites, including two clusters of trees that could be tree roosts and two potential structure roosts (S-4 and S-5). However, no bat sign was observed at any location during the habitat assessment phase of the surveys; therefore, no bat roosts were confirmed during the bat roost habitat assessment.

Summer Bat Roost Acoustic Surveys and Emergence Counts

Emergence counts only resulted in detection of one bat potentially using a roost. Acoustic monitoring was conducted concurrently with the emergence counts to aid in identifying any bats detected. The potential bat roosts in the Project area were located on private property where permission to install equipment was not granted and/or public areas where potential was high for expensive equipment to be damaged or stolen. Therefore, only emergence surveys and short-term acoustic monitoring were conducted for the Project.

In the western U.S., many bat species roost singly or in small groups (e.g., hoary bat, western red bat), while some species (e.g., Mexican free-tailed bat, Yuma myotis) roost in larger groups. One of the potential roost sites monitored, S-5, exhibited bat activity that indicates it may be a bat roost and could potentially be a maternity roost (**Table 4**). Two bat passes from Mexican free-tailed bats were recorded within 10 minutes after sunset at emergence survey area ES-6 (i.e., near Bethany Reservoir). However, only potential tree roosts were being monitored at ES-6, and Mexican free-tailed bats are not known to roost in trees; therefore, the bat calls were likely recorded from bats flying by that had been roosting in a rock feature, an old mine, or an abandoned building nearby. Active tree roosts were not found within the survey area.

Table 4. Locations of potential maternity roosts

Survey Area	Bats Present	Potential Maternity Roost	Nearest Proposed Turbine (Distance)	Notes
ES-5 (trees, S-4, S-5)	Yes	Yes	Turbine 27 (1 mi)	The three bat passes recorded were all after 10:00pm; however, 1 bat was observed near S-5 just after sunset during an emergence survey
ES-6 (trees)	Yes	No	Turbine 17 (0.85 mi)	Potential roosts monitored were trees; both bat passes were TABR (not a tree-roosting species)

¹Species: TABR = Mexican free-tailed bat (*Tadarida brasiliensis*)

Recommendations

While prevailing guidance for siting turbines at wind farms recommends avoiding maternity roosts and hibernacula, effective buffer distances have not been evaluated (American Wind Wildlife Institute 2018, Berthinussen et al. 2021). Additionally, no studies have found conclusive evidence that there is an association between resource availability (e.g., roosts) and bat fatalities at wind energy facilities. Bennett and Hale (2018) examined this potential relationship and did not find a statistically significant association between the two. Because there is a lack of literature to support such an association, no change in micro-siting for the Project is recommended. Post-construction monitoring in the Project area could help provide some insight regarding this potential relationship.

References

- Alameda County Community Development Agency (ACCD). 2014. Altamont Pass Wind Resource Area Repowering Final Program Environmental Impact Report. October 2014.
- American Wind Wildlife Institute. 2018. Bats and Wind Energy: Impacts, Mitigation, and Tradeoffs. American Washington, D.C. Accessed September 19, 2023, at: www.awwi.org/resources/bat-white-paper/.
- Anderson, S. 2002. "Lasiurus cinereus" (On-line), Animal Diversity Web. Accessed May 15, 2023, at: https://animaldiversity.org/accounts/Lasiurus_cinereus/.
- Bat Conservation International. 2021. Western Red Bat Species Data Sheet. Prepared by Alyson Brokaw. Accessed May 15, 2023, at: <https://www.batcon.org/bat/lasiurus-blossevillii/>.
- Bat Conservation International. 2022. Mexican Free-tailed Bat Species Data Sheet. Prepared by Alyson Brokaw. Available online at: <https://www.batcon.org/bat/tadarida-brasiliensis/>.
- Bat Conservation International. 2023. Silver-haired Bat Species Data Sheet. Prepared by Alyson Brokaw. Available online at: <https://www.batcon.org/bat/lasiurus-noctivagans/>.
- Bennett, V. J., and A. M. Hale. 2018. Resource Availability May Not Be a Useful Predictor of Migratory Bat Fatalities or Activity at Wind Turbines. *Diversity* 10, no. 2: 44. Accessed September 19, 2023, at: <https://doi.org/10.3390/d10020044>.

Memorandum

- Bentley, J. 2017. "Lasionycteris noctivagans" (On-line), Animal Diversity Web. Accessed May 15, 2023, at https://animaldiversity.org/accounts/Lasionycteris_noctivagans/.
- Berthinussen, A., O. C. Richardson, and J. D. Altringham. 2021. Bat Conservation: Global Evidence for the Effects of Interventions. Conservation Evidence Series Synopses. University of Cambridge, Cambridge, UK. Accessed September 19, 2023, at: <https://www.conservationevidence.com/synopsis/pdf/32>.
- California Department of Fish and Wildlife (CDFW). 2005a. Mexican Free-tailed Bat Life History Account. Prepared by the California Wildlife Habitat Relationships System, CDFW, California Interagency Wildlife Task Group. Accessed May 15, 2023, at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=2351&inline=1>.
- California Department of Fish and Wildlife (CDFW). 2005b. Silver-haired Bat Life History Account. Prepared by the California Wildlife Habitat Relationships System, CDFW, California Interagency Wildlife Task Group. Accessed May 15, 2023, at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=2333&inline=1>.
- California Department of Fish and Wildlife (CDFW). 2023a. Hoary Bat Life History Account. Prepared by the California Wildlife Habitat Relationships System, CDFW, California Interagency Wildlife Task Group. Accessed May 15, 2023, at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=2341&inline=1>.
- California Department of Fish and Wildlife (CDFW). 2023b. Western Red Bat Life History Account. Prepared by the California Wildlife Habitat Relationships System, CDFW, California Interagency Wildlife Task Group. Accessed May 15, 2023, at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=2339&inline=1>.
- California Energy Commission and California Department of Fish and Wildlife. 2007. California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development. Commission Final Report. California Energy Commission, Renewables Committee, and Energy Facilities Siting Division, and California Department of Fish and Game, Resources Management and Policy Division. CEC-700-2007-008-CMF.
- H. T. Harvey and Associates. 2021. Golden Hills Wind Energy Center Postconstruction Fatality Monitoring Project: Final 3-Year Report. Project 3926-01. Prepared for Golden Hills Wind, LLC.
- H. T. Harvey and Associates. 2022. Golden Hills North Wind Energy Center Postconstruction Fatality Monitoring Final 3-Year Report. Draft January 2, 2022. Prepared for Golden Hills Wind, LLC.
- ICF. 2020. Sand Hill Wind Project Final Subsequent Environmental Impact Report. Prepared for County of Alameda. Prepared by ICF, February 2020.
- Lavender, J. 2014. *Lasiurus blossevillii* (Online), Animal Diversity Web. Accessed May 15, 2023, at: https://animaldiversity.org/accounts/Lasiurus_blossevillii/.
- Sosnicki, J. 2012. "Tadarida brasiliensis" (On-line), Animal Diversity Web. Accessed May 15, 2023, at: https://animaldiversity.org/accounts/Tadarida_brasiliensis/.

Memorandum

Tuttle, M. 1995. The Little-known World of Hoary Bats. *Bats Magazine*. Volume 13, Issue 4. Published by Bat Conservation International. Accessed May 15, 2023, at: <https://www.batcon.org/article/the-little-known-world-of-hoary-bats/>.

Western EcoSystems Technology, Inc. (WEST). 2023. *Post-construction Monitoring at the Summit Wind Repower Project, Alameda County, California. September 2, 2022, to September 1, 2023*. Prepared for Greenbacker Renewable Energy Corporation. November 30, 2023.

Attachment A – Photographs



Photo 1. Salt cedar trees by the Mountain House Bar & Grill at potential tree roost T-3.



Photo 2. Eucalyptus trees by the Mountain House Bar & Grill at potential tree roost T-3.



Photo 3. Cottonwood tree with dead wood at potential tree roost T-4.



Photo 4. View to the west of cottonwood trees at potential tree roost location T-4.



Photo 5. Small shed, potential structure roost S-4.



Photo 6. Abandoned barn, potential structure roost S-5.

RESOLUTION NO. R-2020-555

**RESOLUTION CERTIFYING THE FINAL SUBSEQUENT ENVIRONMENTAL IMPACT
REPORT AND APPROVING CONDITIONAL USE PERMIT PLN2017-00201,
SAND HILL WIND PROJECT
ADOPTED AT THE BOARD OF SUPERVISORS OF THE COUNTY OF ALAMEDA
HEARING OF DECEMBER 15, 2020**

WHEREAS, SAND HILL WIND, LLC, a wholly-owned subsidiary of Sustainable Power Group LLC, hereinafter referred to as sPower, a wholly-owned subsidiary of the AES Corporation and Alberta Investment Management Corporation (AES/AIMCO), filed an application for CONDITIONAL USE PERMIT, PLN2017-00201 (Project) in November 2017, to decommission and remove 671 wind turbines or former wind turbine sites, to install up to 40 new turbines with a maximum production capacity of 144.5 megawatts (MW), using turbines rated between 2.3 and 3.8 MW (potentially up to 4.0 MW) per turbine, and to make improvements to related infrastructure, on fifteen parcels in a generally contiguous area designated in the A (Agriculture) and A-B-E (Agriculture, 160-acre minimum building site area) zoning districts located on roughly 2,600 acres in total area in the eastern Altamont Hills or Mountain House area of Alameda County, generally described as north and south of Altamont Pass Road between two-thirds and two miles west of Grant Line Road, east and west of Mountain House Road between one-quarter and two miles north of Grant Line Road, west of the Delta-Mendota Canal one mile northwest of Mountain House Road, and west of Bethany Reservoir and southeast of the intersection of Christensen and Bruns Roads, as well as to recommence use of a pre-existing wind energy operations and maintenance facility on another, sixteenth parcel at 14740 Altamont Pass Road, altogether bearing the following Assessor's Parcel Numbers:

99B-7750-6-0; 99B-6325-1-4; 99B-6325-1-3; 99B-7375-1-7; 99B-7400-1-5; 99B-7300-1-5;
99B-7050-4-6; 99B-7050-1-9; 99B-7050-4-1; 99B-7350-2-1; 99B-7350-2-5; 99B-7350-2-15;
99B-7500-3-2; 99B-7500-3-1; 99B-7600-1-1; and 99B-7750-11-0; and

WHEREAS, on November 12, 2014, the East County Board of Zoning Adjustments (EBZA) adopted Resolution Z-14-40 which certified the Altamont Pass Wind Resource Area Repowering Final Program Environmental Impact Report (Program EIR or PEIR) as in compliance with the California Environmental Quality Act (CEQA), and found that the Final Program EIR was presented to the Board, which has reviewed and considered the information in the Final Program EIR prior to adopting said Resolution, and that the Final Program EIR reflects the County's independent judgment and analysis; and

WHEREAS, the subject Project is part of the overall program to repower the entire Altamont Pass Wind Resource Area (APWRA) by replacing older generation turbines with newer, larger turbines that serve to improve turbine efficiency but also have the potential to substantially reduce avian mortality, especially for raptor species, consistent with the Final Program EIR certified in November 2014; and

WHEREAS, the PEIR evaluated two repowering alternatives for a maximum capacity of either 417 MW or 450 MW of combined nameplate capacity of new turbines within the APWRA, in order to serve the objective of increasing the output of clean energy and meeting state energy portfolio goals, in recognition that the APWRA has been the site of privately-owned wind energy projects in operation since the 1980s, after the State of California designated the area for production of renewable energy, while further recognizing that within the APWRA the number of MWs generally has a direct and proportional relationship to the mortality of protected avian and bat species; and

WHEREAS, the Board of Zoning Adjustments previously approved in September 2003 the Diablo Winds repowering project that began operations in 2004 and represents 20.5 MW of capacity, based on a prior Program EIR for Repowering the APWRA certified in 1998; and

WHEREAS, the existence of the Diablo Winds project represented a baseline condition for the 2014 PEIR and not a potential new project to be evaluated in the PEIR, because the PEIR was an evaluation of all current and future applications (submitted since the Notice of Preparation for the PEIR was circulated in 2010) for repowering a maximum of either 417 or 450 MW of combined new repowering development; and

WHEREAS, the PEIR further included two specific projects in its analysis which represented partial repowering of the APWRA, known as the Golden Hills (Planning application number PLN2014-00032, 88.4 MW) and Patterson Pass (PLN2012-00212, 19.8 MW) wind projects which together represented 108.2 MW of capacity, and which were approved by the Board of Zoning Adjustments at the time of the certification of the PEIR on November 12, 2014, and the PEIR was intended to provide for tiered review of other specific repowering projects that were anticipated to be proposed, consistent with the provisions for program EIRs in Section 15168 of the CEQA Guidelines using checklists to determine if such projects were adequately covered or anticipated in the PEIR; and

WHEREAS, the County initially reviewed the Project for the purposes of CEQA in the Sand Hill Wind Project *Environmental Analysis*, dated September 2018 that together with the *Implementation Checklist*, also dated September 2018 described the impacts of the current Project on the environment at a detailed project level and mitigation measures applicable to the project, previously identified generally in the PEIR, which would reduce each significant impact to the greatest extent possible or feasible, in most cases to a level that is less than significant but in other cases without reducing it to a less than significant level; and

WHEREAS, Section 15162 of the CEQA Guidelines provides direction as to the circumstances in which a subsequent EIR shall be prepared including when, based on substantial evidence in light of the whole record, the lead agency determines that substantial changes are proposed in the project or program described and addressed in a prior EIR, or changes in the circumstances under which the project will be undertaken, that together would involve new significant environmental effects or more severe significant effects than previously identified, such that major revisions of the prior EIR are required; and

WHEREAS, the Project has been reviewed in accordance with the provisions of CEQA and it was determined that while the Project's scope was described generally as part of the PEIR, the Project proposed individual turbines with a nameplate capacity of 3.6 or 3.8 MW, or potentially up to 4.0 MW if they become available, and therefore with 20 to 33 percent more MW yield per turbine than the 3.0 MW turbines used in the PEIR to estimate environmental impacts of a typical individual future repowering project, and physically increased dimensions of roughly 7% longer rotor blades, 9% additional total rotor diameter, and a resulting 20% expansion of rotor swept area, such that the potential or likely effect would be increased avian and bat mortality on a per turbine basis, which supports the County's decision to prepare a subsequent EIR; and

WHEREAS, the Project is proposed in the context of new information including additional monitoring reports from similar repowering projects in both Alameda and Contra Costa Counties and further information regarding bat mortality, that combined with the physically larger and greater MW output together support the County's decision to prepare a subsequent EIR; and

WHEREAS, in the time since the Golden Hills project was approved in November 2014 for 88.4 MW and 52 turbines, it was constructed in 2015 with a capacity of approximately 85.9 MW (2.5 less MW and 48 turbines), and the Patterson Pass project, approved for up to 12 turbines with a capacity of 19.8 MW has not been constructed and is now an expired project; and

