ES.1 Introduction

The County of Alameda (County) is preparing this Environmental Impact Report (EIR) to examine the environmental effects of the Sand Hill Wind Project (proposed project). The project area is located within the Altamont Pass Wind Resource Area (APWRA) in eastern Alameda County. As required by Section 15123 of the State California Environmental Quality Act (CEQA) Guidelines, this Executive Summary contains the following sections.

- Project Overview
- Project Goal and Objectives
- Project Impacts and Mitigation Measures
- Project Alternatives
- Key Areas of Controversy and Issues to be Resolved

This EIR analyzes the environmental effects of the proposed project, recommends measures to reduce or avoid potential environmental damage resulting from the project, and identifies alternatives to the proposed project. This EIR also describes any significant environmental effects that cannot be avoided, growth-inducing effects, effects found not to be significant, and cumulative impacts.

In accordance with Section 15165 of the State CEQA Guidelines, which requires a lead agency to prepare a program EIR when an individual project is to be implemented in phases or is a necessary precedent for action on a larger project, this EIR addresses both project- and program-level phases of the Sand Hill Wind Project at their appropriate levels of detail. This approach allows the County to evaluate the Initial Repower, which constitutes the first phase of a larger repowering project that may be implemented in phases, in detail at the project level, and consider it for approval while also describing and disclosing the anticipated future phases, or Full Repower.

The EIR will be used by the East County Board of Zoning Adjustments (EBZA) in its consideration of approval of the proposed Sand Hill Wind Project's Initial Repower phase. The contents of this EIR may also be used in the future, in conjunction with anticipated subsequent environmental review, to inform the EBZA's decision on the Sand Hill Wind Project's Full Repower phase.

ES.2 Project Overview

The proposed project consists of the repowering of an existing wind farm within the rural, unincorporated eastern Alameda County portion of the APWRA, east of the San Francisco Bay Area and near the western edge of the San Joaquin Valley in northern California. Repowering is the process of removing older existing wind turbines and installing new, more efficient wind turbines. Removal, or 'decommissioning' of the existing turbines occurs in two main stages, of removing the turbines and towers and other above-ground equipment, followed by foundation removal. The project area is comprised of eight parcels grouped in three distinct areas: four west parcels (only three would be part of the Initial Repower phase; the fourth, an approximately 68-acre parcel, may

be part of the Full Repower phase, discussed below), two northeast parcels, and two southeast parcels (Figure ES-1). The proposed repowering program parcels total approximately 1,000 acres. The project area, like much of the surrounding region, consists largely of cattle-grazed land on which operating wind turbines and ancillary facilities are currently installed. The region is mostly treeless and is generally characterized by rolling foothills of annual grassland, steeper on the west and gradually flatter on the east, sloping toward the floor of the Central Valley.

The proposed project consists of two phases. The Initial Repower phase would involve the complete decommissioning and replacement of approximately 4 megawatts (MW) of existing generating capacity while concurrently performing a Before-After-Control-Impact (BACI) Avian Validation Study (Avian Validation Study), primarily funded by a Public Interest Energy Research (PIER) Grant from the California Energy Commission (CEC). The subsequent phase, the Full Repower, would involve decommissioning of the remaining turbines and repowering of the existing wind farm facilities to a total nameplate capacity of 34 MW. These phases are described generally below, and in greater detail in Sections 2.4.1 and 2.4.2 of Chapter 2, *Project Description*.

ES.2.1 Initial Repower Overview

The first phase of the Sand Hill Wind Project, referred to as the Initial Repower, would involve the removal of 70–80 existing turbines (with approximately 4 MW of generating capacity) and installation of 40 shrouded turbines of equal total capacity (approximately 4 MW). The removal of the 70-80 existing turbines, towers and some above-ground equipment would be completed under the provisions of existing use permits for general operations and maintenance. The new shrouded wind turbine design is also known as a mixer-ejector wind turbine (MEWT) technology, but is referred to as a shrouded turbine throughout this document. The shrouded turbine consists of a foundation, tower, and turbine at the top of the tower. The turbine apparatus includes an electrical generator and wind rotor (blades) surrounded by two shrouds. Figure ES-2 provides a schematic of a shrouded turbine. The advantage of this design is that airflow approaching the gap between the shrouds is channeled directly to the rear of the turbine, resulting in reduced back pressure and, as a consequence, improved energy production over a standard turbine. In addition, the shrouded design is anticipated to reduce impacts on birds compared to the existing turbines in the project area, to be evaluated during the Initial Repower phase, as discussed below.

The Initial Repower is intended to support an ongoing, 3-year Avian Validation Study, under the guidance of the Alameda County Scientific Review Committee (SRC) and primarily funded by a PIER Grant from the CEC. The Avian Validation Study commenced in April 2012 in the form of a twice-weekly fatality survey of the existing 1980s–'90s era turbines and would evaluate the extent to which the shrouded turbines could reduce impacts on birds compared to the existing turbines. The Avian Validation Study is based on a BACI study design or methodology widely utilized by biologists to assess project effects. Under this study design, impact comparisons would be based on a randomized, statistically rigorous study framework that would evaluate the 40 shrouded turbines installed during the Initial Repower at locations interspersed throughout the existing facilities and compare their performance against 157 existing 1980s–'90s era turbines that would serve as a control group. To gather avian mortality data for the Avian Validation Study, avian validation staff would visit each wind turbine twice a week for the duration of the study.

The Applicant proposes to monitor the Initial Repower to determine the effect of the new shrouded turbine technology, consistent with the Avian Validation Study plan, for a period of 1 year following construction of the Initial Repower. As described in Chapter 2, *Project Description*, depending on the results of the study, possible additional Applicant-proposed measures to further assess and/or

