

Mitigation Monitoring and Reporting Program

Introduction

An environmental impact report (EIR) was prepared to comply with the California Environmental Quality Act (CEQA) for the Hatchet Ridge Wind Project (proposed project). The EIR identified potentially significant environmental impacts as well as mitigation measures to reduce the significance of those impacts, where feasible. Potentially significant and unavoidable impacts were identified for the resource areas listed below.

- Aesthetics and visual resources.
- Biological resources.
- Cultural resources.

Regulatory Background

CEQA provides that when an agency approves a project for which mitigation is required, that agency must adopt a mitigation monitoring and reporting program (MMRP) that ensures the mitigation measures will be implemented (Public Resources Code [PRC] Section 21081.6[a]). The MMRP addresses those mitigation measures identified in the EIR that are the responsibility of the agency to implement. CEQA's mandate is rather brief and gives agencies leeway in designing their MMRPs: some agencies focus on monitoring, some focus on reporting, and some focus on both.

This MMRP has been prepared to comply with Section 21081.6(a)(1) of the PRC, which requires that:

The public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation.

This MMRP is intended to ensure the effective implementation of mitigation measures that are within the authority of the Shasta County Department of Resource Management (County) to implement (including monitoring where identified) throughout all phases of construction of the proposed project.

Implementation of Mitigation and Monitoring

The County, as lead agency under CEQA, has developed this MMRP for the proposed project. This MMRP is designed to ensure that the mitigation measures adopted by the County for this project are implemented.

This MMRP lists all mitigation measures identified in the EIR for the proposed project. In general, monitoring becomes effective at the time the action is taken on the project. The timing of monitoring is organized as follows.

- Prior to construction: The monitoring activity consists of ensuring that a particular mitigation action has taken place prior to the beginning of any construction or grading activities, i.e., before the County issues grading or building permits.
- During construction: The monitoring activity consists of active monitoring while grading or construction is occurring on the project site.
- After construction/ongoing: The monitoring activity consists of monitoring after the grading and construction phase of the project has been completed and is related to ongoing operation and maintenance.

The implementation timing of certain mitigation measures is also noted when different from the above-listed categories.

The MMRP is presented in Table 4-1. For each adopted mitigation measure, the table identifies the characteristics listed below.

- The timing of implementation.
- The mitigation measure.
- The implementing party.
- The monitoring party.

Each mitigation measure is copied from the certified final EIR. The table will be used as a reference by the County to identify the applicable measures and to ensure that they have been implemented in a timely manner.

The County will bear the primary responsibility for ensuring that the mitigation measures are implemented. When project work is undertaken by the County's or developer's contractors, the pertinent mitigation measures will be included in the terms and conditions of the contracts. The County's construction inspectors will undertake regular inspections of the job site to ensure that contractors are implementing the mitigation measures and complying with their contract. The County's project manager will be responsible for ensuring that mitigation measures that are the responsibility of the County are carried out.

Mitigation Measure	Description	Timing	Monitoring Responsibility	Verification (date & initial)
Aesthetics and Visual Resources				
Mitigation Measure AES-1 Use rapid discharge flashing red safety lighting	As discussed in Chapter 2, Project Description, studies have suggested that use of a flashing red light reduces the visual impacts on neighboring communities. To comply with FAA regulations, a rapid-discharge flashing red light will be used rather than a single incandescent light.	Installation prior to project operation	Shasta County Department of Resource Management— Planning/ FAA	
Air Quality				
Mitigation Measure AIR-1 Implement SCAQMD required standard mitigation measures	<p>The project applicant will require the construction contractor to implement all feasible Standard Mitigation Measures. Such measures include but are not limited to those listed below.</p> <ul style="list-style-type: none"> ■ PM10 Controls. <ul style="list-style-type: none"> ❑ Alternatives to open burning of vegetative material on the project site will be used by the project applicant unless otherwise deemed infeasible by the AQMD. Examples of suitable alternatives are chipping, mulching, and conversion to biomass fuel. ❑ The applicant will be responsible for ensuring that all adequate dust control measures are implemented in a timely and effective manner during all phases of project development and construction. ❑ All material excavated, stockpiled, or graded should be sufficiently watered to prevent fugitive dust from leaving property boundaries and causing a public nuisance or a violation of an ambient air standard. Watering should occur at least twice daily with complete site coverage, preferably in the mid-morning and after work is completed each day. ❑ All areas (including unpaved roads) with vehicle traffic should be watered periodically or have dust palliatives applied for stabilization of dust emissions. ❑ All onsite vehicles should be limited to a speed of 15 miles per hour on unpaved roads. ❑ If ground-disturbing activities are conducted under windy conditions (in excess of 20 miles per hour), the applicant will ensure that best available dust prevention techniques are used during such activities and will increase the frequency of watering to protect air quality as needed. ❑ All inactive portions of the development site should be seeded and watered until suitable grass cover is established. ❑ The applicant will be responsible for applying (according to manufacturer’s specifications) nontoxic soil stabilizers to all inactive construction areas (previously graded areas that remain inactive for 96 hours) in accordance with the Shasta County Grading Ordinance. ❑ All trucks hauling dirt, sand, soil, or other loose material should be covered or should maintain at least 2 feet of freeboard (i.e., minimum vertical distance between top of the load and top of the trailer) in accordance with the requirements of California Vehicle Code Section 23114. This provision will be enforced by local law enforcement agencies. ❑ All material transported off site will be either sufficiently watered or securely covered to prevent a public nuisance. ❑ During initial grading, earth moving, or site preparation, the project will be required to 	Implementation during construction	Shasta County AQMD and Department of Resource Management — Planning	

Mitigation Measure	Description	Timing	Monitoring Responsibility	Verification (date & initial)
Mitigation Measure AIR-2 Implement additional measures to reduce construction emissions	<p>construct a paved (or dust palliative-treated) apron, at least 100 feet in length, onto the project site from the adjacent paved road(s).</p> <ul style="list-style-type: none"> ❑ Paved streets adjacent to the development site should be swept or washed at the end of each day to remove excessive accumulations of silt and/or mud that may have accumulated as a result of activities on the development site. ❑ Adjacent paved streets will be swept (recommend water sweeper with reclaimed water) at the end of each day if substantial volumes of soil materials have been carried onto adjacent public paved roads from the project site. ❑ Wheel washers will be installed where project vehicles and/or equipment enter and/or exit onto paved streets from unpaved roads. Vehicles and/or equipment will be washed prior to each trip. ❑ Prior to final occupancy, the applicant will reestablish ground cover on the construction site through seeding and watering in accordance with the Shasta County Grading Ordinance. ■ Streets. <ul style="list-style-type: none"> ❑ The project will provide for temporary traffic control as appropriate during all phases of construction to improve traffic flow as deemed appropriate by the Department of Public Works and/or Caltrans. 	Implemented during construction	Shasta County AQMD and Department of Resource Management — Planning	
	<p>Construction activities will be scheduled to direct traffic flow to off-peak hours as much as practicable.</p> <p>The project applicant will require construction contractors to implement measures to reduce construction-related emissions. All feasible measures should be implemented including but are not limited to those listed below.</p> <ul style="list-style-type: none"> ■ Limit the area subject to excavation, grading, and other construction activity at any given time. ■ Limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use. ■ Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run by a portable generator set). ■ Require that all diesel engines be shut off when not in use to reduce emissions from idling. ■ During the smog season (May through October), lengthen the construction period to minimize the number of vehicles and equipment operating at the same time. ■ Off-road trucks should be equipped with on-road engines when possible. ■ Minimize obstruction of traffic on adjacent roadways. ■ Power construction equipment with diesel engines fueled by alternative diesel fuel blends or ultra low sulfur diesel (ULSD). Only fuels that have been certified by ARB should be used. ARB has verified specific alternative diesel fuel blends for NOX and PM emission reduction. The applicant should also use ARB-certified alternative fueled (compressed natural gas [CNG], liquid propane gas [LPG], electric motors, or other ARB certified off-road technologies) engines in construction equipment where practicable. ■ Use construction equipment that meets the current off-road engine emission standard (as certified by ARB) or that is re-powered with an engine that meets this standard. Tier I, Tier II, and Tier III 			