WHEREAS, in the time since the PEIR was certified and on the basis of analyses using environmental checklists pursuant to CEQA (Section 15168), the Board of Zoning Adjustments approved three more repowering projects amounting to an additional 130.8 MW of capacity, including the Golden Hills North project (PLN2015-00157, 40.8 MW), the Summit Wind project (PLN2014-00056, 54 MW) and a prior version of the Sand Hill Wind project under different ownership for a different but overlapping set of parcels as currently proposed by sPower (PLN2015-00198, 36 MW); and

WHEREAS, in the time since the Golden Hills North project was approved in November 2015 for 40.8 MW and 24 turbines, it was constructed in 2016 instead with a nameplate capacity of 46 MW (5.2 more MW and 20 turbines with a capacity of 2.3 MW each); and

WHEREAS, in the time since the Summit Wind project was approved in January 2016 for 54 MW and up to 27 turbines, its owners began construction of 23 turbine sites and subsequently applied for a modified Conditional Use Permit (PLN2020-00007) to use 23 turbines rated with a capacity of 2.5 MW each such that capacity would be increased to 57.5 MW, and such application was approved on May 28, 2020 at a hearing before the EBZA, having found on the basis of an Affected Environment Analysis Update that such modification would not result in new significant environmental effects or a substantial increase in the severity of previously identified significant effects over those analyzed in the PEIR and CEQA Implementation Checklist used for the original project; and

WHEREAS, in the time since the prior Sand Hill project was approved in May 2016 for 36 MW using up to twelve 2.5 to 3.0 MW turbines, its assets were acquired by sPower for the current project proposal and the prior project proposal is not expected to be implemented; and

WHEREAS, the City of Santa Clara, which has jurisdiction over a single wind energy project site known as Rooney Ranch within the APWRA, approved in June 2019 the application of sPower for its repowering project of 25.1 MW of capacity on Rooney Ranch using an environmental checklist tiering from the PEIR in accord with Section 15168 of the CEQA Guidelines; and

WHEREAS, due to the changes in approved and constructed repowering projects as described hereinabove, the total number of MW currently in operation or approved for construction in the APWRA, including the Diablo Wind project (but excluding the prior Sand Hill project that the Project applicant and County considers having been replaced by the current Project), is 251.3 MW; and

WHEREAS, in the time since the Draft Sand Hill Wind Project Subsequent Environmental Impact Report (DSEIR) was completed, the County has received one additional repowering project application, the Mulqueeney Ranch Wind project (PLN2019-00226, of up to 36 turbines and a capacity of 80 MW), which is the subject of separate review under a new subsequent EIR prepared pursuant to CEQA; and

WHEREAS, combined with the proposed 144.5 MW proposed for the Sand Hill Wind Project, the total number of MW of currently operating, constructed approved and proposed repowered wind energy projects in the APWRA would amount to 479.3 MW; and

WHEREAS, a Notice of Preparation (NOP) of a Subsequent Environmental Impact Report (SEIR) was issued on January 3, 2019, soliciting public input regarding the environmental analysis of the repowering Project; and

WHEREAS, the DSEIR was prepared and circulated for public comment between August 9, 2019 and October 4, 2019; and

WHEREAS, the DSEIR describes the effects of the Project on the environment at a detailed level, identifies mitigation measures applicable to the Project and previously identified in the PEIR which would reduce each significant impact to the greatest extent possible or feasible, in most cases to a level that is less than significant but in other cases without reducing it to a less than significant level, including adverse impacts on protected avian and bat species including golden eagle, red-tailed hawk, American kestrel, burrowing owl and other focal raptor species; and

WHEREAS, a Notice of Availability (NOA) of the DSEIR was prepared on August 9, 2019 and copies of the DSEIR provided to the state Office of Planning and Research – State Clearinghouse (SCH) for distribution to state Responsible Agencies, and was also provided to or made available to other interested agencies, organizations and area property owners and residents to solicit comment on the DSEIR during a 45-day comment period ending on September 23, 2019 that was extended for another ten (10) days to October 4, 2019 at 5:00 p.m., and the DSEIR was made available at the offices of the Alameda County Planning Department at 224 West Winton Avenue, Hayward, California, 94544, at a Planning Department branch office at 3585 Greenville Road (Martinelli Center) Livermore, California, 94550, and made available on the Planning Department’s public website on August 29, 2019; and

WHEREAS, a public hearing to take verbal comment on the DSEIR was held on September 12, 2019, at the hour of 1:30 p.m. at a meeting of the EBZA in the City of Pleasanton Council Chambers, 200 Old Bernal Avenue, Pleasanton, California, 94566, where one adjacent neighbor spoke in opposition to one turbine proposed in relatively close proximity to his property, and at which time the matter was tentatively continued to the 24th day of October, a meeting that was subsequently canceled and for which the matter was not placed on a new agenda until the notice of the current hearing was circulated; and

WHEREAS, nine letters of comment were received by the County through October 4, 2019, raising numerous substantial issues such as the cumulative impact analysis in the SEIR of Project effects on avian and bat species, the “micro-siting” of individual turbines using the work by Dr. Shawn Smallwood and by Estep Environmental, and including a request for revision of the DSEIR and its recirculation; and

WHEREAS, in accordance with the CEQA Guidelines Section 15132, the Final Subsequent EIR (FSEIR) document was prepared which includes the full text of the DSEIR, as revised by the lead agency in response to public comments or to otherwise improve the draft, all comments received on the DSEIR, a list of persons, organizations and agencies commenting on the DSEIR, and responses to each comment, and said FSEIR was provided on February 3, 2020 to interested agencies, organizations and persons who commented on the DSEIR, and made available on the County’s public website; and

WHEREAS, it satisfactorily appears from affidavits on file that proper notice of said public hearing was given in all respects as required by law; and

WHEREAS, the FSEIR did not include any additional significant new information or identify any new significant environmental impacts, a substantial increase in the severity of an environmental impact, or any other factors under CEQA Guidelines 15088.5 that would require recirculation of the SEIR; and

WHEREAS, a Final SEIR, containing public and agency comments on the DSEIR and responses to comments, was submitted to the EBZA together with draft resolutions and exhibits and staff analysis recommending the EBZA certify the Final SEIR and approve the Project in the form of the Smaller Turbine–Pre-Micro-Sited Layout Alternative, defined in the Final SEIR as the Environmentally Superior Alternative; and

WHEREAS, the EBZA held a public hearing on said application at the hour of 1:30 p.m. on the 13th day of February 2020, in the City of Pleasanton Council Chambers, 200 Old Bernal Avenue, Pleasanton, California, at which time the project proponent and stakeholders spoke in favor and in opposition to certification of the Final SEIR and approval of the Project; and

WHEREAS, the EBZA reviewed and considered the information in the Final SEIR prior to its action on Conditional Use Permit PLN2017-00201 and affirmed that the Final SEIR reflected the County’s independent judgment and analysis; and

WHEREAS, on February 13, 2020 the EBZA made findings that the Final SEIR was in compliance with CEQA, that it had reviewed and considered the information in the Final Subsequent EIR, and that the Final Subsequent EIR reflects the County’s independent judgment and analysis and adopted Resolution Z-20-01 to certify the Final Subsequent EIR for the Sand Hill Wind Project, Conditional Use Permit PLN2017-00201; and

WHEREAS, in compliance with Section 15091 of the CEQA Guidelines, the Planning Department has prepared Written Findings of Significant Effects, as attached hereto as Exhibit A and incorporated herein by this reference, to provide a brief explanation of the rationale for each finding, supported by substantial evidence in the record, that changes or alterations have been required in or incorporated into the Project, including by identified mitigation measures which would avoid or substantially lessen some but not all identified significant environmental effects, and furthermore that certain mitigation measures or project alternatives identified in the Final Program EIR are infeasible due to specified economic, legal, social, technological, or other considerations; and

WHEREAS, in compliance with Section 15091(d) of the CEQA Guidelines, the Planning Department prepared a Mitigation Monitoring and Reporting Program, attached hereto as Exhibit B and incorporated herein by this reference, which is required to be implemented by the Permittee and by the County as a condition of approval of the Project and that are fully enforceable through permit conditions, agreements, or other measures; and

WHEREAS, further in compliance with Section 15093 of the CEQA Guidelines the Planning Department prepared a Statement of Overriding Considerations, attached hereto as Exhibit C and incorporated herein by this reference, which states specific reasons, supported by substantial evidence in the record, why the County would approve the Project although certain significant adverse environmental effects of the Project, including effects on avian wildlife species including golden eagle and other focal raptor species, would not be avoided or substantially lessened by the identified mitigation measures; and

WHEREAS, the EBZA determined that approval of the Project as conditioned herein, including the implementation of the Mitigation Monitoring and Reporting Program (Exhibit B), would provide for all of the significant effects on the environment to have been eliminated or substantially lessened where feasible, as indicated in the Written Findings of Significant Effects (Exhibit A), and that there are certain significant effects on the environment found to be unavoidable which are acceptable due to overriding concerns as indicated in the Statement of Overriding Considerations (Exhibit C); and

WHEREAS, the EBZA found that adoption of the programs, requirements, procedures, legal and financial commitments and all other specifications as set forth in the conditions of approval for the conditional use permit is necessary for the public health and safety and as a necessary prerequisite to ensure that the proposed decommissioning, construction and operation of the facilities are managed in such a way as to serve the goals and objectives of the Alameda County General Plan; and

WHEREAS, the EBZA heard and considered all reports, recommendations and testimony as hereinabove set forth, including the required findings for approval of the subject Conditional Use Permit, including findings of public need, proper relation to other land uses and transportation and service facilities, adverse effects on health or safety of persons in the vicinity, and consistency with the specific intent clauses or performance standards of the A (Agriculture) zone district, and approved Resolution Z-20-02 to approve Conditional Use Permit PLN2017-00201; and

WHEREAS, on February 24, 2020 the Golden Gate Audubon Society and Audubon California appealed the decision to certify the Final SEIR, and approval of said Conditional Use Permit; and

WHEREAS, the Alameda County Board of Supervisors held a virtual hearing on the appeal on December 15, 2020, as a “Zoom” Webinar, at which time representatives of the applicant spoke in favor of approval of a modified project based on an agreement between the applicant and the appellants to resolve the appeal, as indicated in a letter of November 17, 2020 addressed to the Board, signed by the parties on or before December 4, 2020 in which the appellants agree to withdraw their appeal on the condition that the Board affirm the decision by the EBZA to certify the Final Subsequent EIR and amend the approval to authorize 16 instead of 40 new turbines with a maximum production capacity of 50 instead of 109.5 MW on eleven instead of fifteen parcels; and

NOW THEREFORE, BE IT RESOLVED:

1. The Board certifies that the above recitals are true and correct.
2. The Board certifies that it has been presented with all of the information described in the above recitals and has reviewed and considered this information and the Final Subsequent EIR prior to adopting this Resolution and considering approval of the Project.
3. The Board certifies that the Final Subsequent EIR reflects the County’s independent judgment and analysis and has been completed in compliance with CEQA.
4. Notice of the Board’s hearings on the Draft Subsequent EIR and Final Subsequent EIR have been given as required by law and the actions were conducted pursuant to the State Planning and Zoning Law, CEQA, the State CEQA Guidelines and the County’s CEQA Guidelines.
5. The Board is the elected decision-making body of the local lead agency, and the certification of the Final Subsequent EIR is the final decision of the County of Alameda.

6. All individuals, groups and agencies desiring to comment were given adequate opportunity to submit oral and written comments on the Draft Subsequent EIR and Final Subsequent EIR which met or exceeded the requirements of State Planning and Zoning Law and CEQA.
7. All comments submitted during the public review and comment period on the Draft Subsequent EIR were responded to adequately in the Final Subsequent EIR.
8. No new comments or information has been submitted during the hearing on the Final Program EIR that would substantially change the analysis or conclusions of the Final Subsequent EIR.
9. The appeal of the EBZA's certification of the Final Subsequent EIR is denied.

BE IT FURTHER RESOLVED, the Alameda County Board of Supervisors finds:

1. The use is required by the public need in that wind energy production in the Altamont Pass Wind Resource Area (APWRA) represents a major source of renewable energy that is currently under-utilized by aged, underperforming or defunct wind turbines with documented adverse effects on avian species. The proposed Project would replace existing turbines with more efficient turbines, with the potential to reduce avian impacts. The Project would generate and supply 100% emissions-free electricity to California, would support California's renewable energy goals, and would help reduce dependence on fossil fuels, a primary factor in global warming or climate change.
2. The use will be properly related to other land uses and transportation and service facilities in the vicinity in that as an existing wind farm, the Project site is well-suited from a planning and practical perspective for continued use as a windfarm. The Project parcels have been developed with wind power project uses for over 30 years and are located a substantial distance away from substantial residential, commercial and industrial uses. Existing supporting facilities will continue to be utilized to transmit the power generated to satisfy the electricity needs of California.
3. The use, if permitted, under all the circumstances and conditions of this particular case, will not materially affect adversely the health or safety of persons residing or working in the vicinity, or be materially detrimental to the public welfare or injurious to property or improvements in the neighborhood. The proposed Project would serve the goals and objectives of the Alameda County East County Area Plan and other County economic development and environmental objectives, would have limited impacts on County services and infrastructure, and as mitigated with the measures to be adopted under the Mitigation Monitoring and Reporting Program attached herein as Exhibit B and the conditions of approval, would not negatively impact the surrounding community or environment. As the site is currently occupied by wind turbines and supporting facilities, once construction is complete and the wind turbines have been repowered, environmental conditions as they currently exist would be maintained, if not improved.

Furthermore: a) the subject turbines would be sited in a manner that reduces risks to avian and bat species and according to specified minimum setbacks to reduce any health, safety or aesthetic concerns to any residents in close proximity; b) proper maintenance and operation efforts would be in effect to ensure the safe operation of the turbines; c) fire prevention and security measures would be in place to protect the public and local property; d) construction activities will be conducted in a manner that reduces potential health, safety and environmental concerns; e) the proposed use would not substantially hinder the continued use of the Project sites and surrounding land for cattle grazing as the primary property use; f) any access roads improved for the proposed use would provide improved access to the grazing lands; g) land owners would benefit from the lease payments made by the applicant, which further supports grazing operations; and h) other improvements, such as roadways,

railroads, electrical substations and landfills are not adversely affected by the presence of wind turbines and their associated infrastructure because the proposed Project would replace and/or continue to use existing facilities.

4. The use will not be contrary to the specific intent clauses or performance standards established for the District in which it is to be considered in that the proposed Project is located in the A (Agriculture) zoning district, which has as its stated intent: "to promote implementation of General Plan land use policies for agriculture and other nonurban uses; to conserve and protect existing agricultural uses; and to provide space for and encourage such uses in places where more intensive development is not desirable or necessary for the general welfare." The proposed Project would be consistent with this intent because the development of wind power projects is both allowed and encouraged in the APWRA by the East County Area Plan, the Project removes minimal land from agricultural production, and the use is appropriately located in non-urban areas and serves the public welfare.