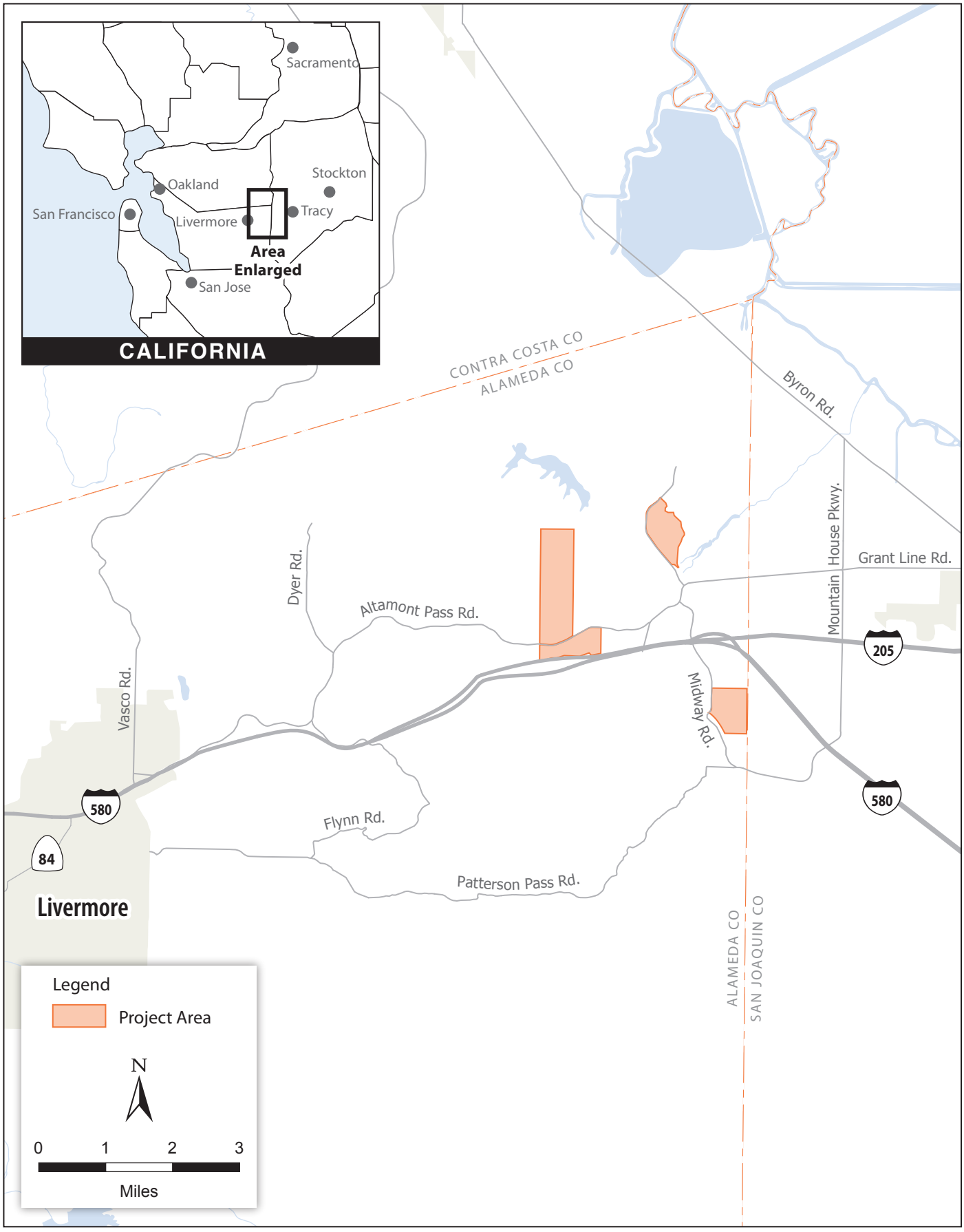

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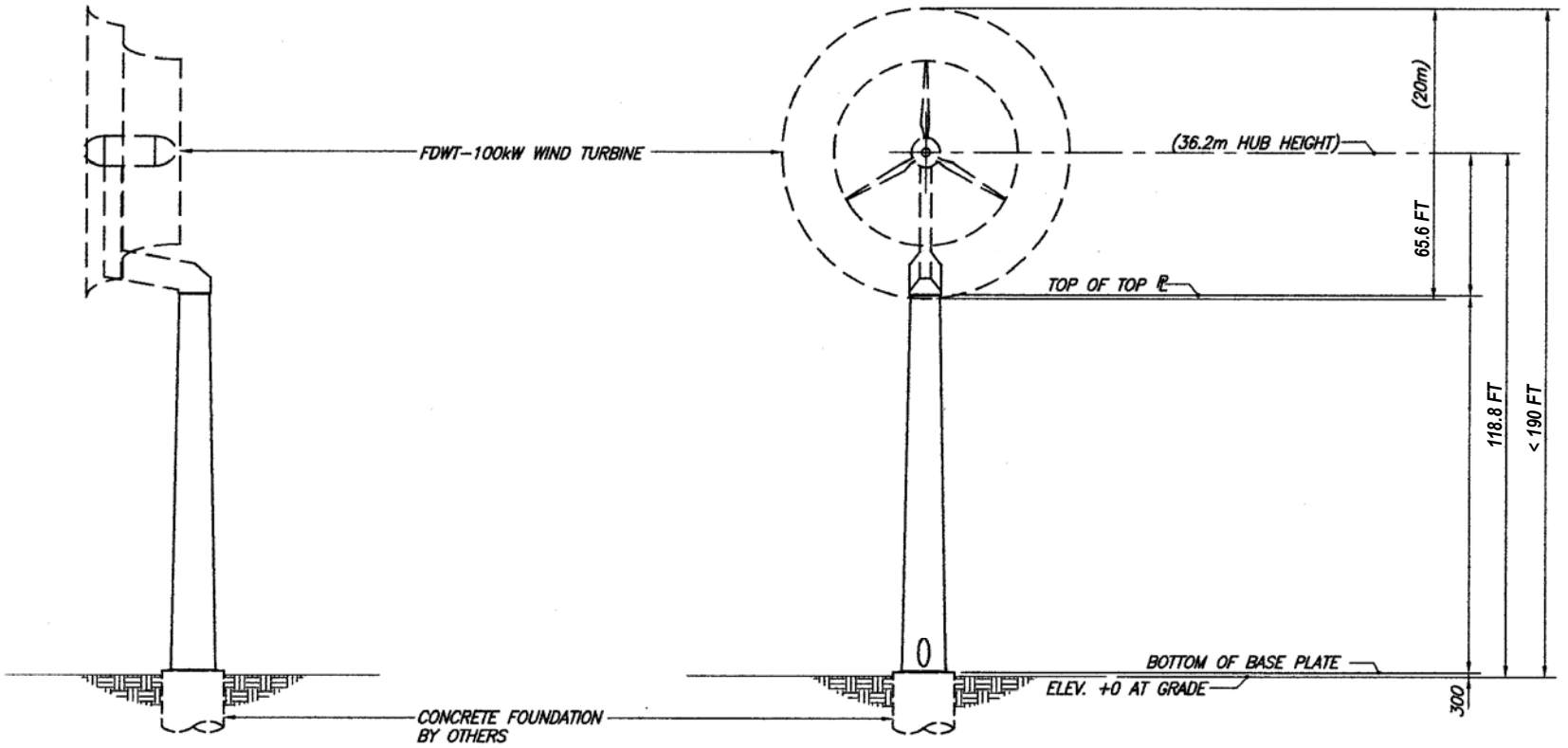
Figure ES-1
Project Location



Source: FloDesign

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Figure ES-2
100 kW Wind Turbine

mitigate avian mortality would involve two primary components: avian fatality monitoring, and if deemed necessary, winter seasonal shutdowns. Seasonal shutdowns would be implemented based on an assessment of the fatality rates, as compared to conventional turbine fatality rates (presented in detail in Section 3.2, *Biological Resources*), for each of the four focal species to be monitored: American kestrel, burrowing owl, red-tailed hawk, and golden eagle.

Because the Initial Repower would be located among existing turbines, no new access roads, substation facilities, interconnection lines, or operations and maintenance (O&M) facilities would be necessary. However, some of the existing internal access roads would require minor improvements, such as grading, adding aggregate base, and widening from an existing width of 10 feet to a width of 16 feet to accommodate construction traffic. In addition, new pads, new connections to the existing power collection system, and temporary laydown areas would be constructed for the shrouded turbines.

The Initial Repower facilities would include 40 shrouded wind turbines made up of several components. Either a free-standing, lattice steel tower with a sheathed covering or a monopole tower would support each shrouded turbine, which would be placed on one of three types of foundation: (1) a large spread footing (inverted "T"), (2) a single pier foundation, or (3) four individual steel reinforced concrete caissons. The type of foundation would depend on the specific soil conditions at the individual turbine sites as well as the type of tower selected. Each turbine would be less than 200 feet tall, have a maximum hub height of up to 120 feet and a maximum diameter of 70 feet, and would consist of a foundation, a tower, and the energy-generating turbine. The turbine includes three blades, the generator itself and its housing, the shroud (inner and outer rings) and the shroud support beams. Each turbine would be located within a graveled, level area approximately 40 feet in diameter to be used for turbine O&M activities.

The Initial Repower would use the existing electrical substation, switch yard, and O&M facilities as well as upgraded existing access roads. New connections to the existing electrical collection system would be required to connect the new turbines to the existing network. Upgrades to the power collection system to accommodate the new turbines would include 1 pad-mounted, 34.5 kilovolt (kV) transformer for every five new shrouded turbines and new cables from the base of the new shrouded turbines to the pad-mounted transformers and from there to the existing power collection system.

The Initial Repower would require four temporary laydown areas each occupying approximately 5 acres, to be used for storage of turbine components, construction equipment, job trailers, and construction materials. Upon completion of construction, the temporary laydown areas would be removed, and the sites would be revegetated. Each turbine location would require a separate assembly pad consisting of a graveled, level area approximately 110 feet wide by 110 feet long to support the construction equipment and to reduce dust. The assembly pad sites would be revegetated once they are removed.

Foundation removal and construction activities for the Initial Repower would include the demarcation of sensitive resource and construction area boundaries, grading and road repair as needed, preparation of the temporary staging areas, decommissioning (disassembly and removal) of existing wind turbines to provide space for the new turbines, construction of new turbine foundations, installation of the new power collection and communication components, installation of the shrouded turbines, system installation and testing, and final cleanup and restoration. Upon completion of construction, operation and maintenance activities would commence for the Initial Repower. Scheduled maintenance of each wind turbine would be conducted approximately every 6

months. On average, each turbine would require 10–20 hours of scheduled mechanical and electrical maintenance per year. O&M personnel would perform routine maintenance, including replacing lubricating fluids periodically, checking parts for wear, and recording data from data-recording chips in the anemometers. All roads, pads, and trenched areas would be inspected regularly and maintained to minimize erosion.

Foundation removal and construction activities are expected to commence in 2014 and continue over a 6- to 9-month period. Foundation removal, as well as any site restoration and reclamation activities associated with the existing turbine sites, would be conducted under the existing CUPs and would occur concurrent with construction activities for the new turbines.

After the expected useful life of the project (anticipated to be 30 years in the absence of any equipment upgrades) the Sand Hill facility would be decommissioned and the area would be revegetated. This would include the breakdown and removal of all turbine components, all facility structures, any other above-ground infrastructure, and underground structures (like foundations) to a reasonable depth, if not removed entirely. Grading would be performed to the extent needed to return the land surface to near natural conditions and reasonable drainage functions.

ES.2.2 Full Repower Overview

After completion of the Initial Repower and using the results of the Avian Validation Study, the Full Repower phase would decommission all existing 1980s–'90s-era turbines remaining after the Initial Repower and replace them with up to 300 shrouded turbines to provide up to 30 MW of additional generating capacity. The Full Repower would be subject to a separate conditional use permit (CUP). The Full Repower would occur within the same project area as the Initial Repower, but would also include removal of the existing 1980s–'90s-era turbines from a 68-acre parcel not utilized for the Initial Repower phase, and possible placement of new, shrouded turbines within that parcel. The Applicant intends to use the test results of the Avian Validation Study and turbine performance data to inform its approach to repowering the remainder of the existing turbines under the Full Repower phase.

Activities associated with repowering of the remaining 320–330 existing 1980s-'90s-era, old technology wind turbines are expected to be the same as those described above for the Initial Repower, although on a substantially larger scale. As with the Initial Repower, activities associated with the Full Repower would include decommissioning and removal of existing turbines and foundations, construction of new turbine foundations, power collection system and communication lines installation, turbine installation, and final cleanup and restoration of former turbine sites.

As with the Initial Repower, appropriate erosion and sediment control measures would be implemented for the Full Repower. The Full Repower would include the erection of additional meteorological (met) towers and may involve the construction of a new O&M building on one of the parcels. For purposes of programmatic analysis, it has been assumed that construction of the Full Repower would occur in a single phase.

A new O&M facility for the Full Repower could potentially involve disturbance of up to 5 acres of land that would include a building footprint, additional parking and storage space, a 25-foot-wide gravel surfaced access road, and gated access. This facility would involve construction of a building up to 30 feet in height, and would have an installed septic system to provide for on-site bathrooms.

