

# EXECUTIVE SUMMARY

## ES.1 INTRODUCTION

This document is a draft environmental impact report (DEIR) prepared on behalf of the County of Humboldt Planning & Building Department to evaluate the potential environmental effects of the proposed Humboldt Wind Energy Project (proposed project or project). Humboldt Wind, LLC (project applicant) submitted an application to Humboldt County (County) for a conditional use permit to construct and operate the proposed project, a wind energy generation facility. The issuance of a conditional use permit meets the definition of a “project” and is subject to environmental review.

According to the California Environmental Quality Act Guidelines (State CEQA Guidelines) (Title 14, Section 15064[f][1] of the California Code of Regulations [14 CCR 15064(f)(1)]), an environmental impact report (EIR) must be prepared whenever a project may result in a significant environmental impact. An EIR is an informational document used to inform public agency decision makers and the general public of the significant environmental effects of a project; identify possible ways to minimize the significant effects; and describe reasonable alternatives to the project that could feasibly attain most of the basic objectives of the project while substantially lessening or avoiding any of the significant environmental impacts. Public agencies are required to consider the information presented in the EIR when determining whether to approve a project.

CEQA also requires that each public agency avoid or mitigate to less-than-significant levels, wherever feasible, the significant environmental effects of projects it approves or implements. If a project would result in significant and unavoidable environmental impacts that cannot be feasibly mitigated to less-than-significant levels, the project can still be approved, but the lead agency’s decision makers must issue a statement of overriding considerations explaining in writing the specific economic, social, or other considerations that they believe make those significant effects acceptable.

As stated in Section 15123(a) of the State CEQA Guidelines, “[a]n EIR shall contain a brief summary of the proposed actions and its consequences. The language of the summary should be as clear and simple as reasonably practical.” As required by the State CEQA Guidelines, the executive summary includes (1) a summary description of the proposed project, (2) a synopsis of environmental impacts and recommended mitigation measures (Table ES-1, at the end of this chapter), (3) identification of the alternatives evaluated, and (4) a discussion of the areas of controversy associated with the proposed project.

The environmental analysis in this EIR has been prepared at a project level of detail. The proposed project is a construction-level approval. A project-level EIR “should focus primarily on the changes in the environment that would result from that development project ... [and] examine all phases of the project including planning, construction, and operation” (State CEQA Guidelines, Section 15161). No further environmental review of individual components of the proposed project is required unless a subsequent EIR or supplement to an EIR is required by Section 15162 or 15163 of the State CEQA Guidelines.

## ES.2 PROJECT OBJECTIVES

The project applicant has identified the following objectives for the proposed project:

- ▶ Contribute to a diversified statewide energy portfolio that will reduce exposure to price volatility associated with electricity and natural gas, while assisting the state in meeting the renewable-energy requirements established in Senate Bill (SB) 350 and SB 100, including assisting in directly achieving the state’s Renewable Portfolio Standard of 100 percent zero carbon energy by 2045.
- ▶ Develop a wind project that is feasible to finance, construct, and operate.
- ▶ Develop a wind energy project that can meet the criteria to achieve the maximum federal tax credit requiring placement into operation by December 30, 2020, which is intended to decrease the cost of renewable energy generation and delivery, promote the diversity of energy supply, and decrease the dependence of the United States on foreign energy supplies.
- ▶ Promote sustainable energy and utilization of alternative energy systems throughout the county in compliance with the Open Space and Conservation Element of the *Humboldt County General Plan*.
- ▶ Develop a wind energy facility as near as possible to existing transmission infrastructure.
- ▶ Develop a wind energy facility in Humboldt County that supports the economy by creating short- and long-term employment opportunities and increasing tax revenue.
- ▶ Displace emissions of approximately 372,000 metric tons per year of carbon dioxide (a greenhouse gas [GHG]) that would otherwise be required to generate the same amount of electricity as this 155-megawatt (MW) project.

## ES.3 PROJECT OVERVIEW

### ES.3.1 PROJECT LOCATION AND COMPONENTS

The project site is about 20 miles south of Eureka, roughly 12 miles southeast of the city of Fortuna, and 22 miles north of the community of Garberville, and is bisected by U.S. Highway 101 (U.S. 101). The community of Scotia is adjacent to the northern edge of the project site. (See Figures 2-1 and 2-2 in Chapter 2, “Project Description,” for the regional location and project site boundaries, respectively.)

The proposed project consists of a maximum of 60 wind turbine generators (WTGs) and associated infrastructure with a nameplate generating capacity (theoretical maximum energy generation) of up to 155 MW. Figure 2-2 depicts the project site boundaries. The project site represents an approximately 2,218-acre area study corridor within which the WTGs and associated infrastructure would be placed. The project boundaries have been defined based on a 1,000-foot-wide corridor centered on the representative locations of WTGs; a 200-foot-wide corridor centered on project roadways, the electrical collection line, and the generation transmission line (gen-tie); and a 500-foot-wide buffer around proposed staging areas, temporary impact areas, and the project substation. The exact footprint of individual WTGs within the project site would be determined during final engineering design, but would generally be placed along Monument and Bear River ridges. WTG heights could reach up to 600 feet tall, with a rotor diameter of 492 feet. The environmental impact analysis in this DEIR is based on a maximum number of WTGs that may be placed within the boundaries of the project site. The assumptions developed for this analysis support a conservative approach to project planning and environmental review, as they represent a maximum level of potential development.

In addition to the WTGs and transformers, the project includes ancillary facilities such as temporary staging areas, access roads, 34.5-kilovolt (kV) collection lines (referred to in this EIR as the “collection system”), operations and maintenance (O&M) facility, a substation, a modified utility switchyard, and a 115 kV gen-tie along Shively Ridge.

A portion of the gen-tie would cross the Eel River; this portion would be constructed underground. The project’s point of interconnection with the Pacific Gas and Electric Company (PG&E) transmission grid would be PG&E’s Bridgeville Substation (Figure 2-2). PG&E is a public utility that sells energy in the California utility market, which is operated by the California Independent System Operator.

The project would include the following components, which are discussed in detail in Chapter 2, “Project Description”:

- ▶ up to 60 WTGs (capable of generating 2–5 MW of electricity each) erected on tubular steel towers set on concrete foundations, as well as the associated WTG pads, temporary staging areas, and transformers;
- ▶ construction of access roads;
- ▶ an up to 25-mile, 115 kV gen-tie, including an underground crossing of the Eel River, following Shively Ridge and ultimately connecting to the existing PG&E transmission system;
- ▶ a project substation located on-site;
- ▶ an underground electrical collection system linking WTGs to each other and to the project substation;
- ▶ an underground communication system (fiber optic cable) adjacent to the collection system;
- ▶ a Supervisory Control and Data Acquisition (SCADA) system between each WTG and the substation and between the project substation and the Bridgeville Substation to monitor and control project output and the transmission of energy into the system;
- ▶ an up to 5-acre O&M facility, including an operations building, a parking area, and an outdoor storage area with perimeter fencing;
- ▶ a 10-acre temporary staging area and a construction trailer and parking area located within the O&M facility;
- ▶ a component offloading location at Fields Landing;
- ▶ two temporary bypasses off U.S. 101 (Hookton Overpass and 12th Street Bypass) for transporting oversize loads;
- ▶ up to six permanent meteorological towers;
- ▶ three 5-acre, temporary staging areas distributed throughout the project site, one of which would include one temporary cement batch plant on Monument Ridge; and
- ▶ up to 17 miles of new 24-foot access roads.

## **ES.3.2 WIND TURBINE GENERATORS, PADS, AND SCADA SYSTEM**

A wind turbine generator consists of the tower, nacelle, hub, blades/rotor, controller, central SCADA system for communication, transformer, Federal Aviation Administration (FAA) lighting where required, and lightning protection system. Maximum WTG height, as measured at the highest point of the rotor blade rotation, would be up to 182 meters (600 feet) from the base of the turbine. Ground clearance for the rotor blades at their lowest point of rotation would be 23 meters (76 feet). The WTGs would have a horizontal-axis design in an off white or light grey color with a nonreflective finish, consistent with FAA requirements.

Each WTG would be supported by a rectangular pad measuring about 350 feet by 350 feet, leveled to a 2 percent slope or less. A portion of the WTG pad would remain graded as a permanent soil-compacted crane pad to provide a stable foundation for the crane during placement of the WTG components. The WTG foundations would be buried to a depth of 10 feet below grade with a pedestal extending approximately 1 foot above the ground. The foundation would be 60–70 feet in diameter, depending on the WTG model selected.

Once construction is completed, a permanent gravel ring 25 feet in diameter would be established around the base of the foundation to form the permanent WTG pad. The gravel would provide a stable surface for maintenance vehicles and would minimize erosion and runoff.

Each WTG contains electronic devices that continuously monitor turbine performance. A SCADA system installed in the generation area would collect operational and performance data from each WTG and the project as a whole and would allow for remote WTG operation.

## **ES.3.3 ELECTRICAL INTERCONNECTION**

The collection system would consist of 34.5 kV lines located underground on dedicated paths or within project roads. Collection lines would be buried in trenches and would terminate at individual WTGs, where they would connect to junction boxes, or at the project substation. Each trench would contain power cables, a ground wire, a fiber optic communication cable for the SCADA system to transmit data from the WTG controllers to the substation and O&M facility, and markers to alert anyone digging in the area.

The main power transformer within the project substation would increase the voltage of the electricity from the 34.5 kV collection system to 115 kV for transmission to the Bridgeville Substation. The final permanent footprint of the substation and switching station site would be approximately 5 acres.

The project would connect to the transmission system at the PG&E Bridgeville Substation via an approximately 25-mile overhead transmission line or gen-tie. The overhead, 115 kV transmission interconnect lines would be constructed on wooden H-frames, wood poles, or metal monopole structures placed within a 100-foot-wide transmission corridor. All energized project components, including the entire gen-tie line and all power lines, would be constructed in accordance with the current suggested practices of the Avian Power Line Interaction Committee.

## **ES.3.4 BRIDGEVILLE SUBSTATION UPGRADES**

The gen-tie would terminate at PG&E's Bridgeville Substation, located between the Cottonwood Substation and the Humboldt Substation. Bridgeville is currently configured as a 115/12 kV substation that connects local distribution lines to PG&E's 115 kV transmission system.

As part of the project, PG&E would expand the Bridgeville Substation to allow the project to connect to the 115 kV side of the substation. Two new intermediate transmission structures may be needed to connect the gen-tie to the 115 kV bus. In addition, the lines entering and exiting the Bridgeville Substation may require modifications to interconnect the project with the PG&E transmission grid. During construction, PG&E may need to construct a temporary transmission line, known as a "shoefly," to maintain electrical service while project-related work is conducted at Bridgeville.

## **ES.3.5 OPERATIONS AND MAINTENANCE FACILITY AND METEOROLOGICAL TOWERS**

An O&M facility is proposed for placement on up to 5 acres of land with a building footprint of 5,000–6,000 square feet. The O&M facility would include a water storage tank, which would be supplied with potable water obtained from a new well drilled within the footprint of the O&M facility. Wastewater generated at the O&M facility would be treated by an appropriately sized septic system that would be installed.

Meteorological towers (METs) and/or Light Detection and Ranging units would be installed on-site to allow project planners to assess the project's viability and determine the optimum WTG layout, and to ensure optimal operation of the installed WTGs. METs would be 80–120 meters (262–394 feet) tall and would comply with FAA lighting regulations. Up to 12 METs would be constructed within the project footprint. Up to six of these METs would remain on-site permanently after the completion of WTG optimization testing.

## **ES.4 CONSTRUCTION AND PHASING**

Construction would begin in fall 2019 and would last 12–18 months. The sequence of construction activities would generally be as follows: tree clearing, site preparation/grading, access road construction, construction of WTG foundations, WTG installation, installation of the collection system, substation construction, gen-tie installation, switchyard installation, final testing and WTG commissioning, installation of O&M facilities, and cleanup and restoration. Some additional details of construction, excerpted from Chapter 2, "Project Description," are presented below.

### **ES.4.1 COMPONENT SHIPPING AND STAGING**

WTG components would be stacked on shipping frames and barged to Humboldt Bay for offloading at Fields Landing. Barges would enter Humboldt Bay connected to a tugboat by a 2,200-foot-plus towline, which would be spooled and shortened before entering the approach jetty. Transportation by sea would take place when weather conditions and the sea state are acceptable, based on predetermined conditions established by the port captain. A crane would be placed on the shore at Fields Landing and the barge anchored approximately 60 feet offshore. The crane would be capable of lifting 160,000 pounds (slightly heavier than the largest piece) 65 feet high at 115 feet of reach. Once offloaded from the barge, components would be either directly loaded onto transport vehicles or temporarily stored at existing storage yards within the Fields Landing complex. Barges would be offloaded over a

30-day period, between 7 a.m. and 10 p.m. Access to and egress from Fields Landing for trucks with WTG components would be via South Bay Depot Road.

## **ES.4.2 COMPONENT TRANSPORT TO THE PROJECT SITE**

Components would be transported overland to the project site on heavy trucks, which would use U.S. 101 before reaching the temporary staging area at the Jordan Creek off-ramp. Truck trailers may be larger than average to carry oversized loads. If required, pilot vehicles would accompany the trucks. Upon reaching the temporary staging area, the equipment would be either offloaded and temporarily stored or hauled directly to the worksite and assembled or installed. For each WTG, up to 15 separate loads of equipment and materials would be delivered. Nine to 12 of these loads would be oversized permitted loads.

Most project components could be transported directly to the project laydown yard at Jordan Creek. However, depending on final WTG selection and the transportation plan, the base tower section may exceed the allowable height of two overpasses: Hookton Road and 12th Street. Temporary detours are proposed for these locations. All transportation activities would be timed to minimize traffic disruptions consistent with applicable permits.

## **ES.4.3 ACCESS ROADS**

Access to the proposed WTG pads and ancillary project components would be provided by the existing network of logging roads except where the existing road cannot accommodate trucks hauling oversize loads. Some segments of currently paved roads (e.g., Shively Road) may require realignment to provide access for the gen-tie. Realigned segments would be improved with gravel during construction. Paved portions would be repaved once construction activities are completed. All newly constructed roads would remain in place for the life of the project.

## **ES.5 SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES**

Section 3.1, “Impacts Found Not to Be Significant,” in Chapter 3, “Environmental Setting, Impacts, and Mitigation Measures,” briefly discusses issues that are not evaluated further in the environmental impact analysis and the reasons for their omission. Sections 3.2 through 3.13 evaluate in detail the environmental impacts that would result from implementation of the proposed project and set forth mitigation measures required to avoid or reduce environmental impacts, where feasible. Chapter 4 evaluates potential cumulative impacts associated with the proposed project.

Table ES-1 (at the end of this chapter) lists each environmental impact of the proposed project, then presents the level of significance of each impact before mitigation, mitigation measures for significant and potentially significant impacts, and the level of significance of each impact after mitigation. It also lists the significant cumulative effects to which the proposed project would contribute. As shown in Table ES-1, implementation of the proposed project could significantly affect a number of environmental resources and issue areas, but mitigation is included to reduce these impacts to a less-than-significant level, where feasible.

A discussion of significant and unavoidable impacts is provided in Chapter 5, “Other CEQA Requirements,” of this DEIR.

## **ES.6 ALTERNATIVES**

The State CEQA Guidelines (Section 15126.6) require that an EIR describe a range of reasonable alternatives to the project that could feasibly attain the basic objectives of the project and avoid and/or lessen the significant environmental effects of the project. Chapter 6 of this DEIR provides a comparative analysis between the proposed project and five alternatives; as required by CEQA, the no project alternative is one of the alternatives evaluated.

In addition to the alternatives carried forward for evaluation in Chapter 6, the project applicant considered two off-site alternatives for WTGs, Shively Ridge and Rainbow Ridge, and multiple alternative alignments for the gen-tie. However, Shively Ridge was eliminated from detailed consideration in this EIR because communication with wildlife agencies indicated it was the site of nesting murrelets (the Eel River to the west and the Van Duzen River to the east). Other considerations leading to the dismissal of Shively Ridge involved engineering, construction, and meteorological concerns regarding development of WTGs. Rainbow Ridge was eliminated from detailed consideration in this EIR because of biological, engineering, construction, and cultural resource concerns regarding development of WTGs and access roads there. The alternative gen-tie routes were not carried forward because they would have been more difficult to construct or would have added length and creek crossings.

The text below provides a brief summary of the five alternatives to the proposed project that are discussed in detail in Chapter 6.

### **ES.6.1 ALTERNATIVE 1: NO PROJECT**

The No Project Alternative assumes that the proposed project would not be implemented and that the project site would remain in its existing condition and used primarily for timber production. If Alternative 1 were selected, no change from existing conditions would occur because the environmental consequences associated with construction and operation of the proposed project would not occur. If the proposed project is not approved at this location, it is reasonably foreseeable that renewable power needed to meet state renewable energy standards would be obtained from a project proposed at this or other suitable sites.

Under the no project scenario, none of the impacts identified for the proposed project would occur. However, the No Project Alternative would not meet any of the basic project objectives, Alternative 1 would likely result in greater use of nonrenewable energy than the proposed project, which is estimated to displace emissions of approximately 372,000 metric tons per year of carbon dioxide (a GHG) that would otherwise be required to generate the same amount of electricity as the 155 MW generated by the proposed project. Alternative 1 would not provide this potential displacement.

### **ES.6.2 ALTERNATIVE 2: REALIGNED GEN-TIE AND ACCESS ROAD**

After conducting preliminary consultation with the National Marine Fisheries Service, the project applicant developed an alternative gen-tie alignment that would avoid the underground crossing of the Eel River.

Under this alternative, the number and location of WTGs would be the same as under the proposed project, but the gen-tie line would be rerouted to an alternative ridge directly above the town of Stafford (the “realigned gen-tie route”), using wooden H-frame or steel monopole structures. The gen-tie structures would be placed on the north side of the ridge to reduce their visibility. Once at the bottom of Monument Ridge, approaching the edge of

the town of Stafford, the line would continue overhead as it crossed the Eel River on the west side of the Stafford Bridge. The line would be at the same height as PG&E's existing three lines on the east side of the bridge, crossing the Eel River at a height equal to or less than the deck of the bridge. Should overhead transmission structures (poles) be used to cross the Eel River, the conductors would be placed within the profile of and near the existing Stafford Bridge to avoid avian collisions, specifically by marbled murrelets.

Once on the east side of the Eel River, the gen-tie line would cross U.S. 101 adjacent to PG&E's distribution line. The gen-tie line would then continue adjacent to Shively Road for 0.8 mile before crossing Stitz Creek just south of the earthen dam. After crossing Stitz Creek, the gen-tie line would proceed directly up Shively Ridge before connecting with the proposed gen-tie corridor at the western terminus of Shively Ridge Road.

The realigned gen-tie route of Alternative 2 would be consistent with the proposed gen-tie corridor until Alderpoint Road. At Alderpoint Road, the realigned gen-tie route would proceed northeast, while the proposed line would deviate south before rejoining the proposed gen-tie 0.3 mile south of the Bridgeville Substation.

Alternative 2 also includes an alternate access road alignment at the Jordan Creek staging area (the "realigned Jordan Creek access") to avoid impacts on a northern spotted owl flyway near Jordan Creek. From the Jordan Creek laydown area, the access road would continue in an easterly direction, roughly paralleling Demonstration Forest Road Left (DEMO-Left) and a PG&E service road. About 0.16 mile east of the junction of DEMO-Left and the PG&E service road, the alignment would turn south along a new alignment up Monument Ridge. This new alignment would continue for 0.4 mile before rejoining DEMO-Left. The alignment would follow DEMO-Left for an additional 1.5 miles before rejoining the proposed alignment. The access road would be slightly longer (approximately 1 mile) but would follow an existing road in places, reducing the impacts of creating new access roads.

Alternative 2 would reduce the risk of frac-out during boring under the Eel River, make better use of existing roads (minimizing timber harvesting), and increase the distance of project infrastructure from Scotia. This alternative would meet project objectives to the same extent as the proposed project.

### **ES.6.3 ALTERNATIVE 3: REDUCED TURBINE FOOTPRINT—MONUMENT RIDGE**

Alternative 3 would reduce the total number of WTGs from 60 to 23 and would avoid placing WTGs on Monument Ridge. Because the WTG count would be reduced, the WTGs selected would likely be the largest (600-foot maximum height). Fewer WTGs would provide greater spacing from sensitive areas identified in the project corridor. Based on a marbled murrelet risk assessment, this alternative would also likely reduce impacts on known marbled murrelet flyways. Alternative 3 would result in less ground disturbance and related impacts than the proposed project, and fewer visual impacts. This alternative is also expected to reduce mortality of birds and bats from collisions with rotor blades, relative to the proposed project.

Alternative 3 would not go as far as the proposed project toward meeting the project objectives because it would not be capable of generating 155 MW of energy. Alternative 3 would likely result in greater use of nonrenewable energy than the proposed project, which is estimated to displace emissions of approximately 372,000 metric tons per year of carbon dioxide (a GHG) that would otherwise be required to generate the same amount of electricity as the 155 MW generated by the proposed project.

## **ES.6.4 ALTERNATIVE 4: REDUCED TURBINE COUNT**

Alternative 4 would place 31 WTGs within the same study corridor as the project. Access to the WTG site would be provided from the planned road at Jordan Creek staging area and the gen-tie would extend to the Bridgeville Substation under the same alignment as the proposed project. Because the turbine count would be reduced, the WTGs selected for installation would be the largest (600-foot maximum height). Based on a marbled murrelet risk assessment, this alternative would likely reduce impacts on known marbled murrelet flyways. Compared to the proposed project, Alternative 4 would result in less ground disturbance during placement of individual WTGs and related impacts, and would place fewer WTGs in areas visible from surrounding lands. This alternative is also expected to reduce mortality of birds and bats from collisions with rotor blades by avoiding areas with high concentrations of birds and bats.

Alternative 4 would not go as far as the proposed project toward meeting the project objectives because it would not be capable of generating 155 MW of energy. Alternative 4 would likely result in greater use of nonrenewable energy than the proposed project, which is estimated to displace approximately 372,000 metric tons per year of carbon dioxide (a GHG) that would otherwise be required to generate the same amount of electricity as the 155 MW generated by the proposed project.