BE IT FURTHER RESOLVED that the Alameda County Board of Supervisors does hereby deny in part and sustain in part the appeal and approve the said application as shown by plans and materials labeled Application Exhibit "B" on file with the Alameda County Community Development Agency, Planning Department, 224 West Winton, Rm. 111, Hayward, CA, 94544, as conceptually modified by Sand Hill Revised Project, Exhibit "D" attached hereto and subject to the following revised conditions:

AUTHORIZATION

1. Approval. Approval of this Permit authorizes Sand Hill Wind, LLC (a wholly-owned subsidiary of Sustainable Power Group LLC, hereinafter referred to as sPower, a wholly-owned subsidiary of the AES Corporation and Alberta Investment Management Corporation (AES/AIMCO)), to decommission and remove an estimated 671 existing or previously existing wind energy turbine sites and construct up to 16 new turbines with a maximum production capacity of 50 megawatts (MW), using turbines rated between 2.3 and 4.0 MW per turbine, on eleven parcels or parts of parcels, extending over roughly 2,400 acres in the vicinity of Altamont Pass Road up to two miles west of Grant Line Road, on both sides of Mountain House Road up to one mile north of Grant Line Road, on both sides of Bethany Reservoir, more broadly in the eastern Altamont Hills or Mountain House area of Alameda County, as well as use of a pre-existing wind energy operations and maintenance facility on another, twelfth parcel at 14740 Altamont Pass Road, altogether bearing the following Assessor Parcel Numbers:

99B-7750-6-0; 99B-6325-1-4; 99B-6325-1-3; 99B-7375-1-7; 99B-7400-1-5; 99B-7300-1-5;
99B-7350-2-15; 99B-7350-2-5; 99B-7500-3-2; 99B-7500-3-1; 99B-7600-1-1; and 99B-7750-11.

Final siting of the sixteen turbine sites on the subject eleven parcels (i.e., excluding turbines on Parcel No. 99B-7750-11) as shown in Exhibit D shall be reviewed by the County's Wind Repowering / Avian Protection Technical Advisory Committee (TAC) as required by Condition 90 (Mitigation Measure MM BIO-11g), which may recommend to the Planning Director final siting in consideration of the micro-siting studies included in the Final SEIR. Additionally, the Permittee shall consult the TAC for input to determine whether the location of Turbines 8, 9, 17 and 40 as indicated on Exhibit D of the project can feasibly be adjusted by further micro-siting analyses in light of the CUP authorization of 16 new turbines only.

2. Compliance and Conditions. Permittee agrees to comply with all applicable regulations, rules and requirements of the County of Alameda and its Agencies, all subdivisions and departments of such

agencies, and to comply with specific conditions of approval described herein by the representatives of said agencies, including but not limited to:

- a. Community Development Agency, Planning Department
- b. Public Works Agency, Building Inspection Department
- c. Public Works Agency, Land Development Department
- d. Public Works Agency, Grading Division
- e. Fire Department
- f. County Sheriff
- g. Health Services Agency, Environmental Health Department

Failure to act in compliance with the conditions herein will be construed as a violation of Zoning and enforcement proceedings shall commence as provided for by Chapter 17.58 of the Alameda County Zoning Ordinance.

Permittee further agrees to comply with all applicable regulations, rules and requirements of the State of California and United States agencies, including but not limited to the following:

- h. California Public Utilities Commission
 - i. California Energy Commission
 - j. California State Department of Fish and Wildlife
 - k. California State Water Quality and Control Board - San Francisco and Central Valley Regions
 - l. Bay Area Air Quality Management District
 - m. United States Fish and Wildlife Service
 - n. Federal Aviation Administration
- 3. Insurance: A Comprehensive General Liability insurance policy in the minimum amount of \$1,000,000 and in the form prescribed in the document "INSURANCE REQUIREMENTS, ALAMEDA COUNTY PLANNING DEPARTMENT, November 12, 2014," in addition to insurance requirements of other agencies listed in Condition 2 shall be provided to the County within 20 business days following approval of this Conditional Use Permit and provided again within 20 business days of each annual anniversary thereof.
- 4. Utility Tax Compliance. Within 60 days of this approval, the Permittee shall submit to the Alameda County Planning Department evidence of business registration with the Alameda County Business Tax Unit in the form of a valid business certificate to ensure compliance with the County's utility tax regulations.
- 5. Liability. By exercise of this Conditional Use Permit, the Permittee agrees to defend, indemnify and hold harmless the County of Alameda, its officers, employees, agents and servants for any and all liability caused by the negligence or wrongful act of the Permittee arising out of the exercise of this Conditional Use Permit, and to pay all claims, damages, judgments, legal costs, adjuster fees, and attorney fees related thereto.
- 6. Indemnification. The Permittee shall defend, indemnify, and hold harmless Alameda County and its agents, officers, and employees from any claim, action, or proceeding against the County of Alameda or its, agents, officers or employees to attack, set aside, void, or annul Conditional Use Permit, PLN2017-00201, the Subsequent EIR, the Program Environmental Impact Report (PEIR),

the September 2018 *Sand Hill Wind Repowering Project Environmental Analysis and CEQA Checklist* that preceded the Subsequent EIR, the California Environmental Quality Act findings, determination of significant impacts, the Mitigation Monitoring and Reporting Program (MMRP), or any combination thereof. Such indemnification shall include, but not be limited to, an award of costs and attorney's fees incurred by the County in its defense. The County shall promptly notify Permittee of any such challenge.

7. Planning Review and Permit Administration Costs. The Permittee shall be responsible for payment of all additional Planning Department and Public Works Agency staff and material costs for completing these agencies' reviews up to the time of this approval, including costs billed against the original application deposit, costs which exceeded the deposit and for a deposit of an additional \$2,000.00 for similar costs associated with administration and enforcement of the conditions herein, independently of Inspection Costs as required below (Condition 8). If all or any part of said cash deposit is depleted by such administration activities, the Permittee shall restore the balance of the deposit to the original \$2,000.00.

The Permittee shall compensate the County for expenditures to retain a biological and avian resource consultant necessary to monitor implementation of these conditions and the Project MMRP during Planning Department review of the building permit, during construction, not to exceed \$15,000 for the Project plus \$100.00 per proposed MW.

The Permittee shall compensate the County for expenditures to retain a County technical representative to the Technical Advisory Committee, as necessary to review monitoring reports and advise the County regarding implementation of these conditions and the Project MMRP during each year of post-construction monitoring as specified in Conditions 90, 91 and 92 (Mitigation Measures BIO-11g, BIO-14b and BIO-14c). Such compensation shall be paid annually in proportion to the installed or rated MW capacity of the facility (as a proportional percentage of all wind repowering projects, which may be prorated on a monthly basis), not to exceed \$15,000 for all repowering projects (adjusted annually for inflation).

8. Inspections and Cost Recovery. The Permittee shall allow staff of the Alameda County Planning Department, Alameda County Public Works Agency, the California Department of Fish & Wildlife, and any other responsible agency to conduct site inspections during construction and operation of the Project in order to ensure compliance with approved permits, plans, and conditions of approval. Inspections shall be conducted at the discretion of said agencies. Discovery of noncompliance may be cause for commencement of proceedings to revoke this Conditional Use Permit, and for payment of applicable bonds. Public Works Agency staff is also authorized to inspect structural and pavement conditions of County roads serving the construction site prior to and after construction to identify needed repairs and to assess cost recovery requirements.

The Permittee or its successors shall be responsible for payment of all reasonable costs associated with necessary inspections of the facility, including costs incurred by the Planning Department, the County Fire Department, the Building Inspection Division, the Public Works Agency or any other applicable Federal, State or County department or agency. Each County Agency shall have the authority to require deposits of \$4,000.00 prior to plan review, for plan review, inspections or other necessary costs. State and federal agencies shall be responsible for collecting established fees and related compensation where required by statute.

9. Bonds. Application for Building Permits to implement any portion of this Conditional Use Permit shall be accompanied by the following bonds:
 - a. A \$2,000.00 cash bond shall be deposited to be used in the investigation and evaluation of a noise complaint as provided in Condition 86 herein below. If all or any part of said cash bond is depleted by such activities, the Permittee shall restore the balance of the bond to the original \$2,000.00.
 - b. A security bond or other acceptable instrument shall be recorded with the Director of Public Works to guarantee repair and restoration of roads serving the Project area that may be damaged in the course of construction of the Project, consistent with the requirements of the Traffic Control Plan as set forth in Condition 48 below.
 - c. A surety bond or other acceptable security instrument shall be recorded with the Director of Public Works to guarantee implementation of the restoration and reclamation plan as required by Conditions 11 and 12 below.
10. Mitigation Monitoring and Reporting Program. The Permittee shall implement all applicable mitigation measures identified in the Mitigation Monitoring and Reporting Program (MMRP) attached herein as Exhibit B, and as specified individually herein. These conditions of approval incorporate the individual mitigation measures and present them either in summarized form or by reference only, and in certain cases provide additional clarification and guidance on the manner, timing and responsibility for implementation of the mitigation measures. The incorporation of the mitigation measures into the conditions of approval (i.e., their replication and representation herein) is not intended to revise, modify or add to any mitigation measure, or add any new obligation to the Permittee under CEQA, but only to augment the understanding of how each mitigation measure shall be implemented. Each mitigation measure is presented within the applicable phase of Project development used herein, beginning with design, and continuing through permit applications, pre-construction tasks, obligations during construction, performance during operation, and for periodic review through the life of the permit.

These conditions of approval are intended to and shall be interpreted by reading Exhibit B and the enumerated conditions together, as a whole, in a manner that gives the maximum effect to both and, to the extent necessary, harmonizes them to avoid any inconsistencies or superfluous terms. If the Permittee, the County or other public agency responsible for implementation of a mitigation measure finds any discrepancy between Exhibit B and these conditions, Exhibit B shall be relied upon unless the conditions herein provide greater clarification of the time or performance or the manner of implementation of the MMRP, when determined to be necessary for the effective implementation of the MMRP. Any remaining questions of interpretation shall be resolved by the Planning Director.
11. Restoration and Reclamation Plan: Prior to issuance of building permits the Permittee shall submit for review and approval by the County Planning Director and the Director of Public Works, a reclamation plan for removal at the end of this permit term (or by major default by the Permittee as described below) of all wind turbines, foundations and ground equipment to a depth of three feet below finished grade. Roads and above-ground facilities installed pursuant to this permit shall also be removed unless the property owner has requested in writing as part of the reclamation plan that they be left in place, subject to approval of the Planning Director. The reclamation plan shall include provisions for:

- a. Removal of roads and staging areas within the subject property or properties not needed for maintenance and operations or for other allowed property uses by the property owner;
- b. Re-grading and re-vegetation to return the subject property or properties to rangeland or pre-windfarm use conditions, with site-specific characteristics of topography, vegetation, drainage and other unique environmental features, subject to approval of the California Department of Fish and Wildlife;
- c. Repair of County roadways from damage that may result from off-haul of materials, movement of oversized loading or heavy-haul vehicle, traffic management and a substantial increase in volume of vehicle trips;
- d. A transportation control plan for conveyance of oversize turbine components.

The reclamation plan shall include a cost estimate of labor and material costs, prepared by a licensed contractor to implement the proposed reclamation plan, and the Planning Director shall have the authority to request additional details of specific cost elements. The reclamation plan shall include a guarantee by the Permittee to carry out the reclamation plan upon determination by the Planning Director and Director of Public Works that the permitted wind farm operations have been abandoned or have produced less than 5 percent of the rated output of the wind farm in one year.

The Planning Director and Director of Public Works may instead make a determination that more than 50% of the turbines are in disrepair and there is no other demonstrated plan, satisfactory to the Planning Director, to restore the equipment to a productive operating condition. Under such circumstances the Planning Director may order the Permittee or property owners to execute the reclamation plan.

12. Restoration and Reclamation Bond. Prior to issuance of building permits, and based on County approval of the reclamation plan as above, the Permittee shall post a security in the form of a surety bond. The security shall remain with the County for the life of the Project, except upon replacement as provided below and upon replacement shall be adjusted for inflation using the appropriate construction price index, as determined by the Director of the Public Works Agency. In the event ownership of the turbines changes from the current Permittee to another person or entity, the new owner shall replace the surety bond of the original Permittee with a surety bond in the name of the new owner within 30 days of the change of ownership.
13. Changes to Power Purchase Agreements. Permittee agrees that, at least six (6) months prior to the expiration, renewal or extension of any Power Purchase Agreements (PPA) made by the Permittee, the Permittee shall inform the Planning Director of such changes and provide the County of Alameda and any Community Choice Aggregation joint powers authority or equivalent program (CCA) in which the County participates, a right of first offer to establish a PPA between the Permittee and the County or the CCA.
14. Ten Year Review. No more than ninety (90) calendar days after the tenth anniversary of the initial approval and within ninety (90) days of the subsequent twentieth anniversary, the Planning Director shall, after notice as provided for in the initial hearing and except as provided for under Conditions 85 and 99 below, set this matter for public hearing by the East County Board of Zoning Adjustments for the purpose of reviewing and verifying compliance with the conditions of approval so as to validate the findings of this conditional use permit.

15. Post-Construction Monitoring Review. Upon completion of the post-construction avian fatality monitoring program required by Mitigation Measures 11g and if required, after implementation of adaptive management program review required by Mitigation Measures 11i, this matter may be set by the Planning Director for a public hearing, after notice as provided for in the initial hearing, for the purpose of assessing the effectiveness of avian protection plans, adaptive management measures, conservation or other strategies to improve or mitigate avian species safety concerns raised in the Program Environmental Impact Report (PEIR). This review may allow the Planning Director to modify conditions previously imposed or add conditions directly related to the results of the post-construction avian fatality monitoring program (Mitigation Measures 11g) and the recommendations of the Technical Advisory Committee.
16. Commencement Date. Pursuant to Section 17.52.050, building permits shall be obtained and construction activity commenced within 3 years of approval or this permit shall be of no force or effect.

PRIOR TO DESIGN SUBMITTAL

17. Preconstruction Surveys for Special-Status Plant Species (MM BIO-1a). As required by Mitigation Measure BIO-1a in the MMRP, no more than 3 years prior to ground-disturbing repowering activities, and during the appropriate identification periods for special-status plants as specified in the MMRP and the PEIR, the Permittee shall have a qualified biologist (as determined by the Alameda County Planning Director) conduct field surveys to identify special-status plant species within and adjacent to the Project site. The Permittee shall submit a report documenting the survey results to the Planning Director for review and approval, meeting the requirements of Mitigation Measure BIO-1a, prior to ground-disturbing activities and before issuance of building permits.
18. Preconstruction Surveys for Habitat for Special-Status Wildlife Species (MM BIO-3a). As required by Mitigation Measure BIO-3a in the MMRP, no more than 3 years prior to ground-disturbing repowering activities, the Permittee shall have a qualified biologist (as determined by Alameda County) conduct field surveys within decommissioning, repowering, and restoration work areas and their immediate surroundings to determine the presence of habitat for special-status wildlife species. The Permittee shall submit a report documenting the survey results and meeting the requirements of Mitigation Measure BIO-3a to the Planning Director for review and approval, prior to conducting any ground-disturbing repowering activities and before issuance of building permits.
19. Preconstruction Bat Roost Surveys (MM BIO-12a). As required by Mitigation Measure BIO-12a in the MMRP, prior to any ground-disturbing activity the Permittee shall have a roost habitat assessment prepared by a qualified bat biologist to identify potential colonial roost sites of special-status and common bat species within 750 feet of the construction area. If suitable roost sites are to be removed or otherwise significantly affected by the proposed Project, the bat biologist will conduct targeted roost surveys of all identified sites that would be affected. Surveys shall conform to the protocols and guidelines set forth in Mitigation Measure BIO-12a in the MMRP, and a report shall be submitted to the Planning Director following such surveys as specified by Mitigation Measure BIO-12a of the MMRP and prior to issuance of building permits.