ES.3 Project Objectives

The underlying purpose of the project is two-fold, first to facilitate an Avian Validation Study that proposes to test and demonstrate how a new wind energy generation technology would be compatible with avian species use in the project area, and second, after review of that study's results, to repower the project parcels with an economically viable wind energy project in a proven wind resource area. As described in Chapter 2, *Project Description*, Sand Hill Wind's fundamental objectives for this project are interrelated and are as follows.

- Through a phased permitting and development process, test and demonstrate a new wind energy generation technology in a proven wind resource area with a strong research record on wind-avian impacts in order to establish a scientifically-supported avian impact research record for this new technology.
- By March 2015, complete a BACI Avian Validation Study primarily funded by a PIER Grant from the CEC. The study would test whether 40 FloDesign shrouded wind turbines on the project parcels are safer to birds than existing open-blade turbines on the same parcels, and would help to develop predictive turbine siting tools for shrouded and open-blade turbines, with the following study objectives.
    - Compare avian wind turbine interactions between FloDesign shrouded turbines and multiple types of existing 1980s–'90s-era conventional wind turbines, at sites with known high avian fatality rates, during day and night and various wind and terrain conditions.
    - Compare avian fatality rates between FloDesign shrouded turbines and existing turbines at known high fatality sites, using a short search interval and a BACI design.
    - Explain variation in fatality rates by turbine design, flight patterns, and avian interactions with wind turbines (e.g., avoidance behaviors).
    - Develop field-tested behavior survey methods and data that inform avoidance rates for use in collision risk models and map-based collision hazard models, with the eventual goal of using model results to assist with wind turbine siting.
- Use information derived from the Avian Validation Study to evaluate potential refinements to the FloDesign shrouded turbine design and to inform FloDesign's repowering plans for the entire project area.
- Use information derived from the Avian Validation Study and project operations to inform a long-term solution for repowering the APWRA that reduces impacts on avian species and potentially reduces costs to ratepayers by using surplus transmission capacity at the Tesla substation and locating wind energy facilities close to Bay Area load centers.
- Develop an economically viable wind energy project through commercially available financing that would maximize renewable energy production and economic viability by initially replacing 4 MW of aging wind energy assets with newer and more efficient shrouded turbines placed in service no later than March 2015 to substantiate the Avian Validation Study, with subsequent repowering phases of up to an additional 30 MW anticipated in later years.

The following are secondary objectives of the Sand Hill Wind Project.

- Provide a comparison between the shrouded turbine design and current-generation, large-scale wind turbines, to determine if shrouded turbines would have a lower rate of avian mortality per MW of energy produced, as well as achieve greater energy efficiency and output.

- Minimize environmental impacts by using existing power transmission, access infrastructure and other existing ancillary facilities to the maximum extent feasible.
- Develop a viable source of clean energy to help California achieve its Renewables Portfolio Standard (RPS) with a low MW-to-acre disturbance ratio and without the need for large amounts of water.
- Offset the need for additional electricity generated from fossil fuels, and thereby assist the state in meeting its air quality goals and reducing greenhouse gas emissions.
- Contribute positively to economic activity during construction and operation.
- Increase local short-term and long-term employment opportunities.

ES.4 Project Impacts and Mitigation Measures

This EIR discusses the project's potential environmental effects, and provides mitigation measures to reduce any significant impacts to less-than-significant levels, where feasible. Environmental topic areas and resources considered and dismissed from further evaluation are distinguished from those considered in detail. Sections 3.1 through 3.12 provide comprehensive discussions of the regulatory and environmental setting for the environmental resources affected by the project, and identify project impacts and mitigation measures designed to reduce significant impacts. Table ES-1, *Summary of Impacts and Mitigation Measures*, summarizes the impacts and mitigation measures identified for the Initial Repower phase and also lists anticipated impacts and proposed mitigation measures for the Full Repower.

ES.4.1 Summary of Project Impacts

The project impacts are summarized in Table ES-1 (presented at the end of this summary). For potentially significant impacts, mitigation measures are identified where feasible to reduce the impact on the environmental resources to a less-than-significant-level. Chapter 3, *Impact Analysis*, provides a detailed discussion of impacts and mitigation measures for the Initial Repower, and a programmatic discussion of potential Full Repower impacts.

ES.4.2 Resources Dismissed from Further Consideration

As discussed in Chapter 3.0, the County determined during the Initial Study (IS) that the proposed project would have no impact on the following resources, which are therefore not analyzed in detail in this EIR.

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

ES.4.3 Impacts Analyzed in the Environmental Impact Report

Chapter 3 of this EIR discusses the potential environmental effects and mitigation measures of the Initial Repower in detail. Specifically, Sections 3.1 through 3.12 provide a full discussion of the environmental setting, project impacts, and mitigation measures designed to reduce significant impacts to less-than-significant levels, if feasible. Table ES-1, *Summary of Impacts and Mitigation Measures*, summarizes the impacts, mitigation measures, and residual impacts for the Initial Repower. Table ES-1 also provides a summary of the program-level evaluation of potential impacts, as well as any mitigation measures, for the Full Repower phase. Impacts associated with the following topics or resources are evaluated in detail in this EIR and are discussed further below.

- Aesthetics
- Agricultural and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology, Soils, and Paleontological Resources
- Greenhouse Gases
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Transportation/Traffic
- Utilities and Service Systems

ES.4.4 Significant and Unavoidable Impacts

Section 15126.2(b) of the State CEQA Guidelines requires that the EIR describe any significant impacts, including those that can be mitigated but not reduced to less-than-significant levels. The following environmental impacts, also summarized in Table ES-1, were determined to be significant and unavoidable.

Aesthetics

Initial Repower

Impact AESTH-2: Have a substantial adverse effect on a scenic vista

Impact AESTH-3: Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway

Impact AESTH-4: Substantially degrade the existing visual character or quality of the site and its surroundings

Full Repower

Impact AESTH-2[F]: Have a substantial adverse effect on a scenic vista

Impact AESTH-3[F]: Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway

Impact AESTH-4[F]: Substantially degrade the existing visual character or quality of the site and its surroundings

Air Quality

Initial Repower

Impact AQ-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors), due to high levels of NOx emissions during the construction period

Full Repower

Impact AQ-3[F]: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors), due to high levels of NOx emissions during the construction period

Biological Resources

Initial Repower

Impact BIO-11: Operation of the proposed project could have direct impacts on special-status avian species

Full Repower

Impact BIO-11[F]: Operation of the proposed project could have direct impacts on special-status avian species

Greenhouse Gases

Initial Repower

Impact GHG-1: Generate GHG emissions, either directly or indirectly, that may have a temporary, construction-related significant impact on the environment

Full Repower

Impact GHG-1[F]: Generate GHG emissions, either directly or indirectly, that may have a temporary, construction-related significant impact on the environment

Transportation/Traffic

Initial Repower

Impact TRA-1: Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit, due to construction traffic on local routes

Full Repower

Impact TRA-1[F]: Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit , due to construction traffic on regional route I-580/I-205 in project vicinity and construction traffic on local routes

Impact TRA-2[F]: Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways, during construction

Impact TRA-4[F]: Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment), due to construction-related traffic

Impact TRA-6[F]: Conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities, during construction

ES.4.5 Less than Significant with Mitigation

The analysis of project impacts indicates that significant impacts on the following resources would be less than significant after mitigation is implemented.

Aesthetics

Initial Repower

Impact AESTH-1: Temporary visual impacts caused by construction activities

Full Repower

Impact AESTH-1[F]: Temporary visual impacts caused by construction activities

Impact AESTH-5[F]: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area

Air Quality

Initial Repower

Impact AQ-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation for construction-related local fugitive dust emissions

Full Repower

Impact AQ-2[F]: Violate any air quality standard or contribute substantially to an existing or projected air quality violation for construction-related local fugitive dust emissions

Biological Resources

Initial Repower

Impact BIO-1: Project construction could have direct or indirect impacts on special-status plants

Impact BIO-2: Construction of the proposed project has the potential to directly or indirectly affect sensitive natural communities

Impact BIO-3: Construction of the proposed project has the potential to affect wetlands and other waters of the United States

Impact BIO-4: Potential loss or disturbance of vernal pool fairy shrimp, longhorn fairy shrimp, and vernal pool tadpole shrimp and their habitat

Impact BIO-5: Potential disturbance or mortality of and loss of suitable habitat for California tiger salamander and California red-legged frog

Impact BIO-6: Potential disturbance or mortality of and loss of suitable habitat for Pacific pond turtle

Impact BIO-7: Potential disturbance or mortality of and loss of suitable habitat for Blainsville's horned lizard, Alameda whipsnake, and San Joaquin coachwhip

Impact BIO-8: Potential construction-related disturbance or mortality of special-status and non-special-status migratory birds

Impact BIO-9: Permanent and temporary loss of foraging habitat for Swainson's hawk, western burrowing owl, and other special-status and non-special-status birds

Impact BIO-10: Potential injury or mortality of and loss of habitat for San Joaquin kit fox and American badger

Full Repower

Impact BIO-1[F]: Project construction could have direct or indirect impacts on special-status plants

Impact BIO-2[F]: Construction of the proposed project has the potential to directly or indirectly affect sensitive natural communities

Impact BIO-3[F]: Construction of the proposed project has the potential to affect wetlands and other waters of the United States

Impact BIO-4[F]: Potential disturbance of vernal pool fairy shrimp, longhorn fairy shrimp, and vernal pool tadpole shrimp and their habitat

Impact BIO-5[F]: Potential disturbance or mortality of and loss of suitable habitat for California tiger salamander and California red-legged frog

Impact BIO-6[F]: Potential disturbance or mortality of and loss of suitable habitat for Pacific pond turtle