## **ES.6.5 ALTERNATIVE 5: REDUCED TURBINE FOOTPRINT—BEAR RIVER RIDGE**

Alternative 5 would reduce the total number of WTGs from 60 to 37 and would avoid placing WTGs on Bear River Ridge. Because the turbine count would be reduced, the WTGs selected would likely be the largest (600-foot maximum height). Fewer WTGs would provide greater spacing from sensitive areas identified in the project corridor. This alternative would avoid impacts on Bear River Ridge, which is considered a tribal cultural resource, and would reduce indirect effects on the Scotia historic district. Alternative 5 would result in less ground disturbance and related impacts than the proposed project, and fewer visual impacts. Relative to the proposed project, this alternative is also expected to reduce mortality of birds and bats from collisions with rotor blades.

Alternative 5 would not go as far as the proposed project toward meeting the project objectives because it would not be capable of generating 155 MW of energy. Alternative 5 would likely result in greater use of nonrenewable energy than the proposed project, which is estimated to displace emissions of approximately 372,000 metric tons per year of carbon dioxide (a GHG) that would otherwise be required to generate the same amount of electricity as the 155 MW generated by the proposed project.

## **ES.6.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE**

CEQA provides that an EIR must identify the environmentally superior project alternative (California Code of Regulations Title 14, Section 15126.6[e]). If the “no project” alternative is the environmentally superior alternative, then the EIR must also identify an environmentally superior alternative from among the others (California Code of Regulations Title 14, Section 15126.6[e][2]). In this case, the No Project Alternative is superior, so the EIR must select among the others for the environmentally superior alternative.

Based on the information provided above, Alternative 5, Reduced Turbine Footprint—Bear River Ridge, is considered environmentally superior to the project. Compared to the proposed project, this alternative would reduce impacts on all resource areas except biological resources, GHG emissions, and fire protection services and wildfire hazards. Alternative 3, Reduced Turbine Footprint—Monument Ridge, would also meet most of the

project objectives, although not to the same extent as the proposed project because it would fail to generate 155 MW of renewable energy.

## **ES.7 KNOWN AREAS OF CONTROVERSY**

Section 15123 of the State CEQA Guidelines requires that a summary of an EIR identify areas of controversy known to the lead agency, including issues raised by agencies and the public. On July 31, 2018, the County issued a notice of preparation (NOP) (Appendix B) to inform agencies and the general public that an EIR was being prepared. The County invited comments on the scope and content of the document and participation at two public scoping meetings. The NOP was circulated for 30 days as mandated by CEQA. Appendix A of this DEIR contains a scoping report listing the written comments received on the NOP and during two public scoping meetings. Copies of the comment letters are also contained in the scoping report.

During the public comment period for the NOP, various comment letters were received regarding the proposed project. Appendix A presents a summary of the public scoping process and summarizes the comments received in writing and at the public meetings held on August 14 and August 15, 2018. In general, areas of potential controversy known to the County include:

- ▶ visual impacts, including effects on views from Rio Dell and Scotia and generation of light pollution;
- ▶ potential take of at-risk species such as the marbled murrelet and northern spotted owl, risks of bird and bat fatalities from collisions with WTGs, displacement from nesting habitat, and other project effects on critical habitats;
- ▶ effects on cultural resources, including tribal cultural resources;
- ▶ potential for erosion and sedimentation from drilling under the Eel River, undergrounding of utilities, and road construction;
- ▶ noise effects from WTG operation;
- ▶ potential traffic congestion during construction and effects of oversize loads on area roadways; and
- ▶ effects on the environment related to the ultimate decommissioning of the project.

These issues were considered during preparation of this DEIR and, where appropriate, are addressed in the environmental impact analyses presented in Chapters 3 and 4.

## **ES.8 PUBLIC PARTICIPATION AND ADDITIONAL STEPS IN THE CEQA REVIEW PROCESS**

This DEIR is being distributed to interested agencies, stakeholder organizations, and individuals. This distribution ensures that interested parties have an opportunity to express their views regarding the environmental effects of the project, and to ensure that information pertinent to permits and approvals is provided to decision makers for the CEQA lead agency and responsible and trustee agencies. This document is available for review by the public during normal business hours at the County of Humboldt Planning & Building Department, 3015 H Street,

Eureka, CA 95501. The DEIR is being distributed for a 45-day period that will end on June 5, 2019. The DEIR is also available online at <http://www.co.humboldt.ca.us>.

Under CEQA, written comments on the DEIR must be postmarked no later than June 5, 2019. Comments should be sent to the following address:

Elizabeth Burks, Planner  
County of Humboldt Planning & Building Department  
3015 H Street  
Eureka, CA 95501  
[CEQAResponses@co.humboldt.ca.us](mailto:CEQAResponses@co.humboldt.ca.us)

If comments are provided via e-mail, please include the project title in the subject line, attach comments in Microsoft Word format, and include the commenter's U.S. Postal Service mailing address.

After the close of the public review period for the DEIR, a response to comments document will be prepared, containing all the comments on environmental issues received during the public review period, responses to those comments, and other information that the County finds to be relevant. The final environmental impact report (FEIR) will be made available for review before the County certifies it as complete. The response to comments document and the DEIR together will compose the FEIR.

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<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
<b>3.2 Aesthetics</b>			
<p><b>3.2-1: Project Impacts on Scenic Vistas and Potential for Substantial Degradation of Existing Visual Character or Quality of Public Views of the Site and Surroundings.</b> The Humboldt County General Plan does not identify specific scenic vistas. However, the project would introduce wind turbine generators, which would be noticeable at all viewing distances depending on atmospheric conditions. The introduction of these tall vertical structures would degrade visual quality. This impact would be <b>significant</b>.</p>	<p>S</p>	<p><b>Mitigation Measure 3.2-1a: Design the Project to Avoid Aesthetic Impacts.</b></p> <p>The project applicant shall consider topography when siting WTGs and shall avoid major modifications to natural landforms or other characteristic parts of the landscape. The WTGs shall be clustered or grouped to break up overly long lines of WTGs. The WTGs shall be similar in shape and size.</p> <p>Each WTG shall be painted an off-white or uniform light-grey color, per manufacturer’s requirements. To minimize the structures’ reflectivity, the paint used shall have a gloss level that does not exceed 30 percent, or 60–70 gloss units, as calculated by the manufacturer. The surfaces of all other structures (e.g., substations, O&amp;M building) shall be given low-reflectivity finishes with neutral colors to minimize the contrast of the structures with their backdrops.</p> <p>Commercial messages and symbols shall be prohibited on WTGs.</p> <p>Overhead transmission lines shall not use lattice steel towers. In lieu of H-frame wooden structures, tubular steel poles or concrete poles may be used and shall be painted light grey or shall be dulled galvanized steel or other nonreflective surface.</p> <p>To minimize ground disturbance, existing roadways shall be used to access WTG pads. All construction-related areas shall be kept clean and tidy by storing construction materials and equipment in the construction staging and laydown areas and/or generally away from public view. The project applicant shall remove construction debris promptly at intervals of 2 weeks or less, at any one location. The Humboldt County Planning &amp; Building Department shall enforce the requirements of this measure through site plan review.</p> <p><b>Mitigation Measure 3.2-1b: Implement Operational Measures to Reduce Aesthetic Impacts.</b></p> <p>WTGs shall be kept clean and in good repair. Nacelle covers and rotor nose cones shall always be maintained in place and undamaged. Inoperative WTGs shall be repaired, replaced, or removed as quickly as feasible because a WTG that is broken or</p>	<p>SU</p>

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		disabled will create a health and safety hazard and disrupt the visual experience of the casual observer. The project applicant shall remove derelict WTGs and derelict parts and pieces within 60 days of decommissioning, and shall relocate such equipment and derelict parts and pieces to an area that is screened from view and/or not visible to the general public. Similarly, O&M areas shall be kept clean and tidy by storing all equipment, parts, and supplies in areas that are screened from view and/or are generally not visible to the general public. Grading and landscape treatment around tower bases shall match the conditions of surrounding landscape and habitat to recreate a pleasing visual environment.	
<b>3.2-2: Project Impacts on Scenic Resources along a State Scenic Highway.</b> The project would not adversely affect trees, rock outcroppings, and historic buildings along a state scenic highway. This impact would be <b>less than significant</b> .	LTS	No mitigation measures are required.	LTS
<b>3.2-3: New Source of Substantial Light or Glare that Would Adversely Affect Day or Nighttime Views in the Area.</b> The project would result in substantial increases in daytime or nighttime light and glare. This impact would be <b>significant</b> .	S	No feasible mitigation measures exist to fully mitigate the largest source of light.	SU
<b>3.2-4: Shadow Flicker Effects.</b> The project would not result in substantial shadow flicker. This impact would be <b>less than significant</b> .	LTS	No mitigation measures are required.	LTS
<b>3.3 Agriculture and Forestry Resources</b>			
<b>3.3-1: Conflict with Existing Williamson Act Contracts.</b> Long-term project features would be located on approximately 27 acres of Williamson Act contract lands that would no longer be devoted to the production of agricultural commodities for commercial purposes. However, wind generation is a compatible use. Therefore, this impact would be <b>less than significant</b> .	LTS	No mitigation measures are required.	LTS
<b>3.3-2: Conversion of Forestland to Nonforest Uses.</b> Project implementation would include the harvest of merchantable timber from up to 836 acres and would permanently convert up to 91 acres of forestland. This impact would be <b>less than significant</b> .	LTS	No mitigation measures are required.	LTS

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
<b>3.4 Air Quality</b>			
<p><b>3.4-1: Short-Term, Construction-Generated Emissions of ROG, NO<sub>x</sub>, and PM<sub>10</sub>.</b> Short-term, construction-generated emissions would exceed NCUAQMD’s significance threshold for NO<sub>x</sub>. This impact would be <b>significant</b>.</p>	S	<p><b>Mitigation Measure 3.4-1: Use Current-Phase Equipment for all Construction Off-Road Vehicles and Equipment.</b></p> <p>The construction contractor shall use current-phase off-road construction vehicles and equipment (currently Tier 4 final) for construction activities. This requirement shall be shown in all construction plans and implemented through the issuance of construction permits. Alternatively, if there is insufficient availability of equipment that meets or exceeds ARB’s standard (currently Tier 4) for heavy-duty diesel engines, an emissions reduction plan shall be prepared to identify other emission reduction measures to reduce NO<sub>x</sub> emissions equivalent to what would be achieved through using current-phase equipment. The plan shall identify requirements to be implemented during construction, such as limiting the simultaneous operation of construction equipment on any given day to reduce maximum daily emissions, and shall quantify the maximum daily and total annual emissions with implementation of the identified measures. This plan shall be approved by NCUAQMD before any construction permits are issued.</p>	SU
<p><b>3.4-2: Long-Term, Operational (Regional) Emissions of Criteria Air Pollutants.</b> Operations and maintenance of the proposed project would generate criteria air pollutants and precursors in the long term, from mobile sources used daily by staff and intermittently for maintenance activities, and potentially from periodic operation of off-road equipment and emergency generators throughout the year. Off-road equipment and emergency generators would operate intermittently, and such operations would not likely all occur on the same days. Emissions from these O&amp;M activities would not exceed NCUAQMD maximum annual thresholds of significance. This impact would be <b>less than significant</b>.</p>	LTS	No mitigation measures are required.	LTS

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
<p><b>3.4-3: Inconsistency of the Project with Air Quality Planning Efforts.</b> Construction and operation of the project would not exceed NCUAQMD thresholds of significance and would not conflict with or obstruct implementation of the plans and policies in place to achieve attainment of the CAAQS for PM<sub>10</sub>. This impact would be <b>less than significant</b>.</p>	LTS	No mitigation measures are required.	LTS
<p><b>3.4-4: Exposure of Sensitive Receptors to Toxic Air Contaminants.</b> Construction of the proposed project would generate localized air pollutant emissions, including emissions of DPM and other TACs that could affect sensitive receptors. Operations are not anticipated to include substantial use of any TACs. Existing regulations, policies, and implementation programs would reduce potential exposure to substantial pollutant concentrations. This impact would be <b>less than significant</b>.</p>	LTS	No mitigation measures are required.	LTS
<p><b>3.4-5: Exposure of Sensitive Receptors to Odorous Emissions.</b> Temporary, short-term construction and long-term operation of the proposed project would not result in the frequent exposure of sensitive receptors to substantial objectionable odor emissions. This impact would be <b>less than significant</b>.</p>	LTS	No mitigation measures are required.	LTS
<b>3.5 Biological Resources</b>			
<p><b>3.5-1: Construction Impacts on Marbled Murrelet Nesting.</b> Construction of the proposed project could affect the success of marbled murrelet nesting activity if construction activity were to cause disturbance at the nest, thereby reducing productivity. This impact would be <b>potentially significant</b>.</p>	PS	<p><b>Mitigation Measure 3.5-1a: Minimize the Construction Footprint to Avoid Impacts on All Suitable Marbled Murrelet Nesting Habitat.</b></p> <p>The project applicant shall not remove any old-growth redwood or mature coniferous forest that could support nesting marbled murrelets, and to the extent feasible shall maximize the buffer between construction activities and suitable marbled murrelet habitat. The project applicant shall prepare documentation depicting the location of marbled murrelet nesting habitat overlain with the construction footprint to confirm that construction activities would have no direct impacts on suitable marbled murrelet habitat. The documentation shall be submitted to the Humboldt County Planning &amp; Building Department, CDFW, and</p>	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures											
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation								
		<p>USFWS before approval of grading or improvement plans or any ground-disturbing activities.</p> <p><b>Mitigation Measure 3.5-1b: Avoid Indirect Impacts on Nesting Marbled Murrelet.</b></p> <p>During the marbled murrelet nesting season (March 24–September 15), the project applicant shall maintain a no-disturbance buffer between the construction activity and marbled murrelet nesting habitat as described below. An exhibit showing the project improvements and marbled murrelet nesting habitat buffers shall be prepared demonstrating compliance with this mitigation measure. In the event the buffers cannot be maintained, an additional marbled murrelet shall be added to the compensatory mitigation required in Mitigation Measure 3.5-2c. The following auditory disturbance buffers shall be maintained between the construction activity and marbled murrelet nesting habitat:</p> <table border="1"> <thead> <tr> <th>Construction Activity</th> <th>Buffer Distance (meters)</th> </tr> </thead> <tbody> <tr> <td>Noise “high” (81–90 dB)</td> <td>100</td> </tr> <tr> <td>Noise “very high” (91–100 dB)</td> <td>250</td> </tr> <tr> <td>Noise “Extreme” (101–110 dB)</td> <td>400</td> </tr> </tbody> </table> <p>If implementation of the buffers described above is infeasible, the project applicant shall consult with CDFW and USFWS regarding an alternative buffer size. The project applicant shall provide documentation of concurrence from CDFW and USFWS to the Humboldt County Planning &amp; Building Department for the alternative buffer size before issuance of construction permits.</p> <p><b>Mitigation Measure 3.5-1c: Develop and Implement a Worker Environmental Awareness Program.</b></p> <p>Before the start of any construction activity, the project applicant shall develop a worker environmental awareness program subject to review and approval by the Humboldt County Planning &amp; Building Department, in consultation with CDFW and USFWS. Before the start of construction, the environmental training shall be provided to all personnel working on the project site during</p>	Construction Activity	Buffer Distance (meters)	Noise “high” (81–90 dB)	100	Noise “very high” (91–100 dB)	250	Noise “Extreme” (101–110 dB)	400	
Construction Activity	Buffer Distance (meters)										
Noise “high” (81–90 dB)	100										
Noise “very high” (91–100 dB)	250										
Noise “Extreme” (101–110 dB)	400										

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>construction and operation. Training materials and briefings shall include but not be limited to:</p> <ul style="list-style-type: none"> <li>• discussion of the federal ESA and CESA, the BGEPA, the MBTA, and CWA; California Fish and Game Code Sections 3503, 3503.5, 3511, 3513, 3800(a), 4150, 4700, 5050, 5515, and 1602; 14 CCR Sections 30.10 and 251.1; the Porter-Cologne Act; CDFG Code Sections 5004 and 7201; and the California Coastal Act, as applicable;</li> <li>• the consequences of noncompliance with these regulatory requirements;</li> <li>• specific conditions of any permits from regulatory and other agencies obtained for the project (USACE, North Coast RWQCB, the CCC, USFWS, NMFS, CDFW, and the County);</li> <li>• identification and values of the special-status plant and wildlife species to be protected;</li> <li>• identification of any important wildlife habitat and sensitive natural communities to be protected;</li> <li>• identification of special-status species, life history descriptions, habitat requirements during various life stages, and the species' protected status;</li> <li>• fire protection measures;</li> <li>• measures to avoid introduction and minimize the spread of invasive weeds during construction and operation;</li> <li>• trash and food waste management procedures to prevent attracting corvids or nuisance wildlife to the site;</li> <li>• hazardous substance spill prevention and containment measures;</li> <li>• clear instructions that if any workers encounter a special-status species within or near the project site during construction, work shall halt and the project biologist and project applicant shall be informed;</li> <li>• clear instructions regarding the scenarios in which permit conditions require the notification of specific agencies, the method for contacting the agencies, and the legally required time frames for such contact;</li> </ul>	

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		<ul style="list-style-type: none"> <li>• a contact person at the on-call biological services provider in the event of the discovery of dead or injured wildlife; and</li> <li>• review of any mitigation requirements related to biological resources.</li> </ul> <p>The training program shall be recorded and subsequently shown to all construction personnel who cannot attend the initial training program before their participation in any construction activity. The project applicant shall submit to the County documentation that all personnel working on the project site during construction and operation have signed a statement that they accept responsibility for acting in accordance with the worker environmental awareness program.</p> <p>Worker environmental awareness program training materials shall be submitted to the County and the regulatory agencies whose permits are addressed in the training, for their review and approval before ground-disturbing activities begin. Once approved, all project applicant, consultant, and construction personnel entering the project site shall be trained before being allowed on-site.</p>	
<p><b>3.5-2: Operational Impacts on Marbled Murrelet.</b> Operation of the proposed project could result in injury to and mortality of marbled murrelet, as a result of collisions with project components such as wind turbine generators and the gen-tie. This impact would be <b>potentially significant</b>.</p>	PS	<p><b>Mitigation Measure 3.5-2a: Avoid and Minimize Operational Impacts on Marbled Murrelets.</b></p> <p>The project applicant shall implement the measures listed below to minimize and avoid collisions of marbled murrelets with project components, including WTGs and the gen-tie. As discussed in Chapter 2, “Project Description,” the gen-tie would cross under the bed of the Eel River, and staging areas for the drilling would be established in upland areas on both sides of the river.</p> <ul style="list-style-type: none"> <li>• WTGs shall not be placed in areas characterized by high passage rates for marbled murrelets. Before issuance of any construction permits, the project applicant shall provide a map to the Humboldt County Planning &amp; Building Department showing proposed WTG locations relative to marbled murrelet high-passage areas.</li> <li>• The gen-tie shall be sited in accordance with the following criteria:</li> </ul>	SU

**Table ES-1. Summary of Project Impacts and Mitigation Measures**

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<ul style="list-style-type: none"> <li>- If the gen-tie is to be placed on a ridgeline (particularly saddles), documentation shall be submitted showing that the location is not a high-use or high-activity area for marbled murrelet.</li> <li>- The gen-tie shall not be placed within 200 meters of old-growth or mature conifer forest stands of adequate size to support nesting murrelets</li> <li>- If the two criteria above are demonstrated to be infeasible to the satisfaction of the Director of the Humboldt County Planning &amp; Building Department subject to consultation with CDFW and USFWS, the gen-tie transmission lines shall be designed to increase their visibility to marbled murrelet. The project applicant shall use approaches developed in consultation with USFWS and CDFW to increase the visibility of project gen-tie transmission line spans located near areas of potentially concentrated marbled murrelet use such as those described above. These approaches could include placement of bird diverters, aviation balls, or reflective diverters, the choice in application of which will be based on site-specific characteristics of the gen-tie conductors and static wires relative to the forest canopy.</li> </ul> <p><b>Mitigation Measure 3.5-2b: Conduct Postconstruction Mortality Monitoring for Marbled Murrelets and Other Species.</b></p> <p>The project applicant shall prepare and implement a PCMM plan as described to evaluate operational impacts on common bird and bat species and special-status species, including bald and golden eagles and marbled murrelet. PCMM shall be conducted annually for the life of the project, beginning with a 3-year period of “intensive” surveys (full plots around WTGs plus roads and pads) and followed by less intensive annual monitoring of mortality using a “roads and pads” design.</p> <p>PCMM studies shall be designed to ensure a minimum overall detection probability (g) (Dalthorp et al. 2017) for marbled murrelet of 30 percent during “intensive” searches (first 3 years) and 8 percent for subsequent annual “road and pad” searches. The</p>	

**Table ES-1. Summary of Project Impacts and Mitigation Measures**

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>overall detection probability for the EoA model represents the probability of detecting a carcass present on the site during the period of evaluation and is based on the results of searcher efficiency and carcass persistence trials, and the spatial and temporal extent of coverage (i.e., proportion of WTGs or time for which searches occurred). Searcher efficiency trials for medium-sized birds shall specifically utilize carcasses that serve as an acceptable proxy for marbled murrelet. Spatial coverage estimates shall also account for the proportion of carcasses expected to fall outside of the search area, based on the search radius from the WTG location and turbine height. This can be estimated initially using information provided by Hull and Muir (2010) or another scientifically defensible source. After a sufficient number of full plot and road and pad searches has been conducted, it may be possible to estimate the proportion of carcasses falling within the search area from site-specific carcass data.</p> <p>An example calculation of the overall detection probability (g) would be if the probability of detecting a carcass is 50 percent based on combined results of searcher efficiency and carcass persistence trials, and full plot searches (100 percent of carcasses fall within search plot) are conducted at 50 percent of project WTGs, g would be equal to 25 percent (0.5*0.5). To achieve the required 30 percent detection probability level, various search parameters can be adjusted, including the number of WTGs searched, search radius, search interval, and others. The level of search effort may be increased during the marbled murrelet nesting season, but adequate survey effort must still be implemented during the nonbreeding season for the species to meet PCMM objectives for other species (see eagles below). If search effort varies among seasons, the difference in marbled murrelet occurrence (and expected fatality rate) between the seasons must be accounted for in a scientifically defensible fashion when incorporating into overall calculations of g.</p> <p>At the completion of each year of PCMM studies, the maximum credible number of marbled murrelet mortalities shall be estimated using the EoA model and PCMM data. Separate estimates based on the 50 percent and 90 percent credibility levels (1-<math>\alpha</math>, where <math>\alpha</math>=0.5 and 0.1, respectively) shall be calculated. There is a 50</p>	