20. Avoid Loss of Historic Resources and Record if Necessary (MMs CUL-1a and -1b). As required by Mitigation Measure CUL-1a in the MMRP, the Permittee shall avoid historic resources in the design and layout of the Project wherever feasible. As required by Mitigation Measure CUL-1b, if avoidance of resources in accordance with Mitigation Measure CUL-1a is determined to be infeasible, the significantly affected historic resource shall be recorded prior to site disturbance and before issuance of building permits, consistent with Mitigation Measure CUL-1b requirements.
21. Preconstruction Survey and Planning for Cultural Resources (MMs CUL-2a and CUL-2b). As required by Mitigation Measure CUL-2a in the MMRP, prior to ground-disturbing activities and issuance of the building permit, the Permittee shall have qualified personnel conduct an archaeological field survey of the Project area to determine whether significant cultural resources exist within the Project area. Documentation of the field survey results shall comply with Mitigation Measure CUL-2a.

As required by Mitigation Measure CUL-2b, if any significant resources are identified through the preconstruction survey, a treatment plan with measures that could include site avoidance, capping, or data recovery will be developed and implemented by the Permittee and approved by the Planning Director subject to applicable requirements.

22. Environmental Site Assessment to Identify Possible Site Contamination (MM HAZ-4). As required by mitigation measure HAZ-4 in the MMRP, the Permittee shall have a Phase I Environmental Site Assessment (ESA) prepared for any Project area proposed for ground-disturbing activities and submit it to the Alameda County Health Services Agency – Environmental Health Department, as the authorized regulatory oversight agency. The Phase I ESA shall be in conformance with the minimum requirements described in Mitigation Measure HAZ-4 in the MMRP.

If the Phase I ESA indicates likely soil contamination a Phase II ESA shall be prepared by a qualified environmental professional under a work plan approved by the Environmental Health Director, including proposed soil sampling, remediation and disposal of contaminants if necessary. The Phase II ESA shall include the components outlined in Mitigation Measure HAZ-4, and shall be provided to the Planning Director and Environmental Health Director, the latter of which may require remediation of soil or groundwater or disposal of hazardous building materials subject to a work plan approved by the Environmental Health Director. Review of a work plan and Phase II ESA will require a deposit of \$6,000.00 (as of this approval date) with the County Health Services Agency – Environmental Health Department, and may require opening a Site Cleanup Program (SCP) file. Any contaminated soil identified on a Project site must be properly disposed of in accordance with the State Department of Toxic Substance Control (DTSC) regulations in effect at the time the Phase II ESA is submitted to the Environmental Health Director.

23. Preconstruction Noise Studies (MM NOI-1). As required by Mitigation Measure NOI-1 in the MMRP, if any turbine is proposed to be located within 2,000 feet of a noise sensitive receptor, such as a residence, school, church or public recreational trail, the Permittee shall have a qualified acoustic engineering consultant prepare a report to evaluate the Project-specific noise impacts associated with operation of the proposed wind turbine(s). This evaluation shall conform to the requirements of mitigation measure NOI-1. If operation of the turbine(s) is predicted to result in noise level of 55 dBA (Ldn) or greater where noise is currently less than 55 dBA (Ldn) or result

in a 5 decibel (dB) increase where noise is currently greater than 55 dBA (Ldn), the Permittee shall modify the Project to select new specific installation sites or turbine designs within the Project boundary to ensure that these performance standards will not be exceeded.

Other methods that can be used to ensure compliance with these performance standards include but are not limited to increasing the distance between proposed turbines and noise sensitive uses, or use of alternative turbine operational modes to reduce noise. Upon completion of the noise study, the Permittee shall submit a report to the Alameda County Planning Director demonstrating how the Project will comply with these performance standards. After review and approval of the report by the Planning Director, the Permittee shall incorporate measures as necessary into the Project design to ensure compliance with these performance standards.

24. Safety Setbacks. New wind turbines shall have a minimum setback from other land uses as stated below.
- a. From a parcel boundary on which a separate windfarm operation is proposed or approved: 1.1 times (or 110% of) the rotor length.
 - b. From a parcel boundary on which no windfarm operation is proposed or approved: 1.25 times (or 125% of) the total turbine height.
 - c. From a Dwelling Unit: three times (or 300% of) the total turbine height.
 - d. From a public road, interstate highway, public trail, commercial or residential zoning: 2.5 times (or 250% of) the total turbine height.
 - e. From a recreation area or property approved for an outdoor recreation use: 1.25 times (or 125% of) the total turbine height.
 - f. From a high-tension electrical transmission line: 2 times (or 200% of) the total turbine height.

The setbacks specified above shall be increased by one (1) percent of the total turbine height (to the top of the rotor blade at the 12:00 o'clock position) per ten (10) feet of elevation that the turbine's ground elevation is above the ground elevation of the affected parcel or use, specifically the nearest affected parcel boundary, recreation area or property, dwelling unit, road or highway right-of-way, trail, commercial or residential zone district boundary, or the center of a transmission or conductor line. The setback may be decreased by one (1) percent of such total turbine height per ten (10) feet of elevation that the turbine's ground elevation is below the ground elevation of affected parcels or uses.

Furthermore, the setbacks specified above, as adjusted according to turbine elevation above or below an affected parcel or use, may be reduced by 50% to an alternative minimum (i.e., to one-half the resulting setback), if a notarized agreement or a recorded easement from the affected property owner (except in the case of setbacks from a public road, interstate highway or transmission line) is approved by the Planning Director, with the following exceptions and conditions:

- i. The setback from a parcel on which no windfarm operation is proposed or approved may be reduced to no less than 1.1 times (or 110% of) the rotor length.
- ii. The setback from a recreation area or property approved for an outdoor recreation use shall not be reduced to less than 1.0 times (100% of) the total turbine height.

- iii. The setback from a public road, interstate highway, public trail, commercial or residential zoning, or high-tension transmission line shall only be reduced to such minimum with the submittal of a report by a qualified professional, to be approved by the Planning Director with substantial evidence that public safety will not be compromised, and property owner agreement or easements shall be required only from private properties with commercial or residential zoning.

Adjustments based on the ground elevation of a turbine shall be limited to whole ten-foot increments, disregarding any smaller portion. Total turbine height shall always be measured from ground elevation to the top of the rotor at the 12:00 o'clock position (i.e., at the furthest upward reach of the rotor blade). For adjoining parcels under the same windfarm use permit, no setback is required. Knowledge of existing, proposed or approved windfarm use permits on adjacent parcels shall be based on the best available information at the time of the subject application. The Planning Director shall reserve the right to reject all or part of an alternative minimum setback based on substantial evidence that a wind turbine will have adverse noise, safety or visual impacts on a dwelling unit that have not been previously disclosed publicly, or that a required report requires additional information before such a minimum is approved.

- 25. Safety Setbacks for Meteorological Towers. New temporary and permanent meteorological towers (met towers) shall have a minimum setback from the exterior Project boundary, shown in the permit application, equal to the total height of the met tower plus 25 feet.
- 26. Undergrounding of Utility Lines. All electrical utility collection and distribution connection lines shall be installed underground, except as required by the utility company for final connections to major substations.
- 27. Site Development Review for Previously Undeveloped Ridgelines (MM AES-2a). Site Development Review pursuant to Section 17.54.230 et. seq. of the County Zoning Ordinance shall be required for new turbines proposed on a ridgeline or hilltop which has not previously been developed with commercial-scale wind turbines (over 25 kW rated capacity). Such Site Development Review shall not be approved unless the Planning Director determines that the visual effects will be substantially avoided by distance from public view points (e.g., over 2,000 feet), intervening terrain, screening landscaping, or compensatory improvements to equivalent and nearby (radius of 1 mile) scenic features, as approved by the Planning Director.
- 28. Analyze Shadow Flicker Distance and Mitigate Effects (MM AES-5). Where shadow flicker could result from the installation of wind turbines near residences (i.e., within 500 meters or about 1,600 feet in a broadly easterly or westerly direction, accounting for all seasons of the year), the Permittee shall prepare a graphic model and study to evaluate the potential for shadow flicker impacts on residences for review and acceptance by the Planning Director. No shadow flicker in excess of 30 minutes in a given day or 30 hours (net or total) in a given year will be permitted unless it has been mitigated subject to the approval of the Planning Director.

If any residence is nonetheless affected by shadow flicker within the 30-minute/30-hour thresholds, the Permittee shall implement one or more measures to avoid or minimize the effect, such as providing opaque window coverings, window awnings, landscape buffers or a combination of these features to reduce flicker to acceptable limits for the affected receptor, or shutting down the turbine during the period shadow flicker would occur. Such measures shall be undertaken in

consultation with the owner of the affected residence, and may be confirmed by preparation of a shadow flicker study at the Permittee's expense. If the shadow flicker study indicates that any given turbine would result in shadow flicker exceeding the 30-minute/30-hour thresholds and the affected property owner is not amenable to window coverings, window awnings, or landscaping and the turbine cannot be shut down during the period of shadow flicker, then the turbine operations would be set back or limited to avoid shadow flicker to the satisfaction of the affected owner of the residence.

29. Color Treatment. All wind turbines, blades, towers and structures shall be treated and maintained with a generally uniform off-white paint scheme in order to blend with the surroundings and minimize adverse visual effect. Exceptions may include experimental measures if recommended by the TAC and approved by the Planning Director to allow any turbine to be painted as a mitigation for bird collisions.

30. Lighting Guidelines. Lighting design for turbine tower entries, substations and permanent operations and maintenance buildings shall be submitted for review and approval by the Planning Director and included in the building permit application. New lighting shall be downward casting and shielded, utilizing motion detection systems if appropriate and shall not unnecessarily "wash out" into surrounding areas. Lenses and bulbs shall not protrude from light fixtures. Fixtures intended to be lit for long periods of time shall utilize low-pressure sodium lamps or devices with similar properties (i.e., long-lasting and energy efficient). Fixtures shall be mounted at the lowest feasible height. If industrial design standards or FAA safety protocols require lighting designs that conflict with the requirements of this condition, such standards and protocols shall take precedence subject to approval by the Planning Director and Building Official with respect to other applicable conditions and mitigation measures.

Lighting required by FAA shall be shrouded, directed upward, or utilize other technology to minimize lighting at ground level. If FAA safety protocols require lighting designs that conflict with the requirements of this condition, such protocols shall take precedence subject to approval by the Planning Director and Building Official with respect to other applicable conditions and mitigation measures.

31. Tower Access. Each wind turbine tower shall be fully enclosed with interior access controlled by the Permittee with security measures approved by the Building Official, and ladder or lift safety measures.
32. Operational Safety. Each turbine generator shall be equipped with both manual and automatic controls to limit the rotational speed of the blade within the design limits of the overall turbine. Generators shall be designed, installed and operated to prevent emissions of electromagnetic interference that are disruptive to adjacent land uses.
33. Meteorological Tower Design Standards. Temporary meteorological towers (met towers) shall be shown on site plans submitted for building permits, and may be guyed (supported by guy-wires) with colored avian marker balls or spirals at appropriate intervals. Met towers installed for operation of more than two years (24 months) shall be free-standing and not supported by guy-wires. Permanent or temporary met towers in excess of 200 feet (or 60 meters) shall be referred to the Federal Aviation Administration for consideration of lighting requirements and paint treatment (e.g., aviation orange). Lighting required by FAA shall be shrouded, directed upward,

or utilize other technology to minimize lighting at ground level. If FAA safety protocols require lighting designs that conflict with the requirements of this condition, such protocols shall take precedence subject to approval by the Planning Director and Building Official with respect to other applicable conditions and mitigation measures.

34. Permanent Signage. Permittee shall provide signage on the entry gates to the subject property(ies) providing basic contact information for use in case of an emergency, including the name of the Project, names, titles, and phone numbers of individuals responsible for operations, non-emergency phone numbers, and the Planning Department general contact information. The turbine towers, rotors, cabinets, or mountings shall not be used for advertising.

35. Turbine and Infrastructure Design and Siting to Reduce Avian Mortality (MMs BIO-11b, BIO-11c and BIO-11d). As required by Mitigation Measures BIO-11b, BIO-11c and BIO-11d in the MMRP, the Permittee shall utilize a siting process and prepare a siting analysis, using analyses of landscape features and location-specific bird use and behavior data to determine the specific turbine site locations with the potential to reduce avian collision risk and fatalities and otherwise minimize potential impacts on bird and bat species. Proponents will utilize existing data as well as collect new site-specific data as part of the siting analysis. Permittee shall implement Mitigation Measure BIO-11b as set forth in the Project MMRP.

Permittee shall use turbines with certain characteristics recognized to reduce the collision risk for avian species. Permittee shall implement the design-related measures set forth by Mitigation Measure BIO-11c as set forth in the Project MMRP. Permittee shall also apply specific measures outlined in Mitigation Measure 11d when designing and siting turbine-related infrastructure in order to reduce the risk of bird electrocution and collision.

Upon determining that the information in the siting analysis is sufficiently detailed for Technical Advisory Committee (TAC) consideration and recommendations, the Planning Director shall schedule a meeting for TAC review of the Project's compliance with mitigation measures BIO-11a and BIO-11b.

36. Retrofit Existing Infrastructure to Minimize Risk to Raptors (MM BIO-11e). As required by Mitigation Measure BIO-11e, the Permittee shall have any existing power lines in its Project area, that are owned or operated by the Permittee and that are associated with electrocution of an eagle or other raptor retrofitted within 30 days of any recorded electrocution, or prior to the start of commercial operation, to make them raptor-safe according to Avian Power Line Interaction Committee guidelines. All other existing structures to remain in a Project area during repowering will be retrofitted, as feasible, according to specifications of Condition 35 and Mitigation Measure BIO-11c prior to repowered turbine operation.

37. Site Management to Discourage Prey for Raptors (MM BIO-11f). As required by Mitigation Measure BIO-11f in the MMRP, the Permittee shall prevent the use of rodenticides, allow rock piles only over 500 meters from any new turbine, and use gravel around turbine foundations, when designing and siting turbine-related infrastructure and other site improvements, and operating the wind turbines, in order to minimize opportunities for fossorial mammals to become established and thereby create a prey base that could become an attractant for raptors.