Impact BIO-7[F]: Potential disturbance or mortality of and loss of suitable habitat for Blainville's horned lizard, Alameda whipsnake, and San Joaquin coachwhip

Impact BIO-8[F]: Potential construction-related disturbance or mortality of special-status and non-special-status migratory birds

Impact BIO-9[F]: Permanent and temporary loss of foraging habitat for Swainson's hawk, western burrowing owl, and other special-status and non-special-status birds

Impact BIO-10[F]: Potential injury or mortality of and loss of habitat for San Joaquin kit fox and American badger

Cultural Resources

Initial Repower

Impact CUL-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5

Impact CUL-3: Disturb any human remains, including those interred outside of formal cemeteries

Full Repower

Impact CUL-2[F]: Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5

Impact CUL-3[F]: Disturb any human remains, including those interred outside of formal cemeteries

Geology, Soils, and Paleontological Resources

Initial Repower

Impact GEO-1: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death as a result of rupture of a known fault

Impact GEO-2: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death as a result of strong seismic ground shaking

Impact GEO-3: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death as a result of seismic-related ground failure, including liquefaction and landslides

Impact GEO-5: Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property

Impact GEO-6: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature

Full Repower

Impact GEO-1[F]: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death as a result of rupture of a known fault

Impact GEO-2[F]: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death as a result of strong seismic ground shaking

Impact GEO-3[F]: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death as a result of seismic-related ground failure, including liquefaction and landslides

Impact GEO-5[F]: Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property

Impact GEO-6[F]: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature

Hydrology and Water Quality

Initial Repower

Impact WQ-1: Violate any water quality standards or waste discharge requirements, due to earth disturbing activities during construction

Impact WQ-3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite

Impact WQ-4: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite

Impact WQ-5: Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff

Impact WQ-6: Otherwise substantially degrade water quality during construction

Full Repower

Impact WQ-1[F]: Violate any water quality standards or waste discharge requirements, due to earth disturbing activities during construction

Impact WQ-3[F]: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite

Impact WQ-4[F]: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite

Impact WQ-5[F]: Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff

Impact WQ-6[F]: Otherwise substantially degrade water quality during construction

Noise

Initial Repower

Impact NOI-4: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project, due to construction activities

Full Repower

Impact NOI-1[F]: Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies, due to wind turbine noise

Impact NOI-3[F]: Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project, due to wind turbine noise

Impact NOI-4[F]: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project, due to construction activities

Transportation/Traffic

Initial Repower

Impact TRA-1: Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit due to construction traffic on regional routes

Impact TRA-2: Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways due to construction-related truck trips

Impact TRA-4: Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) , due to the presence of slow-moving trucks during construction

Impact TRA-5: Result in inadequate emergency access, due to the presence of slow-moving trucks during construction

Impact TRA-6: Conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities, due to short-term disruption of proposed bicycle routes and safety concerns for bicyclists during construction

Full Repower

Impact TRA-5[F]: Result in inadequate emergency access , due to the presence of slow-moving trucks during construction

ES.4.6 Less than Significant Impacts

The analysis of project impacts indicates that the following resources would have less-than-significant impacts on one or more issues.

Aesthetics

Initial Repower

Impact AESTH-5: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area

Full Repower

Impact AESTH-5[F]: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area

Agricultural and Forestry Resources

Initial Repower

Impact AG-5: Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to nonagricultural use

Full Repower

Impact AG-5[F]: Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to nonagricultural use

Air Quality

Initial Repower

Impact AQ-1: Conflict with or obstruct implementation of the applicable air quality plan

Impact AQ-4: Expose sensitive receptors to substantial pollutant concentrations

Impact AQ-5: Create objectionable odors affecting a substantial number of people

Full Repower

Impact AQ-1[F]: Conflict with or obstruct implementation of the applicable air quality plan

Impact AQ-4[F]: Expose sensitive receptors to substantial pollutant concentrations

Impact AQ-5[F]: Create objectionable odors affecting a substantial number of people

Biological Resources

Initial Repower

Impact BIO-12: Operation of the proposed project could have direct impacts on special-status bat species

Full Repower

Impact BIO-12[F]: Operation of the proposed project could have direct impacts on special-status bat species

Geology, Soils and Paleontological Resources

Initial Repower

Impact GEO-4: Result in substantial temporary, construction-related soil erosion or the loss of topsoil

Full Repower

Impact GEO-4[F]: Result in substantial temporary, construction-related soil erosion or the loss of topsoil

Impact GEO-7[F]: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater

Greenhouse Gases

Initial Repower

Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs

Full Repower

Impact GHG-2[F]: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs

Hazards and Hazardous Materials

Initial Repower

Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

Impact HAZ-2: 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

Impact HAZ-7: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan during construction

Impact HAZ-8: Expose people or structures 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

Impact HAZ-9: During normal operation, the effects of bending and stress on rotor blades over time could lead to blade failure and become a potential blade throw hazard

Impact HAZ-10: Because of their large size and proposed location, the proposed turbines have the potential to interfere with microwave, radar, and communications signals and be a hazard to public safety

Full Repower

Impact HAZ-1[F]: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

Impact HAZ-2[F]: 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

Impact HAZ-7[F]: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan during construction

Impact HAZ-8[F]: Expose people or structures 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

Impact HAZ-9[F]: During normal operation, the effects of bending and stress on rotor blades over time could lead to blade failure and become a potential blade throw hazard

Impact HAZ-10[F]: Because of their large size and proposed location, the proposed turbines have the potential to interfere with microwave, radar, and communications signals and be a hazard to public safety

Hydrology and Water Quality

Initial Repower

Impact WQ-2: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)

Full Repower

Impact WQ-2[F]: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)

Noise

Initial Repower

Impact NOI-1: Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies

Impact NOI-2: Expose persons to or generate excessive groundborne vibration or groundborne noise levels during construction

Impact NOI-3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project

Full Repower

Impact NOI-2[F]: Expose persons to or generate excessive groundborne vibration or groundborne noise levels during construction

Transportation/Traffic

Initial Repower

Impact TRA-1: Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit, during Initial Repower operations

Impact TRA-2: Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways, due to the low volume of construction-related worker commutes and operations-related traffic

Full Repower

Impact TRA-2[F]: Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways during Full Repower operations

Impact TRA-2[F]: Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways due to the low volume of operations-related traffic

Utilities and Service Systems

Initial Repower

Impact UT-2: Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects

Impact UT-3: Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects

Impact UT-4: Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed

Impact UT-6: Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs during construction

Impact UT-7: Comply with federal, state, and local statutes and regulations related to solid waste

Full Repower

Impact UT-2[F]: Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects

Impact UT-3[F]: Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects

Impact UT-4[F]: Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed

Impact UT-5[F]: Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments

Impact UT-6[F]: Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs during construction

Impact UT-7[F]: Comply with federal, state, and local statutes and regulations related to solid waste

ES.4.7 No Impact

The analysis of project impacts indicates that for the following topic areas or resources, there would be no impact on one or more specific, focused issues or considerations.

Agricultural and Forestry Resources

Initial Repower

Impact AG-1: Convert prime farmland, unique farmland, or farmland of statewide importance (Farmland), as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use

Impact AG-2: Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract

Impact AG-3: Conflict with existing zoning for, or cause rezoning of forest land, timberland, or timberland zoned Timberland Production

Impact AG-4: Result in the loss of forest land or conversion of forest land to non-forest use

Impact AG-5: Involve other changes in the existing environment that, due to their location or nature, could result in conversion of forest land to non-forest use

Full Repower

Impact AG-1[F]: Convert prime farmland, unique farmland, or farmland of statewide importance (Farmland), as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use

Impact AG-2[F]: Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract

Impact AG-3[F]: Conflict with existing zoning for, or cause rezoning of forest land, timberland, or timberland zoned Timberland Production

Impact AG-4[F]: Result in the loss of forest land or conversion of forest land to non-forest use

Impact AG-5[F]: Involve other changes in the existing environment that, due to their location or nature, could result in conversion of forest land to non-forest use

Cultural Resources

Initial Repower

Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5

Full Repower

Impact CUL-1[F]: Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5

Hazards and Hazardous Materials

Initial Repower

Impact HAZ-3: Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school

Impact HAZ-4: Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment

Impact HAZ-5: Be located within an airport land use plan area or, where such a plan has not been adopted, be within 2 miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area

Impact HAZ-6: Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area

Full Repower

Impact HAZ-3[F]: Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school

Impact HAZ-4[F]: Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment

Impact HAZ-5[F]: Be located within an airport land use plan area or, where such a plan has not been adopted, be within 2 miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area

Impact HAZ-6[F]: Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area

Hydrology and Water Quality

Initial Repower

Impact WQ-7: Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map

Impact WQ-8: Place within a 100-year flood hazard area structures that would impede or redirect flood flows

Impact WQ-9: Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam

Impact WQ-10: Contribute to inundation by seiche, tsunami, or mudflow

Full Repower

Impact WQ-7[F]: Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map

Impact WQ-8[F]: Place within a 100-year flood hazard area structures that would impede or redirect flood flows

Impact WQ-9[F]: Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam

Impact WQ-10[F]: Contribute to inundation by seiche, tsunami, or mudflow

Noise

Initial Repower

Impact NOI-5: Be located within an airport land use plan area, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels

Impact NOI-6: Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels

Full Repower

Impact NOI-5[F]: Be located within an airport land use plan area, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels

Impact NOI-6[F]: Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels

Transportation/Traffic

Initial Repower

Impact TRA-3: Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks

Full Repower

Impact TRA-3[F]: Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks

Utilities and Service Systems

Initial Repower

Impact UT-1: Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board

Impact UT-5: Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments

Full Repower

Impact UT-1[F]: Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board

ES.5 Project Alternatives

Chapter 4, *Alternatives Analysis*, provides an evaluation of alternatives that would avoid or lessen significant effects of the project and that would feasibly attain the fundamental objective and most of the secondary project objectives. These alternatives are described below.