Mitigation Measure	Description	Timing	Monitoring Responsibility	Verification (date & initial)
	engines produce significantly less NOX and PM emissions than uncontrolled engines.			
Biological Resources				
Mitigation Measure BIO-1 Avoid Butte County morning-glory	Wherever possible, redesign the location of the facilities to avoid habitat for Butte County morning-glory. The applicant will, to the extent possible, adjust the location of six turbines and associated access roads currently planned for construction in Butte County morning-glory habitat. If this avoidance measure is not possible, the applicant will implement Mitigation Measure BIO-2.	Prior to initiating construction and ongoing throughout construction	Shasta County Department of Resource Management— Planning	
Mitigation Measure BIO-2 Minimize impacts on Butte County morning-glory	<p>Butte County morning-glory appears to have a patchy distribution within the population in the project area. The applicant will minimize impacts on Butte County morning-glory by locating facilities in unoccupied patches of the population, or in areas that support the lowest densities of plants. To accomplish this measure, a qualified botanist (<i>a qualified botanist</i> is defined as a person with at least an undergraduate degree in botany or biology and specific experience conducting botanical surveys in the region surrounding the project area for at least 3 years/seasons) will conduct a detailed survey of the area prior to construction to describe and map the exact boundaries of the population in the project area and the density of plants within the population. The survey must be conducted during the appropriate time of year, and the results of the survey as well as final facility siting must be submitted to the California Department of Fish and Game (DFG) and the Shasta County Department of Resource Management and approved by both agencies prior to construction.</p> <p>For Butte County morning-glory habitat temporarily disturbed during construction (approximately 15 acres), the applicant will confine the work area to the minimum amount necessary to complete the work. Where temporary disturbance is necessary, the applicant will conduct project activities and necessary ground disturbance in a manner that is consistent with the successful reestablishment of the species. A list of specific actions necessary to ensure successful reestablishment of the species following temporary disturbance, and the locations where these actions will be implemented, will be prepared by a qualified botanist, submitted to DFG and the Shasta County Department of Resource Management, and approved by both agencies prior to construction.</p> <p>Finally, to minimize impacts on Butte County morning-glory resulting from the potential introduction of invasive species, the applicant will implement invasive species control measures during construction and implement monitoring for a period of 3 years following construction. Prior to construction, the applicant must conduct a survey to map invasive species within the project area. During construction, the applicant will implement measures to prevent the spread of existing invasive species as determined necessary by a qualified botanist. Following construction, the applicant will monitor the project area every year for a period of 3 years during the appropriate period(s) of the year to ensure that invasive species have not been spread into new areas or that no new invasive species have been introduced. Through coordination with the Shasta County Department of Resource Management, and under the judgment of a qualified botanist, the applicant will implement measures to control invasive species if deemed necessary. An invasive species control plan must be submitted to the Shasta County Department of Resource Management and DFG prior to construction. Additionally, invasive species monitoring and treatment reports must be submitted to the Shasta County Department of Resource</p>	Prior to initiating construction and ongoing throughout construction	Shasta County Department of Resource Management— Planning /DFG	

Mitigation Measure	Description	Timing	Monitoring Responsibility	Verification (date & initial)
<p>Mitigation Measure BIO-3 Avoid and minimize disturbance of waters of the United States, including wetlands</p>	<p>Management and DFG annually following the completion of construction activities.</p> <ul style="list-style-type: none"> ■ Redesign or modify the project to avoid direct and indirect impacts on wetlands and streams, if feasible. ■ Avoid all wetlands and other waters of the United States by installing orange construction barrier fencing (and sedimentation fencing in some cases) between the construction site and the wetland/other waters areas. ■ Avoid construction activities in saturated or ponded wetlands and streams during the wet season to the maximum extent possible. Where such activities are unavoidable, protective practices, such as use of padding or vehicles with balloon tires, will be employed. ■ If deemed necessary by USACE during the Section 404 permit process, use geotextile cushions and other materials (e.g., timber pads, prefabricated equipment pads, geotextile fabric) in saturated conditions to minimize damage to the substrate and vegetation. ■ Stabilize exposed slopes and stream banks immediately upon completion of construction activities. Other waters of the United States will be restored in a manner that encourages vegetation to reestablish to preproject conditions and contours to reduce the effects of erosion on the drainage system. ■ Restrict any instream construction within the ordinary high water mark to the low-flow period of May through October. ■ Complete all activities promptly to minimize their duration and resulting impacts. ■ Prohibit equipment access or staging in or within 250 feet of wetlands and other waters of the United States along existing access roads. Confine access to existing roads. ■ Keep all protective measures in place until all construction activities have been completed near the resource; remove such measures immediately following construction activities. ■ Locate all turbines and project infrastructure (roads, substations, and other facilities) away from wetlands and drainages. Establish a setback as described below. ■ Construct project components using the setback recommendations established in USACE and California Department of Fish and Game guidance: a 100-foot setback from wetlands and streams and a 250-foot setback from wetlands, streams, and ephemeral pools that provide habitat for special-status species. ■ Retain a qualified wetland biologist to identify and flag the boundaries of wetlands prior to construction as “exclusion areas”; construction crews will follow the recommended setbacks. ■ Appurtenant project facilities (e.g., underground cables) will be sited at least 250 feet from identified wetland resources. ■ Ground disturbance during construction will be sited at least 100 feet from the boundaries of delineated wetlands to the extent feasible to minimize secondary effects on the resources. ■ All fueling and storage areas will be located at least 250 feet from intermittent streams and wetlands to prevent spills of fuel or other hazardous materials from entering receiving waters. ■ Develop a Spill Prevention and Containment Plan and maintain appropriate equipment on site to 	<p>Prior to initiating construction and ongoing throughout construction</p>	<p>USACE</p>	