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>percent probability that the actual number of marbled murrelet mortalities is greater than the 50 percent credible number, and a 10 percent probability that the actual number is greater than the 90 percent credible number of mortalities. These estimates can be used as triggers for potential adaptive management or to evaluate effectiveness of mitigation.</p> <p>If CDFW and USFWS incidental take permits for marbled murrelets specify PCMM methods that differ from those described above, the stricter or most conservative measures shall apply.</p> <p><b>Mitigation Measure 3.5-2c: Implement Compensatory Mitigation to Offset Operational Impacts on Marbled Murrelets.</b></p> <p>The project applicant shall prepare and implement a marbled murrelet mitigation plan to offset the anticipated level of marbled murrelet take over the operational life of the project. The anticipated level of take is set conservatively at 20.86 marbled murrelets over 30 years of project operation. Implementing the marbled murrelet mitigation plan must create at least one individual marbled murrelet for each marbled murrelet taken as a result of the project. The marbled murrelet mitigation plan will describe in detail the proposed measures to minimize and fully mitigate all impacts of the project on marbled murrelets; describe the monitoring and reporting process to document compliance with and effectiveness of the minimization and mitigation measures; and describe the funding and process required for implementation of the minimization, mitigation, and monitoring measures. The project applicant shall establish an endowment to fund implementation and monitoring of the marbled murrelet mitigation plan and shall demonstrate that funding is available to support implementation of the plan for the life of the project. The marbled murrelet mitigation plan will include the following elements:</p> <ul style="list-style-type: none"> <li>• A description of how predator management will be implemented at Van Duzen County Park to reduce the abundance and concentration of corvids (Steller’s jays and ravens), which will include but not be limited to:</li> </ul>	

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<ul style="list-style-type: none"> <li>– installation of specialized trash receptacles, recycling stations, and food lockers to reduce the availability of supplemental food resources to corvids and other wildlife;</li> <li>– installation of grates and rock bins under campsite faucets to reduce corvid attraction and feeding; and</li> <li>– implementation of a “crumb clean” outreach campaign, including installation of signs and providing funding for personnel to enforce the campaign and conduct outreach to visitors to ensure compliance.</li> </ul> <ul style="list-style-type: none"> <li>• A monitoring plan to assess the effectiveness of the predator management and outreach campaign, and a reporting plan to describe the results of the monitoring. Marbled murrelet occupied behavior detection rates and corvid abundance will be monitored each year for at least the first 10 years of project operation to index use of the sites and to compare to baseline levels of marbled murrelet occupied behavior and corvid abundance.</li> <li>• A workplan for collaborating with land managers of adjoining parcels and nearby reserves to facilitate comprehensive predator and visitor management in areas adjacent to Van Duzen County Park.</li> <li>• A funding plan detailing the costs associated with implementation of the plan for the life of the project, and a description of a nonwasting endowment that will be established to fund ongoing predator management, visitor outreach, and monitoring.</li> <li>• A schedule for mitigation implementation and reporting.</li> </ul> <p>The project applicant shall implement an adaptive management plan if monitoring indicates that the effectiveness of the marbled murrelet mitigation plan is falling short of mitigation goals, or if take levels are on a trajectory to exceed the anticipated take limit. Adaptive management actions to rectify a shortfall in production of sufficient marbled murrelets to offset take shall involve consultation with CDFW and USFWS to develop and implement additional compensatory mitigation. This mitigation may include, but is not limited to, funding to support the following efforts:</p>	

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<ul style="list-style-type: none"> <li>• <u>Relocation of recreational facilities out of murrelet habitat.</u> The California Department of Parks and Recreation is seeking funding to relocate a popular day-use picnic area and public restroom facility that currently exists within marbled murrelet old-growth redwood habitat at Founders Grove in Humboldt Redwoods State Park (McAllister, pers. comm., 2019). This day-use area regularly accommodates busloads of tourists who use it as a rest area and leave food behind as they walk on trails. Removing anthropogenic food subsidies in marbled murrelet habitat would help reduce predator pressures on murrelets in the same manner as is proposed for Van Duzen County Park.</li> <li>• <u>Habitat enhancements in buffer forest.</u> The California Department of Parks and Recreation has proposed and is seeking funding to thin and release approximately 125 acres of second-growth forest immediately adjacent to Founders Grove to accelerate the progress of these buffers toward old-growth conditions (McAllister, pers. comm., 2019). To further increase benefits to murrelets, canopy manipulation is proposed for these old-growth buffers to further expedite the process of generating murrelet nesting habitat. Such canopy manipulation work has already been successfully completed elsewhere in the park. Approximately 20,000 acres of formerly harvested stands in Humboldt Redwoods State Park adjacent to occupied murrelet habitat are in need of intervention to help promote the buffering of occupied stands and ultimately provide additional murrelet habitat.</li> <li>• <u>Removal of derelict fishing gear.</u> Removal of derelict fishing gear that poses an entanglement hazard for foraging marbled murrelets could provide benefits to marbled murrelets by reducing fatalities. This measure is currently under consideration as mitigation for murrelets for the Skookumchuk wind project in Washington, and a pilot study has been conducted by SeaDoc out of Humboldt Bay (<a href="https://www.seadocsociety.org/california-lost-fishing-gear-removal-project/">https://www.seadocsociety.org/california-lost-fishing-gear-removal-project/</a>).</li> </ul> <p>If CDFW and USFWS incidental take permits for marbled murrelets require avoidance, minimization, mitigation measures,</p>	

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		or postconstruction monitoring approaches that differ from those described above, the stricter or most conservative measures shall apply. The avoidance, minimization, and mitigation measures implemented in fulfillment of the CDFW and USFWS incidental take permit requirements will be counted toward fulfillment of the mitigation requirements described above.	
<b>3.5-3: Construction Impacts on Bald and Golden Eagle Nesting Activity.</b> Construction of the proposed project could affect bald and golden eagle nest success if active nests were directly affected, or if construction activity were to disturb nest sites, thereby reducing adults' nest attentiveness and nest productivity. This impact would be <b>potentially significant</b> .	PS	<p><b>Mitigation Measure 3.5-3: Avoid and Minimize Impacts on Nesting Eagles.</b></p> <p>The project applicant shall implement the following measures to avoid and minimize impacts on nesting eagles:</p> <ul style="list-style-type: none"> <li>• If construction activities are proposed during the eagle breeding season (January 1–August 31), the project applicant shall conduct preconstruction eagle nesting surveys to determine whether active eagle nests or territories are present within 2 miles of construction boundaries. Surveys shall be conducted by a qualified biologist experienced with the natural history and nesting/territorial behavior of eagles. The ground-based surveys shall be designed to cover all previously documented eagle nest locations (from the CNDDDB, HRC monitoring results, or other reliable sources) and suitable eagles nesting habitat within the 2-mile buffer from the project construction boundaries</li> <li>• Two 4-hour observations shall be conducted at each nest (multiple nests may be observed simultaneously), including one monitoring period in February, during courtship and before egg-laying, and one in early March to determine whether territories are occupied by adult eagles and to identify nesting activity where possible.</li> <li>• The results of the surveys shall be documented in a report and submitted to the Humboldt County Planning &amp; Building Department, USFWS, and CDFW no later than August 31 of the breeding season in which the survey was conducted.</li> <li>• If preconstruction surveys determine that active nests are present within 2 miles of construction activities, the project applicant shall avoid disturbance at active eagle nests. Consistent with the USFWS National Bald Eagle Management Guidelines (2007) and the guidance and recommendations of</li> </ul>	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>Millsap et al. (2015) for golden eagles, any nest previously constructed or used by bald or golden eagles should be treated as active unless (1) the nest has been confirmed based on monitoring data to be inactive for at least the previous five breeding seasons or (2) as described in USFWS (2007) guidance, compelling evidence is available to support the conclusion that the nest is unlikely to be used again in the future.</p> <ul style="list-style-type: none"> <li>• Active eagle nests shall be subject to the following avoidance buffer distances based on USFWS (2007) guidance for bald eagle and USFWS (2002) guidance for golden eagle, unless specific circumstances warrant a lesser distance in accordance with exceptions set forth in the respective sets of guidelines. During construction, a qualified biological monitor shall be present to observe and record behavior of eagles at the nest and to detect eagle response to construction activities and related disturbance. Biological monitors may modify buffers as appropriate based on these observations, in consultation with CDFW and USFWS. The distances presented parenthetically below are for bald eagle and golden eagle (respectively) and assume a direct line of sight between the indicated work activity and the active nest:               <ul style="list-style-type: none"> <li>– Human foot traffic (100 meters/800 meters)</li> <li>– Pass-through vehicular traffic (200 meters/400 meters)</li> <li>– Any other construction work except the types described below (200 meters/800 meters)</li> <li>– Blasting (800 meters for both species)</li> <li>– Helicopter flight (300 meters/800 meters [horizontal and vertical])</li> </ul> </li> </ul> <p>Active eagle nests and associated buffers shall be discussed in the worker environmental awareness program training for construction workers (Mitigation Measure 3.5-1c). Compliance with eagle buffers shall be demonstrated in the monitoring reports submitted by the biological monitor (Mitigation Measure 3.5-19a, “Minimize Impacts on Wildlife and Monitor during Construction”).</p>	

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
<p><b>3.5-4: Construction Impacts on Bald and Golden Eagle Foraging and Nesting Habitat.</b> Construction of the proposed project could remove or degrade the quality of suitable bald and golden eagle foraging habitat. This impact would be <b>less than significant</b>.</p>	LTS	No mitigation measures are required.	LTS
<p><b>3.5-5: Operational Impacts on Bald and Golden Eagles.</b> Operation of the WTGs would pose a risk of collision to bald and golden eagles. This impact would be <b>potentially significant</b>.</p>	PS	<p><b>Mitigation Measure 3.5-5a: Avoid, Minimize, and Compensate for Operational Impacts on Eagles.</b></p> <p>The project applicant shall design and operate the project to minimize potential operational impacts on eagles by adhering to the following impact avoidance and minimization measures:</p> <ul style="list-style-type: none"> <li>• Maintain a landscape around WTGs that does not encourage raptor occurrence by maintaining rodent prey populations to relatively low levels. In addition, implement a prey management program to reduce the availability of rabbits, ground squirrels, and other prey that could attract eagles and other raptors.</li> <li>• Adhere to the general guidelines for turbine and WTG tower design and operation to minimize bird and bat mortality, use turbines and WTG tower designs lacking potential raptor perches that may encourage bird activity near the moving rotors, and avoid guy wires on meteorological towers.</li> <li>• Design and construct all energized project components, including the entire gen-tie, according to APLIC (2006) standards to minimize the potential for electrocution or collision with transmission lines by raptors and other large birds.</li> </ul> <p>The project applicant shall demonstrate compliance with BGEPA:</p> <ul style="list-style-type: none"> <li>• Before beginning project construction, the project applicant shall demonstrate to the Humboldt County Planning &amp; Building Department that it has consulted with USFWS regarding potential impacts of the proposed project on eagles, that the proposed project has been assessed in accordance with the USFWS (2013) <i>Eagle Conservation Plan Guidance</i>, and that the project is in compliance with the BGEPA.</li> </ul> <p>If the project applicant voluntarily elects to pursue an incidental take permit for eagles with USFWS, any mitigation measures implemented in association with the permit (e.g., mortality</p>	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>monitoring, utility pole retrofits for compensatory mitigation) shall also be counted toward the mitigation recommendations provided below.</p> <p><b>Mitigation Measure 3.5-5b: Conduct Postconstruction Mortality Monitoring for Eagles.</b></p> <ul style="list-style-type: none"> <li>As described for marbled murrelet in Mitigation Measure 3.5-2b, the project applicant shall conduct PCMM studies for the life of the project to assess impacts of project operation on eagles. The PCMM shall be designed to ensure a minimum overall detection probability (g) for bald or golden eagles of 30 percent during “intensive” searches (first 3 years) and 8 percent for subsequent annual “road and pad” searches. The overall detection probability shall be calculated as described for marbled murrelet (Mitigation Measure 3.5-2b; Dalthorp et al. 2017).</li> <li>Because eagles are larger than marbled murrelets, the methods outlined for marbled murrelet in Mitigation Measure 3.5-2b are expected to provide adequate detection rates for eagle carcasses. However, because the risk of eagle mortality is spread more evenly throughout the year than the risk of marbled murrelet mortality, the project applicant shall ensure that the search effort for eagle carcasses is distributed evenly throughout all seasons.</li> <li>The overall detection of eagle carcasses (g) shall be calculated based on results of searcher efficiency trials with large raptor carcasses. The overall detection probability for the EoA model represents the probability of detecting a carcass present on the site during the period of evaluation and is based on the results of searcher efficiency and carcass persistence trials, and the spatial and temporal extent of coverage (i.e., proportion of WTGs or time for which searches occurred).</li> <li>At the completion of each year of PCMM studies, the maximum credible number of bald and golden eagle mortalities shall be estimated using the EoA model and PCMM data. As with the marbled murrelet, separate estimates based on the 50 percent and 90 percent credibility levels (<math>-\alpha</math>, where <math>\alpha=0.5</math> and <math>0.1</math>, respectively) shall be calculated. These estimates can be used as</li> </ul>	

**Table ES-1. Summary of Project Impacts and Mitigation Measures**

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>triggers for potential adaptive management or to evaluate effectiveness of mitigation.</p> <p>The project applicant shall provide annual reports describing postconstruction monitoring results to the Humboldt County Planning &amp; Building Department and to USFWS.</p> <p><b>Mitigation Measure 3.5-5c: Implement Compensatory Mitigation to Offset Operational Impacts on Eagles.</b></p> <ul style="list-style-type: none"> <li>• The project applicant shall compensate for the loss of any golden or bald eagles injured or killed as a result of project operation by paying for the retrofitting of electrical utility poles that present a high risk of electrocution to eagles, as prescribed in the <i>Eagle Conservation Plan Guidance</i>, Appendix G (USFWS 2013). This includes eagle mortality detected during structured postconstruction mortality monitoring surveys, and eagle mortality detected incidentally that have resulted from project operations.</li> <li>• For each instance of project-related injury or mortality that removes a bird from the population, 32 utility poles shall be retrofitted. This is based on a resource equivalency analysis (REA) performed by USFWS (2013; Appendix G) and assumes that each retrofitted pole would result in 10 years of avoided loss from electrocution. The REA analysis also assumes that the take of one eagle and the associated compensatory mitigation occur during the same year. Certain utility poles may be eligible for “reframing” (as opposed to retrofitting) to avoid electrocution, which is assumed by USFWS to result in 30 years of avoided loss rather than 10 years. The reframing of 14 poles would be sufficient to offset take of a single eagle, according to the REA analysis.</li> <li>• Compensatory mitigation for the loss of each eagle shall be completed within 1 year of each instance of documented take. Retrofitted poles must be considered “high-risk” for electrocution (per USFWS 2013, Appendix G), and for instances of bald eagle take must be located in areas where both species occur and within the Pacific Flyway north of 40 degrees North latitude. For instances of golden eagle take, retrofitted poles must be located within the Pacific Flyway. These areas</li> </ul>	

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>represent the USFWS-designated “Eagle Management Units” for bald and golden eagles at the project site, respectively (USFWS 2016a).</p> <ul style="list-style-type: none"> <li>The project applicant shall provide a report describing successful implementation of the electric utility pole retrofits for every bald or golden eagle taken as a result of project operations to the Humboldt County Planning &amp; Building Department and to USFWS. The report shall be provided no more than 1 year after detection of the eagle take.</li> </ul> <p>If the project applicant pursues a federal eagle incidental take permit and develops separate mitigation measures for eagles in association with an eagle conservation plan, any mitigation completed toward the eagle take permit requirements shall be counted toward the mitigation requirements outlined above.</p>	
<p><b>3.5-6: Disturbance of Roosting and Nesting Northern Spotted Owls by Construction Activities.</b> Project construction noise and activities could increase stress levels in owls during daytime roosting/nesting periods, potentially leading to nest abandonment. This impact would be <b>potentially significant</b>.</p>	PS	<p><b>Mitigation Measure 3.5-6: Minimize Construction Disturbance to Northern Spotted Owl.</b></p> <p>To prevent nest abandonment caused by auditory and visual disturbance, the project applicant shall implement the following noise and visual disturbance buffers during the nesting season in accordance with the USFWS guidelines <i>Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California</i> (USFWS 2006):</p> <ul style="list-style-type: none"> <li>100 meters for high construction noise (81–90 decibels [dB])</li> <li>250 meters for very high construction noise (91–100 dB)</li> <li>400 meters for extreme construction noise (101–110 dB)</li> </ul> <p>The buffer sizes listed above are default thresholds. Site-specific sound attenuation shall be considered and buffers resized accordingly, and approved by CDFW and USFWS. Buffers shall be placed around northern spotted owl activity centers near the project site as determined during preconstruction surveys and shall account for the locations in the project area where extreme versus high category noise would occur. Buffers shall be clearly indicated on construction drawings and adherence to buffers shall be monitored during construction activities by a qualified monitor. The project applicant shall provide documentation to the Humboldt County Planning &amp; Building Department that CDFW</p>	LTS

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		and USFWS have been consulted in developing the size of the auditory buffer and the level of monitoring and reporting required during construction, and that buffers have been established and adhered to during construction.	
<p><b>3.5-7: Removal, Fragmentation, and Modification of Northern Spotted Owl Habitat during Construction.</b> Construction of access roads, the gen-tie, and other project facilities would result in disturbance to approximately 546.8 acres of forested northern spotted owl habitat (approximately 457.1 acres of temporary impact and 89.7 acres of permanent impact). This impact would be <b>potentially significant</b>.</p>	PS	<p><b>Mitigation Measure 3.5-7: Avoid, Minimize, and Compensate for Construction Impacts on Northern Spotted Owl.</b></p> <p>The project applicant shall implement the following measures to avoid, minimize, and compensate for impacts of project construction on northern spotted owl:</p> <ul style="list-style-type: none"> <li>• Develop a map based on the best available information depicting the locations of foraging, nesting, and roosting habitat for northern spotted owls on the project site. This information will guide efforts to minimize habitat impacts during the project’s final design. The project applicant shall minimize, to the extent feasible, the removal or degradation of mature coniferous forest habitat or other habitats that could support foraging, roosting, or nesting northern spotted owls. Upon completion of construction, the project applicant shall submit to the Humboldt County Planning &amp; Building Department, CDFW, and USFWS documentation of these minimization efforts, and shall provide an accounting of northern spotted owl foraging, nesting, and roosting habitat temporarily and permanently affected by construction.</li> <li>• Provide documentation to the Humboldt County Planning &amp; Building Department, CDFW, and USFWS confirming that functional habitat thresholds have been met for all spotted owl activity sites occurring within 0.7 mile of the project area upon completion of construction. The thresholds that must be met include: <ul style="list-style-type: none"> <li>– Maintain functional nesting habitat (no habitat modifications, no entry) within 500 feet of northern spotted owl activity centers.</li> <li>– Maintain functional foraging and roosting habitat and avoid disturbance within 500–1,000 feet of northern spotted owl activity centers during nesting season.</li> <li>– Provide 500 acres of functional habitat within 0.7 mile of</li> </ul> </li> </ul>	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>activity centers.</p> <ul style="list-style-type: none"> <li>- Provide 1,336 acres of functional habitat within 1.3 miles of activity centers.</li> <li>• Provide compensatory mitigation for northern spotted owl foraging, nesting, and roosting habitat that is permanently removed (clearing for the gen-tie and roads is considered a permanent impact). This mitigation may be composed of one or more of the following options, and shall be developed in consultation with CDFW and USFWS: <ul style="list-style-type: none"> <li>- The project applicant shall mitigate permanent impacts on northern spotted owl foraging, nesting, and roosting habitat by permanently preserving lands at a minimum 3:1 ratio through the purchase of conservation easements or acquisition of suitable northern spotted owl habitat. The determination of what constitutes suitable habitat shall be made in consultation with CDFW and USFWS. Any preserved land shall be protected from development with an encumbering instrument (e.g., a deed restriction, covenant, or conservation easement) and shall be managed through the use of a nonwasting endowment. With concurrence of CDFW and USFWS, the same mitigation lands that are used for marbled murrelet mitigation may be used to satisfy northern spotted owl mitigation obligations. The replacement habitat shall be in the general vicinity of the project site (i.e., in Humboldt County) and should be capable of providing functions similar to those provided by the habitat that will be removed, as determined by USFWS and CDFW.</li> <li>- Within 2 years following the first delivery of power, the project applicant shall purchase and record up the mitigation lands as off-site conservation land in fee-title and/or easement for open space suitable as nesting, foraging, and roosting habitat for northern spotted owls. The County, in consultation with USFWS and CDFW, shall approve the location of the conservation land or easement.</li> </ul> </li> <li>• The project applicant may implement a barred owl management program in the project vicinity on privately held land occupied</li> </ul>	

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		<p>by northern spotted owl (owned by either HRC or another entity), and/or implement this program on the off-site conservation lands described above.</p> <ul style="list-style-type: none"> <li>The project applicant shall comply with northern spotted owl management objectives, conservation measures, and adaptive management measures required in the HCP EIS/EIR (and incorporated into the HCP) (PALCO 1998).</li> </ul> <p>If CDFW and USFWS incidental take permits for northern spotted owl include avoidance, minimization, and mitigation measures that differ from those described above, the stricter or most conservative measures shall apply.</p>	
<p><b>3.5-8: Operational Impacts on Northern Spotted Owls.</b> Northern spotted owls that cross the road/ridge in the wind turbine generator zone as a matter of foraging habit, or during dispersal by young birds, have the potential to collide with WTG blades. This impact would be <b>potentially significant</b>.</p>	PS	<p><b>Mitigation Measure 3.5-8: Avoid, Minimize, and Compensate for Operational Impacts on Northern Spotted Owls.</b></p> <ul style="list-style-type: none"> <li>The project applicant shall implement: <ul style="list-style-type: none"> <li>Mitigation Measure 3.5-5a, “Avoid, Minimize, and Compensate for Operational Impacts on Eagles,” which provides similar benefits and protections for northern spotted owls; and</li> <li>Mitigation Measure 3.5-5b, “Conduct Postconstruction Mortality Monitoring for Eagles,” as adhering to postconstruction monitoring protocols for eagles will achieve adequate detection rates to determine whether the project has resulted in take of northern spotted owls.</li> </ul> </li> <li>For each northern spotted owl mortality, the project applicant shall develop and implement compensatory mitigation in consultation with CDFW and USFWS that will create one northern spotted owl for every individual taken to offset any fatalities documented over the operational life of the project. This offset can be accomplished with funding and implementation of barred owl management programs, or by acquisition of or conservation easements on habitat that would provide nesting, foraging, or roosting northern spotted owl habitat, as described in Mitigation Measure 3.5-7. The benefit to the affected population shall be demonstrated to offset take by creating one northern spotted owl for every spotted owl taken as a result of project operation.</li> </ul>	LTS