38. Turbine Siting and Selection to Minimize Potential Bat Mortality (BIO-14a). Permittee shall use the best information available to site turbines and to select from turbine models in such a manner

as to reduce bat collision risk. The siting and selection process will take into account bat use of the area and landscape features known to increase collision risk (trees, edge habitats, riparian areas, water bodies, and wetlands). Measures include but are not limited to siting turbines the greatest distance feasible up to 500 meters (1,640 feet) from still or flowing bodies of water, riparian habitat, known roosts, and tree stands. Permittee shall implement Measure BIO-14a as set forth in the Project MMRP.

39. Design of Circuit Breakers to Minimize Sulfur Hexafluoride (SF₆) Leakage (MM GHG-2b). The Permittee shall ensure that any new circuit breaker installed at a substation has a guaranteed Sulfur Hexafluoride (SF₆) leak rate of 0.5% by volume or less. The Permittee shall provide the Building Official with documentation of compliance, such as specification sheets, prior to installation of the circuit breaker. In addition, the Permittee shall monitor SF₆-containing circuit breakers at the substation consistent with the California Air Resources Board's Scoping Plan Measure H-6 for the detection and repair of leaks.

CONSTRUCTION PERMIT REQUIREMENTS

40. Building Permit Application Requirements (including MM GHG-2d). The Permittee shall apply for and obtain approval for separate building permits for the removal and demolition of existing turbines and associated facilities, and the construction of new turbines, and shall conform to the following requirements.
- a. Soils report and/or geological/geotechnical study will be required.
 - b. Comply with building codes and submittal requirements in effect at the time of submitting for building permits.
 - c. A California licensed architect or engineer shall be designated as the design professional responsible and in charge of the Project submittal. Submittal documents may be signed and sealed by multiple licensed architects or engineers.
 - d. The Permittee's designated California-licensed land surveyor shall be responsible for the property information filed with the Building Permit application.
 - e. The demolition and construction debris diversion plan shall comply with applicable policies of the Public Works Agency's Construction & Demolition Debris Management Program. In particular, the Permittee shall implement Mitigation Measure GHG-2d as set forth in the MMRP, to comply with the County's revised Green Building Ordinance regarding construction and demolition debris to achieve the following minimum standards: 1) 100% of inert waste and 50% wood/vegetative/scrap metal not including Alternative Daily Cover (ADC) and unsalvageable material will be put to other beneficial uses at landfills; and 2) 100% of inert materials (concrete and asphalt) will be recycled or put to beneficial reuse.
 - f. Plans filed for the Building Permit application shall obtain Zoning Approval (i.e., Planning Department approval for consistency determination that the plans are consistent with this permit), and shall be drawn to scale, indicating the location of each wind turbine, the location and function of all structures within 1,000 feet of any wind turbine, as well as all trailers and major ground equipment to be put in place for use during construction.
 - g. Evidence of a proposed interconnection agreement and any technical requirements and specifications required by the interconnection authority.

- h. Evidence of filing a notice of proposed construction with the Federal Aviation Administration (FAA) and the required referral to the Alameda County Airport Land Use Commission.
41. Use of Recycled Content in New Building Materials (MM GHG-2c). The Permittee shall require the construction of all new substation and other permanent buildings to incorporate materials for which the sum of post-consumer recycled content plus one-half of the post-industrial content constitutes at least 10% of the total value of the materials in the Project.
 42. Fire Department Approval Requirements. Permittee shall contact the Alameda County Fire Department, Fire Prevention Bureau, to obtain a fire clearance certificate. The Bureau may be reached by telephone at (510) 670-5853. The Permittee shall install a Knox Box at all entry gates, provide an emergency contact to the Department, and maintain a fire extinguisher in each ground equipment area. Water tanks meeting NFPA 1142 standards shall be provided at each construction staging area and shown on Building Permit application site plans. Permittee shall be responsible for compliance with the Altamont Pass Windfarms Fire Requirements dated September 22, 2005 and as updated or revised herein.
 43. Grading Permit Application and Geotechnical Investigation Requirements (MM GEO-1). Prior to any grading, ground-disturbing or construction activities on the Project site, the Permittee shall submit a preliminary grading plan and a site-specific geotechnical investigation to the County Grading Department. The geotechnical investigation/report shall be prepared by a qualified geotechnical firm in conformance with Chapter 15.36.320 and subsequent applicable sections of the Alameda County Grading Ordinance, for review by the County for the purpose of obtaining a grading permit in accordance with the provisions of the Grading Ordinance and the following requirements.
 - a. The site-specific geotechnical/geologic report shall be prepared by a licensed geotechnical engineer or engineering geologist with local expertise in geotechnical investigation and design, based on data collected from subsurface exploration, laboratory testing of samples, and surface mapping. The report shall contain all of the elements listed under the Alameda County Grading Ordinance Chapter 15.36.350, as required, and address the following and any additional issues as required by the Director of Public Works.
 - Potential for surface fault rupture related to known and suspected earthquake fault lines, such as the Greenville, Corral Hollow-Carnegie, and the Midway faults (as appropriate to each location).
 - Turbine foundation and power infrastructure siting limitations and recommendations based on the location of such faults relative to proposed site plans.
 - Potential for strong ground shaking, slope failure or unstable cut or fill slopes, presence of expansive soils, unusual terrain or geological characteristics, and appropriate design recommendations for the design of turbine foundation and power collection systems to accommodate such soil or geological conditions.
 - b. The geotechnical/geologic report may be subject to a professional review by the County's consulting geotechnical engineer/geologist. It shall be the Permittee's responsibility to provide sufficient funds to the County for this professional review service if required.
 - c. Permittee shall implement the design recommendations in the geotechnical report, including revised recommendations resulting from the professional review, if such a review is required.

- d. No grading work will be allowed during the rainy season, from October 1 to April 30, except upon a clear demonstration, to the satisfaction of the Director of the Public Works Agency, that at no stage of the work will there be any substantial risk of increased sediment discharge from the site.
 - e. Any proposal for grading work associated with fire access roads must be reviewed and approved by the Alameda County Fire Department prior to issuance of a grading permit.
 - f. The grading permit shall be subject to approval of the Alameda County Flood Control and Water Conservation District.
44. Stormwater Control Plan. Permittee shall prepare a Stormwater Control Plan (SCP) in compliance with the technical requirements of Provisions C.3 and C.6 of the Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit (Municipal Regional Permit, or MRP) and the County Building and Stormwater Management and Discharge Control Ordinances for the purpose of long-term (post-construction) stormwater control. The SCP shall be submitted to the Director of Public Works for approval prior to issuance of a County Stormwater Permit. The SCP shall include:
- a. Plan drawings showing the locations, sizing and Drainage Management Areas discharging to the proposed stormwater treatment system(s), the planned site design and source control measures, and any required hydromodification management (HM) facilities or devices.
 - b. A preliminary written plan that describes the operation and maintenance (O&M) (including inspection) of all installed stormwater treatment systems and HM controls both during construction and following construction.
 - c. A draft of a statement from the Permittee and property owner accepting long-term responsibility for the O&M of the installed stormwater treatment systems and HM controls, along with continuing upkeep of any required source control and site design measures, until such responsibility is legally transferred to another entity.
 - d. A draft of an agreement to include written conditions in any sales or lease agreements or deed for the Project that requires a buyer or lessee to assume long-term responsibility for the O&M of the installed stormwater treatment systems and HM controls, and the upkeep of the source control and site design measures, until such responsibility is legally transferred to another entity.
 - e. A signed statement from the Permittee and property owner(s) granting site access to all representatives of the County, local mosquito and vector control agency staff, and Water Board staff, for the sole purpose of performing O&M inspections of the installed stormwater protection systems (treatment systems, HM controls, source controls and site design measures).
 - f. A written statement from the Permittee and property owner(s) and successors acknowledging that the County may conduct annual inspections of all installed stormwater protection systems and that the Permittee agrees to pay for those inspection costs on a time and materials basis.
 - g. The plan shall specify that all new or modified drainage facilities shall be designed to ensure no net increase in stormwater discharge rates, flow velocities, or sediment transport would result from Project implementation.

- h. Discharges from these facilities shall be designed so as to avoid concentration of flow and subsequent downstream scouring or sedimentation in natural creek beds.
- i. Proposed roadways shall be designed so as to ensure that potential for slope failure and erosion is minimized.
- j. The Stormwater Control Plan shall be incorporated into all design drawings and specifications as appropriate, and shall meet the following standards:
 - i. The Permittee shall design and construct all storm drainage facilities in compliance with the County Public Works Design Standards.
 - ii. The Permittee shall prevent storm drainage from draining across driveway(s) or onto adjacent properties in a concentrated manner.
 - iii. The Permittee shall obtain a drainage permit under applicable County Ordinances for the installation of new drainage culverts.

A Stormwater Control Plan, Waste Discharge Identification (WDID) Number, Notice of Intent (NOI) and a Storm Water Pollution Prevention Plan (SWPPP) must be submitted to the Public Works Agency prior to issuance of the County Grading and Stormwater Permits.

45. NPDES Permit Requirements to Prevent Stormwater Pollution During Construction (MM WQ-1). As required by Mitigation Measure WQ-1 in the MMRP, the Permittee shall submit a Notice of Intent (NOI) and obtain coverage under the Construction General Permit (CGP) authority of the National Pollutant Discharge Elimination System (NPDES) for both the Central Valley and San Francisco Bay Regional Water Boards, before the onset of any construction activities for the purpose of preventing stormwater pollution during construction. The Permittee shall have a specific Project Storm Water Pollution Prevention Plan (SWPPP) prepared by a Qualified SWPPP Developer and ready for implementation prior to construction. This SWPPP shall be kept onsite during construction activity and provided upon request to representatives of the County and Water Board staffs.

Permittee shall apply for a County Stormwater Permit prior to the start of any construction; this application shall include proof of coverage under the CGP and a copy of the Project SWPPP. This SWPPP must provide for the implementation of pollutant discharge controls that utilize Best Management Practices (BMPs) and technology to reduce erosion, sedimentation, and other discharges to the water quality standards of the CGP and the County Stormwater Permit. BMPs may consist of a wide variety of protective measures taken to reduce pollutants in stormwater and other nonpoint-source runoff, including but not limited to, the following practices:

- a. Installation of temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) to control erosion and sedimentation from disturbed areas.
- b. Construction of dry detention basins (typically dry except after a major rainstorm, when it will temporarily fill with stormwater), designed to decrease runoff from the work site during storm events and to prevent flooding of the construction areas. Basin BMPs must include maintenance schedules for the periodic removal of sediments, excessive vegetation, and debris that may clog basin inlets and outlets.

- c. The application of covers or nontoxic soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more) that could contribute sediment to waterways.
- d. The enclosure and coverage of exposed stockpiles of dirt or other loose, granular construction materials that could contribute sediment to waterways.
- e. The control of run-on that could deposit sediment or other materials from areas adjacent to the work site.
- f. The assurance that no earth or organic material will be deposited or placed where it may be directly carried into a stream, marsh, slough, lagoon, or body of standing water.
- g. The application of controls that would preclude the following types of materials from being rinsed or washed into the County stormdrain system, the “waters of the United States,” or adjacent properties: concrete, concrete wash, solvents and adhesives, thinners, paints, fuels, sawdust, dirt, gasoline, asphalt and concrete saw slurry, and heavily chlorinated water.
- h. The establishment of grass or other vegetative cover on the construction site as soon as possible after disturbance.

The Permittee (and the selected contractor) shall select a combination of appropriate BMPs, consistent with the above and with the requirements of the CGP and the County Stormwater Permit, which is expected to minimize runoff and remove contaminants from stormwater discharges. The final selection of BMPs will be subject to approval by the County and by the San Francisco Bay Regional Water Board or the Central Valley Water Board.

The Permittee (and the selected contractor) shall verify that a Notice of Intent (NOI) has been filed with the appropriate State Water Board having jurisdiction, that the said Water Board has issued a Waste Discharge Identification (WDID) Number, that a project SWPPP has been prepared, and that a County Stormwater Permit has been issued before allowing construction to begin. The selected contractor shall perform regular inspections of the construction area, to verify that the BMPs specified in the SWPPP are properly implemented and maintained. The contractor will notify the appropriate Regional Water Board and the County immediately if there is a noncompliance issue. If necessary, the contractor shall require that additional BMPs be designed and implemented if those originally constructed do not achieve the identified performance standard of the CGP or the County Permit.

- 46. Roadway Encroachment Permit. Permittee shall apply to the Public Works Agency for separate roadway encroachment permits for temporary and permanent access and facilities. Improvement plans shall be prepared by a registered Civil Engineer for approval by the Director of Public Works, accompanied by the required review and inspection fees, as well as insurance and security deposits if required by the Public Works Agency.
- 47. Gate Entries. The Permittee shall provide designs to the Director of Public Works for roadway widening, pavement transitions, shoulder widening, necessary longitudinal and transverse drainage, and any driveway profile adjustments in conformance with County Roadway Standards. The new pavement section shall match, at a minimum, the full roadway section of each affected County roadway. No gates or fences shall be located within any County road right-of-way, and gates shall not swing out towards the public road.

48. Construction Traffic Control Plan (MM TRA-1). Prior to starting construction-related activities, the Permittee shall prepare and implement a Traffic Control Plan (TCP) as required by Mitigation Measure TRA-1 in the MMRP to reduce or eliminate impacts associated with the Project. The TCP shall adhere to Alameda County and Caltrans requirements, and must be submitted for review and approval of the County Public Works Agency prior to implementation. The TCP shall include the elements listed in Mitigation Measure TRA-1 such as controlling the peak hours of construction worker commuting, truck access during peak hours, notification of contractors of local road weight and speed limits, etc.; however, the County and Caltrans may require additional elements to be identified during their review and approval of the TCP.

When lane/road closures occur during delivery of oversized loads, provide advance notice (no less than five working days) to the County Fire Department, Sheriff's Office, and California Highway Patrol (CHP) to ensure that alternative evacuation and emergency routes are designated to maintain service response times. The names and 24-hour contact numbers of the Project construction superintendent and foreman shall be included as part of the advance notification.

For oversized loads transported on County roads, if road closures are required, the Permittee shall comply with transportation permit requirements of Caltrans, California Highway Patrol, and the Public Works Agency for oversized loads. To implement a road closure, a request should be submitted to the Alameda County Public Works Agency, Road Division, at least two months before the planned closure. Copies of the road closure request should be provided to Caltrans and the Alameda County Sheriff's Office. If determined to be necessary by the County Director of Public Works due to slow moving trucks, delivery of some or all large components or construction equipment may be restricted to night-time hours. Procedures include but are not limited to the following:

- i. Loads wider than the vehicle code limit of 8'-6" will require a Public Works Agency Oversize Move Permit (OMP), for which the Permittee shall provide a description of the largest vehicle/load combination (overall height, width, and length and axle loadings).
- ii. Notice of request for an OMP will be referred to the CHP, and based upon coordination between the PWA and CHP may provide the basis for a Repetitive OMP.
- iii. Prior to commencement of any construction activities, including grading and site preparation, Permittee shall give written notice to the Planning Director with a copy to the Director of Public Works of the commencement date, proposed access route and estimated duration in years of any construction activities.