Mitigation Measure	Description	Timing	Monitoring Responsibility	Verification (date & initial)
	prevent adverse impacts on wetlands that could result from an inadvertent spill.			
Mitigation Measure BIO-4 Conduct vegetation removal activities during the non-breeding season	To avoid potential impacts on nesting yellow warblers, raptors, and other migratory birds, all initial ground disturbance and vegetation removal activities will occur during the non-breeding season (i.e., August 15–March 1). If vegetation removal activities during the breeding season cannot be avoided, implement Mitigation Measure BIO-6.	During construction activities (April–August 15)	DFG	
Mitigation Measure BIO-5 Conduct preconstruction surveys for nesting birds and avoid active nest sites	To avoid potential impacts on nesting yellow warblers, raptors, and other migratory birds, a preconstruction survey will be conducted to locate all active nests of special-status birds and birds protected under the Migratory Bird Treaty Act. Nest sites of special-status raptors will be avoided and no vegetation removal activities will occur within a 0.25-mile radius of the nest until the young have fledged or the nest has failed, as determined by a qualified biologist. No vegetation removal activities will be conducted within 100 feet of the nests of nesting songbirds until the young have fledged or the nest has failed, as determined by a qualified biologist.	Preconstruction surveys to be conducted prior to initiating construction; activities ongoing throughout construction	DFG	
Mitigation Measure BIO-6 Monitor avian and bat mortality rates and implement adaptive management measures, if necessary	Mitigation Measure BIO-6 involves preparing and implementing a multifaceted program of avian and bat mortality monitoring and implementing adaptive management measures, as needed. It comprises the components listed below.	TAC to be formed prior to initiating construction; recommendations implemented throughout construction	Shasta County Department of Resource Management—Planning /TAC	
	<ul style="list-style-type: none"> ■ Forming a technical advisory committee (TAC). ■ Preparation and implementation of an avian and bat mortality monitoring study plan, and submittal of annual monitoring reports. ■ Evaluating results of the monitoring study relative to specified fatality thresholds. ■ Providing funding for and implementation of offsite mitigation for potential take of fully protected species and/or impacts on other avian or bat species. ■ Providing a secondary compensatory mitigation fund for implementation of offsite habitat enhancement or protection/conservation measures. ■ Preparing and implementing an onsite habitat protection and enhancement plan. ■ Implementation of adaptive operational management measures, based on monitoring results, if necessary. 			
	A summary table presenting the Mitigation Measures Decision Framework is presented at the end of the description of this BIO-6 mitigation measure.			
	Technical Advisory Committee. Shasta County Department of Resource Management shall be responsible for the formation of a Technical Advisory Committee (TAC). Invitations for participation shall be sent to representatives from the California Department of Fish and Game, the U.S. Fish and			

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	<p>Wildlife Service, Shasta County Department of Resource Management, the applicant's project operations and construction managers (also referred to herein as "project owner" or "owner"), and a not-for-profit organization dedicated to avian conservation. The County shall make reasonable efforts to ensure participation by the above parties, but notwithstanding failure of any of these representatives to respond or agree to participate, the TAC shall be formed prior to the initiation of project operations. As its first order of business the TAC shall approve its Charter which shall specify all organizational matters including but not limited to notice, frequency and conduct of meetings, and specification of those decisions which may be determined solely by the TAC without subsequent directive from the Planning Director. Attendance at TAC meetings shall be by invitation of its members only.</p> <p>The TAC shall review and approve monitoring protocols prior to project operations and prior to implementation of any new or revised protocols. The TAC will review results from fatality monitoring to determine if fatality thresholds have been exceeded or if fatality of fully protected species has occurred. If such thresholds have been exceeded, the TAC shall make recommendations to the County Planning Director to require implementation of mitigation measures pursuant to the Mitigation Measures Decision Framework table below. To the extent practicable, decisions of the TAC shall be made using best available science as determined by the TAC. In the event that decisions cannot be made by consensus, decisions of the TAC shall be made by simple majority vote. The Planning Director shall have final authority to direct their implementation. Prior to making any decision based on a TAC recommendation, the Planning Director shall review the recommendations of the TAC and may consider additional recommendations of, or any other information provided by, any of its voting members.</p> <p>Monitoring Study. The project owner shall implement and fully fund a 3-year operational avian and bat fatality monitoring study by a qualified professional recommended by the TAC and approved by the County Planning Director, which will begin when the first turbine begins operation, pursuant to the monitoring protocols developed by the TAC and approved by the Planning Director. The owner shall submit the monitoring results in an annual monitoring report, submitted to the TAC.</p> <p>After the first full 2 years of monitoring after the entire project is in operation, a third year will be scheduled as determined by the TAC. Additional years of monitoring at the owner's expense may be required should population-level impacts on any species become apparent. Consultation among the California Department of Fish and Game, the U.S. Fish and Wildlife Service, and Shasta County Department of Resource Management shall occur on a semiannual basis through the TAC process during the monitoring study to determine the need for continued monitoring or additional studies specific to refining mitigation measures. One objective of the monitoring study will be to determine if specific additional mitigation for impacts is warranted and what the mitigation should entail. Additional mitigation will be required if fatality rates exceed a threshold of concern for a particular species or groups of species. See the fatality thresholds table below; note that due to state fully protected status for bald eagle and sandhill crane, more than one fatality of either shall constitute a requirement for additional mitigation as described below. To determine if a threshold has been exceeded, the average annual fatality rate for species and species groups will be determined after each year of monitoring. Fatality thresholds listed in the table below were determined based on the pre-project surveys, current</p>			

Mitigation Measure	Description	Timing	Monitoring Responsibility	Verification (date & initial)														
	<p>knowledge of species that are likely to use the habitat in the project area, the EIR impact analysis, and the regulatory status of the potentially impacted species. The owner shall arrange for a permit to enter for research/monitoring purposes for qualified scientists (when funded by others) subject to approval of the TAC.</p> <p>The operational monitoring study shall be designed to determine the level of each avian or bat species' mortality from the project and must take into account biases such as the searcher efficiency, carcass removal, and effective search area to estimate total mortality from the project, using methods such as those described in the California Energy Commission's <i>California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development</i>. The determination of exceedance of fatality thresholds shall be based on the results of the monitoring, so will therefore be expressed as an annual rate per turbine or per MW. This method effectively utilizes the adjusted or calculated fatalities impacts, as opposed to just the observed impacts. For example, the number of fatalities for any given species that are found may not be the total number of that species actually impacted because of the biases associated with searcher efficiency (carcasses that are not found) or carcass removal (carcasses scavenged before they could be found).</p> <p>Fatality Thresholds. Due to the project's potential for causing fatalities to bald eagle and sandhill crane, which are state fully protected species, compensatory mitigation is mandatory prior to construction (described further below). Under California law, any take of a fully protected species is illegal. Per the EIR, the project owner will assume impacts are possible and will mitigate up front for these potential impacts. Additionally, if impacts exceed the fatality thresholds identified in the tables below, additional mitigation will be required as described in the mitigation framework outlined below. Exceedance of the following fatality thresholds would trigger the TAC to evaluate additional mitigation and to use the funds set aside in a secondary compensatory mitigation fund as prescribed in the following below.</p> <p>Fully Protected Species</p> <table border="1" data-bbox="422 1101 989 1208"> <thead> <tr> <th>Species</th> <th>Fatality Thresholds</th> </tr> </thead> <tbody> <tr> <td>Bald eagle</td> <td>1 fatality per year</td> </tr> <tr> <td>Sandhill crane</td> <td>1 fatality per year</td> </tr> </tbody> </table> <p>Special-Status Species</p> <table border="1" data-bbox="422 1292 1247 1435"> <thead> <tr> <th>Species</th> <th>Fatality Threshold Per Year of Operations</th> </tr> </thead> <tbody> <tr> <td>Other raptor species</td> <td>0.35 fatalities per turbine; 0.15 fatalities per MW</td> </tr> <tr> <td>Yellow warbler</td> <td>0.07 fatalities per turbine; 0.03 fatalities per MW</td> </tr> <tr> <td>Owls</td> <td>0.11 fatalities per turbine; 0.05 fatalities per MW</td> </tr> </tbody> </table>	Species	Fatality Thresholds	Bald eagle	1 fatality per year	Sandhill crane	1 fatality per year	Species	Fatality Threshold Per Year of Operations	Other raptor species	0.35 fatalities per turbine; 0.15 fatalities per MW	Yellow warbler	0.07 fatalities per turbine; 0.03 fatalities per MW	Owls	0.11 fatalities per turbine; 0.05 fatalities per MW			
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Mitigation Measure	Description	Timing	Monitoring Responsibility	Verification (date & initial)
	<p>Funding for Offsite Mitigation for State Fully Protected Species Prior to Project Construction and Operation. In recognition of the project’s potential to take state fully protected species (bald eagle and sandhill crane), which, were a take permit possible per the State Fish and Game Code, would require the owner to minimize and fully mitigate for all take, the owner shall provide for compensatory mitigation prior to construction. Mitigation will involve acquisition of offsite habitat appropriate for sandhill crane and bald eagle. For impacts on sandhill crane, the project owner will work with an appropriate wildlife refuge with nesting and breeding habitat located such that sandhill crane populations potentially impacted have a reasonable nexus to populations that breed on the lands to be acquired. The acreage and quality of acquired breeding land shall be chosen to optimize opportunity for breeding enhancement of sandhill cranes at a ratio of 2:1 (i.e., two birds produced annually from enhanced or preserved breeding habitat for each bird potentially killed; best available estimate is 1 fatality per year). Title to acquired parcel(s) will be transferred to the wildlife refuge for preservation, enhancement, and management of sandhill crane breeding habitat prior to construction. The project owner shall also donate \$100,000 to a reputable land trust or conservation program approved by the California Department of Fish and Game and U.S. Fish and Wildlife Service for the purpose of preservation and enhancement of bald eagle breeding habitat. The program may involve acquisition of lands, purchase of a conservation easement, land stewardship or conservation, or research projects.</p> <p>Secondary Compensatory Mitigation Fund for Implementation of Offsite Species or Habitat Enhancement or Protection/Conservation Measures. If data show that a fatality threshold of concern has been exceeded, the project owner shall implement additional mitigation measures that the County Planning Director determines are appropriate, based on the TAC’s recommendations and analysis of the data and best available information for the species impacted. Such mitigation shall be designed to benefit the affected species or species group (e.g., raptors). Examples of appropriate additional mitigations include, but are not limited to, protection of nesting habitat for the affected species through purchase or conservation easement, enhancement of habitat or protected areas, creating artificial nesting habitat (e.g., nest structures), improving wildfire response and prevention, modifications of onsite conditions (e.g., grazing, weed control), wetland enhancement or creation, species-related research to improve knowledge of a species and conservation needs (e.g., bat population research), contributing to established conservation programs for specific species or issues (e.g., Bat Wind Energy Cooperative), and establishing a compensatory mitigation fund for species-specific conservation programs. Focusing mitigation on specific impacted species and resources is consistent with state and national policies for environmental protection such as the California Environmental Quality Act, National Environmental Policy Act, Endangered Species Act, and Clean Water Act.</p> <p>Onsite Habitat Protection and Enhancement Plan. Onsite habitat modification/ protection or enhancement measures shall also be implemented if thresholds for additional mitigation are reached or unexpected fatalities occur. Unexpected fatalities include exceedance of the above-established fatality thresholds or fatalities of special-status species not anticipated in pre-operations studies. Examples of possible mitigation measures include, but are not limited to, protection of nests identified within the project boundary, alterations to habitat within the study area to inhibit or enhance certain species’ success, and modification of lighting schemes to address fatalities related to lighting at the project site. The TAC shall review and consider the relevant data and recommend the appropriate habitat protection</p>			