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		If CDFW and USFWS incidental take permits for northern spotted owl include avoidance, minimization, and mitigation measures that differ from those described above, the stricter or most conservative measures shall apply.	
<b>3.5-9: Construction Impacts on Nesting Raptors.</b> Project construction could directly or indirectly affect the nesting success of raptors. This impact would be <b>potentially significant</b> .	PS	<p><b>Mitigation Measure 3.5-9: Avoid Impacts on Nesting Raptors.</b></p> <p>The project applicant shall implement the following measures to avoid directly or indirectly affecting nesting raptors during project construction:</p> <ul style="list-style-type: none"> <li>• Where feasible, tree and vegetation removal activities shall be avoided in potential raptor nesting habitat during the avian nesting season (February 1–August 31, annually).</li> <li>• Preconstruction raptor nesting surveys shall be conducted. Before any construction activities occur during the avian nesting season (February 1–August 31), including vegetation removal (if necessary), preconstruction raptor nesting surveys shall be conducted by a qualified biologist to identify raptor nests within 500 feet of proposed work areas. The qualified biologist shall be knowledgeable in the distribution, habitat, life history, and identification of Northern California birds; experienced in nest searching for birds that may occur within study area; and knowledgeable in survey protocols and/or permits needed to survey for federally listed or state-listed birds.</li> </ul> <p>If active raptor nests are detected during preconstruction surveys, a 500-foot exclusion zone shall be established around the nest in which no work would be allowed until the young have successfully fledged or nesting activity has ceased. The determination of fledging or cessation of nesting shall be made by a qualified biologist with experience in nest searching and monitoring for raptors, in consultation with CDFW and USFWS. In consultation with CDFW and USFWS, the size of the exclusion zone may be modified depending on the species and the type of construction activity and associated disturbance anticipated near the nest. Active nest sites shall be monitored periodically by a qualified biologist throughout the nesting season to identify any sign of disturbance and to document nest status.</p>	LTS

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
<p><b>3.5-10: Removal and Modification of Special-Status Raptor Nesting and Foraging Habitat during Construction.</b> Construction of access roads, the gen-tie, and other project facilities would result in up to approximately 862.1 acres of impacts (approximately 729.5 acres of temporary impacts and 132.6 acres of permanent impacts) on potential nesting and foraging habitat for special-status raptor species. This impact would be <b>less than significant</b>.</p>	LTS	No mitigation measures are required.	LTS
<p><b>3.5-11: Operational Impacts on Raptors.</b> Operation of the proposed project could result in mortality of and injury to raptors, as a result of collisions with wind turbine generators and electrical transmission lines. This impact would be <b>potentially significant</b>.</p>	PS	<p><b>Mitigation Measure 3.5-11: Avoid, Minimize, and Compensate for Operational Impacts on Raptors.</b> The project applicant shall implement:</p> <ul style="list-style-type: none"> <li>• Mitigation Measure 3.5-5a, “Avoid, Minimize, and Compensate for Operational Impacts on Eagles,” which provides similar protections to raptors;</li> <li>• Mitigation Measure 3.5-5b, “Conduct Postconstruction Mortality Monitoring for Eagles,” as adhering to postconstruction monitoring for eagles will also provide sufficient fatality monitoring for other raptors; and</li> <li>• Mitigation Measure 3.5-5c, “Implement Compensatory Mitigation to Offset Operational Impacts on Eagles.” These avoidance and minimization measures include requirements to implement avoidance and minimization measures and implement a PCMM to monitor and report on project-related fatalities. This measure also describes compensatory mitigation in the form of retrofitting power poles to reduce electrocution risk to eagles, but this mitigation also provides benefits to raptors other than eagles (Kagan 2016).</li> </ul> <p>After collection of 3 years of postconstruction monitoring data, the Humboldt County Planning &amp; Building Department will review the data and, in consultation with USFWS and CDFW, will determine which, if any, specific WTGs generate disproportionately high levels of avian mortalities (based on evidence of statistically significant higher levels of mortality relative to other WTGs). If specific WTGs are found to result in disproportionately high avian mortalities, the project applicant shall consult with the County to evaluate any feasible measures that can be implemented at the discretion of the County to reduce</p>	SU

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		<p>or avoid mortalities at those specific WTGs.</p> <p>If unauthorized take of a federal or state threatened or endangered raptor occurs during project operation, the project applicant shall immediately notify the appropriate agency (CDFW and/or USFWS) by phone. The applicant shall then submit a written finding to the appropriate agency and the County within 2 calendar days that describes the date, time, location, species and, if possible, cause of unauthorized take. The applicant shall notify the County within 3 calendar days of the receipt of any USFWS and/or CDFW required or recommended actions resulting from the unauthorized take, including whether an incidental take permit and/or additional requirements is deemed necessary by either agency.</p>	
<p><b>3.5-12: Construction Impacts on Avian Foraging and Nesting Habitat.</b> Construction activities associated with installation of proposed project infrastructure, including wind turbine generators and pads, the substation, the O&amp;M facility, and the gen-tie, resulting in removal of forest, woodland, grassland, and riparian habitat would result in loss of avian nesting, foraging, and migratory stopover habitat for special-status birds. This impact would be <b>potentially significant</b>.</p>	PS	<p><b>Mitigation Measure 3.5-12: Avoid and Minimize Impacts on Avian Nesting and Foraging Habitat.</b></p> <p>The project applicant shall implement the following measures to avoid or offset impacts on avian nesting and foraging habitat:</p> <ul style="list-style-type: none"> <li>• Minimize the construction footprint in riparian and wetland habitats, and in grassland habitats that could support nesting horned larks. Based on information from project bird use survey data (Stantec 2018g) and from McAllister (pers. comm., 2019), the project applicant shall develop a map depicting the location of the Bear River population of horned larks. Within this area, small and large rock outcroppings shall not be disturbed for the purposes of WTG placement. A 150-foot buffer shall be applied to large and small rock outcroppings that are suitable habitat for horned larks. If it is not feasible to maintain the rock outcroppings for the purpose of constructing the main access road, substitute rocks shall be placed within the mapped population area.</li> <li>• Implement Mitigation Measure 3.5-1c, “Develop and Implement a Worker Environmental Awareness Program.”</li> </ul> <p>Provide compensatory mitigation for permanent impacts on grassland habitat at a no-net-loss ratio for grassland and scrub/shrub habitat, and at a 3:1 ratio for permanent impacts on riparian habitat, as described in Mitigation Measure 3.5-23e, “Develop and Submit a Reclamation, Revegetation, and Weed</p>	LTS

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		Control Plan.” Temporary impacts on grassland, scrub/shrub, and riparian habitat shall be restored on-site.	
<p><b>3.5-13: Construction Impacts on Nesting Birds.</b> Construction of the proposed project could affect avian nest success if active nests were to be directly affected or if construction activity were to cause disturbance at nest sites, thereby reducing adults’ nest attentiveness and nest productivity. This impact would be <b>potentially significant</b>.</p>	PS	<p><b>Mitigation Measure 3.5-13: Avoid Impacts on Nesting Birds.</b></p> <p>The project applicant shall minimize impacts on habitat supporting nesting birds, as described in Mitigation Measure 3.5-12, and shall implement Mitigation Measure 3.5-1c, “Develop and Implement a Worker Environmental Awareness Program,” and measures for biological monitors. In addition, the project applicant shall implement the following measures to avoid directly or indirectly affecting nesting birds during project construction:</p> <ul style="list-style-type: none"> <li>• The project applicant shall conduct preconstruction nesting bird surveys to locate all active nests of special-status birds and birds protected under the MBTA, and California Fish and Game Code Sections 3503 and 3503.5. Before any construction activities occur during the general avian nesting season (March 1–August 31), including vegetation removal (if necessary), preconstruction nesting bird surveys shall be conducted by a qualified biologist to identify any nests within 250 feet of proposed work areas. The qualified biologist shall be knowledgeable in the distribution, habitat, life history, and identification of Northern California birds; experienced in nest searching for birds that may occur within the study area; and knowledgeable in survey protocols and/or permits needed to survey for federally listed or state-listed birds.</li> </ul> <p>If nests are detected during preconstruction surveys, a 250-foot exclusion zone shall be established around the nest in which no work will be allowed until the young have successfully fledged or nesting activity has ceased. The determination of fledging or cessation of nesting shall be made by a qualified biologist with experience in nest searching and monitoring for raptors, in consultation with CDFW and USFWS. In consultation with CDFW and USFWS, the size of the exclusion zone may be modified depending on the species and the type of construction activity and associated disturbance anticipated near the nest. Active nest sites shall be monitored periodically throughout the nesting season to identify any sign of disturbance and to document nest status.</p>	LTS

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
<p><b>3.5-14: Operational Impacts on Nonraptor Birds.</b> Operation of the proposed project could result in mortality of and injury to nonraptor birds, as birds could collide with or be electrocuted by project components such as wind turbine generators and electrical transmission lines. This impact would be <b>potentially significant</b>.</p>	<p>PS</p>	<p><b>Mitigation Measure 3.5-14: Avoid and Minimize Operational Impacts on Nonraptor Birds.</b></p> <p>The project applicant shall implement the following measures to avoid and minimize operational impacts of the project on nonraptor birds:</p> <ul style="list-style-type: none"> <li>• <b>Minimize Construction Footprint.</b> The project applicant shall minimize the construction footprint to ensure that locations chosen for WTGs avoid known occurrences of all special-status nonraptor species to the greatest extent feasible.</li> <li>• <b>Conduct Postconstruction Mortality Monitoring.</b> PCMM studies shall be designed to ensure a minimum overall detection probability (g) for bats of 10 percent during “intensive” searches (first 3 years) and 3 percent for subsequent annual “road and pad” searches. The overall detection probability shall be calculated as described for marbled murrelet (Mitigation Measure 3.5-2b; Dalthorp et al. 2017). Achieving this level of detection for bats will ensure that the detection rates for small birds are sufficient as well, because small birds generally persist longer and are detected at higher rates than bats.</li> <li>• <b>Calculate Detection Probability.</b> The overall detection probability shall be calculated as described above for marbled murrelet and eagles, to represent the probability of detecting a carcass present on the site during the period of evaluation based on the results of searcher efficiency and carcass persistence trials, the proportion of WTGs covered, the proportion of carcasses falling within the search area, and the temporal extent of coverage. As described in Mitigation Measure 3.5-18b, this required level of detection is based on the need to accurately determine when the mortality rate of bats meets or exceeds 1.7 mortalities per WTG per year, which would trigger adaptive management action. Meeting this requirement will also ensure that detection rates of small birds are adequate to identify when one or more species is experiencing significant mortality, because they are more readily detected and tend to persist for longer than bat carcasses. After collection of 3 years of postconstruction monitoring data, the Humboldt County Planning &amp; Building Department will review the data and, in consultation with USFWS and CDFW, will determine which, if</li> </ul>	<p>LTS</p>

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		<p>any, specific WTGs generate disproportionately high levels of avian mortalities (based on evidence of statistically significant higher levels of mortality relative to other WTGs). If specific WTGs are found to result in disproportionately high avian mortalities, the project applicant shall consult with the County to evaluate any feasible measures that can be implemented at the discretion of the County to reduce or avoid mortalities at those specific WTGs.</p> <ul style="list-style-type: none"> <li>• <b>Report Take.</b> If unauthorized take of a federally listed or state-listed threatened or endangered avian species occurs during project operation, the project applicant shall immediately notify the appropriate agency (CDFW and/or USFWS) by phone. The project applicant shall then submit a written finding to the appropriate agency and the County within 2 calendar days that describes the date, time, location, species, and if possible, cause of unauthorized take. The project applicant shall notify the County within 3 calendar days of the receipt of any USFWS- and/or CDFW-required or recommended actions resulting from the unauthorized take, including whether an incidental take permit and/or additional requirements is deemed necessary by either agency.</li> </ul>	
<p><b>3.5-15: Construction Impacts on Bat Maternity Roosts or Hibernacula and Loss of Essential Roost Habitat.</b> Construction of the proposed project could result in mortality of and injury to bats, including special-status species, and removal of essential bat roost habitat. This impact would be <b>potentially significant</b>.</p>	PS	<p><b>Mitigation Measure 3.5-15: Avoid and Compensate for Impacts on Bat Roosts.</b> To avoid direct and indirect impacts on bats, the project applicant shall conduct a habitat assessment to determine whether potential bat roosts occur in or near the project area, and shall implement avoidance and minimization measures to protect bats and bat roosts as described below.</p> <ol style="list-style-type: none"> <li>1. Conduct a habitat assessment to identify potential bat roost sites:             <ol style="list-style-type: none"> <li>a. Trees, rock outcroppings, and structures to be removed shall be assessed for potentially suitable colonial roost habitat in advance of removal (Tatarian 2018). The assessment shall be conducted under the guidance of a qualified biologist with experience identifying bat roosts and approved by CDFW. The assessment shall emphasize trees and rock outcroppings that exhibit characteristics that provide high-quality roost</li> </ol> </li> </ol>	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>habitat, such as snags with apparent cavities or sloughing bark, large-diameter trees with basal hollows, large-diameter trees with indications of senescence, live trees with dead tops, species that age or decay in a manner that creates cavities or large crevices (e.g., redwood, big-leaf maple, tanoak), and large rock outcroppings containing cave-like structures, or numerous fissures or flakes.</p> <p>2. All potentially suitable roost habitat shall be rated on a scale of 1 to 3, as follows: 1 = unsuitable/low suitability, 2 = high suitability, 3 = identifiable roost. Avoid removal of confirmed roosts and highly suitable potential roost habitat:</p> <p>a. Removal of roost habitat rated 2 or 3 shall be avoided to the extent feasible via project modifications (e.g., roadway realignment). When determining whether suitable roost habitat shall be preserved, the qualified biologist, in consultation with CDFW, shall consider whether preserving the habitat might lead to greater impacts (ongoing mortality) from wind farm operations than the impacts that would be caused by removal (exclusion and loss of habitat), depending on the location and significance of the suitable roost habitat.</p> <p>b. If avoiding all potential and identifiable roost habitat rated 2 or 3 is not feasible, the qualified biologist shall visually inspect all accessible habitat during the daytime. During the inspection, the biologist shall identify characteristics that would make the habitat unsuitable for roosting bats (e.g., water intrusion, excessive airflow, indications of use by other wildlife) and for indications of use by bats (e.g., guano, urine or oil staining, bat smells, audible bat noises, visible bats). Visual inspections shall be aided as appropriate by the use of spotlights, binoculars, and borescopes, and shall avoid undue disturbance to roosting bats in a sensitive state (e.g., rearing or hibernation). Any roost habitat determined to be unsuitable shall be changed to a rating of 1. Any indications of bat use shall be recorded and the roost habitat shall be rated 3.</p> <p>c. A qualified biologist who is experienced in surveying potential roost habitat, and who is approved by CDFW, shall survey all potential roost habitat rated 2 that is inaccessible</p>	

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>for visual inspection to determine habitat use patterns. The survey design may include emergence surveys using night-vision technology, acoustic surveys, thermal surveys, or any combination of the above, as determined appropriate for specific site conditions by the qualified biologist, and as approved by CDFW. The surveyor shall attempt to determine whether the habitat serves as a day roost, night roost, maternity roost, and/or hibernacula; how many bats may use the habitat; and which species may use the habitat. To determine which seasons the roost is in use, such surveys may need to be conducted during all four seasons. Any habitat with indications of use shall be changed to a rating of 3. Any roost habitat that is surveyed sufficiently, as determined by the qualified biologist in consultation with CDFW, to indicate an absence of bat use shall be changed to a rating of 1.</p> <p>c. As an alternative to doing extensive surveys to determine habitat use patterns and/or to determine whether the roost is used by Townsend’s big-eared bat, the project applicant shall assume that all potential roost habitat rated 2 is identified roost habitat rated 3, and shall remove it and compensate for its loss as described below.</p> <p>3. Adjust tree removal timing and approach to minimize impacts:</p> <p>a. To the extent feasible, all tree removal shall occur in the fall (September 1–October 31, with adjustments possible depending on weather conditions and as approved by CDFW) to minimize impacts on foliage-roosting bat species, and on any colonial tree-roosting species not detected during the habitat assessment and surveys. All trees rated 3 shall only be removed outside of their season(s) of use, or in the fall.</p> <p>b. The project applicant shall implement a staged approach to tree removal under the guidance of the qualified biologist who has experience identifying bat roosts. The purpose of the staged approach is to encourage any bats in residence to leave before habitat is removed. Where roost habitat rated 2 or 3 must be removed, habitat rated 1 shall be removed at least 1 day and no more than 5 days before habitat rated 2 or</p>	

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>3. In addition, if roost habitat rated 3 must be removed, the qualified biologist shall develop a tree removal approach to further encourage any bats in residence to leave before any trees are removed. This approach shall be developed in consultation with CDFW and may include such measures as limbing the tree a day before felling the tree; opening up the potential roost habitat to introduce disturbing airflow; introducing nighttime lighting or other disturbing elements to the roost area; or excluding bats from the habitat, either physically with the use of one-way doors, or with the use of acoustic deterrents, as practical.</p> <p>4. Compensate for the loss of essential Townsend’s big-eared bat roost habitat:</p> <ul style="list-style-type: none"> <li>a. All essential Townsend’s big-eared bat roost habitat being removed shall be replaced with artificial roost habitat constructed to mimic the specific type of roost habitat being removed. The design and location of the artificial roost habitat shall be approved by CDFW, and may include the creation of basal hollows in existing trees, or constructed artificial roosts.</li> <li>b. Based on the judgment of the qualified biologist and in consultation with CDFW, replacement habitat shall be located near suitable foraging habitat, and within a suitable distance of the habitat removed, to benefit the local bat populations affected. Bat occupancy performance standards, provisions for long-term protection, and a monitoring approach for the replacement habitat shall be approved by CDFW before the roost is removed.</li> </ul> <p>5. Avoid and minimize temporary impacts on roost sites during construction:</p> <ul style="list-style-type: none"> <li>a. <i>Conduct a habitat assessment.</i> Trees, rock outcroppings, and structures located within a minimum 100-foot buffer area from anticipated construction disturbance areas shall be assessed as part of the habitat assessment described above in Measure 1. The buffer area will generally include all habitat within the line of sight from the edge of the disturbance area. However, the buffer area may be field-fit and expanded as necessary by the qualified biologist, depending on the</li> </ul>	

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>severity of planned disturbance and any visual or acoustic screening that may exist (e.g., dense vegetation can reduce noise levels by 10 dBA more than 200 feet [U.S. Department of Transportation 2011 in Caltrans 2016]).</p> <p>b. <i>Avoid and minimize disturbance of potential roost habitat.</i> Disturbance of all habitat rated 2 or 3 shall be avoided to the extent feasible via project modifications. If avoiding all habitat rated 2 or 3 is not possible, a qualified biologist, in consultation with CDFW, shall assess the degree of anticipated disturbance and probable species sensitivity. If warranted, the qualified biologist shall develop and implement impact minimization measures that are appropriate to site conditions. He or she shall consider that some degree of construction disturbance to species with high roost fidelity may be less disruptive than implementation of certain minimization measures (e.g., temporary exclusion). Impact minimization measures may include the following:</p> <ul style="list-style-type: none"> <li>– Delaying work in a buffer area around the suitable roost habitat until spring or fall when all bats would be volant and could fly away from the disturbance area. An appropriate buffer may be approximately 100 feet depending on site specifics, but greater avoidance distances might be needed to allow noise to attenuate to approximately background levels to achieve optimal noise avoidance (Johnston et al. 2004).</li> <li>– Modifying construction techniques, equipment, and/or timing to use less disruptive approaches. Examples of less disruptive approaches include using equipment that emits noise at a lower decibel level and/or at lower frequencies outside the ranges that bats can hear; scheduling intermittent highly disruptive activities during the spring and fall when bats are the least sensitive; and conducting intermittent highly disruptive activities when atmospheric conditions are favorable. (For example, noise travels farther during periods of higher humidity or lower temperatures [Washington Department of Transportation 2015 in Caltrans 2016]).</li> <li>– Installing sound or vision barriers between the suitable</li> </ul>	

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		<p>roost habitat and the construction.</p> <ul style="list-style-type: none"> <li>- Starting the disturbance before the sensitive season(s) and continuing into the sensitive season(s), so that bats can avoid establishing a maternity or hibernation roost in the area of disturbance, or can become desensitized to the disturbance before their sensitive season(s).</li> <li>- Avoiding the use of nighttime lighting and/or disruptive work around important night roosts.</li> <li>- Temporarily excluding bats before their sensitive seasons and before construction disturbance.</li> </ul> <p>As an alternative to implementing Measures 5a and 5b listed above, all highly suitable roost habitat may be surveyed as described above in Measure 2. If the qualified biologist determines that survey approaches and results are sufficient to indicate an absence of bats in the potential roost habitat, no further action is required.</p>	
<b>3.5-16: Construction Disturbance of Bachelor Groups, Migratory Roosts, or Solitary Bats.</b> Construction of the proposed project could result in mortality, displacement, and disturbance of bachelor groups, migrating bats, or solitary bats, including special-status species. This impact would be <b>less than significant</b> .	LTS	No mitigation measures are required.	LTS
<b>3.5-17: Loss of Bat Foraging Habitat and Nonessential Roosts.</b> Construction of the proposed project would require the permanent removal of foraging habitat, and could result in the permanent loss of nonessential roosts. This impact would be <b>less than significant</b> .	LTS	No mitigation measures are required.	LTS
<b>3.5-18: Operational Impacts on Bats.</b> Operation of the proposed project could result in mortality of and injury to a large number of bats, including special-status bat species, as a result of interaction with wind turbine generators. This impact would be <b>potentially significant</b> .	PS	<p><b>Mitigation Measure 3.5-18a: Preclude Operational Impacts on Bat Population Level Decline through Consultation with a Technical Advisory Committee.</b></p> <p>To minimize the risk of bat mortality and preclude the project's contribution to significant impacts on local and regional bat populations, a technical advisory committee (TAC) shall be formed and funded by the project applicant. The TAC shall evaluate postconstruction monitoring data to determine whether bat mortality attributable to the project poses a potential for a</p>	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>significant impact on the local and regional bat population if left unabated.</p> <p>The TAC’s duties shall include but not be limited to the following:</p> <ul style="list-style-type: none"> <li>• reviewing and interpreting postconstruction fatality data and bat survey data;</li> <li>• assessing whether bat mortality attributable to the project poses a potential for a bat population to drop below self-sustaining levels if left unabated; and</li> <li>• strategically identifying operational minimization measures that will most efficiently minimize impacts on bat populations while recognizing the operational needs of the facility.</li> </ul> <p>In the event the TAC finds that action is needed, the TAC shall strategically identify the measures that will most efficiently minimize impacts on the bat population. The TAC’s recommendations shall focus on operational modifications that address documented mortality contributing to population-level declines of bats while recognizing the operational needs of the facility.</p> <p>The TAC shall provide a report of its findings to the Humboldt County Planning &amp; Building Department on an annual basis, or at less frequent intervals if determined by the TAC that annual reporting is not necessary. The recommendations of the TAC shall be implemented as a component of this mitigation measure.</p> <p>The TAC shall be composed of representatives from the following organizations:</p> <ul style="list-style-type: none"> <li>• Humboldt County Planning &amp; Building Department</li> <li>• CDFW</li> <li>• Pacific Southwest Research Station (or another organization dedicated to bat research)</li> </ul> <p>Humboldt Wind, LLC (operator of facility)</p> <p><b>Mitigation Measure 3.5-18b: Conduct Bat Surveys and Mortality Monitoring.</b></p> <p>To inform operations and resource management practices, the project applicant shall conduct surveys to assess and monitor bat</p>	