The Transportation Control Plan shall also address the following requirements:

- a. Permittee shall submit video footage of pavements on County roads to be used for transport of major turbine components and construction equipment with the building permit or grading permit applications, and post a security bond to guarantee that the Permittee shall reconstruct any failed, cracked, or deteriorated portions of County road pavements that resulted from Project construction. The Permittee shall calculate the amount of the required security bond and submit the calculation to the County Director of Public Works for review and approval.
- b. The Permittee shall monitor roads during Project construction to identify any damage that requires immediate repair. Complete road repairs on local public roads as needed during

construction to prevent excessive deterioration. This work may include construction of temporary roadway shoulders to support any necessary detour lanes.

- c. Repair or restore County road rights-of-way to original condition or better upon completion of the work.
 - d. Emergency road repairs shall be completed at the Permittee's expense. Any potentially hazardous road segment must be flagged until the road is repaired.
 - e. Coordinate Project-related construction activities, including schedule, truck traffic, haul routes, and the delivery of oversized or overweight materials, with Alameda County, Caltrans, and affected cities to identify and minimize overlap with other area construction projects.
49. Watercourse Protection Ordinance. If any ground disturbing work is proposed within or near a watercourse, a watercourse encroachment permit or a grading permit shall be secured from the Public Works Agency in accordance with the Alameda County Watercourse Protection Ordinance. Watercourse setbacks shall be delineated on the exhibit plan per the provisions of Article V of the Watercourse Ordinance. The Ordinance establishes a setback of 20 feet from the top of the creek bank. However, for existing bank slopes at 2 horizontal to 1 vertical, or steeper, establish the setback by drawing a line on a cross-section at a 2 horizontal to 1 vertical slope from the toe of the existing bank to a point where it intercepts the ground surface and then add 20 feet. As provided by the Watercourse Protection Ordinance (Section 13.12.310, item G), the Director of Public Works shall make the determination as to setback limits and any permitted development within a setback.
50. Other Watercourse Requirements. The Permittee shall be responsible, prior to any work near or within a recognized watercourse, for securing other permits (e.g., Streambed Alteration Agreement) or other approvals required for work which is regulated by any other public agency (i.e., the California Department of Fish and Wildlife, Army Corp of Engineers, etc.).
51. Project-Specific Avian Protection Plan (BIO-11a). The Permittee shall prepare a Project-specific Avian Protection Plan (APP) as required by Mitigation Measure BIO-11a in the MMRP to specify measures and protocols consistent with the program-level mitigation measures that address avian mortality. The Project-specific APP will include, at a minimum, the following components.
- a. Information and methods used to site turbines to minimize risk.
 - b. Documentation that appropriate turbine designs are being used.
 - c. Documentation that avian-safe practices are being implemented on Project infrastructure.
 - d. Methods used to discourage prey for raptors.
 - e. A detailed description of the postconstruction avian fatality monitoring methods to be used (consistent with the minimum requirements outlined in Mitigation Measure BIO-11g).
 - f. Methods used to compensate for the loss of raptors (consistent with the requirements of Mitigation Measure BIO-11h).

The Permittee shall prepare and submit a draft Project-specific APP to the County within 10 days of submitting the Building Permit application. The draft APP will be reviewed by the TAC for

consistency and the inclusion of appropriate mitigation measures that are consistent with the PEIR and recommended for approval by the County. The Permittee must obtain approval from the Planning Director of the draft APP prior to commercial operation, and obtain recommendations from the TAC for preparation of the Final APP within six months of commercial operations. The Final APP shall be subject to approval by the Planning Director.

52. Stop Work Procedures for Encounters With Cultural Resources, Human Remains and Paleontological Resources During Ground-Disturbing Activities (MMs CUL-2d, CUL-3 and GEO-7c). Permittee shall ensure that construction specifications include a stop-work order if paleontological, prehistoric, or historic-era cultural resources, or human remains are unearthed during ground-disturbing activities. Specific procedures are set forth in Conditions 68, 69 and 70.

PRIOR TO ISSUING BUILDING PERMIT

53. Implement Best Management Practices (BMPs) to Avoid and Minimize Impacts on Special-Status Plant and Animal Species (MMs BIO-1b, BIO-5a and BIO-7a). The Permittee shall ensure that the following BMPs, in accordance with practices established in the East Alameda County Conservation Strategy (EACCS), will be incorporated into the Project design and construction documents.
- a. Employees and contractors performing decommissioning, reclamation or construction activities will receive environmental sensitivity training. Training will include review of environmental laws, mitigation measures, permit conditions, and other requirements that must be followed by all personnel to reduce or avoid effects on special-status species during decommissioning, reclamation or construction activities.
 - b. Environmental tailboard trainings will take place on an as-needed basis in the field. These trainings will include a brief review of the biology of the covered species and guidelines that must be followed by all personnel to reduce or avoid negative effects on these species during decommissioning and reclamation activities. Directors, managers, superintendents, and the crew leaders will be responsible for ensuring that crewmembers comply with the guidelines.
 - c. Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas to the extent practicable.
 - d. Offroad vehicle travel will be avoided.
 - e. Material will be stockpiled only in areas that do not support special-status species or sensitive habitats.
 - f. Grading will be restricted to the minimum area necessary.
 - g. Prior to ground-disturbing activities in sensitive habitats, Project construction boundaries and access areas will be flagged and temporarily fenced during construction to reduce the potential for vehicles and equipment to stray into adjacent habitats. Vehicles or equipment will not be refueled within 100 feet of a wetland, stream, or other waterway unless a bermed and lined refueling area (i.e., a created berm made of sandbags or other removable material) is constructed.
 - h. Erosion control measures will be implemented to reduce sedimentation in nearby aquatic habitat when activities are the source of potential erosion. Plastic monofilament netting

(erosion control matting) or similar material containing netting will not be used at the Project. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.

- i. Significant earth moving-activities will not be conducted in riparian areas within 24 hours of predicted storms or after major storms (defined as 1-inch of rain or more).

Work sites for Project activities shall not allow: trash dumping, firearms, open fires (such as barbecues) not required by the activity, hunting, and pets.

54. Measures to Avoid, Minimize and Mitigate Impacts On Special-Status Wildlife Species (MMs BIO-3b, BIO-4a, BIO-5a, BIO-6, BIO-7a, BIO-8a, BIO-8b, BIO-9 and BIO-10a). The Permittee shall implement Mitigation Measures BIO-3b, BIO-4a, BIO-5a, BIO-6, BIO-7a, BIO-8a, BIO-9 and BIO-10a, as identified in the Project MMRP to address special-status invertebrates, amphibians, reptiles, nesting birds and mammals, which are based on the EACCS and which have been modified and supplemented in the Project MMRP. The MMRP measures shall address the following species:

- a. Vernal pool branchiopods (invertebrates, including longhorn fairy shrimp, vernal pool fairy shrimp and vernal pool tadpole shrimp)
- b. Curved-footed hygrotus diving beetle
- c. Valley elderberry longhorn beetle
- d. California tiger salamander
- e. Western spadefoot
- f. California red-legged frog
- g. Foothill yellow-legged frog
- h. Western pond turtle
- i. Blainville's horned lizard
- j. Alameda whipsnake
- k. San Joaquin coachwhip
- l. Western burrowing owl
- m. Tri-colored blackbird
- n. Other non-special-status migratory birds
- o. San Joaquin kit fox
- p. American badger

Where impacts cannot be avoided or minimized, compensatory mitigation will be undertaken in accordance with mitigation ratios and requirements provided in the EACCS (Appendix C2 in the Final PEIR). In the event that an incidental take permit is obtained, compensatory mitigation will be undertaken in accordance with the terms of the permit in consultation with United States Fish and Wildlife Service (USFWS).

Implementation of some Mitigation Measures identified in the MMRP will require that the Permittee obtain incidental take permits from USFWS and CDFW (e.g., Alameda whipsnake) before construction begins. Additional conservation measures may be required in applicable Project permits (i.e., ESA incidental take permit).

55. Implement Best Available Control Technology for Heavy-Duty Vehicles (MM GHG-2a). The Permittee shall require existing trucks/trailers to be retrofitted with the best available technology and/or ARB-approved technology consistent with the ARB's *Truck and Bus Regulation* (California Air Resources Board 2011). The ARB Truck and Bus Regulation applies to all diesel-

fueled trucks and buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds. The Permittee shall comply with the specific requirements of Mitigation Measure GHG-2a as set forth in the MMRP to mitigate for potentially significant cumulative construction and operations and maintenance contributions to greenhouse gas emissions.

PRIOR TO GROUND-DISTURBING ACTIVITIES

56. Establish Activity Exclusion Zones for Special-Status Plant Species (BIO-1c). As required by Mitigation Measure BIO-1c in the MMRP, where pre-construction surveys determine that a special-status plant species is present in or adjacent to a Project area, the Permittee shall establish activity exclusion zones to avoid direct and indirect impacts of the Project on such species. No ground-disturbing activities shall take place within these designated activity exclusion zones, including construction of new facilities, construction staging, or other temporary work areas. Activity exclusion zones for special-status plant species will be established around each occupied habitat site, the boundaries of which will be clearly marked with standard orange plastic construction exclusion fencing or its equivalent. The establishment of activity exclusion zones will not be required if no construction-related disturbances will occur within 250 feet of the occupied habitat. The size of activity exclusion zones may be reduced through consultation with a qualified biologist and with concurrence from CDFW based on site-specific conditions.
57. Best Management Practices to Avoid and Minimize Effects on Special-Status Amphibians (MM BIO-5a). The Permittee shall implement BMPs and other appropriate measures consistent with Mitigation Measure BIO-5a in the Project MMRP to address special-status amphibians and shall ensure that, in accordance with measures developed for the EACCS, such BMPs are incorporated into the appropriate design and construction documents. Implementation of some of these measures will require that the Project proponent obtain incidental take permits from USFWS (e.g., California red-legged frog and California tiger salamander) and from CDFW (California tiger salamander only) before construction begins. Additional conservation measures or conditions of approval may be required in applicable Project permits (e.g., ESA or CESA incidental take authorization). Permittee shall comply with the specific requirements of Mitigation Measure BIO-5a in the MMRP to mitigate for effects on amphibians, including, but not limited to limits on the season in which ground-disturbing activities may occur, installation of barrier fencing, identifying appropriate relocation areas and preparing a relocation plan.

Permittee shall have a qualified biologist conduct preconstruction surveys immediately prior to ground-disturbing activities (including equipment staging, vegetation removal, grading). The biologist will survey the work area and all suitable habitats within 300 feet of the work area. If individuals (including adults, juveniles, larvae, or eggs) are found, work will not begin until USFWS and/or CDFW is contacted to determine if moving these life-stages is appropriate. If relocation is deemed necessary, it will be conducted in accordance with the relocation plan. Incidental take permits are required for relocation of California tiger salamander (USFWS and CDFW) and California red-legged frog (USFWS). Relocation of western spadefoot and foothill yellow-legged frog normally requires a letter from CDFW authorizing this activity; however, a biologist with a specific authorization (i.e., scientific collecting permit or MOU from CDFW) will be accepted for this purpose.

58. Preconstruction Surveys for Western Pond Turtle and Monitoring of Construction Activities (BIO-6). If determined as a result of pre-construction surveys pursuant to Mitigation Measure

BIO-3a, that suitable aquatic or upland habitat for western pond turtle is identified within proposed work areas, Permittee shall implement Mitigation Measure BIO-6 as set forth in the Project MMRP, consistent with measures developed for the EACCS, to ensure that the proposed Project does not have a significant impact on western pond turtle. The mitigation includes but is not limited to surveys conducted both one week before and immediately before (within 24 hours) of work activity, use of a biological monitor if needed, and approval by CDFW for any required relocation of turtles.

59. Plan for Restoration of Disturbed Annual Grasslands (BIO-5c). Within 30 days prior to any ground disturbance, Permittee shall have a qualified biologist prepare a Grassland Restoration Plan in coordination with CDFW and subject to CDFW approval, to ensure that temporarily disturbed annual grasslands and areas planned for the removal of permanent roads and turbine pad areas are restored to pre-Project conditions. The Grassland Restoration Plan shall conform to the requirements of Mitigation Measure BIO-5c in the MMRP.

The Grassland Restoration Plan shall include a requirement to monitor restoration areas annually (between March and October) for up to three years following the year of restoration. The restoration will be considered successful when the percent cover for restored areas is 70% absolute cover of the planted/seeded species compared to the percent absolute cover of nearby reference sites.

The Permittee shall provide evidence to the Planning Director that CDFW has reviewed and approved the Grassland Restoration Plan. Additionally, the Permittee shall provide annual monitoring reports to the County by January 31 for three years or until restoration is deemed successful by the CDFW, summarizing the monitoring results and any remedial measures implemented (if any are necessary) during the previous year.

60. Pre-Construction Worker-Awareness Training for Archaeological Resources (MM CUL-2c). The Permittee shall provide for training overseen by a qualified professional archaeologist prior to the initiation of any site preparation and/or the start of construction. The Permittee shall ensure that all construction workers receive adequate training, and to ensure that forepersons and field supervisors can recognize archaeological resources (e.g., areas of shellfish remains, chipped stone or groundstone, historic debris, building foundations, human bone) in the event that any are discovered during construction.