No Project Alternative

The project area currently includes approximately 400 wind energy turbines. The project area also includes associated electricity collection and transmission infrastructure, access roads, and support facilities. Under the No Project Alternative, the proposed Initial and Full Repower phases would not be built. The existing wind turbines are assumed to continue to operate, under the conditions of the 2007 Settlement Agreement, until the existing use permits expire in 2018. At that point, the existing facilities would be decommissioned. The area is expected to be repowered—using conventional, open-blade, utility-scale wind turbines and no shrouded turbines—by another wind project in the near future. Such repowering is foreseeable because the site is located within one of the most significant resource areas for wind energy development in California and the applicable Alameda County general plan and zoning designations allow wind development on the site.

Alternative 1 – Reduced Avian Validation Study

Under this alternative, the Initial Repower would consist of only 10 shrouded turbines, rather than 40 (representing 1 MW total capacity, instead of 4 MW). The Full Repower would repower to the full 34 MW of capacity at the project site with shrouded FloDesign turbines through subsequent development phases. Alternative 1 would meet the fundamental project objective of conducting the Avian Validation Study, but to a lesser degree than the Initial Repower because, while the smaller sample size of 10 shrouded turbines would serve to indicate the avian effects of the shrouded turbines, it would not be large enough to provide robust, conclusive statistical results.

Alternative 2 – Conventional Turbines

Under this alternative, the initial development phase of the project would proceed as proposed, with a repower of 4 MW with 40 shrouded FloDesign turbines. However, potential future repowering of the remainder of the project site would use up to 15 conventional, open-blade, utility-scale wind turbines instead of shrouded FloDesign turbines. Potential turbine options for the subsequent development phases could include commercially-available 1.5 MW GE turbines or 2.3 MW Siemens turbines or other utility-scale open-bladed turbines within this range. Based on established agreements with the USFWS and the CDFW, the maximum nameplate generation capacity is assumed to be limited to the same capacity as exists in the project area, 25.5 MW.

Alternative 3 – High Risk Avoidance

Under this alternative, the first 40 turbines would be developed as proposed, in an Initial Repower phase in the same manner as the project. Additional future repowering phases would locate up to 300 shrouded FloDesign turbines to avoid existing turbine locations exhibiting a high risk of avian impacts at a rating of 8 or higher by the APWRA SRC consistent with the "Hazardous Rating Scale of the SRC," SRC document P69 (Final 2-1-08).

Alternative 4 – Seasonal Avoidance

Under this alternative, the first 40 turbines would be developed as proposed, and, along with additional future repowering phases with shrouded FloDesign turbines, would be shut down annually from November 1 through February 15.

Environmentally Superior Alternative

Section 15126.6(e)(2) of the State CEQA Guidelines requires an EIR to identify an environmentally superior alternative. If the No Project Alternative is found to be the environmentally superior alternative, the EIR also must identify an environmentally superior alternative from among the other action alternatives. In general, the environmentally superior alternative is that alternative determined to have the least adverse impact on the environment. For this project, the No Project Alternative was not found to be environmentally superior.

In the case of the proposed project and alternatives, Alternative 1 was found to be the environmentally superior alternative. Alternative 1 differs from the proposed project and other alternatives primarily because the Initial Repower phase of this alternative would consist of only 10 shrouded turbines instead of 40.

The reduced scale and duration of construction activities associated with Alternative 1 compared to the proposed project and other alternatives, which all would entail installation of 40 turbines in the Initial Repower, lessens the potential for significant effects on Aesthetics; Air Quality; Geology, Soils, Paleontology; Greenhouse Gases; Noise; and Transportation/Traffic. These resources would undergo less severe effects relative to the proposed project and other alternatives because there would be fewer turbines visible to sensitive viewers; fewer turbines would generate less operational noise. Additionally, the smaller area of disturbance and shorter duration associated with construction of only 10 new turbines under Alternative 1 would result in lower levels of air pollutant and greenhouse gas (GHG) emissions; decreased potential risk related to geologic hazards associated with construction and potential to disturb paleontological resources; lower noise level changes associated with construction-generated noise; reduced number of truck, vendor, and worker vehicle trips on local county roads that could affect road performance and safety for motorists and bicyclists and access for emergency providers. The effects of the Full Repower on these resources under Alternative 1 would be similar to the proposed project and other alternatives.

ES.6 Potential Areas of Controversy/Issues to be Resolved

ES.6.1 Areas of Controversy

Areas of controversy were identified through written agency and public comments received during the project scoping period. Public comments received during the scoping period are provided in Appendix A. The following issues were identified as areas of concern during scoping and are addressed in the appropriate sections of Chapter 3, *Impact Analysis*.

- Biological resources
- Cultural resources
- Hydrology and site drainage
- Encroachment on California Department of Water Resources right of way
- Transportation on public roadways
- Geology and soils

ES.6.2 Issues to Be Resolved

Section 15123(b)(3) of the State CEQA Guidelines requires that an EIR contain issues to be resolved, which includes the choice among alternatives and whether or how to mitigate significant impacts. The County of Alameda EBZA, which is required to certify the EIR prior to approving or denying the proposed project, will need to determine whether:

- The EIR adequately describes the project's environmental impacts.
- The EIR's recommended mitigation measures should be adopted or modified.
- Additional mitigation measures should be employed.

ES.7 How to Comment on This Draft EIR

This draft EIR, incorporating public and agency responses to the Initial Study/Notice of Preparation (IS/NOP), is being circulated for review and comment by appropriate agencies, as well as organizations and individuals who have requested notification. In accordance with Section 15205(d) of the State CEQA Guidelines, the County has scheduled a 45-day public review period for the draft EIR, ending at 5:00 p.m. on December 23, 2013. Within that 45-day period, the County will hold one public hearing to request comments on the draft EIR, at the following time and place.

Thursday, December 19, 2013 at 1:30 p.m.

City of Pleasanton Council Chambers
200 Old Bernal Road, Pleasanton, California

This draft EIR is available for review at the Alameda County website (www.acgov.org/cda/planning—select "Pending Land Use Projects" "Current Development Projects" "Wind Turbine Projects" and "Sand Hill Wind Project"), and at the website of the Altamont Pass SRC (www.altamontsrc.org). Copies will also be available for viewing during normal business hours (8:30 a.m. to 5:00 p.m.), Monday through Friday, at the Alameda County Community Development Agency, Planning Department, located at 224 West Winton Avenue, Room 111, Hayward, California, 94544. Comments on the draft EIR may be submitted to the Planning Department at that address, to the attention of Sandra Rivera, Assistant Planning Director.

Following the close of the public review period for the draft EIR, the County will consider the comments it receives. The County will prepare a final EIR, incorporating all comments received during the public comment period, for consideration by the EBZA, tentatively scheduled for March 27, 2014. As required by CEQA (Section 21092.5), the final EIR, including written responses to the comments submitted by public agencies, will be available at least 10 days prior to certification. The EBZA will consider the final EIR and the project, as well as the entire administrative record, before deciding whether to approve the Applicant's requested CUP for the Initial Repower.

Table ES-1. Summary of Impacts and Mitigation Measures

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Aesthetics			
Initial Repower			
Impact AESTH-1: Temporary visual impacts caused by construction activities	Significant	Mitigation Measure AESTH-1: Limit construction to daylight hours	Less Than Significant
Impact AESTH-2: Have a substantial adverse effect on a scenic vista	Significant		Significant and Unavoidable
Impact AESTH-3: Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway	Significant		Significant and Unavoidable
Impact AESTH-4: Substantially degrade the existing visual character or quality of the site and its surroundings	Significant		Significant and Unavoidable
Impact AESTH-5: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area	Less Than Significant	None Required	
Full Repower			
Impact AESTH-1[F]: Temporary visual impacts caused by construction activities	Significant	Mitigation Measure AESTH-1: Limit construction to daylight hours	Less Than Significant
Impact AESTH-2[F]: Have a substantial adverse effect on a scenic vista	Significant		Significant and Unavoidable
Impact AESTH-3[F]: Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway	Significant		Significant and Unavoidable
Impact AESTH-4[F]: Substantially degrade the existing visual character or quality of the site and its surroundings	Significant		Significant and Unavoidable
Impact AESTH-5[F]: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area	Significant	Mitigation Measure AESTH-5[F]: Minimize exterior and interior lighting fixtures to those needed to ensure safety and security	Less Than Significant

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Agricultural and Forestry Resources			
Initial Repower			
Impact AG-1: Convert prime farmland, unique farmland, or farmland of statewide importance (Farmland), as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to nonagricultural use	No Impact	None Required	
Impact AG-2: Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract	No Impact	None Required	
Impact AG-3: Conflict with existing zoning for, or cause rezoning of forest land, timberland, or timberland zoned Timberland Production	No Impact	None Required	
Impact AG-4: Result in the loss of forest land or conversion of forest land to non-forest use	No Impact	None Required	
Impact AG-5: Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use (less-than-significant impact on farmland conversion; no impact on forest land	Less Than Significant Impact on Farmland Conversion; No Impact on Forest Land	None Required	
Full Repower			
Impact AG-1[F]: Convert prime farmland, unique farmland, or farmland of statewide importance (Farmland), as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to nonagricultural use	No Impact	None Required	
Impact AG-2[F]: Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract	No Impact	None Required	