**Table ES-1. Summary of Project Impacts and Mitigation Measures**

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>use across the project site. Surveys shall be designed for determining whether bat presence in the project area can be used to refine operations to minimize bat fatalities and loss of energy generation. Study designs shall be developed in consultation with the TAC. Surveys shall be designed for determining whether, when, and where bats—particularly hoary bats—move through the project site and in what numbers. The study design may include a combination of study methods, such as radiotelemetry monitoring using Motus stations, thermal imaging, radar studies designed to detect the elevations at which bats fly through the project area, and acoustic studies conducted at WTG elevations (Weller, pers. comm., 2018; Johnston, pers. comm., 2018).</p> <p>The project applicant shall conduct mortality monitoring across the project site to inform resource management practices, to aid in refining operational minimization measures for minimizing bat fatalities and loss of energy generation, and for assessing the effectiveness of other impact minimization measures currently in development that may be implemented as they become available.</p> <p>The monitoring protocol (i.e., field protocol) and data evaluation methods (e.g., statistical and modeling approaches) shall be developed in consultation with the TAC. The monitoring protocol and evaluation methods used shall incorporate “lessons learned” from other recent monitoring efforts (e.g., Golden Hills North Wind Energy Center), and may include the use of scent detection dogs and data analysis approaches developed by USGS (GenEst, Evidence of Absence model), as appropriate.</p> <p>PCMM studies shall be designed to ensure a minimum overall detection probability (g) for bats of 10 percent during “intensive” searches (first 3 years) and 3 percent for subsequent annual “road and pad” searches. The overall detection probability shall be calculated as described for marbled murrelet (Mitigation Measure 3.5-2b; Dalthorp et al. 2017). The overall detection probability shall be calculated as described above for marbled murrelet and eagles, to represent the probability of detecting a carcass present on the site during the period of evaluation based on the results of searcher efficiency and carcass persistence trials, the proportion of WTGs covered, the proportion of carcasses falling within the search area, and the temporal extent of coverage. This required</p>	

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		<p>level of detection is based on the need to accurately determine when the mortality rate of hoary bats meets or exceeds mortality rates that may trigger adaptive management action. The TAC may determine that intensive searches are needed beyond the first 3 years of operation to provide enough iterations to determine the best operational protocols to minimize mortality and loss of energy generation.</p> <p>The project applicant shall report bat survey and mortality data to BatAMP, the Wildlife Response and Reporting System, the Biogeographic Information and Observation System Program, and other organizations that collaboratively collect and analyze these data, in accordance with California Energy Commission guidelines, and as directed by the TAC.</p> <p>The project applicant shall implement an employee wildlife incident reporting program to document and report any unanticipated or unusual events (e.g., a large-scale bat fatality event or atypical fatality pattern) discovered outside the course of standardized postconstruction monitoring. Such discoveries shall be reported to the TAC for a root cause analysis, and operational minimization measures shall be developed and implemented to reduce the likelihood of such events occurring again.</p> <p><b>Mitigation Measure 3.5-18c: Design and Operate Facility Lighting to Avoid Attracting Bats into Rotor Paths.</b></p> <p>Light sources required for operations shall be located, shielded, and oriented to avoid attracting bats into the rotor path of any WTGs. Lighting near WTGs shall be motion-activated, shall emit no light during the “off” phase, and shall be set for short durations when activated.</p>	
<p><b>3.5-19: Construction Impacts on Special-Status Mammals.</b> Grading and clearing activities, foot and vehicular traffic, and equipment operations associated with preparation of staging areas, construction of access roads, installation of components, and other activities associated with construction of the proposed project would result in loss of habitat for and disturbance of special-status wildlife, including the potential for direct mortality and injury. This impact would be <b>potentially significant</b>.</p>	PS	<p><b>Mitigation Measure 3.5-19a: Minimize Impacts on Wildlife and Monitor during Construction.</b></p> <p>The project applicant shall retain qualified biological monitors to continuously implement the following measures during construction to minimize impacts on wildlife and sensitive habitats:</p> <ul style="list-style-type: none"> <li>• Monitor construction activity for compliance with all project permits and the approved mitigation and monitoring program</li> </ul>	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>for the project; report on monitoring activities as required by project permits.</p> <ul style="list-style-type: none"> <li>• All fences installed on the project site shall be a maximum of 4 feet in height, wire strand, with a smooth bottom wire at least 18 inches from the ground to facilitate wildlife movement during operation of the project.</li> <li>• During construction activities, if an injured or dead special-status species is encountered, the work shall stop within the immediate vicinity. The project applicant shall notify the biological monitor, and the appropriate resource agency (e.g., USFWS or CDFW). Any measures required by these agencies be implemented and proof of implementation shall be submitted to the agencies before construction is allowed to proceed.</li> <li>• At the end of each work day, the biological monitor shall ensure that all potential wildlife pitfalls (trenches, bores, and other excavations) have been backfilled. If backfilling is not feasible, all trenches, bores, and other excavations shall be sloped at a 3:1 ratio at the ends to provide wildlife escape ramps, or covered completely to prevent wildlife access, or fully enclosed with exclusion fencing. If any wildlife species become entrapped, construction shall not occur until the animal has left the trench or been removed by a qualified biological monitor as feasible.</li> <li>• Employees and contractors shall look under vehicles and equipment for the presence of wildlife before moving vehicles and equipment. If wildlife is observed, no vehicles or equipment would be moved until the animal has left voluntarily or is removed by the biological monitor. No federally listed or state-listed species shall be handled.</li> <li>• Vehicle speed limits shall not exceed 15 miles per hour during construction and operation of the project. A speed limit sign shall be posted at all project site entry locations.</li> <li>• The use of high-intensity lighting, steady burning, or bright lights such as sodium vapor, quartz, halogen, or other bright spotlights shall be continuously minimized.</li> </ul>	

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>Nighttime vehicle traffic associated with project activities shall be kept to a minimum volume and speed to prevent mortality of nocturnal wildlife species.</p> <p><b>Mitigation Measure 3.5-19b: Avoid and Minimize Impacts on Special-Status Mammals and Associated Habitats.</b></p> <p>To avoid and minimize impacts on special-status wildlife and associated habitats, the project applicant shall implement the following measures:</p> <ul style="list-style-type: none"> <li>• Mitigation Measure 3.5-1c, “Develop and Implement a Worker Environmental Awareness Program”</li> <li>• “Minimize Construction Footprint” in Mitigation Measure 3.5-14, “Avoid and Minimize Operational Impacts on Nonraptor Birds”</li> <li>• Mitigation Measure 3.5-23e, “Develop and Submit a Reclamation, Revegetation, and Weed Control Plan”</li> <li>• Mitigation Measure 3.5-22b, “Implement Siting Constraint Measures to Delineate and Protect Aquatic Resources”</li> </ul> <p>Mitigation Measure 3.10-1, “Implement Wet-Weather BMPs Consistent with the Humboldt Redwood Company Habitat Conservation Plan,” in Section 3.10, “Hydrology and Water Quality”</p> <p><b>Mitigation Measure 3.5-19c: Develop and Implement a Preconstruction Survey Plan for Special-Status Mammals.</b></p> <p>Before approval of grading or improvement plans, a qualified biologist shall prepare a preconstruction survey plan for special-status mammals. The survey plan shall address the following special-status species: Sonoma tree vole, ringtail, Pacific fisher, and American badger. Survey techniques and methodologies described in the plan may incorporate those described in <i>Sonoma Tree Vole Habitat on Managed Redwood and Douglas-fir Forestlands in North Coastal California</i> (Chinnici et al. 2011) and the <i>Fisher and Marten Survey Techniques on the Tahoe National Forest</i> (Fowler and Golightly 1994). The survey plan shall include the following elements:</p>	

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<ul style="list-style-type: none"> <li>• The survey area shall be conducted in a buffer 150 feet from the boundary of construction disturbance in areas with suitable habitat for these species.</li> <li>• If occupied burrows, dens, or nests are detected, impacts shall be avoided by establishing 50-foot exclusion buffers within which construction activities shall be prohibited until denning/nesting activities are complete or the den/nest is abandoned.</li> <li>• Occupied dens/nests shall be monitored once per week to assess disturbance and use status.</li> <li>• If avoidance of a den/nest is infeasible, the project applicant shall coordinate with CDFW to passively relocate the mammal.</li> </ul> <p>The project applicant shall submit the special-status mammal survey plan for approval to the Humboldt County Planning &amp; Building Department before approval of grading or improvement plans, and surveys shall be conducted before ground-disturbing activities.</p> <p><b>Mitigation Measure 3.5-19d: Minimize Impacts on Special-Status Mammals during Construction.</b></p> <p>The project applicant shall continuously implement the following measures to minimize impacts on wildlife during ongoing construction activities:</p> <ul style="list-style-type: none"> <li>• All fences installed on the project site shall be a maximum of 4 feet in height, wire strand, with a smooth bottom wire at least 18 inches from the ground to facilitate wildlife movement during project operation.</li> <li>• During construction activities, if an injured or dead special-status species is encountered, the construction contractor shall stop work within the immediate vicinity. The project applicant shall notify the Humboldt County Planning &amp; Building Department, the on-call biologist, and the appropriate resources agency (e.g., USFWS or CDFW) before construction is allowed to proceed.</li> <li>• At the end of each work day, the biological monitor shall ensure that all potential wildlife pitfalls (trenches, bores, and other excavations) have been backfilled. If backfilling is not feasible,</li> </ul>	

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		<p>all trenches, bores, and other excavations shall be sloped at a 3:1 ratio at the ends to provide wildlife escape ramps, or covered completely to prevent wildlife access, or fully enclosed with exclusion fencing. If any wildlife becomes entrapped, construction shall not occur until the animal has left the trench or been removed by a qualified biological monitor as feasible.</p> <ul style="list-style-type: none"> <li>• Employees and contractors shall look under vehicles and equipment for the presence of wildlife before moving vehicles and equipment. If wildlife is observed, no vehicles or equipment shall be moved until the animal has left voluntarily or is removed by the biological monitor. No listed species shall be handled.</li> <li>• Vehicle speed limits shall not exceed 15 miles per hour during construction and operation of the project. A speed limit sign shall be posted at all project site entry locations.</li> <li>• The project shall continuously minimize use of high-intensity lighting, steady burning, or bright lights such as sodium vapor, quartz, halogen, or other bright spotlights.</li> </ul> <p>Nighttime vehicle traffic associated with project activities shall be kept to a minimum volume and speed to prevent mortality of nocturnal wildlife species.</p> <p><b>Mitigation Measure 3.5-19e: Restore Special-Status Mammal Habitat.</b></p> <p>If restoration and/or enhancement of special-status mammal habitat is selected as a mitigation strategy, the project applicant shall implement Mitigation Measure 3.5-23e, “Develop and Submit a Reclamation, Revegetation, and Weed Control Plan,” and include performance standards, and a monitoring and reporting program to track revegetation and/or enhancement success.</p>	
<p><b>3.5-20: Operational Impacts on Special-Status Mammals.</b> The potential exists for special-status mammals present in the project area during project operation to be struck by vehicles. This impact would be <b>less than significant</b>.</p>	LTS	No mitigation measures are required.	LTS

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
<p><b>3.5-21: Construction Impacts on Special-Status Amphibians and Reptiles.</b> Grading, clearing, horizontal directional drilling, and other activities associated with project construction could result in direct and indirect impacts on special-status amphibian and reptile species and their habitat. This impact would be <b>potentially significant</b>.</p>	PS	<p><b>Mitigation Measure 3.5-21a: Avoid and Minimize Impacts on Aquatic, Riparian, and Upland Habitats.</b></p> <p>The project applicant shall avoid and minimize removal and disturbance of aquatic, riparian, and upland habitats that could support special-status amphibians and reptiles by implementing the following measures:</p> <ul style="list-style-type: none"> <li>• Mitigation Measure 3.5-1c, “Develop and Implement a Worker Environmental Awareness Program”</li> <li>• “Minimize Construction Footprint” in Mitigation Measure 3.5-14, “Avoid and Minimize Operational Impacts on Nonraptor Birds”</li> <li>• Mitigation Measure 3.5-22b, “Implement Siting Constraint Measures to Delineate and Protect Aquatic Resources”</li> <li>• Mitigation Measure 3.5-22d, “Avoid Potential Effects on Aquatic Resources Associated with Horizontal Directional Drilling”</li> <li>• Mitigation Measure 3.5-23e, “Develop and Submit a Reclamation, Revegetation, and Weed Control Plan”</li> </ul> <p>Mitigation Measure 3.10-1, “Implement Wet-Weather BMPs Consistent with the Humboldt Redwood Company Habitat Conservation Plan,” in Section 3.10, “Hydrology and Water Quality”</p> <p><b>Mitigation Measure 3.5-21b: Avoid and Minimize Impacts on Special-Status Amphibians and Reptiles.</b></p> <p>The project applicant shall avoid and minimize impacts on foothill yellow-legged frog, northern red-legged frog, Pacific tailed frog, southern torrent salamander, and western pond turtle by implementing the mitigation measures listed above and Mitigation Measure 3.5-19a, “Minimize Impacts on Wildlife and Monitor during Construction.”</p> <p><b>Mitigation Measure 3.5-21c: Develop and Implement a Preconstruction Survey Plan for Special-Status Amphibians and Reptiles.</b></p> <p>The project applicant shall implement preconstruction surveys as described below. The preconstruction survey plan shall identify, at</p>	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>minimum, the following information for each special-status amphibian species and western pond turtle:</p> <ul style="list-style-type: none"> <li>• The life stage(s) to be surveyed for</li> <li>• Survey method(s)</li> <li>• Timing of survey(s)</li> <li>• Justification for timing and methodology of survey design (e.g., watershed characteristics, regional snowpack, timing and rate of spring runoff, day length, average ambient air and water temperatures, local and seasonal conditions)</li> </ul> <p>The project applicant shall conduct preconstruction surveys for special-status amphibians and western pond turtles. Preconstruction surveys shall include, at minimum, the following provisions:</p> <ul style="list-style-type: none"> <li>• Surveys shall be conducted by a qualified biologist within 3–5 days before entering or working within suitable aquatic and/or upland habitat.</li> <li>• Surveys shall be conducted within the boundaries of the proposed worksite plus a 500-foot buffer zone upstream and downstream of the construction area.</li> <li>• Surveys shall include a description of any standing or flowing water.</li> <li>• Surveys shall consist of “walk and turn” surveys during which the biologist shall examine areas beneath surface objects (e.g., rocks, leaf litter, moss mats, coarse woody debris) for salamanders, and conduct visual surveys for frogs and western pond turtle.</li> <li>• If special-status amphibians or reptiles are detected during the preconstruction survey, impacts shall be avoided by establishing an exclusion buffer of no less than 50 feet within which construction activities shall be prohibited. A qualified biologist shall be on-site during all nearby construction activities. If the biologist determines that the habitat is no longer occupied, construction may proceed within the exclusion buffer.</li> </ul>	

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>If avoidance is infeasible, the project applicant shall coordinate with CDFW to passively relocate the special-status amphibian or reptile.</p> <p><b>Mitigation Measure 3.5-21d: Avoid and Minimize Impacts on Foothill Yellow-Legged Frog.</b></p> <p>A qualified biologist shall conduct a visual preconstruction survey for foothill yellow-legged frog in or within 200 feet of suitable habitat 48 hours before the start of construction. The biologist shall be familiar with the life cycle of this species and shall conduct surveys appropriate to the life stage anticipated to be present in the project area at the time of year during which surveys are being undertaken.</p> <p>If foothill yellow-legged frog is detected during surveys, the project applicant shall implement avoidance measures included in the incidental take permits obtained by CDFW. Avoidance and minimization measures for foothill yellow-legged frog shall include, as appropriate, the following components:</p> <ul style="list-style-type: none"> <li>• Seasonal work restriction</li> <li>• Exclusion fencing</li> <li>• Decontamination</li> <li>• No night work or lighting</li> <li>• Water diversion</li> <li>• Water storage facilities</li> <li>• Season of diversion</li> <li>• Bypass flow</li> <li>• Diversion materials</li> <li>• Diversion monitoring</li> </ul> <p>If foothill yellow-legged frogs are found during the preconstruction survey, the project applicant shall consult CDFW immediately by either telephone or e-mail and shall provide a short description of observations, including a count of individuals and the life stage(s), conditions at the site, and other aquatic species observed. If no foothill yellow-legged frogs are found during the preconstruction survey and no surface water is present</p>	

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		<p>in the project area, work may commence without further surveys or construction restrictions.</p> <p>If no foothill yellow-legged frogs are found but surface water is present during the preconstruction survey, or if surface water becomes present at any time during the work period, the biologist shall survey the worksite each day before the start of work activities where equipment and/or materials may come in contact with such water.</p> <p><b>Mitigation Measure 3.5-21e: Compensate for Impacts on Aquatic and Upland Habitats for Foothill Yellow-Legged Frog.</b></p> <p>The project applicant shall provide compensatory mitigation for permanent impacts on aquatic, riparian, and associated upland habitats for foothill yellow-legged frog at a minimum 1:1 ratio. Within 2 years following the first delivery of power, the project applicant shall purchase and record the mitigation lands as off-site conservation land in fee-title and/or easement for suitable habitat that would support foothill yellow-legged frogs. The County, in consultation with CDFW, shall approve the location of the conservation land or easement.</p>	
<p><b>3.5-22: Impacts of Project Construction on Special-Status Fish.</b> Grading, clearing, horizontal directional drilling, and other activities associated with project construction could result in indirect impacts on special-status fish species and their habitat from project runoff and sedimentation. This impact would be <b>potentially significant</b>.</p>	PS	<p><b>Mitigation Measure 3.5-22a: Avoid and Minimize Impacts on Aquatic Resources.</b></p> <p>The project applicant shall implement the following mitigation measures:</p> <ul style="list-style-type: none"> <li>• Mitigation Measure 3.5-1c, “Develop and Implement a Worker Environmental Awareness Program”</li> <li>• “Minimize Construction Footprint” in Mitigation Measure 3.5-14, “Avoid and Minimize Operational Impacts on Nonraptor Birds”</li> <li>• Mitigation Measure 3.5-23e, “Develop and Submit a Reclamation, Revegetation, and Weed Control Plan”</li> <li>• Mitigation Measure 3.10-1, “Implement Wet-Weather BMPs Consistent with the Humboldt Redwood Company Habitat Conservation Plan,” in Section 3.10, “Hydrology and Water Quality”</li> </ul> <p>In addition, the project applicant shall coordinate with Humboldt</p>	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>County to implement the Five Counties Salmonid Conservation Program to protect water quality for listed salmonids during activities associated with construction of access roads, including culvert installation, in accordance with the <i>Five Counties Salmonid Conservation Roads Maintenance Manual</i>. This manual (Five Counties Salmon Conservation Program 2002) provides a framework for implementing improved road maintenance practices and was developed with input from CDFW Region I, the North Coast RWQCB, and NMFS. The manual, which was adopted by the County in 2010, includes guidelines and procedures for protecting listed salmonids in the context of road construction and maintenance, including measures for culvert maintenance, soil disposal, bridge maintenance, monitoring practices, staff training, BMP designs, culvert criteria for fish passage, and water drafting guidelines.</p> <p><b>Mitigation Measure 3.5-22b: Implement Siting Constraint Measures to Delineate and Protect Aquatic Resources.</b></p> <p>The project applicant shall assign a qualified biologist to flag or fence aquatic habitats to clearly delineate the extent of construction. All crews shall be provided a set of drawings showing the locations of aquatic habitats in and near the work area.</p> <p><b>Mitigation Measure 3.5-22c: Avoid Impacts on Sediment and Habitats in Humboldt Bay and Implement Eelgrass Monitoring and Protection Plan.</b></p> <p>The project applicant shall avoid all impacts on sediment and adjacent habitats (such as eelgrass beds) in Humboldt Bay by using existing shipping channels and pinning the barge against wooden piles connected to the shore by a mooring line. The barge shall not come in contact with Humboldt Bay sediment or habitats at any time. The project applicant shall develop an eelgrass monitoring and protection plan to ensure that eelgrass beds will not be adversely affected during offloading of components in Humboldt Bay.</p>	

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p><b>Mitigation Measure 3.5-22d: Avoid Potential Effects on Aquatic Resources Associated with Horizontal Directional Drilling.</b></p> <p>The project applicant shall implement the following mitigation measures to avoid potential effects on aquatic resources associated with horizontal directional drilling:</p> <ul style="list-style-type: none"> <li>• Provide notification of the horizontal directional drilling to CDFW as part of the lake and streambed alteration agreement application, and to Humboldt County as part of the final conditional use permit application. The project applicant shall assign a qualified biological monitor with previous horizontal directional drilling monitoring experience and knowledge of the environmental sensitivities of the project area to monitor all horizontal directional drilling activities. The monitor shall be on-site for the duration of horizontal directional drilling activities and shall provide brief reports of daily activities to CDFW and the County.</li> <li>• The project applicant’s biologist shall conduct on-site briefings for all horizontal directional drilling workers to ensure that all field personnel understand the locations of aquatic resources and their responsibility for timely reporting of frac-outs.</li> </ul> <p>Barriers (e.g., straw bales, sedimentation fences) shall be erected between the bore site and all nearby aquatic resources before drilling to prevent any material from reaching aquatic resource areas. The distance between the bore site and aquatic resource areas shall be compliant with protective setback boundary requirements specified in CDFW and County permits.</p> <p><b>Mitigation Measure 3.5-22e: Minimize Potential Effects on Aquatic Resources Associated with Horizontal Directional Drilling.</b></p> <p>The project applicant shall implement the following mitigation measures to minimize potential effects on aquatic resources associated with horizontal directional drilling:</p> <ul style="list-style-type: none"> <li>• The biological monitor shall continually visually inspect aquatic resources, and surrounding areas, for evidence of frac-outs. The biological monitor shall monitor the drilling fluid circulation at the horizontal directional drilling site and stay aware of the</li> </ul>	