Mitigation Measure	Description	Timing	Monitoring Responsibility	Verification (date & initial)
	measures to be implemented for the particular species in question.			
	<p>Adaptive Operational Management Measures. Further mitigation that includes operations strategies for the wind project would be considered only if the above-described additional species- or resources-specific mitigation measures imposed by the Planning Director fail to mitigate the fatality threshold exceedance after 1 year of implementation, as determined by the recommendation of the TAC based on its review and analysis of the monitoring data following implementation of the above-described measures. Also, the operations strategies must be designed to benefit the appropriate species or species group (e.g., raptors) where a threshold for significant impacts has been exceeded and there are no other appropriate mitigation measures to offset the impact. Any operations management strategies would be developed by the TAC with input from the project owner's operations management team and Shasta County's Department of Resource Management, so that project owner expertise and understanding of feasibility related to turbine management is considered in the process.</p> <p>Additional Research. Additional research may be needed if unexpected fatalities occur as a result of operations. Unexpected fatalities include exceedance of the above-established fatality thresholds or fatalities of special-status species not expected in pre-operations studies. The scope of any additional studies shall be limited to addressing specific unexpected fatalities, and the results shall be used to determine appropriate additional mitigation measures; the owner shall provide updates to State BIOS and CNDDB records within 6 months of any new information on species occurrences, diversity, or migration.</p> <p>Mitigation Measures Decision Framework. The following table provides a listing and summary of each component of the mitigation measures BIO-6 program, as well as the timing and responsibility for implementation and triggers for additional mitigation.</p>			

Mitigation Measures Decision Framework for BIO-6

Mitigation Measure Component	Summary Description	Timing/Duration/Formulae	Trigger/Threshold for Additional Mitigation
Technical Advisory Committee	Formation of a Technical Advisory Committee (invited parties shall include one representative each from the CDFG, USFWS, one conservation organization, project operations and construction manager (the owner), and Shasta County Department of Resource Management). The TAC shall be limited to one voting member from each party, with advisors for each party allowed to attend and participate in meetings and lend expertise to the members. See <i>Technical Advisory Committee</i> above for further details on the	The TAC shall be formed during construction and shall hold its first meeting prior to the commencement of commercial project operations in order to review and make initial recommendations for the monitoring study protocols. Thereafter, the TAC shall meet at least semiannually to review the results of avian fatality monitoring.	If the monitoring studies show that any fatality thresholds have been exceeded, the TAC shall confer to make recommendations to the Planning Director for additional mitigation as outlined below.

Mitigation Measure	Description	Timing	Monitoring Responsibility	Verification (date & initial)
Fatality monitoring and thresholds	<p>operation of the TAC.</p> <p>Fatality monitoring will be conducted by a qualified biologist approved by the TAC and will be used to compare pre-operations predictions of fatality with actual fatalities associated with project operations to determine if impact thresholds have been exceeded. Carcass scavenge calibration shall commence on the first appropriate day for the applicable species after day 1 of operations. In addition the owner shall arrange for a permit to enter for research/monitoring purposes for qualified scientists (when funded by others) subject to approval of the TAC.</p> <p>Additionally, project operations staff will be trained in handling and reporting avian fatalities encountered in the course of turbine maintenance and other regular activities on site. A protocol for project staff will be developed through coordination with the California Department of Fish and Game and the County for appropriate handling and reporting of fatalities. The project owner acknowledges that project staff training is intended to supplement, not substitute, for the formal monitoring study requirements outlined above.</p>	<p>Three years, beginning as close as possible to the first day of commercial project operations. Additional periods of monitoring shall be required should results of monitoring studies suggest that additional monitoring is warranted. See <i>Monitoring Study</i> and <i>Fatality Thresholds</i> above for further details.</p>	<p>Referral to the TAC for potential changes to monitoring methods and additional monitoring or research shall occur if the monitoring studies show that the fatality thresholds are exceeded. The TAC shall review the first year of monitoring data to determine whether to recommend to the Planning Director any changes or refinements to the monitoring protocols.</p> <p>Reasons for extending monitoring beyond the 3 years include: fatality of species not expected during pre-project surveys, fatality of special-status or fully protected species exceeding thresholds, and inadequacy of monitoring data. Additional monitoring or changes to the monitoring protocols will be subject to the approval of the Planning Director based upon the recommendations of the TAC.</p>	
Up-front compensatory mitigation for potential bald eagle and sandhill crane impacts	<p>The owner shall provide for compensatory mitigation prior to construction for potential impacts on bald eagle and sandhill crane.</p>	<p>For sandhill crane and bald eagle, mitigation will involve acquisition, enhancement, or preservation of sufficient offsite breeding habitat at a 2:1 ratio of potential mortality. The project owner will work with the appropriate wildlife</p>	<p>Due to the project's potential for causing fatalities of bald eagle and sandhill crane, which are state fully protected species, compensatory mitigation is mandatory</p>	