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Impact AG-3[F]: Conflict with existing zoning for, or cause rezoning of forest land, timberland, or timberland zoned Timberland Production	No Impact	None Required	
Impact AG-4[F]: Result in the loss of forest land or conversion of forest land to non-forest use	No Impact	None Required	
Impact AG-5[F]: Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use	Less Than Significant Impact on Farmland Conversion; No Impact on Forest Land	None Required	
Air Quality			
Initial Repower			
Impact AQ-1: Conflict with or obstruct implementation of the applicable air quality plan	Less Than Significant	None required	
Impact AQ-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation	Significant	Mitigation Measure AQ-2: Implement basic BAAQMD construction mitigation measures	Less Than Significant
Impact AQ-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)	Significant	Mitigation Measure AQ-2: Implement basic BAAQMD construction mitigation measures Mitigation Measure AQ-3a: Ensure off-road equipment emission standards certification Mitigation Measure AQ-3b: Implement BAAQMD's additional construction mitigation measures	Significant and Unavoidable
Impact AQ-4: Expose sensitive receptors to substantial pollutant concentrations	Less Than Significant	None Required	
Impact AQ-5: Create objectionable odors affecting a substantial number of people	Less Than Significant	None required	
Full Repower			
Impact AQ-1[F]: Conflict with or obstruct implementation of the applicable air quality plan	Less Than Significant	None Required	

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Impact AQ-2[F]: Violate any air quality standard or contribute substantially to an existing or projected air quality violation	Significant	Mitigation Measure AQ-2: Implement basic BAAQMD construction mitigation measures	Less Than Significant
Impact AQ-3[F]: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)	Significant	Mitigation Measure AQ-2: Implement basic BAAQMD construction mitigation measures Mitigation Measure AQ-3a: Ensure off-road equipment emission standards certification Mitigation Measure AQ-3b: Implement BAAQMD's additional construction mitigation measures	Significant and Unavoidable
Impact AQ-4[F]: Expose sensitive receptors to substantial pollutant concentrations	Less Than Significant	None Required	
Impact AQ-5[F]: Create objectionable odors affecting a substantial number of people	Less Than Significant	None Required	
Biological Resources			
Initial Repower			
Impact BIO-1: Project construction could have direct or indirect impacts on special-status plants	Significant	Mitigation Measure BIO-1a: Conduct surveys to determine the presence or absence of special-status plant species Mitigation Measure BIO-1b: Avoid and minimize impacts on special-status plant species by establishing activity exclusion zones, where feasible Mitigation Measure BIO-1c: Compensate for impacts on special-status plant species Mitigation Measure BIO-1d: Implement general avoidance and minimization measures from the Conservation Strategy Mitigation Measure BIO-1e: Retain a biological monitor during ground-disturbing activities within environmentally-sensitive habitat areas Mitigation Measure BIO-1f: Restore disturbed annual grasslands	Less Than Significant

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Impact BIO-2: Construction of the proposed project has the potential to directly or indirectly affect sensitive natural communities	Significant	Mitigation Measure BIO-1d: Implement general avoidance and minimization measures from the Conservation Strategy Mitigation Measure BIO-1e: Retain a biological monitor during ground-disturbing activities within environmentally-sensitive habitat areas Mitigation Measure BIO-1f: Restore disturbed annual grasslands Mitigation Measure BIO-2: Compensate for the loss of alkali meadow habitat	Less Than Significant
Impact BIO-3: Construction of the proposed project has the potential to affect wetlands and other waters of the United States	Significant	Mitigation Measure BIO-1d: Implement general avoidance and minimization measures from the Conservation Strategy Mitigation Measure BIO-1e: Retain a biological monitor during ground-disturbing activities within environmentally-sensitive habitat areas Mitigation Measure BIO-3a: Identify and delineate waters of the United States and waters of the State (including wetlands) Mitigation Measure BIO-3b: Avoid and minimize disturbance of waters of the United States, including wetland communities Mitigation Measure BIO-3c: Compensate for unavoidable impacts on waters of the United States	Less Than Significant
Impact BIO-4: Potential disturbance of vernal pool fairy shrimp, longhorn fairy shrimp, and vernal pool tadpole shrimp and their habitat	Significant	Mitigation Measure BIO-1d: Implement general avoidance and minimization measures from the Conservation Strategy Mitigation Measure BIO-1e: Retain a biological monitor during ground-disturbing activities within environmentally-sensitive habitat areas Mitigation Measure BIO-1f: Restore disturbed annual grasslands Mitigation Measure BIO-3b: Avoid and minimize disturbance of waters of the United States, including wetland communities	Less Than Significant

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
		Mitigation Measure BIO-4: Implement measures to avoid, minimize, and mitigate for potential impacts on longhorn fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp	
Impact BIO-5: Potential disturbance or mortality of and loss of suitable habitat for California tiger salamander and California red-legged frog	Significant	Mitigation Measure BIO-1d: Implement general avoidance and minimization measures from the Conservation Strategy Mitigation Measure BIO-1e: Retain a biological monitor during ground-disturbing activities within environmentally-sensitive habitat areas Mitigation Measure BIO-1f: Restore disturbed annual grasslands Mitigation Measure BIO-3b: Avoid and minimize disturbance of waters of the United States, including wetland communities Mitigation Measure BIO-5: Implement measures to avoid, minimize, and mitigate for potential impacts on California tiger salamander and California red-legged frog	Less than Significant
Impact BIO-6: Potential disturbance or mortality of and loss of suitable habitat for Pacific pond turtle	Significant	Mitigation Measure BIO-1d: Implement general avoidance and minimization measures from the Conservation Strategy Mitigation Measure BIO-1e: Retain a biological monitor during ground-disturbing activities within environmentally-sensitive habitat areas Mitigation Measure BIO-1f: Restore disturbed annual grasslands Mitigation Measure BIO-3b: Avoid and minimize disturbance of waters of the United States, including wetland communities Mitigation Measure BIO-6: Conduct preconstruction surveys for Pacific pond turtle and monitor construction activities if turtles are observed	Less Than Significant

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Impact BIO-7: Potential disturbance or mortality of and loss of suitable habitat for Blainville's horned lizard, Alameda whipsnake, and San Joaquin coachwhip	Significant	Mitigation Measure BIO-1d: Implement general avoidance and minimization measures from the Conservation Strategy Mitigation Measure BIO-1e: Retain a biological monitor during ground-disturbing activities within environmentally-sensitive habitat areas Mitigation Measure BIO-1f: Restore disturbed annual grasslands Mitigation Measure BIO-7: Implement measures to avoid, minimize, and mitigate for potential impacts on Blainville's horned lizard, Alameda whipsnake, and San Joaquin coachwhip	Less Than Significant
Impact BIO-8: Potential construction-related disturbance or mortality of special-status and non-special-status migratory birds	Significant	Mitigation Measure BIO-1d: Implement general avoidance and minimization measures from the Conservation Strategy Mitigation Measure BIO-1e: Retain a biological monitor during ground-disturbing activities within environmentally-sensitive habitat areas Mitigation Measure BIO-1f: Restore disturbed annual grasslands Mitigation Measure BIO-8a: Implement measures to avoid and minimize potential impacts on special-status and non-special-status nesting birds Mitigation Measure BIO-8b: Implement measures to avoid and minimize potential impacts on western burrowing owl	Less Than Significant
Impact BIO-9: Permanent and temporary loss of foraging habitat for Swainson's hawk, western burrowing owl, and other special-status and non-special-status birds	Significant	Mitigation Measure BIO-1f: Restore disturbed annual grasslands Mitigation Measure BIO-9: Compensate for the permanent loss of foraging habitat for Swainson's hawk, western burrowing owl, and other special-status and non-special-status birds	Less Than Significant

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Impact BIO-10: Potential injury or mortality of and loss of habitat for San Joaquin kit fox and American badger	Significant	Mitigation Measure BIO-1d: Implement general avoidance and minimization measures from the Conservation Strategy Mitigation Measure BIO-1e: Retain a biological monitor during ground-disturbing activities within environmentally-sensitive habitat areas Mitigation Measure BIO-1f: Restore disturbed annual grasslands Mitigation Measure BIO-10: Implement measures to avoid, minimize, and mitigate for potential impacts on San Joaquin kit fox and American badger	Less Than Significant
Impact BIO-11: Operation of the proposed project could have direct impacts on special-status avian species	Significant	Applicant Proposed Measure 1: Conduct avian and bat fatality monitoring Applicant Proposed Measure 2: Implement seasonal shutdowns Mitigation Measure BIO-11a: Incorporate avian-safe practices into design of turbine-related infrastructure Mitigation Measure BIO-11b: Compensate for the loss of burrowing owl Mitigation Measure BIO-11c: Mitigate for the loss of individual golden eagles by retrofitting electrical facilities	Significant and Unavoidable
Impact BIO-12: Operation of the proposed project could have direct impacts on special-status bat species	Less Than Significant	None Required	
Full Repower			
Impact BIO-1[F]: Project construction could have direct or indirect impacts on special-status plants	Significant	Mitigation Measure BIO-1a: Conduct surveys to determine the presence or absence of special-status plant species Mitigation Measure BIO-1b: Avoid and minimize impacts on special-status plant species by establishing activity exclusion zones, where feasible Mitigation Measure BIO-1c: Compensate for impacts on special-status plant species	Less Than Significant

