

## **Exhibit D**

### **Proposed SEPA Mitigation Measures**



*Proposed*

**SEPA**

**Mitigation Measures**

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*This document is a summary listing of the State Environmental Policy Act (SEPA) mitigation measures proposed by the Applicant and by Washington Energy Facility Site Evaluation Council (EFSEC) taken from the Draft Environmental Impact Statement (DEIS) issued by EFSEC in August 2004 for the Wild Horse Wind Power Project.*

*Section numbers listed in the Table of Contents reflect the numbering system in the DEIS.*

# Table of Contents

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Section	Page Number
<b>3.1.4 Earth</b>	
3.1.4.1 Erosion Control during Project Construction	1
3.1.4.2 Erosion Control during Project Operation	2
3.1.4.3 Earthquakes	3
3.1.4.4 Volcanic Eruptions	4
3.1.4.5 Landslides	5
3.1.4.6 Unique Features	5
3.1.4.7 Contaminated Soils	5
3.1.4.8 Decommissioning Plans	5
<b>3.2.4 Air Quality</b>	7
<b>3.3.4 Water Resources</b>	8
3.3.4.1 Construction General SWPPP Measures	8
3.3.4.2 Operational General SWPPP Measures	14
<b>3.4.4 Vegetation and Wetlands</b>	17
3.4.4.1 Wetlands	18
3.4.4.2 Special-Status Plants	18
3.4.4.3 Noxious Weeds	18
<b>3.5.4 Wildlife</b>	20
3.5.4.1 Study and Analysis	20
3.5.4.2 Project Design	21
3.5.4.3 Operational BMPs	22
3.5.4.4 Monitoring and Adaptive Management	23
<b>3.6.4 Fisheries</b>	24
3.6.4.1 Construction Techniques and BMPs to Minimize Impacts	24
3.6.4.2 Post-Construction Restoration of Temp. Disturbed Areas	25
<b>3.7.4 Energy and Natural Resources</b>	26
3.7.4.1 Conservation and Renewable Resources Measures	26
<b>3.8.4 Noise</b>	27
<b>3.9.4 Land Use</b>	28

<b>3.10.4 Visual Resource/Light and Glare</b>	<b>29</b>
<b>3.11.4 Population, Housing and Economics</b>	<b>31</b>
<b>3.12.4 Public Services and Utilities/Recreation</b>	<b>32</b>
3.12.4.1 Construction	32
3.12.4.2 Operation and Maintenance	33
<b>3.13.4 Cultural Resources</b>	<b>34</b>
<b>3.14.4 Traffic and Transportation</b>	<b>35</b>
3.14.4.1 Construction	35
3.14.4.2 Operation	36
<b>3.15.4 Health and Safety</b>	<b>37</b>
3.15.4.1 Fire and Explosion	37

# **EARTH**

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## **3.1.4 Mitigation Measures**

### **3.1.4.1 Erosion Control during Project Construction**

The following Mitigation Measures are proposed by the applicant.

Before construction begins, a detailed SWPPP would be developed by the Applicant and approved by the Washington Energy Facility Site Evaluation Council (EFSEC) for the project to reduce the potential for erosion and pollutant discharge from the site during construction and operation activities. The SWPPP would be designed to meet the requirements of the Washington State Department of Ecology General Permit to Discharge Storm Water through its stormwater pollution control program (Chapter 173-230 WAC) associated with construction activities and a Washington State Department of Ecology General sand and gravel permit. Requirements of a National Pollution Discharge Elimination System (NPDES) Stormwater Construction Permit would also be followed.

The SWPPP would include both structural and non-structural BMPs. Examples of structural BMPs include installation of silt fences and other physical controls to divert flows from exposed soils or otherwise limit runoff and pollutants from exposed portions of the site. Examples of nonstructural BMPs include materials handling protocols, disposal requirements, and spill prevention methods.

The SWPPP would be prepared along with a detailed project grading plan by the Engineering, Procurement, and Construction (EPC) contractor when design-phase topographic surveying and mapping are completed for the site. The EPC would implement the construction BMPs, with enforcement by the project's environmental monitor, who would be responsible for implementing the SWPPP.