Mitigation Measure	Description	Timing	Monitoring Responsibility	Verification (date & initial)
		<p>refuge to identify appropriate sandhill crane breeding habitat for acquisition. Lands will be transferred to the wildlife refuge for preservation and enhancement. For bald eagle, mitigation will be contribution of \$100,000 to a reputable land trust or conservation program approved by DFG and USFWS for the purpose of offsite preservation and enhancement of bald eagle habitat.</p>		<p>prior to construction.</p>
		<p>Proof of initiation of compliance with the up-front compensatory mitigation requirements shall be provided by the project owner to the Planning Director prior to the issuance of any construction permits.</p>		
<p>Secondary compensatory mitigation fund</p>	<p>The applicant shall set aside a mitigation fund to be used should threshold exceedances occur. The mitigation fund shall be used for habitat protection and enhancement, additional research, and/or additional mitigation determined to be appropriate by the TAC to address threshold exceedances. The TAC will recommend to the Planning Director the best uses of the compensatory mitigation fund.</p>	<p>A mitigation fund shall be set up by the project owner as a one-time endowment or other type of protected principal for individual mitigation activities approved by the Planning Director, based on the recommendations of the TAC. The mitigation fund shall be calculated at a rate of \$1,000 per MW based on the full capacity of the project. Proof of funding and the details of the fund's principal value, custodial financial institution, and accessibility shall be provided by the project owner to the Planning Director prior to the commencement of commercial project operations.</p>	<p>Subject to the Planning Director's review and approval of the recommendations of the TAC, and in addition to all other mitigation herein described, the Secondary Compensatory Mitigation Fund shall be used when the fatality thresholds described above are exceeded in any year of operations</p>	
<p>Onsite habitat protection and enhancement</p>	<p>Onsite habitat modification/protection or enhancement measures shall be implemented if thresholds for additional mitigation are reached or unexpected fatalities occur. Unexpected fatalities</p>	<p>The TAC shall make a recommendation to the Planning Director for additional measures to be included in a Habitat</p>		<p>If fatality thresholds are exceeded, habitat protection and enhancement measures may be needed, subject</p>

Mitigation Measure	Description	Timing	Monitoring Responsibility	Verification (date & initial)
plan	include exceedance of the above-established fatality thresholds or fatalities of special-status species not anticipated in pre-operations studies. Examples of possible mitigation measures include, but are not limited to, protection of nests identified within the project boundary, alterations to habitat within the study area to inhibit or enhance certain species' success, and modification of lighting schemes to address fatalities related to lighting at the project site. The TAC shall review and consider the relevant data and recommend the appropriate habitat protection measures to be implemented for the particular species in question.	Protection and Enhancement Plan. Such measures shall be implemented as specified by the Planning Director, but in all cases shall be fully implemented within 1 year following the final decision of the Planning Director to impose specific additional measures.	to the recommendation of the TAC and approval of the Planning Director.	
Operations measures	Changes to operations shall be considered only if all other mitigation approaches outlined above are not effective in fully mitigating the impact to a less-than-significant level. Any proposed changes to operations shall be subject to the approval of the Planning Director and must be determined to be reasonable, feasible, and linked to reducing specific impacts identified through the monitoring studies conducted at the project. For example, operations changes that may be implemented include shutdown of individual turbines during times of sensitivity of species known to be impacted, if the TAC can determine that a particular turbine location and the spinning of its blades is a cause of the fatalities. Operations shutdowns will be limited to individual turbines where fatality thresholds are consistently exceeded and to the time periods in which the fatality threshold exceedances occur. Shutdowns shall only be approved on a month-to-month basis.	Approved on a month-to-month basis and limited to the time periods in which the fatality threshold exceedances occur.	Operational changes shall only be implemented if the fatality threshold exceedance persists and cannot be mitigated to a less-than-significant level by the Habitat Protection and Enhancement Plan, compensatory mitigation, and additional research mitigation approaches described above. The Planning Director has the ultimate approval authority over any changes to project operations.	
Additional research	Additional research may be needed if unexpected fatalities occur as a result of operations. Unexpected fatalities include exceedance of the above-established fatality thresholds or fatalities of special-status species not expected in pre-operations studies. The scope of any	Additional research to address unexpected fatalities may be needed after the first year of fatality monitoring. The TAC may make recommendations to the Planning Director regarding the protocols of any	If fatality thresholds are exceeded, additional research may be necessary, subject to the discretion and recommendations of the TAC. The Planning	

Mitigation Measure	Description	Timing	Monitoring Responsibility	Verification (date & initial)
	<p>additional studies shall be limited to addressing specific unexpected fatalities and the results shall be used to determine appropriate additional mitigation measures; the owner shall provide updates to State BIOS and CNDDB records within 6 months of any new information on species occurrences, diversity, or migration.</p>	<p>such additional research.</p>	<p>Director shall have final approval authority over the protocol, timing, and methodology of any such additional research.</p>	
Cultural Resources				
<p>Mitigation Measure CUL-1 Coordinate with the Pit River Tribe during project development, and prepare a detailed recordation of Hatchet Ridge–Bunchgrass Mountain</p>	<p>The County and the project owner will facilitate a preconstruction meeting and field visit with the Pit River Tribe through the Tribe’s chairperson and the Pit River Environmental Office to discuss locations or issues of cultural sensitivity in the proposed project area. The project owner will coordinate with the Tribe to consider ways to minimize impacts on culturally sensitive locations during construction. Additionally, the County and the applicant will coordinate with the Pit River Tribe through the Tribe’s chairperson and the Pit River Environmental Office to retain a professional ethnographic consultant to undertake a detailed recordation of Hatchet Ridge–Bunchgrass Mountain. The recordation will commence prior to construction and will include photographic documentation of pre- and postconstruction conditions on Hatchet Ridge–Bunchgrass Mountain. Additional research, particularly into ethnographer Omer C. Stewart’s notes filed at the University of California, Berkeley, and interviews with Itsatawi and Madesi individuals, will be referenced in the document. The information gathered as a result of field, interview, and research tasks will be compiled into a report, which will be transmitted to the Pit River Tribe. The Tribe will have the right to determine if the report is submitted to the California Historical Resources Information System. Detailed recordation of Hatchet Ridge–Bunchgrass Mountain in this manner will create a photographic and documentary record of the cultural resource prior to construction of the proposed project, resulting in partial compensation for the loss of the property’s character-defining features of isolation, harshness, and serenity.</p>	<p>Survey conducted with Pit River Tribe prior to initiation of construction</p>	<p>Shasta County Department of Resource Management—Planning /Pit River Tribe</p>	
<p>Mitigation Measure CUL-2 Implement a cultural resources monitoring program with the Pit River Tribe during construction</p>	<p>Cultural resource monitors from the Pit River Tribe will be invited by the project owner to monitor initial ground-disturbing construction activities associated with the proposed project in areas identified by the Tribe as culturally sensitive to ensure that more discrete sacred localities in the project area are avoided or that impacts on such localities are mitigated to the extent feasible, including, but not limited to, avoidance or data recovery. The Pit River Environmental Office should coordinate with the appropriate Achumawi bands (Itsatawi and Madesi) to assign monitors.</p>	<p>As a condition of approval, monitoring plan to be developed prior to construction</p>	<p>Shasta County Department of Resource Management—Planning /Pit River Tribe</p>	
<p>Mitigation Measure CUL-3a Stop work if archaeological materials are discovered during construction</p>	<p>If archaeological materials (such as chipped or ground stone, historic debris, building foundations, or non-human bone) are inadvertently discovered during ground-disturbing activities, the construction contractor will stop work in that area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find and develop appropriate treatment measures. Treatment measures will be made in coordination with the Tribe and other parties as appropriate. Treatment measures typically include development of avoidance strategies or mitigation of impacts through data recovery programs such as excavation or detailed documentation.</p>	<p>As a condition of project approval; implemented prior to and during construction</p>	<p>Shasta County Department of Resource Management—Planning /Pit River Tribe</p>	
	<p>If cultural resources are discovered during construction activities, the construction contractor and lead</p>			