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>status of the operation.</p> <ul style="list-style-type: none"> <li>• If the biological monitor suspects a potential frac-out that is not yet visible at the surface (e.g., loss of bentonite slurry in the drill pit but no frac-out at the surface), the project applicant shall cease horizontal directional drilling activities immediately and the horizontal directional drilling contractor shall implement measures to reduce the potential for a frac-out (e.g., increase the density of the drilling mud or reduce the pressure of the drill). The project applicant shall then be allowed to continue horizontal directional drilling activities. If a frac-out occurs, the project applicant shall implement the measure identified below to reduce or minimize effects on the affected aquatic resource.</li> <li>• The horizontal directional drilling contractor shall keep necessary response equipment and supplies (e.g., vacuum truck, straw bales, sediment fencing, sandbags) on-site during horizontal directional drilling operations so that they are readily available in the event of a frac-out.</li> <li>• If a frac-out is detected, the project applicant shall implement the following measures to reduce or minimize effects on the affected aquatic resource: <ul style="list-style-type: none"> <li>– All work shall stop until the frac-out has been contained and cleaned up.</li> <li>– The frac-out area shall be isolated with straw bales, sandbags, or silt fencing to surround and contain the drilling mud; cleanup shall be performed using a vacuum truck supported by construction workers on foot using hand tools, as necessary. (To prevent effects on the streambanks, mechanized equipment shall not be used to scoop or scrape up frac-out materials.)</li> <li>– If a frac-out occurs, the project applicant shall notify the appropriate jurisdictional agency (USACE, the North Coast RWQCB, and/or CDFW) and the County Public Works–Engineering Department by telephone and in writing (e-mail acceptable) within 24 hours. The required notification shall include a description of the frac-out and cleanup measures implemented. For the purpose of this mitigation,</li> </ul> </li> </ul>	

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		<p>USACE, the North Coast RWQCB, and CDFW are considered potentially jurisdictional agencies that require notification of a frac-out affecting a stream feature, and USACE and the North Coast RWQCB are considered potentially jurisdictional agencies that require notification of a frac-out.</p> <p>If a frac-out occurs and is considered to have negatively affected the Eel River, based on consultation with the appropriate jurisdictional agencies, the project applicant shall implement appropriate measures to restore pre–horizontal directional drilling conditions in consultation with the agencies.</p>	
<p><b>3.5-23: Impacts on Special-Status Plants during Project Construction and Operation.</b> Grading, clearing, and other activities associated with construction and operation of the proposed project would result in loss and disturbance of special-status plant species present in the project footprint. This impact would be <b>potentially significant</b>.</p>	PS	<p><b>Mitigation Measure 3.5-23a: Conduct Preconstruction Botanical Surveys for Special-Status Plants.</b></p> <p>The project applicant shall conduct appropriately timed botanical surveys before construction for all areas of ground disturbance that could support special-status plant populations. Floristic surveys shall be conducted by a qualified botanist during the species’ blooming period in accordance with methods described in CDFW’s 2018 <i>Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities</i> (CDFW 2018b). The results of the survey shall be presented in a report submitted to Humboldt County and CDFW no later than August 2019. If additional special-status plants are detected in the project area, they shall be incorporated into project siting, design, avoidance, and management in accordance with Mitigation Measures 3.5-23b through 3.5-23d below.</p> <p><b>Mitigation Measure 3.5-23b: Avoid and Minimize Impacts of Project Construction on Special-Status Plants.</b></p> <p>Known occurrences of special-status plants shall be flagged during preconstruction surveys and avoided to the greatest extent feasible. Avoidance measures may consist of placing an equipment limitation or equipment exclusion zone around special-status plant populations to minimize direct impacts while allowing the use of any existing roads or other access areas that may pass through the equipment limitation zone or near the equipment exclusion zone. If impacts on Siskiyou checkerbloom cannot be avoided, then a qualified biologist shall map the location and</p>	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>extent of potentially affected populations in the project impact area during preconstruction surveys, and shall quantify the anticipated loss for mitigation.</p> <p>To control invasive/noxious weeds, the project applicant shall implement Mitigation Measure 3.5-23e, “Develop and Submit a Reclamation, Revegetation, and Weed Control Plan,” before construction begins. The project applicant shall return all temporarily disturbed areas to their natural condition by implementing the project reclamation, revegetation, and weed control plan.</p> <p><b>Mitigation Measure 3.5-23c: Compensate for Permanent Effects of Project Construction on Special-Status Plants and Associated Habitats.</b></p> <p>Where occurrences of special-status plants cannot be avoided, the reclamation, revegetation, and weed control plan shall include seed, plant, and/or topsoil salvage. Topsoil, seeds, and/or plants shall be replaced in the approximate location of their removal after project construction has been completed, or in another location within the project area with suitable habitat. In addition, mitigation for permanent loss for sensitive natural communities (Mitigation Measures 3.5-24a through 3.5-24c, below) will benefit the special-status plant species supported in those communities.</p> <p><b>Mitigation Measure 3.5-23d: Compensate for Impacts on Siskiyou Checkerbloom.</b></p> <p>For any unavoidable impacts on Siskiyou checkerbloom, the project applicant shall develop a mitigation strategy as part of the reclamation, revegetation, and weed control plan. The mitigation strategy shall include performance standards for successful (re)establishment of Siskiyou checkerbloom and/or enhancement of existing habitat, and a monitoring and reporting program to track revegetation and/or enhancement success. This plan shall be developed in consultation with CDFW and shall be approved by Humboldt County before construction begins. Mitigation shall be at least 1.5:1 for the actual impact acreage to Siskiyou checkerbloom populations, calculated per as-built construction drawings and the results of the preconstruction plan surveys.</p>	

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<ul style="list-style-type: none"> <li>• The revegetation plan shall include the following provisions for the restoration and/or enhancement of affected Siskiyou checkerbloom plants:</li> <li>• Before project disturbance, identification of restoration areas within the project site for seeding and/or transplanting of Siskiyou checkerbloom, with data collection to determine appropriate microsites.</li> <li>• Before project disturbance, measurement of existing Siskiyou checkerbloom populations within the project site for percent cover and density and establishment of these characteristics as the minimum success criteria for the species' cover and density as a result of restoration/enhancement.</li> <li>• A plan and protocols for appropriate and ecologically sensitive collection and storage of Siskiyou checkerbloom seeds, rhizomes, and plants from the project site.</li> <li>• Transplanting and seeding protocols for Siskiyou checkerbloom.</li> <li>• Adaptive management measures and a remedial planting plan.</li> <li>• Revegetation and/or enhancement monitoring and reporting for at least 3 years.</li> </ul> <p>Techniques for the protection and enhancement of existing populations of Siskiyou checkerbloom within the project site that are not affected, such as control of invasive weeds and, through coordination with local tribes, cultural methods associated with traditional ecological knowledge of tending the species.</p> <p><b>Mitigation Measure 3.5-23e: Develop and Submit a Reclamation, Revegetation, and Weed Control Plan.</b></p> <p>Before project construction, the project applicant shall develop and submit a reclamation, revegetation, and weed control plan to CDFW, Humboldt County, and any agency whose permit requirements are addressed in the plan, for their review and approval. The plan shall describe in detail any reclamation, revegetation, and weed control efforts to be conducted during and after project construction, both to stabilize the site and to comply with the mitigation requirements of regulatory agency permits. The plan shall establish performance criteria, time frames for</p>	

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>reclamation and restoration of the project site, and provisions for a monitoring program to assess the success of any proposed reclamation, revegetation, and/or restoration efforts.</p> <p>The reclamation, revegetation, and weed control plan shall be developed and implemented to preserve native vegetation communities in the project area and reestablish native plant cover, natural communities, and wildlife habitat to the greatest extent feasible. The plan shall provide for the reestablishment/restoration of sensitive natural communities on a no-net-loss basis. The plan shall be developed in accordance with the Humboldt County Grading, Excavation, Erosion, and Sedimentation Control Ordinance. The reclamation, revegetation, and weed control plan shall include, at a minimum, the following provisions:</p> <ul style="list-style-type: none"> <li>• Reclamation of all areas disturbed by project construction, including temporary disturbance areas around construction sites, laydown/staging areas, temporary access roads, and the gen-tie, using a locally sourced native seed mix. For portions of the gen-tie that cross HRC lands, the seed mix shall be developed in coordination with HRC to ensure compliance with any provisions of the Humboldt Redwood Company HCP. A qualified biologist with demonstrated experience with the habitat to be restored shall have oversight for the selection of reclamation species.</li> <li>• Procedures and practices included in the project’s weed control plan for the control of nonnative invasive/noxious weeds in reclaimed and revegetated areas. Invasive pest species, as listed by the California Invasive Plant Council and the Humboldt Weed Management Area, shall not be used. The weed control plan may be appended to the reclamation and revegetation plan.</li> <li>• A description of proven available reclamation techniques and procedures (such as hydroseeding, drill seeding, and broadcast seeding, adapted to local conditions) in all disturbed areas.</li> <li>• Salvage of topsoil in all areas subject to grading or excavation. Topsoil shall be removed, stockpiled on-site, and returned to the original site (reclaimed) or used in habitat restoration activities elsewhere on the site. To avoid spreading pathogens such as Sudden Oak Death with movement of topsoil, the following</li> </ul>	

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>BMPs from the California Oak Mortality Task Force shall be implemented:</p> <ul style="list-style-type: none"> <li>- Before issuance of any permits or grading activities, conduct a survey of the site to determine whether portions of the forest are infected with the pathogen that causes Sudden Oak Death. If identified, the areas of infestation shall be shown on a map. This map shall be included in the worker environmental awareness plan and the criteria listed below shall be followed.</li> <li>- To the extent practical and feasible, route equipment away from host plants and trees, especially in areas with disease symptoms. Locate landings, access roads, staging areas, and other sites of equipment activity away from host plants, especially areas with disease symptoms.</li> <li>- Each time equipment or vehicles leave the site, inspect the equipment or vehicles for host plant debris (leaves, twigs, and branches). Host plant debris should be removed from equipment and vehicles before their departure. This applies to all equipment and vehicles associated with the operation. An exception will be granted for equipment or vehicles that leave the site temporarily and will be not be traveling to uninfested areas before their return.</li> <li>- After working in an infested area, remove or wash off accumulations of soil, mud, and organic debris from shoes, boots, vehicles and heavy equipment, etc., before traveling to an area that is not infested with Sudden Oak Death. Lysol® or a bleach solution can be used to disinfect shoes and boots after cleaning.</li> <li>- Clean mud from vehicles to remove host plant material embedded in mud. Establish an equipment power wash station near the infested area. The power wash station shall be constructed to include paved or rock base; well-drained so that vehicles exiting the station do not become contaminated by wash water; and located where wash water and displaced soil does not have the potential to carry fines to a watercourse, paying particular attention to sites where soil and organic debris may accumulate.</li> </ul>	

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<ul style="list-style-type: none"> <li>• BMPs for erosion control and water quality protection identified in Section 3.10, “Hydrology and Water Quality”; the CDFW Streambed Alteration Agreement; the USACE permit; and the project’s storm water pollution prevention plan (SWPPP). Before issuance of a grading permit, the project applicant shall consult with the County, the State Water Resources Control Board, and the North Coast RWQCB to acquire the appropriate regulatory approvals that may be necessary to obtain Section 401 water quality certification, a State Water Resources Control Board statewide National Pollutant Discharge Elimination System stormwater permit for general construction activity (Water Quality Order 2009-0009-DWQ), and any other necessary site-specific waste discharge requirements or waivers under the Porter-Cologne Act. The project applicant shall prepare and submit the appropriate notices of intent and prepare the SWPPP and any other necessary engineering plans and specifications for erosion and pollution prevention and control.</li> <li>• Monitoring of and reporting on created or restored habitat as mitigation for temporary and permanent impacts for a minimum of 5 years or until established success criteria have been met, to assess progress and identify potential problems with the restoration sites. Success criteria are defined as minimum thresholds for vegetation growth and establishment. Such criteria will be developed based on preproject (baseline) conditions and the conditions of appropriate nearby reference sites for the particular habitat types being reclaimed or restored. In communities not considered sensitive natural communities by CDFW, minimum success criteria would include but are not be limited to overall percent cover, relative percent cover of native species, and percent cover of noxious weeds. For created or restored sensitive natural communities, additional success criteria would include percent cover for herbaceous plants, percent canopy cover for native woody (i.e., tree and shrub) species (if applicable to the habitat type being reclaimed/restored), density of native woody species (if applicable to the habitat type being reclaimed/restored), and percent survival of planted woody species (if applicable).</li> </ul>	

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		<ul style="list-style-type: none"> <li>Adaptive management measures and a remedial planting plan. Remedial measures (e.g., additional planting, weeding, or erosion control) shall be taken during the monitoring period if necessary to ensure the success of the restoration effort.</li> <li>Maintenance, monitoring, and reporting procedures.</li> </ul> <p>If the mitigation fails to meet the established performance criteria for vegetation growth and establishment within the maintenance and monitoring period, monitoring of remedial plantings shall extend beyond the initial period until the criteria are met or unless otherwise approved by Humboldt County in consultation with the North Coast RWQCB, USACE, and CDFW.</p> <p>If elements of the restoration area(s) meet their success criteria before the end of 5 years of monitoring, they may be eliminated from future monitoring with approval from the enforcement agency.</p>	
<p><b>3.5-24: Loss or Disturbance of Sensitive Natural Communities and Riparian Habitat.</b> Grading, clearing, and other activities associated with construction and operation of the proposed project would result in substantial loss and disturbance of sensitive natural communities and riparian habitat. This impact would be <b>potentially significant</b>.</p>	PS	<p><b>Mitigation Measure 3.5-24a: Avoid and Minimize Impacts on Sensitive Natural Communities and Riparian Habitat.</b></p> <p>During project engineering and design and during construction, the project applicant shall avoid and minimize disturbances to sensitive natural communities and riparian habitat whenever possible by implementing the following mitigation measures:</p> <ul style="list-style-type: none"> <li>Mitigation Measure 3.5-1c, “Develop and Implement a Worker Environmental Awareness Program”</li> <li>“Minimize Construction Footprint” in Mitigation Measure 3.5-14, “Avoid and Minimize Operational Impacts on Nonraptor Birds”</li> <li>Mitigation Measure 3.5-19a, “Minimize Impacts on Wildlife and Monitor during Construction”</li> <li>Mitigation Measure 3.5-23e, “Develop and Submit a Reclamation, Revegetation, and Weed Control Plan”</li> </ul> <p>A qualified biologist shall monitor impacts on sensitive natural communities and riparian habitat during construction to ensure that they are identified for avoidance and preserved on-site to the greatest extent feasible. For all sensitive natural communities and riparian habitat that cannot be avoided, the project applicant shall quantify refined impact acreages based on the final design before</p>	LTS

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>construction, to identify the degree of actual impacts adequately to determine required mitigation acreages. These impact acreages shall be verified upon completion of construction based on monitoring reports and as-built drawings.</p> <p><b>Mitigation Measure 3.5-24b: Compensate for Loss of Sensitive Natural Communities and Riparian Habitat.</b></p> <p>Any sensitive natural communities and/or riparian habitat permanently affected shall be included in per-acre compensatory mitigation as described in Mitigation Measure 3.5-23e, “Develop and Submit a Reclamation, Revegetation, and Weed Control Plan.” For sensitive natural communities that cannot be reestablished/created on-site or off-site because of the limited nature of suitable substrates, such as coastal prairie communities, habitat enhancement/on-site restoration of degraded sensitive natural communities may be used for compensation. Habitat lift/enhancement may be used to count toward compensatory mitigation ratios, but shall not exceed 1.5 to 1 (i.e., 1.5 acre of enhanced high-quality sensitive natural community to compensate for the loss of 1 acre of degraded sensitive natural community). An exception to replacement applies to forest communities that are removed under a timber harvest plan in accordance with Section 1106 of the California Forest Practice Rules. No off-site tree planting or other mitigation is required for these forest communities. These communities are identified with a single asterisk (*) in DEIR Table 3.5-15 and include redwood forest, grand fir forest, and Douglas-fir forest.</p> <p><b>Mitigation Measure 3.5-24c: Restore Sensitive Natural Communities and Riparian Habitat.</b></p> <p>If on-site restoration is selected as compensatory mitigation for impacts on sensitive natural communities and/or riparian habitat, the project applicant shall prepare and implement Mitigation Measure 3.5-23e, “Develop and Submit a Reclamation, Revegetation, and Weed Control Plan.” The plan shall include reestablishment of sensitive natural communities and/or riparian habitat, including riparian vegetation subject to CDFW jurisdiction, and/or enhancement of existing habitat, on a per-acre basis. To offset the temporary loss of sensitive natural</p>	

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>communities during construction, the minimum mitigation ratio shall be at least 1 acre of sensitive natural communities for each acre of permanent or temporary impact. Greater mitigation ratios are required for impacts on mature, high-quality riparian habitat that require a longer period to create high-value replacement habitat. Riparian vegetation under CDFW jurisdiction shall be mitigated according to the project's lake and streambed alteration agreement obtained pursuant to Section 1600 of the California Fish and Game Code. The reclamation, revegetation, and weed control plan shall include the following provisions for restoring affected sensitive natural communities and/or riparian habitat:</p> <ul style="list-style-type: none"> <li>• Baseline data shall be collected at reference locations within the project site to establish expected ranges and minimum thresholds for species composition, relative species richness, and vegetative cover (i.e., herbaceous, shrub, and/or woody canopy) for each sensitive habitat that would be affected.</li> <li>• An appropriate species planting palette shall be developed for each sensitive habitat that would be affected.</li> <li>• Minimum planting densities shall be designed to achieve minimum performance standards for survival cover and density, while maintaining the natural character of the vegetation community being restored/created.</li> <li>• Minimum performance standards shall be established for percent survival, species composition, relative species richness, and vegetative cover (i.e., herbaceous, shrub, and/or woody canopy). These standards shall be based on the preconstruction documentation of reference locations within the project site and the life history traits of the plants being restored (i.e., herbaceous vs. woody, fast-growing primary colonizers vs. slow-growing successional species).</li> <li>• Any trees removed from riparian habitat shall be replaced with the same or similar species at a ratio of 3:1 (three trees planted for every one tree removed). Tree replacement may be carried out concurrently on sensitive natural communities and/or riparian habitats that are also being restored/created/enhanced on a per-acre compensatory basis.</li> <li>• In sensitive natural communities, mature, woody trees and</li> </ul>	

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<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		<p>shrubs shall be avoided to the greatest extent feasible. In cases where mature trees within sensitive natural communities will be removed, a mitigation ratio of 3:1 shall be used to compensate for the time it takes for trees to grow to functional capacity. Mature trees consist of trees with the following DBH:</p> <ul style="list-style-type: none"> <li>- Oregon white oak: More than 6 inches DBH</li> <li>- California bay: More than 10 inches DBH</li> <li>- Madrone: More than 6 inches DBH</li> <li>- Big-leaf maple: More than 10 inches DBH</li> <li>- Tanoak: More than 10 inches DBH</li> <li>- Red alder: More than 10 inches DBH</li> <li>- Shining willow: More than 6 inches DBH</li> </ul>	
<p><b>3.5-25: Disturbance and Loss of Wetlands and Other Waters during Project Construction.</b> Grading, clearing, and other activities associated with construction and operation of the proposed project would result in disturbance and loss of wetlands and other waters. This impact would be <b>potentially significant</b>.</p>	PS	<p><b>Mitigation Measure 3.5-25a: Avoid and Minimize Impacts on Wetlands and Other Waters of the United States.</b></p> <p>The project applicant shall avoid and minimize impacts on wetlands and other waters of the United States by implementing the following mitigation measures:</p> <ul style="list-style-type: none"> <li>• Mitigation Measure 3.5-22b, “Implement Siting Constraint Measures to Delineate and Protect Aquatic Resources”</li> <li>• Mitigation Measure 3.5-22e, “Minimize Potential Effects on Aquatic Resources Associated With Horizontal Directional Drilling”</li> <li>• Mitigation Measure 3.5-23e, “Develop and Submit a Reclamation, Revegetation, and Weed Control Plan”</li> <li>• Mitigation Measure 3.10-1, “Implement Wet-Weather BMPs Consistent with the Humboldt Redwood Company Habitat Conservation Plan,” in Section 3.10, “Hydrology and Water Quality”</li> </ul> <p>In addition, the project applicant shall implement the following measures:</p> <ul style="list-style-type: none"> <li>• Before any construction activity, the project applicant shall submit a wetland delineation to USACE for verification. The verified delineation shall serve as the baseline to determine actual project impacts for the purpose of permitting and</li> </ul>	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>determining compensatory mitigation needs. The project applicant shall obtain a CWA Section 404 permit from USACE for discharges under USACE jurisdiction before project construction, and shall abide by all permit conditions, including those for compensatory mitigation. The mitigation ratio will be determined by USACE but shall be no less than 1:1 for permanent impacts to ensure no net loss of wetlands functions and values in the project area in the long term. To ensure consistency and a comprehensive approach to mitigation planning, compensatory mitigation may be planned and implemented concurrently with other mitigation requirements, such as those for riparian habitat mitigation and sensitive natural communities.</p> <ul style="list-style-type: none"> <li>• The project applicant shall also submit wetland mapping to Humboldt County and identify corresponding setback requirements as appropriate (i.e., 100-foot setback) on project maps to comply with County setback requirements. Any required setback shall be shown on project construction drawings and plans (e.g., grading and improvement plans).</li> <li>• Construction activities and project components shall be located at least 100 feet from aquatic resources wherever feasible.</li> <li>• Before any construction activity, the project applicant shall assign a qualified biologist to identify the locations of wetlands and other waters and their corresponding setbacks (if applicable) as required by project permits, for avoidance. Identification of wetlands and other waters for avoidance shall be in addition to and distinguished from any required construction boundary fencing or flagging.</li> <li>• If it is not feasible to maintain the aquatic resource setbacks, the County may allow encroachment within the setbacks depending on site-specific factors, subject to advance consultation with CDFW, as required by the County's Streamside Management Ordinance. The project applicant shall submit a supplemental evaluation to the County that details how the proposed construction activities would avoid potential impacts on aquatic resources, including through BMPs, and shall obtain permission from the County for encroachment.</li> </ul>	