DURING CONSTRUCTION

61. Implement Applicable BAAQMD Basic Construction Mitigation Measures (MM AQ-2a). The Permittee shall require all contractors to comply with the following requirements for all areas with active construction activities.
- a. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered two times per day.
 - b. All haul trucks transporting soil, sand, or other loose material offsite will be covered.
 - c. All visible mud or dirt tracked out onto adjacent public roads will be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

- d. All vehicle speeds on unpaved roads will be limited to 15 mph.
 - e. All roadways, driveways, and sidewalks to be paved will be completed as soon as possible. Building pads will be laid as soon as possible after grading unless seeding or soil binders are used.
 - f. Idling times will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage will be provided for construction workers at all access points.
 - g. All construction equipment will be maintained and properly tuned in accordance with manufacturer's specifications. All equipment will be checked by a certified visible emissions evaluator.
 - h. Post a publicly visible sign with the telephone number and person to contact representing the Permittee regarding dust complaints. This person will respond and take corrective action within 48 hours. The Air District and County Building Official's phone numbers will also be visible to ensure compliance with applicable regulations.
62. Implement Applicable BAAQMD's Additional Construction Mitigation Measures (MM AQ-2b). The Permittee shall require all contractors and subcontractors to comply with the following requirements for all areas with active construction activities.
- a. During construction activities, all exposed surfaces will be watered at a frequency adequate to meet and maintain fugitive dust control requirements of the relevant air quality management entities.
 - b. All excavation, grading, and/or demolition activities will be suspended when average wind speeds exceed 20 mph, as measured at the Livermore Municipal Airport.
 - c. Wind breaks (e.g., trees, fences) will be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50% air porosity.
 - d. Vegetative ground cover (e.g., fast-germinating native grass seed) will be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
 - e. The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time will be limited.
 - f. All trucks and equipment, including their tires, will be cleaned off prior to leaving the site or Project area.
 - g. Site accesses to a distance of 100 feet from the paved road will be treated with a 6 to 12-inch compacted layer of wood chips, mulch, or gravel.
 - h. Sandbags or other erosion control measures will be installed to prevent silt runoff to public roadways from sites with a slope greater than 1%.
 - i. The idling time of diesel-powered construction equipment will be minimized to 2 minutes, and idling of equipment using other types of combustion engines shall comply with the Basic Construction Mitigation Measures set forth in Condition 61 or Mitigation Measure AQ-2a in the MMRP.
 - j. The Permittee will develop a plan demonstrating that the offroad equipment (more than 50 horsepower) to be used in the construction Project (i.e., owned, leased, and subcontractor

- vehicles) would achieve a Project wide fleet-average 20% NOX reduction and 45% PM reduction compared to the most recent Air Resources Board (ARB)-defined fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.
- k. Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).
 - l. All construction equipment, diesel trucks, and generators will be equipped with BACT for emission reductions of NOX and PM.
 - m. All construction equipment shall meet ARB's most recent certification standard for offroad heavy duty diesel engines.
63. Compliance with NPDES Storm Water Requirements (MM WQ-1). Permittee shall implement the Storm Water Pollution Prevention Plan (SWPPP) required by Condition 45 and as required by Mitigation Measure WQ-1 in the MMRP, maintain compliance with the other requirements of the CGP and the County C.6 Stormwater Permit (inspection, sampling, reporting, etc.) and construct the stormwater treatment system(s) per the Stormwater Control Plan (SCP). The SCP, SWPPP, and the CGP and County Stormwater Permit inspection, sampling and reporting documentation shall be kept onsite during construction activity and shall be made available upon request to representatives of the County and Water Board staff.
64. Prevent Introduction, Spread, and Establishment of Invasive Plant Species (MM BIO-2). The Permittee shall implement Mitigation Measure BIO-2 as set forth in the MMRP, in order to avoid and minimize the introduction and spread of invasive nonnative plant species, including the following BMPs, and the other requirements of Mitigation Measure BIO-2.
- a. Construction vehicles and machinery including tires will be cleaned prior to entering the construction area. Cleaning stations will be established at the perimeter of the construction area along all construction routes.
 - b. Vehicles will be cleaned only at approved areas. No cleaning of vehicles will occur at job sites.
 - c. To discourage the introduction and establishment of invasive plant species, seed mixtures and straw used within natural vegetation will be either rice straw or weed-free straw.
65. Retain a Biological Monitor During Ground-Disturbing Activities in Environmentally-Sensitive Areas (BIO-1e). As required by Mitigation Measure BIO-1e, the Permittee shall have a qualified biologist (as determined by the Alameda County Planning Director) conduct periodic monitoring of decommissioning, repowering, and reclamation activities that occur adjacent to sensitive biological resources (e.g., special-status species, sensitive vegetation communities, wetlands, etc.). Monitoring shall occur during initial ground disturbance where sensitive biological resources are present and weekly thereafter or as determined by the County in coordination with a qualified biologist. The biologist will assist the crew, as needed, to comply with all Project implementation restrictions and guidelines. In addition, the biologist will be responsible for ensuring that the Permittee or its contractors maintain exclusion areas adjacent to sensitive biological resources, and for documenting compliance with all biological resources-related mitigation measures.

66. Protection of Valley Elderberry Longhorn Beetle Habitat (MM BIO-4a). Where pre-construction surveys completed pursuant to Condition 18 (Mitigation Measure BIO-3a) indicate valley elderberry longhorn beetle habitat is present within proposed work areas or within 100 feet of these areas, the Permittee shall implement Mitigation Measure BIO-4a in the MMRP related to avoiding removal of elderberry shrubs, protecting elderberry shrubs/clusters near construction areas, providing buffer areas approved by USFWS, fencing and monitoring.

Biological inspection reports on the presence and protective actions taken regarding valley elderberry longhorn beetle habitat will be provided to the Permittee, the County and USFWS.

67. Stop Work Procedures for Encounters With Hazardous Materials or Soil or Groundwater Contamination (MM HAZ-4). As required in part by Mitigation Measure HAZ-4 as set forth in the MMRP, the Permittee shall initiate stop-work procedures upon encounters with hazardous materials or soil or groundwater contamination during construction, demolition or reclamation activities, and implement appropriate health and safety procedures, including the use of appropriate personal protective equipment (e.g., respiratory protection, protective clothing, helmets and goggles). Any such discovery shall be reported immediately to the Alameda County Health Services Agency – Environmental Health Department, and complete procedures outlined in Mitigation Measure HAZ-4 in the MMRP and as described in Condition 22.
68. Stop Work Procedures for Encounters With Cultural Resources During Ground-Disturbing Activities (MM CUL-2d). As required by Mitigation Measure CUL-2d as set forth in the MMRP, the Permittee shall, in addition to providing construction specifications requiring stop-work procedures upon encounters with cultural resources during grading or other ground-disturbing activity (as required by Condition 52), the Permittee and any related contractor shall immediately halt all activity within 100 feet of the find until a qualified archaeologist can assess the significance of the find. Prehistoric materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or tool-making debris; culturally darkened soil (“midden”) containing heat-affected rocks and artifacts; stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered-stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. If the find is determined to be potentially significant, the archaeologist, in consultation with the Native American representative (if appropriate), will develop a treatment plan that could include site avoidance, capping, or data recovery.
69. Stop Work Procedures for Encounters With Human Remains During Ground-Disturbing Activities (MM CUL-3). In addition to providing construction specifications requiring stop-work procedures upon encounters with cultural resources during grading or other ground-disturbing activity, the Permittee shall ensure the construction specifications include a stop-work order if human remains are discovered during construction or demolition. There will be no further excavation or disturbance of the site within a 100-foot radius of the location of such discovery, or any nearby area reasonably suspected to overlie adjacent remains. The Alameda County Coroner will be notified and will make a determination as to whether the remains are Native American. If the Coroner determines that the remains are not subject to his authority, he will notify the Native American Heritage Commission, who will attempt to identify descendants of the deceased Native American. If no satisfactory agreement can be reached as to the disposition of the remains pursuant to this state law, then the landowner will re-inter the human remains and items

associated with Native American burials on the property in a location not subject to further subsurface disturbance. A final report will be submitted to Alameda County. This report will contain a description of the mitigation program and its results, including a description of the monitoring and testing resources analysis methodology and conclusions and a description of the disposition/curation of the resources.

70. Procedures and Preparation for Encounters with Paleontological Resources During Major Excavation (MMs GEO-7a, GEO-7b and GEO-7c). As required by Mitigation Measures GEO-7a, GEO-7b and GEO-7c in the MMRP, the Permittee shall retain a qualified professional paleontologist to monitor activities with the potential to disturb sensitive paleontological resources, and to determine if, on the basis of data gathered during detailed project design, where monitoring by a paleontologist during ground-disturbing activities will require monitoring. The Permittee shall implement Mitigation Measures GEO-7a, GEO-7b and GEO-7c as set forth in the MMRP related to paleontological resources.

The Permittee will ensure that all construction workers receive adequate training provided by a qualified professional paleontologist, and to ensure that forepersons and field supervisors can recognize fossil materials in the event any are discovered during construction.

If substantial fossil remains (particularly vertebrate remains) are discovered during earth disturbing activities, activities within 100 feet of the find will stop immediately until a state-registered professional geologist or qualified professional paleontologist can assess the nature and importance of the find and a qualified professional paleontologist can recommend appropriate treatment. Subsequent procedures are described in detail in the MMRP for Mitigation Measures GEO-7c.

71. Construction Signage. Permittee shall provide signage as required by the permitting authority (e.g. Fire Department, Building Department) including phone numbers of the facility operator for use in case of an emergency. The name of the Project and the names, titles, and phone numbers of individuals responsible for control of construction-related noise, dust, and traffic shall be maintained on all signage during construction. A 24-hour emergency number shall also be provided on all signage. The sign shall be kept up-to-date at all times.
72. Limit Construction to Daylight Hours (MM AES-1). As required by Mitigation Measure AES-1, major construction activities shall not be undertaken between sunset and sunrise or on weekends. Construction activity is specifically prohibited from using high-wattage lighting sources to illuminate work sites after sunset or before sunrise, with the exception of nighttime deliveries under the approved transportation control plan or other construction activities that require nighttime work for safety considerations. For the purpose of this condition and Mitigation Measure AES-1, major construction activities shall be defined as those which are visibly obtrusive from residences and public recreational trails, based on the finding of significant impacts in the PEIR.
73. Noise-Reduction Practices During Construction (MM NOI-2). The Permittee shall employ noise-reducing practices during decommissioning and new turbine construction so that resulting noise does not exceed Alameda County noise ordinance standards. Measures to limit noise may include the following:
- a. Prohibit noise-generating activities before 7 a.m. and after 7 p.m. on any day except Saturday or Sunday, and before 8 a.m. and after 5 p.m. on Saturday or Sunday.

- b. Locate equipment as far as practical from noise sensitive uses.
- c. Require that all construction equipment powered by gasoline or diesel engines have sound-control devices that are at least as effective as those originally provided by the manufacturer and that all equipment be operated and maintained to minimize noise generation.
- d. Use noise-reducing enclosures around noise-generating equipment where practicable.
- e. Implement other measures with demonstrated practicability in reducing equipment noise upon prior approval by the County.

In no case will the Permittee be allowed to use gasoline or diesel engines without muffled exhausts.

PRIOR TO DATE OF COMMERCIAL OPERATION

74. Remove Derelict Facilities and Restore Abandoned Roadways (MM AES-2b). As required by Mitigation Measure AES-2b as set forth in the MMRP, the Permittee shall clear the Project site of all derelict equipment, wind turbine components not required for the Project, and litter and debris from old turbine operations. Such litter and debris may include derelict turbines, obsolete anemometers, unused electrical poles and broken turbine blades. In addition, abandoned roads that are no longer in use on such parcels shall be restored and hydroseeded to reclaim the sites and remove visual traces from the viewscape, except in cases where state or federal resource agencies (i.e., USFWS and/or CDFW) recommend that the features be left in place for habitat purposes, or as specified by local landowners to facilitate continued ranching operations. All parcels with new turbines will be maintained in such a manner through the life of Project operations and until the parcels are reclaimed in accordance with the approved reclamation plan.
75. Compensate for Impacts on Special-Status Plant Species (BIO-1d). The Permittee shall avoid or minimize temporary and permanent impacts on special-status plants that occur on Project sites and will compensate for impacts on special-status plant species. All impacts on large-flowered fiddleneck, diamond-petaled California poppy, and caper-fruited tropidocarpum will be avoided, impacts on other special-status plant species will be avoided to the extent feasible, and any unavoidable impacts will be addressed through compensatory mitigation.

Where avoidance of impacts on a special-status plant species is infeasible, loss of individuals or occupied habitat of a special-status plant species occurrence will be compensated for through the acquisition, protection, and subsequent management in perpetuity (i.e., conservation easements) of other existing occurrences at a 2:1 ratio (occurrences impacted: occurrences preserved). The Permittee will provide detailed information to the County and CDFW on the location of the preserved occurrences, quality of the preserved habitat, feasibility of protecting and managing the areas in perpetuity, responsible parties, and other pertinent information. If suitable occurrences of a special-status plant species are not available for preservation, then the Project will be redesigned to remove features that would result in impacts on that species.

76. Conservation Measures to Compensate for Raptor and Avian Mortality (BIO-11h). The Permittee shall provide a plan for compensation for projected levels of mortality of raptors and other avian species including golden eagles, employing one or more of the options set forth in Mitigation Measure BIO-11h in the MMRP. The objective is to provide or improve habitat for raptors and avian species within the APWRA on a long-term basis, or in ten-year increments, to be adjusted

on the basis of avian monitoring results only every ten years or once within each ten-year period. An avian conservation strategy, to be outlined in the draft APP required by Mitigation Measure 11a, shall be implemented within one year of the commercial operations date (or of 75 percent of the turbine capacity if construction is staged), unless compliance with the conservation strategy includes complying with compensatory mitigation measures in an Eagle Take Permit (ETP) from the USFWS, in which case compensation shall be provided according to terms of the eagle permit. Strategic measures may include retrofitting of high-risk power poles or other electrical infrastructure, if required by an approved Eagle Conservation Plan under an eagle take permit from USFWS, contributions to raptor conservation and rehabilitation activities, acquisition of conservation easements within the APWRA, or other measures if supported by a Resource Equivalency Assessment (REA). If the ETP results in retrofitting of high-risk power poles outside of the APWRA, it will be accepted as compensatory mitigation only if required by an ETP from the USFWS, or if other compensatory mitigation measures causes a delay to the Project or results in a greater cost than would be incurred by high-risk power pole retrofits.

77. Compensate for Direct and Indirect Effects on Valley Elderberry Longhorn Beetle (BIO-4b). If elderberry shrubs cannot be avoided and protected as outlined in Condition 54 (Mitigation Measure BIO-4a), the Permittee shall obtain an incidental take permit from USFWS and compensate for the loss of any elderberry shrubs. Surveys of elderberry shrubs to be transplanted will be conducted by a qualified biologist prior to transplantation. Surveys will be conducted in accordance with the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (U.S. Fish and Wildlife Service 1999). Permittee shall comply with the specific requirements of Mitigation Measure BIO-4b of the MMRP to mitigate for effects on valley elderberry longhorn beetle.

The Project proponent will be responsible for funding and providing monitoring reports to USFWS in each of the years in which a monitoring report is required. As specified in the *Conservation Guidelines*, the report will include information on timing and rate of irrigation, growth rates, and survival rates and mortality.

78. Compensate for Loss of Habitat for Special-Status Amphibians, Reptiles, Western Burrowing Owl, San Joaquin Kit Fox and American Badger (MMs BIO-5b, BIO-7b, BIO-9 and BIO-10b). Where impacts on aquatic and upland habitat for special-status amphibians, reptiles special-status and non-special-status tree/shrub- and ground-nesting birds and burrowing owls, cannot be avoided or minimized, Permittee shall provide compensatory mitigation in accordance with mitigation ratios and requirements developed under the EACCS (Appendix C). In the event that take authorization is required, compensatory mitigation will be undertaken in accordance with the terms of the authorization in consultation with USFWS and/or CDFW.