Mitigation Measure	Description	Timing	Monitoring Responsibility	Verification (date & initial)
Mitigation Measure CUL-3b Stop work if human remains are discovered during construction	<p>If human remains of Native American origin are discovered during ground-disturbing activities, the County must comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the NAHC (PRC 5097). If human remains are discovered or recognized in any location other than a dedicated cemetery, the County will not allow further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:</p> <ul style="list-style-type: none"> ■ the Shasta County coroner has been informed and has determined that no investigation of the cause of death is required; and ■ if the remains are of Native American origin, <ul style="list-style-type: none"> □ the descendants from the deceased Native Americans have made a recommendation to the landowner or the person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC 5097.98; or □ the NAHC was unable to identify a descendant or the descendant failed to make a recommendation within 48 hours after being notified by the NAHC. 	As a condition of project approval; implemented prior to and during construction	Shasta County Department of Resource Management— Planning /Pit River Tribe/Shasta County Coroner	
Geology and Soils				
Mitigation Measure GEO-1 Implement recommendations of site-specific geotechnical investigation prepared by state-licensed personnel	As part of the project design process, the Shasta County Department of Resource Management will ensure that the applicant retains appropriately qualified state-licensed professionals (G.E. and C.E.G.) to conduct site-specific geotechnical and engineering geologic investigations consistent with all currently applicable standards of professional geotechnical engineering and engineering geologic practice. The purpose of the investigations will be to provide a geologic basis for the development of appropriate project design. Investigations will address bedrock and Quaternary geology; geologic structure, including primary and secondary seismic hazards as defined by the State of California; soils; slope stability; previous history of excavation and fill placement; earthwork recommendations; and any other topics identified by Shasta County Department of Resource Management, the design engineer(s), the geotechnical engineer, or the engineering geologist as relevant. The results of the study will be presented to the Shasta County Department of Resource Management in the form of a geotechnical and engineering geology report (soils report). The report will include design and/or construction requirements to address any geologic conditions or hazards identified as posing substantial risk to life, safety, or property (including the project), as well as recommendations to ensure that project construction and operation do not exacerbate any existing geologic hazards. The applicant will be responsible for ensuring that project design and construction adheres to all recommendations of the report.	As a condition of project approval; implemented prior to and during construction	Shasta County Department of Resource Management— Building	
Mitigation Measure GEO-2 Ensure that the site-specific geotechnical investigation addresses landslide risks	The applicant will ensure that the site-specific geotechnical report prepared for the project evaluates landslide risks, including seismically induced landsliding, in the project area and, where appropriate, identifies mitigation to address these hazards. Any mitigation will be consistent with the current standard of care for geotechnical engineering and engineering geology, and all applicable building codes and standards. The applicant will be responsible for ensuring that all recommendations of the site-specific geotechnical report are implemented.	As a condition of project approval; implemented prior to and during construction	Shasta County Department of Resource Management— Building	
Mitigation Measure GEO-3	The proponent will ensure that the site-specific geotechnical report prepared for the project includes an evaluation of the potential for ridgetop shattering to affect project facilities and, if appropriate, identifies	As a condition of project	Shasta County Department of	

Mitigation Measure	Description	Timing	Monitoring Responsibility	Verification (date & initial)
Ensure that the site-specific geotechnical investigation addresses ridgetop shattering risks	mitigation to address these hazards. Any mitigation will be consistent with the current standard of care for geotechnical engineering and engineering geology, and all applicable building codes and standards. The applicant will be responsible for ensuring that all recommendations of the site-specific geotechnical report are implemented.	approval; implemented prior to and during construction	Resource Management—Building	
Hazards and Hazardous Materials				
Mitigation Measure HAZ-1 Prepare a Hazardous Materials Business Plan/Spill Prevention Control and Countermeasures Plan	<p>In accordance with the California Health and Safety Code and California Code of Regulations and as part of compliance with the NPDES General Construction Permit, the project applicant will prepare a Hazardous Materials Business Plan/Spill Prevention Control and Countermeasures Plan (Plan) to avoid spills and minimize impacts in the event of a spill. A Plan will be required from the contractor during construction and from the operator during operations. The purpose of the Plan is to ensure that adequate containment would be provided to control accidental spills, that adequate spill response equipment and absorbents would be readily available, and that personnel would be properly trained in how to control and clean up any spills. The County will review and approve the Plan prior to approval of a grading permit. The County will routinely inspect active portions of the project area to verify that the BMPs specified in the Plan are properly implemented and maintained, will immediately notify the contractor if there is a noncompliance issue, and will require compliance. The federal reportable spill quantity for petroleum products, as defined in EPA's guidelines (40 CFR 110) is any oil spill that: (1) violates applicable water quality standards; (2) causes a film or sheen upon or discoloration of the water surface or adjoining shoreline; or (3) causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines. The Plan will include the components listed below.</p> <ol style="list-style-type: none"> a. The Plan must include a discussion of hazardous materials management, including delineation of hazardous material and hazardous waste storage areas, prevention and response procedures, access and egress routes, and notification procedures. b. The Plan will be provided to all contractors working on the proposed project, and one copy will be available on site at all times. c. The applicant and the applicant's contractors will store all paint, solvents, and any other hazardous materials in the manner specified by the manufacturer and in accordance with federal regulations and nationally and internationally recognized codes and standards. Small spray cans of carburetor fluid and other hazardous materials will be stored in an enclosed area in the O&M building. A material safety data sheet will be stored with each material. d. All employees must be properly trained in the use and handling of these materials. e. Should a spill of hazardous material occur, EHD and DTSC, which have spill response and cleanup ordinances to govern emergency spill response, will be notified immediately. A written description of reportable releases will be submitted to the Central Valley Water Board. This submittal will include a description of the release, including the type of material and an estimate of the amount spilled, the date of the release, an explanation of why the spill occurred, and a description of the steps taken to prevent and control future releases. The releases will be documented on a spill report form. <p>If a reportable spill has occurred and it is determined that project activities have adversely affected surface or groundwater quality in excess of water quality standards, a detailed analysis will be performed by a Registered Environmental Assessor to identify the likely cause of contamination. This analysis will</p>	As a condition of project approval; implemented prior to and during construction	Shasta County Department of Resource Management—Environmental Health	