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>The project applicant shall implement Mitigation Measure 3.5-1c, “Develop and Implement a Worker Environmental Awareness Program,” to include specific information regarding wetlands and other waters that occur on the project site and that either would be affected or have been identified for avoidance. Training shall be conducted before the start of construction and shall include information about the locations and extent of wetlands and other waters, methods of resource avoidance, permit conditions, and possible fines for violations of permit conditions and federal and/or state environmental laws.</p> <p><b>Mitigation Measure 3.5-25b: Compensate for Impacts on Wetlands and Other Waters.</b></p> <p>The project applicant shall implement Mitigation Measure 3.5-23e, “Develop and Submit a Reclamation, Revegetation, and Weed Control Plan,” and shall include detailed measures for the compensation, restoration, and/or enhancement of wetlands and other waters on a wetland type per-acre basis. The standard for mitigation shall be no net loss. If restoration is selected as a method of compensatory mitigation, the project applicant shall prepare a wetland mitigation and monitoring plan as part of the project’s reclamation, revegetation, and weed control plan (Mitigation Measure 3.5-23e), and shall submit it to the County for review, determination of adequacy, and approval. Mitigation ratios shall be calculated following USACE wetland mitigation procedures and shall be based on the actual impact acreage of final design per as-built construction drawings and the results of the preconstruction surveys. After review and approval by the pertinent agencies, mitigation shall be carried out at a ratio no less than 1:1, or another ratio approved by the appropriate jurisdictional agency, whichever is higher.</p> <p>The wetland mitigation and monitoring plan shall be written by a qualified biologist and shall include the following elements, at minimum:</p> <ul style="list-style-type: none"> <li>• goals of the plan and permitting requirements satisfied;</li> <li>• wetland restoration activities and locations, including the restoration of temporarily affected wetlands and other waters to preconstruction conditions;</li> </ul>	

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		<ul style="list-style-type: none"> <li>• monitoring and reporting requirements (including monitoring period), and criteria to measure mitigation success; and remedial measures, should mitigation efforts fall short of established targets.</li> </ul> <p>The project applicant shall consult with USACE about the adequacy of the plan and may consult with other agencies, if the plan aims to fulfill multiple permitting and mitigation requirements.</p>	
<p><b>3.5-26: Impacts on Migratory Corridors during Project Construction and Operation.</b> Construction of the proposed project would result in the loss of relatively small amounts of land area, such that the project site would remain largely undeveloped. Project infrastructure would not impede movement by birds, bats, and terrestrial wildlife, and project operation would consist of activities that are similar to other land uses in the area. This impact would be <b>less than significant</b>.</p>	LTS	No mitigation measures are required.	LTS
<p><b>3.5-27: Impacts on Nursery Sites.</b> Construction of the proposed project would avoid colonial bird-nesting sites (rookeries), and would avoid and minimize impacts on bat nursery roost sites. The project site would remain largely undeveloped, and project operation would not result in additional impacts on suitable nursery sites.</p>	LTS	No mitigation measures are required.	LTS
<p><b>3.5-28: Potential Inconsistency with the Humboldt Redwood Company Habitat Conservation Plan.</b> The period for the first project construction phase is inconsistent with the provisions of the Humboldt Redwood Company HCP. This impact would be <b>potentially significant</b>.</p>	PS	<p><b>Mitigation Measure 3.5-28: Implement Wet-Weather BMPs Consistent with the Humboldt Redwood Company Habitat Conservation Plan or Equivalent BMPs.</b></p> <p>To reduce the potential for erosion and sedimentation that may cause downstream impacts on anadromous fish species, the project applicant shall implement the following measures from the Humboldt Redwood Company HCP. During the wet season (October 15–June 1), the project applicant shall implement the following measures while conducting road or landing construction, reconstruction, and road upgrades:</p> <ul style="list-style-type: none"> <li>• No road or landing construction, reconstruction, and upgrading shall occur within 170 feet of Class I or II waters, or within the Equipment Exclusion Zone (50 or 100 feet, respectively) of</li> </ul>	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>Class III waters. [The Equipment Exclusion Zone is the area where heavy equipment associated with timber operations is totally excluded for the protection of aquatic habitat, aquatic species, water quality, and beneficial uses of water and other forest resources. Class I waters are those where fish are always or seasonally present on-site, and include habitat to sustain fish migration, spawning, and rearing, and domestic water supplies, such as springs, on-site or within 100 feet downstream of the project operations area. Class II waters are non-fish-bearing waters where aquatic habitat is present for non-fish aquatic species, including in watercourses, streams, seeps, springs, lakes, ponds, and wetlands. Class III waters are those with no aquatic life or habitat present.]</p> <ul style="list-style-type: none"> <li>• The construction, reconstruction, and upgrading shall not cross Class I, II, or III waters.</li> <li>• No portion of the constructed, reconstructed, and upgraded road/landing shall cross an inner gorge, headwall swale, unstable area, extreme, very high, or high mass-wasting hazard area. The soil moisture condition in the soils moved for purposes of construction, reconstruction, and upgrading shall be no wetter than is found during normal watering (dust abatement treatments or light rainfall, and the soil is not rutting or pumping fines).</li> <li>• During and after construction, reconstruction, and upgrading, there shall be no visible increase in turbidity in any drainage facility, construction/reconstruction site, or road surface, any of which drains directly to Class I, II, or III waters (standing water on the road that does not drain to Class I, II, or III waters is not applicable).</li> <li>• During construction, reconstruction, and upgrading, erosion control material of sufficient quantity shall be stockpiled on-site and utilized to prevent an increase in turbidity in any drainage facility, construction site, or road surface, any of which drains directly to Class I, II, or III waters.</li> </ul> <p>Alternatively, the project applicant shall implement Mitigation Measure 3.10-1, "Implement Wet-Weather BMPs Consistent with the Humboldt Redwood Company Habitat Conservation Plan,"</p>	

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		described in Section 3.10, "Hydrology and Water Quality." These measures describe BMPs for wet-season erosion control, and a water quality monitoring program that provides Humboldt County with stop-work authority over project construction activities.	
<b>3.6 Cultural Resources, Including Tribal Cultural Resources</b>			
<b>3.6-1: Change to the Significance of an Archaeological Resource.</b> Multiple documented or assumed eligible cultural resources in the project area have the potential to be damaged or destroyed by project implementation. This impact would be <b>potentially significant.</b>	PS	<p><b>Mitigation Measure 3.6-1a: Avoid Potential Impacts.</b> Before construction permits are issued, the project applicant shall submit improvement plans to the County Planning &amp; Building Department demonstrating that the WTG locations and other permanent infrastructure will avoid known archaeological resources. Previously recorded site P-12-003314 must be identified in the field and avoided. If it cannot be relocated, its extent will be assumed to be consistent with the Roscoe et al. 2010 study and no WTG or other infrastructure requiring excavation will be located in this area.</p> <p><b>Mitigation Measure 3.6-1b: Preserve Resources in Place.</b> For locations where archaeological resources have been identified or may exist (including the Bridgeville Substation expansion area) and cannot be avoided, the improvements shall be constructed such that no excavation is undertaken. The intact resources shall be preserved in place by capping the resource(s). The improvement plans submitted to the County shall include details regarding the improvements, with components including placement of geo-fabric over existing ground, placement of clean fill material over the fabric, and final improvements on top of the clean fill.</p> <p><b>Mitigation Measure 3.6-1c: Monitor Ground-Disturbing Activities.</b> An archaeologist and Native American Tribal monitor shall be on-site, at the project applicant's expense, to observe and inspect all ground-disturbing activities. The archaeologist and Native American Tribal monitor shall have authority to stop work in an area where previously unidentified resources are encountered until the resources have been appropriately identified and addressed. In the event that resources are discovered, the County Planning &amp; Building Department shall be notified immediately.</p>	LTS

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		<p><b>Mitigation Measure 3.6-1d: Prepare Treatment Plan and Stop Potentially Damaging Work for Inadvertent Discovery of Cultural Materials Uncovered during Project Construction, Assess the Significance of the Find, and Pursue Appropriate Management.</b></p> <p>The project applicant shall prepare an unanticipated-discoveries plan that shall outline contacts and steps to be taken in the event of an unanticipated discovery, including steps from assessment to curation. The plan shall include the following steps to be taken if an inadvertent discovery of cultural materials (e.g., unusual amounts of shell, animal bone, bottle glass, ceramics, structure/building remains) is made during project-related construction activities:</p> <ul style="list-style-type: none"> <li>• Halt construction activities within 100 feet until a qualified archaeologist and Native American monitor make a determination about the resource.</li> <li>• Evaluate the significance of the resources. Implement treatment measures set forth in the plan in consultation with the County. If avoidance is feasible, project modifications shall be made to avoid the resource. If avoidance is not feasible and the County Planning &amp; Building Department determines that the resource is not CRHR eligible, no additional mitigation is required and construction can proceed. If the County Planning &amp; Building Department determines that the resource is CRHR eligible and that the discovery has significant historical associations or could yield additional scientific information about local or regional history or prehistory that has not been recovered during prior investigations, the project applicant shall complete a Phase III data recovery excavation program for significant cultural resources that would be affected.</li> <li>• Prepare a report documenting evaluation and treatment of the resource for submission to the County.</li> </ul>	
<p><b>3.6-2: Disturbance of Human Remains.</b> Previously undiscovered buried human remains could be encountered during project construction, resulting in damage to or destruction of such remains. This impact would be <b>potentially significant</b>.</p>	PS	<p><b>Mitigation Measure 3.6-2: Stop Potentially Damaging Work if Human Remains Are Uncovered during Project Construction, Assess the Significance of the Find, and Pursue Appropriate Management.</b></p>	LTS

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		<p>California law recognizes the need to protect interred human remains, particularly Native American burials and associated items of patrimony, from vandalism and inadvertent destruction. The procedures for the treatment of discovered human remains are contained in Sections 7050.5 and 7052 of the California Health and Safety Code, and PRC Section 5097.</p> <p>In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, all such activities within a 100-foot radius of the find must be halted immediately and the project applicant's designated representative must be notified. The project applicant is required to notify the County Coroner and a qualified professional archaeologist immediately. The coroner will examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands, as per Section 7050.5(b) of the Health and Safety Code. If the coroner determines that the remains are those of a Native American, the coroner will contact the NAHC by phone within 24 hours of making that determination, as per Section 7050(c) of the Health and Safety Code. The project applicant must act on notification of a discovery of Native American human remains in compliance with PRC Section 5097.9. The project applicant and the professional archaeologist are required to contact the Most Likely Descendant, as determined by the NAHC, regarding the remains. The Most Likely Descendant, in cooperation with the property owner and the lead agencies, will determine the ultimate disposition of the remains.</p>	
<p><b>3.6-3: Change to the Significance of a Historical Resource.</b> Historic districts and historic landscapes could be affected by the project. This impact on the Scotia Historic District would be <b>less than significant</b>, while this impact on the Bear River Ridge and Valley Historic Landscape and Bear River Ridge Ethnobotanical/Cultural Landscape would be <b>significant</b>.</p>	<p><i>Scotia Historic District: LTS</i> <i>Bear River Ridge and Valley Historic Landscape and Bear River Ridge Ethnobotanical/Cultural Landscape: S</i></p>	<p><i>The mitigation measures below do not apply to the impact on the Scotia Historic District. Mitigation Measures 3.6-3a and 3.6-3b apply to the impact on the Bear River Ridge and Valley Historic Landscape, while Mitigation Measure 3.6-3c applies to the Bear River Ridge Ethnobotanical/Cultural Landscape.</i></p> <p><b>Mitigation Measure 3.6-3a: Prepare a Historic American Landscape Survey Report.</b> Before any project-related ground disturbance, the project applicant shall retain a professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History to prepare written and photographic</p>	<p><i>Scotia Historic District: LTS</i> <i>Bear River Ridge and Valley Historic Landscape and Bear River Ridge Ethnobotanical/Cultural Landscape: SU</i></p>

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>documentation of the historic landscape that will be negatively affected by the project. The documentation of historical resources shall be prepared based on the National Park Service’s Historic American Landscape Survey (HALS) report guidelines; however, the documentation will not be reviewed by the National Park Service or transmitted to the Library of Congress, and therefore, does not need to be a full-definition dataset.</p> <p>The written historical data shall follow the HALS Historic Guidelines’ three-part outline format, which includes (1) historical information (physical history, historical context); (2) physical information; and (3) sources of information. The written historical data shall be printed on 8.5-by-11-inch archival bond paper.</p> <p>Efforts shall also be made to locate historic photographs and maps of the built environment resources within the historic landscape. If located, these shall be reproduced and included in the dataset. If available, up to 10 historic photographs, maps, or other relevant material shall also be included in the dataset.</p> <p>Before the start of construction and any ground-moving activities, large-format (4 x 5 inch) black-and-white archival photographs shall be taken of the historical resources. Up to 30 photograph views for the dataset shall include (1) contextual views; (2) detail views of building clusters; and (3) any relevant detail views. The photographs shall be fully captioned and referenced on a photographic key.</p> <p>After completion of the HALS documentation, the materials shall be placed on file with Humboldt County and archival-quality copies of the respective reports shall be distributed to the Ferndale Museum, the Scotia Museum, the Humboldt County Historical Society, and other local historical societies, libraries, and museums as necessary.</p> <p><b>Mitigation Measure 3.6-3b: Prepare and Implement a Site Protection Plan.</b></p> <p>Before permits are issued for construction or grading activities, a detailed site plan to protect historic-age built environment resources shall be developed and submitted to the County Planning &amp; Building Department. Implementation of the plan will reduce potential impacts by avoidance and protection of properties</p>	

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		<p>to ensure that construction activities will not cause inadvertent damage. The protection plan shall also include mitigation strategies to avoid inadvertent damage, including but not limited to the following:</p> <ul style="list-style-type: none"> <li>• Avoid siting or routing heavy equipment or trucks within 100 feet of historic-age buildings or structures including corrals, barns, and ancillary buildings.</li> <li>• Establish compliance and monitoring procedures to avoid any inadvertent damage to historic-age buildings and structures.</li> <li>• Brief project personnel on the sensitivity of historical resources in the historic landscape and compliance and monitoring procedures.</li> </ul>	
		<p><b>Mitigation Measure 3.6-3c: Incorporate Plants Appropriate for the Wiyot Tribe Ethnobotanical Area into the Reclamation, Revegetation, and Weed Control Plan Required as Part of Mitigation Measure 3.5-23e.</b></p> <p>The project’s reclamation, revegetation, and weed control plan shall incorporate plants included in the “Wiyot List of Plant Species of Environmental and Cultural Concern” in the final restoration plan. The species planted shall be subject to the same monitoring requirements and success criteria established in Mitigation Measure 3.5-23e, “Develop and Submit a Reclamation, Revegetation, and Weed Control Plan.”</p>	
<p><b>3.6-4: Change to the Significance of a Tribal Cultural Resource.</b> Tribal Cultural Resources could be affected by construction and operation of the proposed project. This impact would be <b>significant</b>.</p>	S	<p><b>Bear River Ridge:</b> No feasible mitigation is available to reduce this significant impact.</p> <p><b>California Condor: Mitigation Measure 3.6-4: Detect Presence of and Curtail Operations for Condors.</b></p> <p>If condors are released in the Bald Hills in Redwood National Park or another location with a range overlapping the project’s WTGs, the project applicant shall implement a detection system using the transponders attached to the condors, and shall curtail operations when condors are close to the WTGs so that the condors are not at risk of encountering operating WTGs. The detection technology and plan for curtailment shall be incorporated into the project’s bird and bat conservation strategy (Mitigation Measure 3.5-18a). Implementation of the detection</p>	SU

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		technology and the requirement to curtail WTGs shall occur within 6 months after the condors are released.	
<b>3.7 Geology and Soils</b>			
<b>3.7-1: Surface Rupture Along a Known Earthquake Fault.</b> The project would not be constructed over the surface traces of any active faults. This impact would be <b>less than significant</b> .	LTS	No mitigation measures are required.	LTS
<b>3.7-2: Possible Risks to People and Structures Caused by Strong Seismic Ground Shaking.</b> The project site is in an area of high seismic activity, within a region that contains known active faults; therefore, proposed structures and employees could be subject to hazards from strong seismic ground shaking. However, given project compliance with California Building Code requirements, this impact would be <b>less than significant</b> .	LTS	No mitigation measures are required.	LTS
<b>3.7-3: Possible Risks to People and Structures Caused by Seismic-Related Ground Failure, Liquefaction, and Landslides.</b> Project construction activities could occur in areas subject to liquefaction, which could pose a hazard to people and structures. However, given project compliance with existing state and local regulatory requirements, this impact would be <b>less than significant</b> .	LTS	No mitigation measures are required.	LTS
<b>3.7-4: Erosion during Project Construction and Operation.</b> Construction activities during project implementation would involve grading and earth movement in soils subject to wind and water erosion hazards, and on steep slopes. Furthermore, if not constructed properly, new haul routes in steep areas could result in substantial erosion during project operations. However, given project compliance with existing state and local regulatory requirements, this impact would be <b>less than significant</b> .	LTS	No mitigation measures are required.	LTS
<b>3.7-5: Potential Geologic Hazards Related to Construction in Expansive Soils.</b> Construction of the project's generation and haul components could occur in soils that have the potential to expand when wet, and thus, may result in damage to structures or foundations. However, given project compliance with existing state and local regulatory requirements, this impact would be <b>less than significant</b> .	LTS	No mitigation measures are required.	LTS

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
<b>3.7-6: Potential Insuitability of Soils for Use with Septic Systems.</b> Wastewater for the O&M facility would be treated by an appropriately sized septic system that would be installed. This impact would be <b>less than significant</b> .	LTS	No mitigation measures are required.	LTS
<b>3.8 Greenhouse Gas Emissions</b>			
<b>3.8-1: Generation of Greenhouse Gas Emissions.</b> Implementing the proposed project would generate construction-related and operational GHG emissions. Long-term operation of the proposed project would reduce CO <sub>2</sub> e emissions compared to existing conditions. Therefore, this impact would result in a <b>less than cumulatively considerable contribution to the significant cumulative impact of global climate change</b> .	Less than cumulatively considerable contribution	No mitigation measures are required.	LTS
<b>3.8-2: Consistency with Applicable Plans, Policies, and Regulations Adopted for the Purpose of Reducing the Emissions of GHGs.</b> Implementing the proposed project would be consistent with state and County policies adopted to reduce GHGs. Therefore, this impact would result in a <b>less than cumulatively considerable contribution to the significant cumulative impact of global climate change</b> .	Less than cumulatively considerable contribution	No mitigation measures are required.	LTS
<b>3.9 Hazards and Hazardous Materials</b>			
<b>3.9-1: Accidental Spills of Hazardous Materials from Routine Transport, Use, or Disposal of Hazardous Materials.</b> Construction and operation activities for the proposed project may create opportunities for accidental spills of hazardous materials at and around the project site during routine transport, use, or disposal activities. This impact would be <b>less than significant</b> .	LTS	No mitigation measures are required.	LTS
<b>3.9-2: Exposure to Hazardous Materials Existing at the Project Site or Location of the Project on a Site Included on a List of Hazardous Materials Sites Compiled Pursuant to Government Code Section 65962.5.</b> Project activities would not result in new exposure to hazardous materials at the project site. However, DTSC reserves the right to require additional surveys and tests of the land in the event that construction work	PS	<b>Mitigation Measure 3.9-1: Investigate Known Hazard along the Project Alignment.</b> The project applicant shall retain a licensed professional to conduct soil sampling and testing along the segment of the project alignment routed near the Mount Pierce Relay Annex. A report shall be prepared to summarize the findings of lab tests and make recommendations for project design and construction to protect	LTS

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
would disturb the soil. Therefore, this impact would be <b>potentially significant</b> .		human health. Available measures may include remedial actions to remove the contaminated soils or routing of the alignment to avoid the contaminated area. The report shall be submitted to the County for review and recommendations shall be enforced by reviewing engineering plans during inspection and confirming implementation while in the field.	
<b>3.9-3: Potential Safety Hazards Associated with Project Construction.</b> Construction and operation of the project may include the use of explosives. Using explosives has the potential to create a significant hazard to the public and structures. This impact would be <b>potentially significant</b> .	PS	<p><b>Mitigation Measure 3.9-2: Prepare and Implement a Blasting Plan to Minimize Potential for Blasting-Related Safety Incidents.</b></p> <p>Before the issuance of grading or building permits, if blasting is required, the project applicant shall contract with a blasting contractor with experience conducting blasting activities. The contractor shall be licensed to use Class A explosives, and licensed as a contractor in the State of California. The blasting contractor shall prepare a blasting plan for the proposed blasting activities to avoid endangering worker safety. The blasting plan shall be submitted for review to the Humboldt County Planning Department, in consultation with the County Environmental Health Services Department, the State Fire Marshal, and the North Coast Unified Air Pollution Control District.</p> <p>The blasting plan shall:</p> <ul style="list-style-type: none"> <li>• describe procedures to be implemented to protect workers during blasting, such as using a signaling system to alert workers of an impending blast and using blasting mats to prevent or reduce the number of rock particles thrown into the air;</li> <li>• provide procedures for preventing employee or public entry into any area subject to blasting;</li> <li>• describe procedures for proper storage and transportation of explosive materials, including protecting explosives from wildfires;</li> <li>• prohibit blasting during extreme fire danger periods; and</li> <li>• comply with the guidelines established by the U.S. Bureau of Mines and the U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement, for minimizing damage to structures from blasting.</li> </ul>	LTS