79. Compensate for the Loss of Alkali Meadow Habitat, Riparian Habitat, and Wetlands (MMs BIO-15, BIO-16 and BIO-18; if applicable). If alkali meadow habitat, riparian habitat or wetlands are filled or disturbed as part of the repowering Project, the Permittee shall compensate for the loss of this habitat to ensure no net loss of habitat functions and values. Compensation ratios will be based on site-specific information and determined through coordination with state and federal agencies (CDFW, USFWS, United States Army Corps of Engineers, or USACE). Unless specified otherwise by a resource agency, the compensation will be at a minimum 1:1 ratio (1 acre restored or created for every 1 acre filled) and may be a combination of onsite restoration/ creation, offsite restoration, and mitigation credits. A restoration and monitoring plan

will be developed and implemented. The plan will describe how alkali meadow habitat, riparian habitat or wetlands will be created and monitored.

80. Evidence of Compliance with the Federal Aviation Administration (FAA). Prior to the date of commercial operation, the Permittee shall provide a copy of the FAA Determination of No Hazard to the Alameda County Planning Director for a hearing by the Alameda County Airport Land Use Commission.

PERFORMANCE STANDARDS

81. Windfarm Fire Requirements. To provide a reasonable level of fire protection and safety for ongoing windfarm operations, the Permittee shall be responsible for compliance with the Altamont Pass Windfarms Fire Requirements dated September 22, 2005 adopted by Alameda County (ACFD) and which were reviewed and re-adopted on November 12, 2014. In addition, the Permittee shall make a reasonable attempt to maintain the telephone numbers of the inhabitants of all adjacent properties and give timely notification to same in the event of an on-site fire.
82. Safety Reporting. Permittee shall notify the County Building Official and Planning Director of any tower collapse, blade throw, fire, or injury to worker within five (5) days of any such occurrence.
83. Screen Surplus Parts and Materials (MM AES-2c). As required by Mitigation Measure AES-2c, the Permittee shall have surplus parts and materials that are kept onsite maintained in a neat and orderly fashion and screened from view, which may be accomplished by using a weatherproof camouflage material that can be draped over surplus parts and materials stockpiles. Draping materials shall be changed at least twice per year from green to brown and back again according to the season so that stockpiles are effectively camouflaged to match the predominant color of surrounding grass areas.
84. Site Maintenance. Litter and debris shall be contained in appropriate receptacles and shall be disposed of promptly. All construction trailers, construction materials and construction-related debris shall be removed following cessation of construction activity, or within 30 days of authorization of commercial operation.
85. Removal of Inoperative Equipment. Any inoperative windfarm or windfarm site that is determined to be substantially inoperative shall be restored or reclaimed consistent with the approved *Restoration and Reclamation Plan* (Condition 11), under the following procedures:
- a) The Planning Director and Director of Public Works shall make a determination that the permitted wind farm operations have been abandoned or have produced less than 5 percent of the rated output of the wind farm in one year, verified by the annual status reports and there is no demonstrated plan provided by the Permittee or property owner, satisfactory to the Planning Director, to restore the equipment to a productive operating condition.
 - b) The Planning Director and Director of Public Works may instead make a determination that more than 50% of the turbines are actively being removed or are in disrepair and there is no demonstrated plan, satisfactory to the Planning Director, to restore the equipment to a productive operating condition.

Upon determination by the Planning Director that either of the above criteria is present on the property, the Planning Director shall give notice to the property owner/wind operator of the following requirements:

- a. Within 30 days from the date of the notice by the Planning Director, the Permittee shall secure a building permit to inspect all inoperable or abandoned wind turbines; and
- b. The application for a building permit shall be accompanied by a cash performance deposit to restore the site subject to the approved *Restoration and Reclamation Plan*.

86. Noise Standards. In the event a reasonable complaint is received by the Environmental Health Director alleging the presence of sound levels from one or more wind turbines exceeding the levels described in the application, or exceeding 55 dBA (Ldn) as measured at the exterior of any dwelling unit:

- a. The Environmental Health Director shall report this matter to the Permittee and to the Planning Director and upon receipt of such report, this matter shall be brought to hearing pursuant to Section 17.54.030.
- b. Upon receipt of the report from the Environmental Health Director, the Planning Director shall require the Permittee to have a qualified firm furnish a site specific study with recommendations on the circumstances, if any, which would render the Project in conformance with all applicable noise conditions; the report shall also include a recommendation to the Planning Director who will make the final determination as to whether subsection (d) shall be imposed.
- c. For a minimum 30 day period from the date of notification from the Environmental Health Director, at the time and place as may be agreed upon by the parties involved, Permittee shall attempt in good faith to negotiate a resolution of this matter with the party making the allegation; the results of such negotiation shall be reported to the Planning Director in a timely manner.
- d. Following the review period as provided under subsection (c) and until the conclusion of the revocation procedures as provided by Section 17-54.030, one or more wind turbines authorized by this permit to be constructed or maintained that are in closest proximity to the dwelling or building site of the party making the allegation, may be required to be made inoperative.

The measurement standard for the A-weighted scale shall be adjusted by the Planning Director to allow any sound device that is installed on or around the turbine as a mitigation for bird collisions.

Methods for measuring and reporting acoustic emissions from wind turbines and wind-farms shall be equal to or exceed the minimum standards for precision described by the International Electrotechnical Commission (IEC) in its 61400 series – Standards and Technical Specifications – *IEC 61400-11: Acoustic Noise Measurement Techniques*.

The Planning Director, in consultation with the Alameda County Environmental Health Services, shall establish criterion for noise samples and measurement parameters such as the duration of data collection, time of day, wind speed, atmospheric conditions and direction as set forth in the Wyle Research Report.

87. Electromagnetic Interference. If it has been demonstrated to the Planning Director that the turbine is causing disruptive electromagnetic interference, the Permittee shall promptly mitigate the disruptive interference, which may include discontinued operation of one or more turbine.

MONITORING AND SUBSEQUENT REVIEW

88. Initial Status Report. Six months from the issuance of grading and/or building permits, the Permittee shall submit to the Planning Director a status report describing compliance with conditions of the permit.
89. Annual Status Report. Following commercial operation date (COD), and on each annual anniversary of said commencement, Permittee shall submit to the Planning Director a brief status report containing the following information: description and rated capacity of all equipment installed, relevant meteorological data collected, and actual MW electric power generated to date broken down into appropriate time categories.
90. Post-Construction Avian Fatality Monitoring (MM BIO-11g). As required by Mitigation Measure BIO-11g as set forth in the MMRP, the Permittee shall provide for a postconstruction monitoring program to be conducted for the Project for a minimum of three (3) years beginning on the COD, or beginning upon commercial operation of 75 percent of the Project if construction is completed in phases. Monitoring shall be in conformance with the protocols and specifications of Mitigation Measure BIO-11g, including the formation of a technical advisory committee (TAC) to oversee the monitoring program and to advise the County on implementation of adaptive management measures.

As required by Mitigation Measure BIO-11g, if the results of the first 3 years of monitoring indicate that baseline fatality rates (i.e., the fatality rates of non-repowered turbines as described in the PEIR) are exceeded, monitoring will continue (potentially in combination with Condition 94/Mitigation Measure BIO-11i) until the average annual fatality rate is determined to be below the baseline fatality rate for two (2) consecutive years.

An additional two (2) years of monitoring will be implemented on the tenth anniversary of the COD.

91. Post-Construction Bat Fatality Monitoring (MM BIO-14b). As required by Mitigation Measure 14b in the MMRP, the Permittee shall implement a scientifically defensible, post-construction bat fatality monitoring program that is consistent with the protocols and sample size established and recognized by bat biologists in the APWRA, to estimate actual bat fatalities and determine if additional mitigation is required. Such monitoring shall take place concurrent with the 3-year post-construction monitoring program required by Mitigation Measure BIO-11g, and shall incorporate bat-specific components and protocols as specified by Mitigation Measure 14b in the MMRP. If recommended by the TAC, such a monitoring program shall recommence for two (2) years beginning on the tenth anniversary of the COD.
92. Annual Monitoring Reports on Bat Use and Fatalities (MM BIO-14c). The Permittee shall have annual reports of bat use results and fatality monitoring prepared by a qualified biologist within 3 months of the end of the last day of each year's fatality monitoring as required by Mitigation Measure BIO-14b, and submit such reports to the TAC and Planning Director. Special-status bat species records will be reported to the California Natural Diversity Data Base (CNDDB).

93. Technical Advisory Committee (MM BIO-11g). The County shall convene a Technical Advisory Committee (TAC) to oversee the post-construction monitoring program as required by Mitigation Measure BIO-11g and Condition 90 and to advise the County on adaptive management measures required by Mitigation Measure BIO-11i and Condition 94. The roles and responsibilities of the TAC membership shall be established by the Planning Director following consultation with the East County Board of Zoning Adjustments (based on a public hearing to be held for such specific purpose on or before December 18, 2014). The TAC shall include representatives from the County (including one or more technical consultants, such as a biostatistician, an avian biologist, and a bat biologist), and wildlife agencies (CDFW, USFWS) and as determined following the above-mentioned consultation. The TAC will have a standing meeting, which shall be open to the public, every 6 months to review monitoring reports produced pursuant to Mitigation Measure BIO-11g and Condition 90. Formation and operation of the TAC shall otherwise be consistent with Mitigation Measure BIO-11g.

The TAC may be the same TAC as may be formed and meeting for the purpose of prior repowering projects, such as Golden Hills—Phase 1; no new TAC is either required or encouraged. An adjunct or auxiliary advisory committee for the TAC composed of landowners, special district representatives, environmental advocacy groups and other stakeholders shall be convened by the Planning Director to confer with the ‘core’ TAC members on an as-needed basis, particularly on issues of establishing conservation easements and providing for landscape-scale mitigation as required by Condition 76.

94. Implement an Avian Adaptive Management Program (MM BIO-11i). If fatality monitoring described in Mitigation Measure BIO-11g results in an estimate that exceeds the preconstruction baseline fatality estimates (i.e., estimates at the non-repowered turbines as described in the PEIR) for any focal species or species group (i.e., individual focal species, all focal species, all raptors, all non-raptors, all birds combined, e.g., 2.43 raptors per MW per year and 4.5 native non-raptors per MW per year), the Permittee shall prepare a Project-specific adaptive management plan within 2 months following the availability of the fatality monitoring results. The County shall review and approve such plan in consultation with the TAC and it shall be implemented within 2 months of such approval. Follow-up monitoring will be required to determine if specific measures shall be sustained, revised or replaced with other measures. Measures, as outlined in Mitigation Measure BIO-11i, include but are not limited to visual modifications, anti-perching measures, prey-reduction strategies, use of experimental technologies, turbine curtailment (including real-time curtailment), or cut-in speed adjustments based on a focused study of such a strategy.
95. Develop and Implement a Bat Adaptive Management Plan (MM BIO-14d). The Permittee shall develop adaptive management plans to reduce bat mortality, in concert with Mitigation Measure BIO-14b, using appropriate feasible measures, and using both currently available and emerging information. The goals of the adaptive management plans are to ensure that the best available science and emerging technologies are used to assess impacts on bats, and that impacts are minimized to the greatest extent possible while maintaining energy production. Specific bat-related measures shall conform to the guidelines set forth in Mitigation Measure BIO-14d in the MMRP, including identified adaptive management measures.
96. Injured Bat Rehabilitation Compensation (MM BIO-14e). Project proponent shall pay in full the cost of reasonable, licensed rehabilitation efforts for any injured bats taken to wildlife care facilities from the Project area.

97. Stormwater Control Plan: Permittee shall carry out the operation and maintenance (O&M) of all installed stormwater protective system(s) as directed in the approved Stormwater Control Plan (SCP) and in compliance with Provision C.3 of the Municipal Regional Stormwater National Pollutant Discharge Elimination System Permit (MRP) and with the terms and conditions of the County Stormwater Permit, as required by Condition 45.
98. Monitor Substation Circuit Breakers for SF₆ Leakage. (MM GHG-2b). Permittee shall provide for periodic monitoring and necessary repair of circuit breakers installed at substations to verify a sulfur hexafluoride (SF₆) leak rate of 0.5% by volume or less consistent with the Air District's *Scoping Plan* Measure H-6 for the detection and repair of leaks.
99. Optional Review/Revocation/Revision. At any time during the term of this permit and after notice as provided for in the initial hearing, this matter may be set for rehearing if the Planning Director has made an initial determination based on substantial evidence that the use of the site for generation of electrical energy from wind turbine operations has ceased for a period of six months, or has produced less than 5 percent of the rated output of the wind farm in one year, and if therefore the permit should be revoked. In addition, pursuant to Section 17.54.030, the permit may be revoked if the permit has otherwise been exercised unlawfully or contrary to any condition or limitation of its issuance. As part of such rehearing, and/or reconsideration for the permit, the Board may determine that conditions previously imposed should be modified or new conditions should be added to assure continued affirmative findings for this permit. This reconsideration may include imposition of other requirements, treatments and measures to ensure public safety and applicable policies of the East County Area Plan. Any condition modified or added shall have the same force and effect as if originally imposed.
100. Transfer of Operations. Any entity that has acquired the facilities as authorized under this permit may maintain the benefits of the existing use permit provided that a letter of notification is submitted to the Board of Zoning Adjustments and Planning Department within six months after such transaction, and all conditions of approval for the subject facility are carried out by the new operator/Permittee.
101. Site Restoration. Permittee shall provide written notification to the Planning Director upon cessation of operations on the site by the Permittee. During operation of the Project, no abandoned turbine tower, rotor, ground or other equipment components shall be stored onsite outside designated storage areas. A wind turbine shall be deemed abandoned for the purposes of this Resolution if it has not produced electricity for one year or has produced less than 5 percent of the rated output of the wind farm in one year.

If all operations have been terminated, the Permittee and/or property owner shall be required to remove all improvements authorized under this permit from the site and the property shall be returned within twelve months of cessation to a condition with no wind facilities, subject to the requirements of the County.
102. Termination. Said Conditional Use Permit shall terminate after 30 years, on the 30th anniversary of the date of approval of this application, and shall remain revocable for cause in accordance with Section 17.54.030 of the Alameda County Zoning Ordinance. Permittee shall either remove the turbines and improvements approved herein in accordance with the approved reclamation plan or shall apply for new use conditional permits in accordance with Section 17.54.130 of the Zoning Ordinance.

THE FOREGOING was PASSED and ADOPTED by a majority vote of the Board of Supervisors of the County of Alameda this 15th day of December, 2020, pursuant to the following vote:

AYES: Supervisors Chan, Haggerty, Miley, & President Valle - 4

NOES: None


EXCUSED: Supervisor Carson

ABSTAINED: None

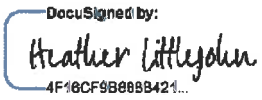


PRESIDENT, BOARD OF SUPERVISORS

ATTEST:
Anika Campbell-Belton, Clerk
Board of Supervisors

By: 
Deputy

APPROVED AS TO FORM:
DONNA R. ZIEGLER, COUNTY COUNSEL

By: 
Heather Littlejohn, Deputy County Counsel