Mitigation Measure	Description	Timing	Monitoring Responsibility	Verification (date & initial)
Mitigation Measure HAZ-2 Conduct a Phase I investigation	<p>conform to ASTM standards and will include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, the County and its contractors will select and implement measures to control contamination, with a performance standard that water quality will be returned to baseline conditions. These measures will be subject to approval by EHD and DTSC.</p> <p>The applicant will prepare a Phase I site assessment prior to approval of a grading permit. The Phase I site assessment will conform to standards of the ASTM and will include recommendations for reducing or eliminating the source or mechanisms of contamination (or pathways of exposure to such contamination) if contamination is found and remediation/control measures are determined to be necessary concerning construction-period exposure and the handling of contaminated material. The applicant will implement the recommendations of the Phase I site assessment relative to construction. This mitigation measure may be conducted in coordination with Mitigation Measure HAZ-3 as appropriate.</p>	As a condition of project approval; implemented prior to and during construction	Shasta County Department of Resource Management—/Environmental Health	
Mitigation Measure HAZ-3 Plan for encountering hazardous materials	The project applicant will prepare a business plan prior to approval of a grading permit, specifying the proper handling, reporting, and disposal procedures for hazardous materials used during construction. If hazardous contaminants are unexpectedly encountered during construction, construction crews will cease work in the vicinity and notify DRM. A licensed waste disposal contractor will be used to remove the hazardous materials, once identified, from the site in accordance with federal, state, and local requirements.	As a condition of project approval; implemented prior to and during construction	Shasta County Department of Resource Management—/Environmental Health	
Mitigation Measure HAZ-4a Comply with FAA regulations	Prior to approval of construction permits, the project applicant will file an FAA form 7460-01 for each wind turbine site, and submit site coordinates based on the 1983 North American Datum (NAD) to the FAA. The applicant will then implement measures to reduce impacts on aircraft and air navigation in accordance with FAA's response and the requirements of FAA's analysis of the Form 7460-01 and Advisory Circular 70/7460-1K, <i>Obstruction Marking and Lighting</i> .	As a condition of project approval; implemented prior to and during construction	Federal Aviation Administration/Shasta County Department of Resource Management	
Mitigation Measure HAZ-4b Comply with Caltrans Division of Aeronautics regulations	In accordance with Public Utilities Code (PUC) Section 21656, <i>Permit for Extension of Structure More Than 500 Feet Above the Ground</i> , and Section 21659, <i>Hazards Near Airports Prohibited</i> , the applicant will obtain a permit from the Caltrans Division of Aeronautics prior to approval of construction permits (unless FAA has determined that the construction does not constitute a hazard to air navigation or would not create an unsafe condition for navigation).	As a condition of project approval; implemented prior to and during construction	Caltrans Division of Aeronautics/Shasta County Department of Resource Management	
Mitigation Measure HAZ-5 Comply with legal requirements for fire prevention during construction activities	<ul style="list-style-type: none"> ■ In accordance with the Public Resources Code, the construction contractor will comply with the following legal requirements during construction activities. ■ Earthmoving and portable equipment with internal combustion engines will be equipped with a spark arrester to reduce the potential for igniting a wildland fire (PRC Section 4442). ■ Appropriate fire suppression equipment will be maintained during the highest fire danger period: from April 1 to December 1 (PRC Section 4428). 	As a condition of project approval; implemented prior to and during construction	Shasta County Fire	

Mitigation Measure	Description	Timing	Monitoring Responsibility	Verification (date & initial)
Mitigation Measure HAZ-6 Create and maintain adequate firebreaks and practice fire prevention	<ul style="list-style-type: none"> ■ On days when a burning permit is required, flammable materials will be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame, and the construction contractor will maintain the appropriate fire suppression equipment (PRC Section 4427). 	As a condition of project approval; implemented prior to and during construction	Shasta County Fire/ Department of Resource Management— Building	
	<ul style="list-style-type: none"> ■ On days when a burning permit is required, portable tools powered by gasoline-fueled internal combustion engines will not be used within 25 feet of any flammable materials (PRC Section 4431). 			
	<ul style="list-style-type: none"> ■ The applicant will be required to comply with the following measures for the duration of project operations. 			
	<ul style="list-style-type: none"> ■ Maintain around and adjacent to buildings and structures a firebreak made by removing and clearing away, for a distance of 100 feet as required by PRC 4290, all flammable vegetation or other combustible growth. 			
	<ul style="list-style-type: none"> ■ Maintain around and adjacent to the project facilities additional fire protection or firebreak made by removing all brush, flammable vegetation, or combustible growth that is located within 100 feet of the structures or to the property line, whichever is nearer. Grass and other vegetation located more than 30 feet from the structures and less than 18 inches in height above the ground may be maintained where necessary to stabilize the soil and prevent erosion. 			
	<ul style="list-style-type: none"> ■ Provide prior to project operations and maintain at all times a screen over the outlet of every chimney or stack that is attached to any device that burns any solid or liquid fuel. The screen will be constructed of nonflammable material with openings not larger than 0.5 inch. 			
	<ul style="list-style-type: none"> ■ Prior to occupancy, install fire extinguishers at the O&M building. 			
	<ul style="list-style-type: none"> ■ Employees will be trained in using extinguishers and communicating with the SCFD. 			
Mitigation Measure HAZ-7 Prepare an Emergency Response Plan	<ul style="list-style-type: none"> ■ The SCFD and/or Cal Fire will periodically inspect the project area. ■ Provide the SCFD and/or Cal Fire access to onsite water storage tanks, if such access is needed. <p>Prior to approval of construction permits, an Emergency Response Plan will be prepared for the review and approval by Shasta County. This plan will address potential accidents or emergencies involving fires or explosions at the wind energy facility. The Emergency Response Plan will be prepared in accordance with the Integrated Contingency Planning Guidelines (sometimes referred to as the “One Plan” guidelines) issued by the National Response Team. The Plan will consist of three sections: an Introduction, a Core Plan, and Annexes. The Introduction and Core Plan should be brief and contain only essential (“high level”) information. The Introduction will describe the scope of the Emergency Response Plan, key names and addresses of contacts for an emergency, a description of processes, and the general facility hazards information. The Core Plan will describe how to identify an emergency, how and who to alert if an emergency occurs, roles during an emergency, how the emergency will be controlled, and how to terminate the incident.</p>	As a condition of project approval; implemented prior to and during construction	Shasta County Fire/ Department of Resource Management— Building	
	<p>To prevent turbine or meteorological tower failure and blade and ice throw and avoid potential impacts, the project applicant will incorporate the following measures into the project design.</p>			
Mitigation Measure HAZ-8 Wind turbine design and safety mechanisms	<ul style="list-style-type: none"> a. Turbines will conform to international standards for wind turbine generating systems, including those set forth in International Electro technical Commission (IEC) 61400-1: Wind Turbine Generator Systems – Part I: Safety Requirements (1999), and will be certified according to these requirements to 	As a condition of project approval; implemented prior to and	Shasta County Fire/ Department of Resource Management—	

Mitigation Measure	Description	Timing	Monitoring Responsibility	Verification (date & initial)
	<p>help ensure that the static, dynamic, and defined life fatigue stresses of the blade would not be exceeded under the combined load expected at the Project Area.</p> <p>b. The project applicant will adhere to state and local building codes during turbine installation on the foundations; such adherence will also minimize the risk of rotor and tower failure.</p> <p>c. To prevent safety hazards caused by over-speed, the project applicant will install a comprehensive protection system on each turbine to prevent excess rotor speed and turbine and tower failures, such as having rotor speed controlled by a redundant pitch-control system and a backup disk-brake system. During normal operations, the rotor speed is controlled by the generator torque microprocessors and blade pitch. When wind speeds increase to excessive levels, the rotor pitch would turn, or feather, the blades. Power control automated systems are used to constantly monitor rotor speed to ensure that it is maintained within the desired operating range. If an over-speed is detected, the control system immediately initiates a procedure to shut down the machine. The shutdown procedure will utilize a combination of generator torque applied by the power electronics unit and rapid pitching of the blades to the feather position, which is accomplished by the hydraulic pitch actuator and the hydraulic power unit. In the event of hydraulic power unit failure or loss of electrical power, the turbines will be shut down using stored pressure that will power the hydraulic actuator to the feather position and bring them to a complete stop. Additionally, critical components have multiple temperature sensors and a control system to shut the system down and take it off line if an overheat condition is detected.</p> <p>d. To prevent safety hazards caused by tower failure, the project applicant will fulfill the requirements below.</p> <ul style="list-style-type: none"> i. Design the turbine towers and foundation to withstand wind speed of 100 miles per hour to ensure stability even under extreme wind conditions at the standard height. ii. Engineer the turbines according to Zone 4 Uniform Building Code Earthquake Standards. iii. Ensure that all installed equipment meets the standards of National Electrical Manufacturers Association (NEMA), the American National Standards Institute (ANSI), and Cal-OSHA. <p>e. To prevent safety hazards caused by electrical failure, electrical systems and the substation will fulfill the requirements listed below.</p> <ul style="list-style-type: none"> i. Be designed by California-registered electrical engineers. ii. Meet national electrical safety codes and other national standards, including NEMA, ANSI, and Cal-OSHA standards. <p>f. The project applicant will provide the County with manufacturers' specifications for the wind turbines, specifying that all turbines are equipped with a braking system, blade pitch control, and/or other mechanism for rotor control and have both manual and automatic over-speed controls.</p>	<p>during construction</p>	<p>Building</p>	