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
		Mitigation Measure BIO-1d: Implement general avoidance and minimization measures from the Conservation Strategy Mitigation Measure BIO-1e: Retain a biological monitor during ground-disturbing activities within environmentally-sensitive habitat areas Mitigation Measure BIO-1f: Restore disturbed annual grasslands	
Impact BIO-2[F]: Construction of the proposed project has the potential to directly or indirectly affect sensitive natural communities	Significant	Mitigation Measure BIO-1d: Implement general avoidance and minimization measures from the Conservation Strategy Mitigation Measure BIO-1e: Retain a biological monitor during ground-disturbing activities within environmentally-sensitive habitat areas Mitigation Measure BIO-1f: Restore disturbed annual grasslands Mitigation Measure BIO-2: Compensate for the loss of alkali meadow habitat	Less Than Significant
Impact BIO-3[F]: Construction of the proposed project has the potential to affect wetlands and other waters of the United States	Significant	Mitigation Measure BIO-1d: Implement general avoidance and minimization measures from the Conservation Strategy Mitigation Measure BIO-1e: Retain a biological monitor during ground-disturbing activities within environmentally-sensitive habitat areas Mitigation Measure BIO-3a: Identify and delineate waters of the United States and waters of the State (including wetlands) Mitigation Measure BIO-3b: Avoid and minimize disturbance of waters of the United States, including wetland communities Mitigation Measure BIO-3c: Compensate for unavoidable impacts on waters of the United States	Less Than Significant

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Impact BIO-4[F]: Potential disturbance of vernal pool fairy shrimp, longhorn fairy shrimp, and vernal pool tadpole shrimp and their habitat	Significant	Mitigation Measure BIO-1d: Implement general avoidance and minimization measures from the Conservation Strategy Mitigation Measure BIO-1e: Retain a biological monitor during ground-disturbing activities within environmentally-sensitive habitat areas Mitigation Measure BIO-1f: Restore disturbed annual grasslands Mitigation Measure BIO-3b: Avoid and minimize disturbance of waters of the United States, including wetland communities Mitigation Measure BIO-4: Implement measures to avoid, minimize, and mitigate for potential impacts on longhorn fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp	Less Than Significant
Impact BIO-5[F]: Potential disturbance or mortality of and loss of suitable habitat for California tiger salamander and California red-legged frog	Significant	Mitigation Measure BIO-1d: Implement general avoidance and minimization measures from the Conservation Strategy Mitigation Measure BIO-1e: Retain a biological monitor during ground-disturbing activities within environmentally-sensitive habitat areas Mitigation Measure BIO-1f: Restore disturbed annual grasslands Mitigation Measure BIO-3b: Avoid and minimize disturbance of waters of the United States, including wetland communities Mitigation Measure BIO-5: Implement measures to avoid, minimize, and mitigate for potential impacts on California tiger salamander and California red-legged frog	Less Than Significant
Impact BIO-6[F]: Potential disturbance or mortality of and loss of suitable habitat for Pacific pond turtle	Significant	Mitigation Measure BIO-1d: Implement general avoidance and minimization measures from the Conservation Strategy	Less Than Significant

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
		Mitigation Measure BIO-1e: Retain a biological monitor during ground-disturbing activities within environmentally-sensitive habitat areas Mitigation Measure BIO-1f: Restore disturbed annual grasslands Mitigation Measure BIO-3b: Avoid and minimize disturbance of waters of the United States, including wetland communities Mitigation Measure BIO-6: Conduct preconstruction surveys for Pacific pond turtle and monitor construction activities if turtles are observed	
Impact BIO-7[F]: Potential disturbance or mortality of and loss of suitable habitat for Blainville's horned lizard, Alameda whipsnake, and San Joaquin coachwhip	Significant	Mitigation Measure BIO-1d: Implement general avoidance and minimization measures from the Conservation Strategy Mitigation Measure BIO-1e: Retain a biological monitor during ground-disturbing activities within environmentally-sensitive habitat areas Mitigation Measure BIO-1f: Restore disturbed annual grasslands Mitigation Measure BIO-7: Implement measures to avoid, minimize, and mitigate for potential impacts on Blainville's horned lizard, Alameda whipsnake, and San Joaquin coachwhip	Less Than Significant
Impact BIO-8[F]: Potential construction-related disturbance or mortality of special-status and non-special-status migratory birds	Significant	Mitigation Measure BIO-1d: Implement general avoidance and minimization measures from the Conservation Strategy Mitigation Measure BIO-1e: Retain a biological monitor during ground-disturbing activities within environmentally-sensitive habitat areas Mitigation Measure BIO-1f: Restore disturbed annual grasslands Mitigation Measure BIO-8a: Implement measures to avoid and minimize potential impacts on special-status and non-special-status nesting birds	Less Than Significant

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
		Mitigation Measure BIO-8b: Implement measures to avoid and minimize potential impacts on western burrowing owl	
Impact BIO-9[F]: Permanent and temporary loss of foraging habitat for Swainson's hawk, western burrowing owl, and other special-status and non-special-status birds	Significant	Mitigation Measure BIO-1f: Restore disturbed annual grasslands Mitigation Measure BIO-9: Compensate for the permanent loss of foraging habitat for Swainson's hawk, western burrowing owl, and other special-status and non-special-status birds	Less than Significant
Impact BIO-10[F]: Potential injury or mortality of and loss of habitat for San Joaquin kit fox and American badger	Significant	Mitigation Measure BIO-1d: Implement general avoidance and minimization measures from the Conservation Strategy Mitigation Measure BIO-1e: Retain a biological monitor during ground-disturbing activities within environmentally-sensitive habitat areas Mitigation Measure BIO-1f: Restore disturbed annual grasslands Mitigation Measure BIO-10: Implement measures to avoid, minimize, and mitigate for potential impacts on San Joaquin kit fox and American badger	Less Than Significant
Impact BIO-11[F]: Operation of the proposed project could have direct impacts on special-status avian species	Significant	Mitigation Measure BIO-11a: Incorporate avian-safe practices into design of turbine-related infrastructure Mitigation Measure BIO-11b: Compensate for the loss of burrowing owl Mitigation Measure BIO-11c: Mitigate for the loss of individual golden eagles by retrofitting electrical facilities Mitigation Measure BIO-11d: Implement additional measures to reduce Full Repower avian fatality rates	Significant and Unavoidable
Impact BIO-12[F]: Operation of the proposed project could have direct impacts on special-status bat species	Less Than Significant	None Required	

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Cultural Resources			
Initial Repower			
Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5	No Impact	None Required	
Impact CUL-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5	Significant	Mitigation Measure CUL-2: Stop work in case of accidental discovery of buried archeological resources	Less Than Significant
Impact CUL-3: Disturb any human remains, including those interred outside of formal cemeteries	Significant	Mitigation Measure CUL-3: Stop work in case of accidental discovery of buried human remains	Less Than Significant
Full Repower			
Impact CUL-1[F]: Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5	No Impact	None Required	
Impact CUL-2[F]: Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5	Significant	Mitigation Measure CUL-2: Stop work in case of accidental discovery of buried archeological resources	Less Than Significant
Impact CUL-3[F]: Disturb any human remains, including those interred outside of formal cemeteries	Significant	Mitigation Measure CUL-3: Stop work in case of accidental discovery of buried human remains	Less Than Significant
Geology, Soils, and Paleontological Resources			
Initial Repower			
Impact GEO-1: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death as a result of rupture of a known fault	Significant	Mitigation Measure GEO-1: Prepare a site-specific geotechnical report	Less Than Significant
Impact GEO-2: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death as a result of strong seismic ground shaking	Significant	Mitigation Measure GEO-1: Prepare a site-specific geotechnical report	Less Than Significant
Impact GEO-3: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death as a result of seismic-related ground failure, including liquefaction and landslides	Significant	Mitigation Measure GEO-1: Prepare a site-specific geotechnical report	Less Than Significant

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Impact GEO-4: Result in substantial soil erosion or the loss of topsoil	Less Than Significant	None Required	
Impact GEO-5: Be located on expansive soil creating substantial risks to life or property	Significant	Mitigation Measure GEO-1: Prepare a site-specific geotechnical report	Less Than Significant
Impact GEO-6: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	Significant	Mitigation Measure GEO-6a: Retain a qualified professional paleontologist to monitor significant ground-disturbing activities Mitigation Measure GEO-6b: Educate construction personnel in recognizing fossil material Mitigation Measure GEO-6c: Stop work if substantial fossil remains are encountered during construction	Less Than Significant
Full Repower			
Impact GEO-1[F]: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death as a result of rupture of a known fault	Significant	Mitigation Measure GEO-1: Prepare a site-specific geotechnical report	Less Than Significant
Impact GEO-2[F]: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death as a result of strong seismic ground shaking	Significant	Mitigation Measure GEO-1: Prepare a site-specific geotechnical report	Less Than Significant
Impact GEO-3[F]: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death as a result of seismic-related ground failure, including liquefaction and landslides	Significant	Mitigation Measure GEO-1: Prepare a site-specific geotechnical report	Less Than Significant
Impact GEO-4[F]: Result in substantial soil erosion or the loss of topsoil	Less Than Significant	None Required	
Impact GEO-5[F]: Be located on expansive soil creating substantial risks to life or property	Significant	Mitigation Measure GEO-1: Prepare a site-specific geotechnical report	Less Than Significant
Impact GEO-6[F]: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	Significant	Mitigation Measure GEO-6a: Retain a qualified professional paleontologist to monitor significant ground-disturbing activities Mitigation Measure GEO-6b: Educate construction personnel in recognizing fossil material	Less Than Significant