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
<b>3.9-4: Potential Hazards Associated with Operation of Wind Turbine Generators.</b> Implementation of the proposed project could cause reasonably foreseeable upset and accident conditions during operation of the wind turbine generators. This impact would be <b>less than significant</b> .	LTS	No mitigation measures are required.	LTS
<b>3.9-5: Interference with Air Navigation.</b> Project implementation would include installation of meteorological towers and wind turbine generators that could interfere with air navigation. However, this impact would be <b>less than significant</b> .	LTS	No mitigation measures are required.	LTS
<b>3.9-6: Release and Handling of Hazardous Materials within One-Quarter Mile of Existing Schools.</b> Schools are located within one-quarter mile of the transportation route. However, this impact would be <b>less than significant</b> .	LTS	No mitigation measures are required.	LTS
<b>3.10 Hydrology and Water Quality</b>			
<b>3.10-1: Potential Temporary, Short-Term Construction-Related Drainage and Water Quality Effects.</b> Project construction activities would involve grading and earth movement, which could substantially alter the site’s existing drainage patterns, generate erosion or siltation on-site, and deposit other nonpoint-source pollutants in on-site stormwater runoff. If not properly designed and implemented, the proposed earthwork could degrade surface water or groundwater quality or change existing drainage patterns through hydromodification. Construction-related spills of hazardous materials or fuels could also reach receiving waters, thus degrading water quality and potentially violating a water quality standard or waste discharge requirement. The project would implement all measures contained in regulatory plans, programs, and policies adopted for protection of the environment. However, this impact would be <b>potentially significant</b> .	PS	<p><b>Mitigation Measure 3.10-1: Implement Wet-Weather BMPs Consistent with the Humboldt Redwood Company Habitat Conservation Plan.</b></p> <p>To reduce the potential for erosion and sedimentation that may cause downstream impacts on anadromous fish species, the project applicant shall prepare and implement an erosion control plan for review and approval by the Humboldt County Planning &amp; Building Department that includes the following measures from the Humboldt Redwood Company HCP:</p> <ul style="list-style-type: none"> <li>• No road or landing construction, reconstruction, and upgrading shall occur within 170 feet of Class I or II waters, or within the Equipment Exclusion Zone (50 or 100 feet, respectively) of Class III waters. The construction, reconstruction, and upgrading shall not cross Class I, II, or III waters.</li> <li>• No portion of the constructed, reconstructed, and upgraded road/landing shall cross an inner gorge, headwall swale, unstable area, extreme, very high, or high mass-wasting hazard area.</li> <li>• The soil moisture condition in the soils moved for purposes of construction, reconstruction, and upgrading shall be no wetter</li> </ul>	LTS

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>than is found during normal watering (dust abatement treatments or light rainfall, and the soil is not rutting or pumping fines).</p> <ul style="list-style-type: none"> <li>• During and after construction, reconstruction, and upgrading, there shall be no visible increase in turbidity in any drainage facility, construction/reconstruction site, or road surface, any of which drains directly to Class I, II, or III waters (standing water on the road that does not drain to Class I, II, or III waters is not applicable).</li> <li>• During construction, reconstruction, and upgrading, erosion control material of sufficient quantity shall be stockpiled on-site and used to prevent an increase in turbidity in any drainage facility, construction site, or road surface, any of which drains directly to Class I, II, or III waters.</li> </ul> <p>If the Humboldt Redwood Company HCP measures cannot be implemented, or if the project applicant seeks to conduct work during the wet season (October 15–June 1), the project applicant shall implement the following measures while conducting tree harvest, road or landing construction, reconstruction, and road upgrades:</p> <ul style="list-style-type: none"> <li>• Exposed slopes greater than 10:1 shall be stabilized with hydraulic wood fiber mulch applied at a minimum rate of 2,500 pounds per acre. A sterile erosion control seed mix or suitable native seed mix shall be applied with the hydraulic mulch.</li> <li>• Exposed slopes greater than 3:1 shall be stabilized with erosion control matting installed in accordance with the current California Stormwater Quality Association (CASQA) BMP Handbook. Erosion control matting shall consist of 100 percent biodegradable materials. In lieu of erosion control matting, hydraulic Bonded Fiber Matrix (BFM) consisting of wood mulch with tackifier shall be applied at a minimum rate of 3,500 pounds per acre. A sterile erosion control seed mix or suitable native seed mix shall be applied with the hydraulic BFM.</li> </ul>	

Table ES-1. Summary of Project Impacts and Mitigation Measures																							
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation																				
		<ul style="list-style-type: none"> <li>• Exposed slopes greater than 10:1 shall have fiber roll or equivalent linear slope breaks installed at the following minimum intervals:                             <table style="margin-left: 20px; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Slope</th> <th style="text-align: left;">Interval</th> </tr> </thead> <tbody> <tr> <td>i. &gt;15:1</td> <td>25 feet</td> </tr> <tr> <td>ii. &gt;10:1</td> <td>20 feet</td> </tr> <tr> <td>iii. &gt;4:1</td> <td>15 feet</td> </tr> <tr> <td>iv. &gt;2:1</td> <td>10 feet</td> </tr> </tbody> </table> <p>Fiber roll linear slope breaks shall consist of 100 percent biodegradable materials and shall be installed in accordance with the current CASQA BMP Handbook.</p> </li> <li>• Temporary access roads established as part of the project shall be stabilized with rock and shall have water bars, earthen dike, or equivalent slope diverters installed at the following intervals:                             <table style="margin-left: 20px; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Slope</th> <th style="text-align: left;">Interval</th> </tr> </thead> <tbody> <tr> <td>v. &gt;15:1</td> <td>150 feet</td> </tr> <tr> <td>vi. &gt;10:1</td> <td>100 feet</td> </tr> <tr> <td>vii. &gt;5:1</td> <td>75 feet</td> </tr> <tr> <td>viii. &gt;4:1</td> <td>50 feet</td> </tr> </tbody> </table> </li> <li>• The outflow from slope diverters shall be directed onto a stabilized area or into a grade stabilization structure. Road slope diversion and outflow structures shall be installed in accordance with the current CASQA BMP Handbook.</li> <li>• To monitor the effectiveness of wet-season erosion control measures, the project applicant shall implement a stormwater discharge sampling program in accordance with the SWRCB General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ (General Permit). The project applicant shall comply with the Numeric Action Levels (NALs) for turbidity and pH specified in the General Permit, and shall adjust BMPs as necessary to maintain compliance with turbidity and pH NALs. The results of laboratory sampling will be provided to the Humboldt County Planning &amp; Building Department at the time the results are uploaded to the state Stormwater Multiple</li> </ul>	Slope	Interval	i. >15:1	25 feet	ii. >10:1	20 feet	iii. >4:1	15 feet	iv. >2:1	10 feet	Slope	Interval	v. >15:1	150 feet	vi. >10:1	100 feet	vii. >5:1	75 feet	viii. >4:1	50 feet	
Slope	Interval																						
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v. >15:1	150 feet																						
vi. >10:1	100 feet																						
vii. >5:1	75 feet																						
viii. >4:1	50 feet																						

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>Application and Report Tracking System database.</p> <ul style="list-style-type: none"> <li>Should erosion and sedimentation devices fail, or should the NALs and/or pH NALs be exceeded, the County will have stop-work authority over project construction activities. The County will stop work on any portion of the project determined by the County to be the source of erosion or sedimentation. Work will be suspended until the erosion and sedimentation control measures can be fortified or reestablished, or until the County determines that site conditions (e.g., weather, soil moisture content) have improved.</li> <li>The project applicant shall inspect erosion and sedimentation control measures before any precipitation event (as defined by greater than 0.25 inch of rain forecasted for a 24-hour period) during the wet season, and shall report the inspection results to the County before conducting work during any precipitation event. Work shall be suspended if the County determines that erosion control measures are in disrepair, or would be ineffective in the prevention of erosion resulting from the forecasted precipitation event. At any time, work may be suspended at the discretion of the County if site conditions deteriorate to the point where erosion control measures would be ineffective.</li> </ul>	
<p><b>3.10-2: Potential to Increase the Rate or Amount of Surface Runoff in a Manner that Would Result in Flooding On- or Off-site.</b> Project implementation would not substantially alter runoff volumes, as the percentage of impervious surface is minimal compared to the total land area in the watershed. Topography would not be substantially altered by clearing and grading for project components, and stream channel crossings would be stormproofed to improve their capacity and protect against erosion. The proposed project is not anticipated to substantially increase the peak discharge rates of stormwater runoff. The project would not increase the potential for on-site and off-site flooding, exceed the capacity of existing or planned stormwater drainage systems, or impede or redirect flood flows. This impact would be <b>less than significant</b>.</p>	LTS	No mitigation measures are required.	LTS

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
<p><b>3.10-3: Potential Water Quality Impacts from Project Operations.</b> Project implementation would alter the permeability of surfaces that could increase runoff from the project area, thereby increasing the potential for transport of pollutants from the project area to local surface waters. This impact would be <b>less than significant</b>.</p>	LTS	No mitigation measures are required.	LTS
<p><b>3.10-4: Potential to Deplete Groundwater Supplies or Interfere Substantially with Groundwater Recharge Such that the Project May Impede Sustainable Groundwater Management.</b> Compaction and widening of roads, installation of turbines and foundations, and operation of the project facilities could require the use of surface or groundwater. This impact would be <b>less than significant</b>.</p>	LTS	No mitigation measures are required.	LTS
<b>3.11 Noise</b>			
<p><b>3.11-1: Generation of a Substantial Temporary Increase in Ambient Noise Levels in the Vicinity of the Project in Excess of Standards Established in the Local General Plan or Noise Ordinance, or Applicable Standards of Other Agencies.</b> Construction of project components would require temporary, short-term construction activities and haul truck trips to haul wind turbine generator parts and needed construction materials and equipment to the project area. Project-related construction activities and haul truck trips could expose existing sensitive receptors to temporary noise levels that would exceed the applicable noise standards and/or result in a substantial increase in ambient noise levels. This impact would be <b>less than significant</b>.</p>	LTS	<p><i>Even though impacts were determined to be less than significant, the project applicant has voluntarily agreed to implement this mitigation measure as an enforceable condition of approval.</i></p> <p><b>Mitigation Measure 3.11-1: Implement Noise-Reducing Construction Practices.</b></p> <p>The project applicant shall ensure that the following measures are implemented during construction activities, where construction occurs within 500 feet of a sensitive receptor, to avoid and minimize construction noise effects on sensitive receptors:</p> <ul style="list-style-type: none"> <li>• All construction equipment shall be equipped with noise-reduction devices, such as mufflers, to minimize construction noise, and all internal combustion engines will be equipped with exhaust and intake silencers, in accordance with manufacturers' specifications.</li> <li>• The use of bells, whistles, alarms, and horns shall be restricted to safety warning purposes only.</li> <li>• Mobile and fixed construction equipment (e.g., compressors and generators), construction staging and stockpiling areas, and construction vehicle routes shall be located at the most distant point feasible from noise-sensitive receptors.</li> <li>• The project applicant shall ensure that all heavy trucks are</li> </ul>	LTS

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		properly maintained and equipped with noise-control (e.g., muffler) devices, in accordance with manufacturers' specifications, at each work site during project construction, to minimize construction traffic noise effects on sensitive receptors.	
<b>3.11-2: Temporary and Short-Term Exposure of Sensitive Receptors to, or Temporary and Short-Term Generation of, Excessive Groundborne Vibration.</b> Project construction activities would require the use of heavy construction equipment and blasting in the project area. Heavy construction equipment and blasting activities would not expose existing sensitive receptors to temporary vibration levels that would exceed applicable standards. This impact would be <b>less than significant</b> .	LTS	No mitigation measures are required.	LTS
<b>3.11-3: Long-Term Increases in Project-Generated Noise.</b> Project operation would introduce new long-term noise sources in the project area. Noise generated by substations and overhead transmission lines would not be anticipated to expose existing sensitive receptors to a permanent increase in noise levels that would exceed the applicable noise standards or result in a substantial increase in ambient noise levels. However, noise generated by wind turbine generators could expose existing sensitive receptors to a substantial permanent increase in ambient noise levels. With respect to noise generated by substations and overhead transmission lines, and to long-term, low-frequency and infrasonic noise from operation of the wind turbine generators, this impact would be less than significant. With respect to long-term exterior noise generated by operation of the wind turbine generators, this impact would be <b>potentially significant</b> .	<i>Project substation: LTS</i> <i>Overhead transmission lines: LTS</i> <i>Long-term low-frequency and infrasonic noise from wind turbine operation: LTS</i> <i>Long-term exterior noise from wind turbine operation: PS</i>	<i>This mitigation measure applies only to long-term exterior noise impacts from wind turbine generator operations.</i> <b>Mitigation Measure 3.11-2: Implement Noise-Reducing Wind Turbine Generator Operations.</b> The project applicant shall reduce the number of proposed WTGs north of receptor R-5 (shown in Figure 3.11-2) to avoid and minimize the effects of noise related to WTG operation. The following measure shall be implemented: <ul style="list-style-type: none"><li>Relocate, eliminate, or impose operational modifications on WTGs within 1,200 feet of receptor R-5 to reduce the permanent increase in ambient noise levels from 24-hour-per-day operation of WTGs to less than 5 dBA.</li></ul>	LTS

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
<b>3.12 Transportation and Traffic</b>			
<p><b>3.12-1: Potential to Conflict with a Program, Plan, Ordinance, or Policy.</b> The project would not substantially alter the total number of vehicle miles traveled in Humboldt County, as it is not considered to be a trip-generating land use type. The project would not conflict with a state or local transportation policy, including State CEQA Guidelines Section 15064. This impact would be <b>less than significant</b>.</p>	LTS	No mitigation measures are required.	LTS
<p><b>3.12-2: Creation of Hazards from Truck Traffic.</b> A large number of trucks would transport loads over roadways that do not normally see a high volume of truck traffic. These trucks could exceed applicable standards for maximum vehicle width or exceed the width of most travel lanes. Use of the roadway network by these oversized trucks would shorten the remaining useful life of roadway surface and could create hazardous road condition. This impact would be <b>potentially significant</b>.</p>	PS	<p><b>Mitigation Measure 3.12-1: Rehabilitate/Reconstruct County-Maintained Roads Damaged by Truck Traffic.</b></p> <p>The project applicant shall prepare a transportation route plan that avoids heavy truck trips (except pickup trucks without trailers) on Monument Road and Mattole Road. All truck traffic shall use Jordan Road for ingress and egress from U.S. 101 to the project site.</p> <p>Before issuance of the grading permit, the project applicant shall submit a haul route map to the County Department of Public Works identifying all County-maintained roads that would be used by trucks. The applicant and County Department of Public Works shall assess each road on the ground to determine their preproject condition before project-related truck traffic uses the roads.</p> <p>During the course of the project, if the project applicant wishes to use additional County-maintained roads, the applicant shall submit a revised haul route map to the County Department of Public Works. The applicant and the County Department of Public Works shall assess each road on the ground to determine their preproject condition before project-related truck traffic uses the roads.</p> <p>At the conclusion of the project, the project applicant and the County Department of Public Works shall reassess all roads used by project-related truck traffic. The applicant shall rehabilitate/reconstruct the roads to the satisfaction of the County Department of Public Works.</p>	LTS

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
<p><b>3.12-3: Potential to Impede Emergency Access.</b> The size and limited mobility of heavy trucks hauling project components could impede vehicular travel on U.S. 101. U.S. 101 is the primary north/south access route to and from Humboldt County. The County Emergency Operations Plan lists U.S. 101 for use by emergency responders during critical events. This impact would be <b>less than significant</b>.</p>	LTS	<p><i>Even though the impact would be less than significant, the project applicant has voluntarily agreed to implement Mitigation Measure 3.12-2 as an enforceable condition of approval.</i></p> <p><b>Mitigation Measure 3.12-2: Create a Traffic Control Plan and Notify the Public Regarding Anticipated Roadway Obstructions.</b></p> <p>The transporters shall travel under loaded conditions during off-peak hours and possibly during evenings or at night, to minimize impacts on roadway traffic flows. The project applicant shall work with Caltrans to determine the lowest hourly traffic flows and develop a traffic control plan that specifies travel times and days, and includes public notification of anticipated roadway obstructions before transporter travel days. The final plan shall be submitted to Caltrans for review and approval.</p>	LTS
<b>3.13 Fire Protection Services and Wildfire Hazards</b>			
<p><b>3.13-1: Increased Demand for Fire Protection Services.</b> Implementing the proposed project could result in a need for additional firefighting equipment and technical rescue services that would exceed the training and existing equipment capabilities of likely responders. This impact would be <b>potentially significant</b>.</p>	PS	<p><b>Mitigation Measure 3.13-1a: Prepare and Implement a Fire Services Financing Plan.</b></p> <p>Before energizing the project, the project applicant shall develop and implement a fire services financing plan in consultation with the Humboldt County Fire Chiefs' Association and Rio Dell Fire Protection District. The plan shall identify:</p> <ul style="list-style-type: none"> <li>• the equipment needed to provide emergency rescue, medical, or fire protection calls for service at the project site;</li> <li>• the cost to acquire equipment and training in the use of the equipment as measured over the 30-year life span of the project;</li> <li>• the project applicant's fair-share contribution toward acquisition of this equipment and training; and</li> <li>• a financing mechanism to allow for receipt and distribution of funds to implement the plan.</li> </ul> <p>The plan shall be monitored annually and the outcome shall be included in the fire services report completed by the fire chiefs and submitted to the County Board of Supervisors.</p>	LTS

<b>Table ES-1. Summary of Project Impacts and Mitigation Measures</b>			
<b>Impacts</b>	<b>Significance Before Mitigation</b>	<b>Mitigation Measures</b>	<b>Significance After Mitigation</b>
		<p><b>Mitigation Measure 3.13-1b: Prepare and Implement a Fall Protection and Rescue Plan.</b></p> <p>Before any construction permits are issued or construction activity begins, the project applicant shall prepare a fall protection and rescue plan that shall be submitted for approval by the Humboldt County Planning &amp; Building Department. Once approved, the plan shall be implemented throughout the life of the project.</p> <p>The fall protection and rescue plan shall identify site access, vehicle parking and staging areas, dimensions of confined spaces, anchor points, personal protection, and patient packaging. The project applicant shall retain a reputable training provider that will provide training in high-angle rescue. Potential training providers can include state fire training organizations and private companies. Training shall be in accordance with National Fire Protection Association (NFPA) 1006, Standard for Technical Rescuer Professional Qualifications, and NFPA 1670, Standard on Operations and Training for Technical Search and Rescue Incidents. This training shall include but not be limited to the following elements:</p> <ul style="list-style-type: none"> <li>• • Rope system anchors</li> <li>• • Evacuation litters</li> <li>• • Rescuer and patient packaging</li> <li>• • Lowering and raising systems</li> <li>• • Mechanical advantage systems</li> <li>• • Fall protection and/or limiter systems</li> </ul> <p>Personnel shall practice their techniques on a regular basis to remain proficient. All training shall be documented and include attendee signatures, and files documenting all training shall be maintained in the event of an investigation after an incident.</p>	
<p><b>3.13-2: Increased Risk of Wildland Fires.</b> The project area is located on land considered to be a State Responsibility Area with a high fire hazard severity rating. Project construction and operation would include activities that may create sparks or flames, representing a potential hazard that would exacerbate the risk of wildfire. This impact would be <b>potentially</b></p>	PS	<p><b>Mitigation Measure 3.13-2a: Prepare and Implement a Fire Safety and Management Plan to Minimize the Potential for Wildland Fires.</b></p> <p>Before any construction permits are issued or construction activity begins, the project applicant shall develop a fire protection plan. The plan is subject to review and approval by the Humboldt</p>	LTS

**Table ES-1. Summary of Project Impacts and Mitigation Measures**

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
<p><b>significant.</b></p>		<p>County Planning &amp; Building Department in consultation with CAL FIRE and shall be implemented during construction and throughout the lifetime of project operations. The scope of the plan shall apply to all property, buildings, structures, operations, and facilities associated with the project. The plan shall include identified helicopter landing zones, special rescue equipment to be kept on-site, a training plan for first responders, and suitable areas for the installation and maintenance of wildland fire control features. The fire safety and management plan shall do all of the following:</p> <ul style="list-style-type: none"> <li>• • Require that all internal combustion engines, stationary and mobile, be equipped with spark arresters. Spark arresters shall be in good working order.</li> <li>• • Require that light trucks and cars with factory-installed (type) mufflers be used only on roads where the roadway is cleared of vegetation. Said vehicle types shall maintain their factory-installed (type) muffler in good condition.</li> <li>• • Specify that fire rules shall be posted on the project bulletin board at the contractor's field office and in areas visible to employees.</li> <li>• • Ensure that equipment parking areas and small stationary engine sites are cleared of all extraneous flammable materials.</li> <li>• • Specify that personnel must be trained in the practices of the fire safety plan relevant to their duties. Construction and maintenance personnel shall be trained and equipped to extinguish small fires to prevent them from growing into more serious threats.</li> <li>• • Prohibit smoking in wildland areas, with smoking limited to paved areas or areas cleared of all vegetation.</li> <li>• Require consultation with CAL FIRE regarding the need to install water or dip tanks within the project site.</li> <li>• Implement measures developed to address fire prevention on Red Flag Warning days issued by the National Weather Service for the project site. All nonemergency construction and maintenance activities shall cease, or implementation measures to address fire hazards on Red Flag Warning days shall be</li> </ul>	

Table ES-1. Summary of Project Impacts and Mitigation Measures			
Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		<p>approved as part of construction plans and or within the operation plan, allowing certain limited activities to proceed.</p> <ul style="list-style-type: none"> <li>• Describe the preventive strategies and programs adopted to minimize the risk of electrical lines and equipment causing catastrophic wildfires.</li> <li>• Describe protocols for identifying the potential for fire, including providing meteorological data collected by meteorological towers to CAL FIRE to help reporting on local conditions, and actions to verify fire and CAL FIRE contact information to report a potential fire.</li> <li>• Identify protocols for disabling re-closers and deenergizing portions of the electrical distribution system, considering the associated impacts on public safety.</li> <li>• Describe plans for inspections of electrical infrastructure.</li> <li>• Prepare a list that identifies, describes, and prioritizes all wildfire risks, and drivers for those risks associated with project operation and transmission to the point of interconnection.</li> </ul> <p><b>Mitigation Measure 3.13-2b: Prepare an Emergency Response Plan.</b></p> <p>Before any construction permits are issued or construction activity begins, the project applicant shall prepare an emergency response plan for operations. The plan is subject to review and the Humboldt County Planning &amp; Building Department in consultation with CAL FIRE. The emergency response plan shall address potential accidents or emergencies involving fires or explosions at the wind energy facility, and shall provide key names and addresses of contacts in case of emergency, as well as a description of processes and general information about facility hazards. The emergency response plan shall describe how to identify an emergency, how to alert someone and whom to alert if an emergency occurs, roles during an emergency, how the emergency will be controlled, and how to terminate the incident.</p>	
<p>Notes: LTS = less than significant; PS = potentially significant; S = significant; SU = significant and unavoidable</p> <p>Source: Data compiled by AECOM in 2019</p>			

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