Mitigation Measure	Description	Timing	Monitoring Responsibility	Verification (date & initial)
Mitigation Measure HAZ-9 Install grounding and equipment shutoff mechanisms on project facilities	<p>To protect workers from electrical shock and other work-related accidents during the Hatchet Ridge Wind Project, the following measures will be implemented.</p> <ol style="list-style-type: none"> a. Grounding will be designed and implemented to the standards of the Institute of Electrical and Electronics Engineers. b. All turbines and utility lines will be equipped with automatic and manual disconnect mechanisms. c. Three circuit breakers that can be both manually and automatically operated will be provided between each turbine and the connection to the electrical grid. d. The electrical systems and substations will be designed by California-registered electrical engineers and will meet national electrical safety codes and other national standards, including NEMA, ANSI, and Cal-OSHA standards. e. The above mechanisms will be installed and tested before interconnection. 	As a condition of project approval; implemented prior to and during construction	Shasta County Department of Resource Management—Building	
Mitigation Measure HAZ-10 Field Management Plan to Reduce EMF Risk	<p>In accordance with CPUC Decision 93-11-013, PG&E and/or the project applicant will prepare a field management plan that incorporates “no-cost” and “low-cost” magnetic field reduction steps to reduce EMF risks to personnel on the project site. The field management plan will be submitted to CPUC for review and approval prior to occupancy of the site. Consistent with PG&E’s Transmission and Substation EMF Design Guidelines, the field management plan will include the following project information:</p> <ul style="list-style-type: none"> ■ A description of the project (e.g., cost, design, length, location). ■ A description of the surrounding land uses using priority criteria classifications. ■ No-cost options to be implemented. ■ Priority areas where low-cost measures are to be applied. ■ Measures considered for magnetic field reduction, percent reduction, and cost. These measures may include but not be limited to the following: <ul style="list-style-type: none"> □ Increased distance from conductors and equipment. □ Reduced conductor spacing. □ Minimized current. □ Optimized phase configuration. ■ Which options were selected and how areas were treated equivalently or why low-cost measures cannot be applied to this project because of cost, percent reduction, equivalence, or some other reason. 	As a condition of project approval; implemented prior to and during construction	California Public Utilities Commission/ Shasta County Department of Resource Management	

Mitigation Measure	Description	Timing	Monitoring Responsibility	Verification (date & initial)
Hydrology and Water Quality				
Mitigation Measure HYD-1 Implement measures to maintain groundwater and surface water quality in case of accidental spills	If an appreciable spill has occurred and results determine that project activities have adversely affected surface or groundwater quality, the County will be responsible for ensuring that a detailed analysis is performed by a registered environmental assessor to identify the likely cause of contamination. This analysis will conform to American Society for Testing and Materials standards and will include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, the project proponent and/or the County will select and implement measures to control contamination, with a performance standard that groundwater quality must be returned to baseline conditions. These measures will be subject to approval by the County.	As a condition of project approval; implemented prior to and during construction	Shasta County Department of Resource Management—Water	
Mitigation Measure HYD-2 Ensure that the site-specific geotechnical investigation addresses septic system constraints and design	The applicant will ensure that the site-specific geotechnical report prepared for the project includes an evaluation of the site's suitability for the proposed septic system, including the potential for septic leach field use to contribute to risks of slope failure. If appropriate, the geotechnical report will also identify constraints on septic system placement and design. The applicant will be responsible for ensuring that all recommendations of the site-specific geotechnical report are implemented.	As a condition of approval of project approval, and implemented prior to and during construction	Shasta County Department of Public Works—Building	
Transportation/Traffic				
Mitigation Measure TRA-1 Develop and implement a construction Traffic Control Plan	<p>The proposed project's construction-related traffic impacts can be mitigated through development and implementation of a Traffic Control Plan as part of the overall Construction Management Plan, in accordance with County and Caltrans policies. The Traffic Control Plan will be implemented throughout the course of project construction. This plan would include but not be limited to the elements listed below.</p> <ul style="list-style-type: none"> ■ A plan for communicating construction plans with Caltrans, emergency service providers, residences located in the project vicinity, and anyone else who may be affected by project construction. ■ An access and circulation plan for use by emergency vehicles when lane closures and/or detours are in effect. If lane closures occur, provide advance notice to local fire departments and sheriff's department to ensure that alternative evacuation and emergency routes are designed to maintain response times. ■ Maintain access to existing development in the area at all times. ■ Provide for adequate parking for construction trucks and equipment within the project area and designated staging areas along Bunchgrass Lookout Road throughout the construction period. ■ Provide adequate parking for construction workers within the project area and designated staging areas. ■ Provide temporary truck crossing signs on State Route 299 during construction if allowed by Caltrans. <p>Provide flaggers/traffic control personnel as necessary (e.g., when oversize loads must turn from State Route 299 onto Bunchgrass Lookout Road).</p>	As a condition of project approval; implemented prior to and during construction	Caltrans/Shasta County Department of Public Works—Roads	
Mitigation Measure TRA-2	The project proponent is required to file a FAA Form 7460-1, <i>Notice of Proposed Construction or Alteration</i> ,	Prior to and	Shasta County	

Mitigation Measure	Description	Timing	Monitoring Responsibility	Verification (date & initial)
Consult with FAA to meet the FAA requirements	<p>for each wind turbine structure. FAA will issue a Determination of No Hazard to Air Navigation for each of the project turbines and meteorological towers if the project meets FAA requirements.</p> <p>If FAA determines that the project would potentially be an obstruction unless reduced to a specified height, the project proponent will work with FAA to resolve any adverse effects on aeronautical operations.</p>	during construction	Department of Resource Management—Planning /FAA	
Utilities and Service Systems				
Mitigation Measure USS-1 Notify communication tower owners and site wind turbines to avoid conflicts with microwave signals	<p>Prior to issuance of the conditional use permit for this project, the project applicant will notify all owners of frequency-based communication stations and towers within 2 miles of the proposed project. Wind turbine towers and the proposed corrugated metal O&M building will be sited to avoid potential conflict with microwave communication signals.</p> <p>In the event that a complaint is received regarding microwave or land mobile pathway interference, the project applicant will appropriately and satisfactorily resolve receiver interference through coordination with owners of frequency-based communication stations and towers. Possible actions include installation of high-performance antennas at nearby microwave sites, if required.</p>	Prior to and during construction	Shasta County Department of Resource Management—Planning /Federal Communications Commission	