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
		Mitigation Measure GEO-6c: Stop work if substantial fossil remains are encountered during construction	
Impact GEO-7[F]: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater	Less Than Significant	None Required	
Greenhouse Gas Emissions			
Initial Repower			
Impact GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment	Significant for Construction	Mitigation Measure GHG-1: Implement BAAQMD BMPs for construction	Significant and Unavoidable
Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs	Less Than Significant	None Required	
Full Repower			
Impact GHG-1[F]: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment	Significant for Construction	Mitigation Measure GHG-1: Implement BAAQMD BMPs for construction	Significant and Unavoidable
Impact GHG-2[F]: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs	Less Than Significant	None Required	
Hazards and Hazardous Materials			
Initial Repower			
Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials	Less Than Significant	None Required	
Impact HAZ-2: 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	Less Than Significant	None Required	

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Impact HAZ-3: Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school	No Impact	None Required	
Impact HAZ-4: Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment	No Impact	None Required	
Impact HAZ-5: Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area	No Impact	None Required	
Impact HAZ-6: Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area	No Impact	None Required	
Impact HAZ-7: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan	Less Than Significant	None Required	
Impact HAZ-8: Expose people or structures 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	Less Than Significant	None Required	
Impact HAZ-9: During normal operation, the effects of bending and stress on rotor blades over time could lead to blade failure and become a potential blade throw hazard	Less Than Significant	None Required	
Impact HAZ-10: Because of their large size and proposed location, the proposed turbines have the potential to interfere with microwave, radar, and communications signals and be a hazard to public safety	Less Than Significant	None Required	

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Full Repower			
Impact HAZ-1[F]: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials	Less Than Significant	None required	
Impact HAZ-2[F]: 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	Less Than Significant	None required	
Impact HAZ-3[F]: Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school	No Impact	None Required	
Impact HAZ-4[F]: Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment	No Impact	None Required	
Impact HAZ-5[F]: Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area	No Impact	None Required	
Impact HAZ-6[F]: Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area	No Impact	None Required	
Impact HAZ-7[F]: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan	Less Than Significant	None required	
Impact HAZ-8[F]: Expose people or structures 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	Less Than Significant	None required	

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Impact HAZ-9[F]: During normal operation, the effects of bending and stress on rotor blades over time could lead to blade failure and become a potential blade throw hazard	Less Than Significant	None required	
Impact HAZ-10[F]: Because of their large size and proposed location, the proposed turbines have the potential to interfere with microwave, radar, and communications signals and be a hazard to public safety	Less Than Significant	None required	
Hydrology and Water Quality			
Initial Repower			
Impact WQ-1: Violate any water quality standards or waste discharge requirements	Significant	Mitigation Measure WQ-1: Comply with NPDES requirements	Less Than Significant
Impact WQ-2: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)	Less Than Significant	None Required	
Impact WQ-3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite	Significant	Mitigation Measure WQ-1: Comply with NPDES requirements	Less Than Significant
Impact WQ-4: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite	Significant	Mitigation Measure WQ-1: Comply with NPDES requirements Mitigation Measure WQ-4: Comply with local hydrological and drainage requirements	Less Than Significant

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Impact WQ-5: Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff	Significant	Mitigation Measure WQ-1: Comply with NPDES requirements Mitigation Measure WQ-4: Comply with local hydrological and drainage requirements	Less Than Significant
Impact WQ-6: Otherwise substantially degrade water quality	Significant	Mitigation Measure WQ-1: Comply with NPDES requirements	Less Than Significant
Impact WQ-7: Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map	No Impact	None Required	
Impact WQ-8: Place within a 100-year flood hazard area structures that would impede or redirect flood flows	No Impact	None Required	
Impact WQ-9: Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam	No Impact	None Required	
Impact WQ-10: Contribute to inundation by seiche, tsunami, or mudflow	No Impact	None Required	
Full Repower			
Impact WQ-1[F]: Violate any water quality standards or waste discharge requirements	Significant	Mitigation Measure WQ-1: Comply with NPDES requirements	Less Than Significant
Impact WQ-2[F]: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)	Less Than Significant	None Required	
Impact WQ-3[F]: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite	Significant	Mitigation Measure WQ-1: Comply with NPDES requirements	Less Than Significant

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Impact WQ-4[F]: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite	Significant	Mitigation Measure WQ-1: Comply with NPDES requirements Mitigation Measure WQ-4: Comply with local hydrological and drainage requirements	Less Than Significant
Impact WQ-5[F]: Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff	Significant	Mitigation Measure WQ-1: Comply with NPDES requirements Mitigation Measure WQ-4: Comply with local hydrological and drainage requirements	Less Than Significant
Impact WQ-6[F]: Otherwise substantially degrade water quality	Significant	Mitigation Measure WQ-1: Comply with NPDES requirements	Less Than Significant
Impact WQ-7[F]: Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map	No Impact	None Required	
Impact WQ-8[F]: Place within a 100-year flood hazard area structures that would impede or redirect flood flows	No Impact	None Required	
Impact WQ-9[F]: Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam	No Impact	None Required	
Impact WQ-10[F]: Contribute to inundation by seiche, tsunami, or mudflow	No Impact	None Required	
Noise			
Initial Repower			
Impact NOI-1: Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies	Less Than Significant	None Required	

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Impact NOI-2: Expose persons to or generate excessive groundborne vibration or groundborne noise levels	Less Than Significant	None Required	
Impact NOI-3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project	Less Than Significant	None Required	
Impact NOI-4: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project	Significant	Mitigation Measure NOI-4: Employ noise-reducing practices during decommissioning	Less Than Significant
Impact NOI-5: Be located within an airport land use plan area, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels	No Impact	None Required	
Impact NOI-6: Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels	No Impact	None Required	
Full Repower			
Impact NOI-1[F]: Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies	Significant	Mitigation Measure NOI-1[F]: Perform an acoustical evaluation and implement noise-reduction measures	Less Than Significant
Impact NOI-2[F]: Expose persons to or generate excessive groundborne vibration or groundborne noise levels	Less Than Significant	None Required	
Impact NOI-3[F]: Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project	Significant	Mitigation Measure NOI-1[F]: Perform an acoustical evaluation and implement noise-reduction measures	Less Than Significant
Impact NOI-4[F]: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project	Significant	Mitigation Measure NOI-4: Employ noise-reducing practices during decommissioning	Less Than Significant

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Impact NOI-5[F]: Be located within an airport land use plan area, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels	No Impact	None Required	
Impact NOI-6[F]: Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels	No Impact	None Required	
Transportation/Traffic			
Initial Repower			
Impact TRA-1: Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit	Less Than Significant for operations; Significant for construction traffic on regional routes; Significant for construction traffic on local routes	Mitigation Measure TRA-1: Develop and implement a construction traffic control plan	Less Than Significant for operations; Less Than Significant With Mitigation for construction traffic on regional routes; Significant and Unavoidable for construction traffic on local routes
Impact TRA-2: Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways	Less Than Significant for operations; Less Than Significant for construction-related worker commutes; Significant for construction-related truck trips	Mitigation Measure TRA-1: Develop and implement a construction traffic control plan	Less Than Significant

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Impact TRA-3: Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks	No Impact	None Required	
Impact TRA-4: Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)	Significant for slow, construction-related vehicle traffic	Mitigation Measure TRA-1: Develop and implement a construction traffic control plan	Less Than Significant
Impact TRA-5: Result in inadequate emergency access	Significant for slow, construction-related vehicle traffic	Mitigation Measure TRA-1: Develop and implement a construction traffic control plan	Less than Significant
Impact TRA-6: Conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities	Significant for slow, construction-related vehicle traffic	Mitigation Measure TRA-1: Develop and implement a construction traffic control plan	Less Than Significant
Full Repower			
Impact TRA-1[F]: Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit	Less Than Significant for operations; Significant for construction traffic on regional routes; Significant for construction traffic on local routes	Mitigation Measure TRA-1: Develop and implement a construction traffic control plan	Less Than Significant for operations; Less Than Significant With Mitigation for construction traffic on regional routes; Significant and Unavoidable for construction traffic on local routes

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Impact TRA-2[F]: Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways	Less Than Significant for operations; significant during construction		Significant and Unavoidable During Construction
Impact TRA-3[F]: Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks	No Impact	None Required	
Impact TRA-4[F]: Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses	Significant for slow, construction-related vehicle traffic	Mitigation Measure TRA-1: Develop and implement a construction traffic control plan	Significant and Unavoidable
Impact TRA-5[F]: Result in inadequate emergency access	Significant for slow, construction-related vehicle traffic	Mitigation Measure TRA-1: Develop and implement a construction traffic control plan	Less Than Significant
Impact TRA-6[F]: Conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities	Significant for slow, construction-related vehicle traffic	Mitigation Measure TRA-1: Develop and implement a construction traffic control plan	Significant and Unavoidable During Construction
Utilities and Service Systems			
Initial Repower			
Impact UT-1: Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board	No Impact	None Required	
Impact UT-2: Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	Less Than Significant	None Required	

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Impact UT-3: Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	Less Than Significant	None Required	
Impact UT-4: Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed	Less Than Significant	None Required	
Impact UT-5: Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments	No Impact	None Required	
Impact UT-6: Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs	Less Than Significant	None Required	
Impact UT-7: Comply with federal, state, and local statutes and regulations related to solid waste	Less Than Significant	None Required	
Full Repower			
Impact UT-1[F]: Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board	No Impact	None Required	
Impact UT-2[F]: Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	Less Than Significant	None Required	
Impact UT-3[F]: Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	Less Than Significant	None Required	

Impact	Level of Significance	Proposed Mitigation Measure(s)	Level of Significance after Mitigation
Impact UT-4[F]: Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed	Less Than Significant	None Required	
Impact UT-5[F]: Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments	Less Than Significant	None Required	
Impact UT-6[F]: Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs	Less Than Significant	None Required	
Impact UT-7[F]: Comply with federal, state, and local statutes and regulations related to solid waste	Less Than Significant	None Required	