Site-specific BMPs would be identified on the construction plans for site slopes, construction activities, weather conditions, and vegetative buffers. The sequence and methods of construction activities would be controlled to limit erosion. Also, the majority of areas that would be disturbed by the project are sloped at 20% or less (Wind Ridge Power Partners LLC 2004). Clearing, excavation, and grading would be limited to the smallest areas necessary to construct the project. Surface protection measures such as erosion control blankets or straw mulching may also be required during construction or before restoration if the potential for erosion is high in a particular portion of the site.

All construction practices would emphasize erosion control through such measures as:

- using straw mulch and vegetating disturbed surfaces,
- retaining original vegetation wherever possible,
- directing surface water runoff away from denuded areas, keeping runoff velocities low by minimizing slope steepness and length, and
- providing and maintaining stabilized construction entrances.

Work on the access roads would include grading and resurfacing (with additional gravel) existing roads and constructing new roads. The site would generally have gravel roadways with a low-profile design, allowing water to flow over them in most areas. Erosion control measures to be installed during work on the access roads include the following:

- maintaining vegetative buffer strips between the affected areas and any nearby receiving waterways;
- installing sediment fence/straw bale barriers on disturbed slopes and other locations shown in the SWPPP;
- using straw mulch at locations adjacent to an affected road;
- providing temporary sediment traps and synthetic mats downstream of seasonal stream crossings;
- installing silt fences on steep, exposed slopes; and
- planting affected areas with designated seed mixes.

At each turbine location, a crane pad area of approximately 4,000 square feet would be graded and covered with crushed rock. During construction, silt fences, hay bales, or matting would be placed on the down-slope side of the crane pad. Wind turbine equipment such as blades, tower sections, and nacelles would be transported and off-loaded at each turbine location near the foundation and crane pad. After construction, disturbed areas at and around all crane pad staging areas would be reseeded as necessary to restore the area as closely as possible to its original condition.

Design specifications and further details for excavation, blasting, and other activities associated with the removal and preparation of quarry materials for project construction will be included in the project plans and specifications. This information and a reclamation plan for the rock quarries will be provided to EFSEC for review and approval prior to start of construction.

### **3.1.4.2 Erosion Control during Project Operation**

The project operations group would be responsible for monitoring the SWPPP measures that are implemented during construction to ensure that they continue to function properly. Final designs for the permanent BMPs would be incorporated into the final construction plans and specifications prepared by the engineering team's civil design engineer. The EPC contractor's civil design engineer and the project's engineering team will prepare an operations manual for permanent BMPs. The permanent stormwater BMPs would include erosion and sedimentation control through site landscaping, grass, and other vegetative cover. The final designs for these permanent BMPs would conform to either 1) the Washington State Department of Ecology Western Washington Stormwater Management Manual, with adjustment for conditions in eastern Washington, or 2) a similar Stormwater Management Manual that is expected to be published by Ecology in the summer of 2004.

Operational BMPs will be adopted, as part of the SWPPP, to prevent stormwater pollution by implementing good housekeeping, preventative, and corrective maintenance procedures; steps for spill prevention and emergency cleanup; employee training programs; and inspection and record-keeping practices as necessary. Examples of good operational housekeeping practices identified by the Applicant that would be used by the project include the following:

- prompt cleanup and removal of spillage,
- regular pickup and disposal of garbage,
- regular sweeping of floors,
- HAZMAT data sheet cataloging and recording, and
- proper storage of containers.

The project operators would periodically review the SWPPP against actual practice. The plant operators would determine if the controls identified in the plan are adequate and if employees are following them.

### **3.1.4.3 Earthquakes**

The Applicant proposes to design and construct project facilities in accordance with engineering standards in effect at the time of construction, which would be either the Uniform Building code (UBC) or the International Building Code (IBC) requirements. The wind turbines would be equipped with vibration sensors that would automatically shut down the turbine in the event of a severe earthquake (Wind Ridge Power Partners LLC 2004, Section 3.1).

Additional mitigation measures that would minimize risks from earthquakes would also be implemented and are discussed below.

Prior to final project design, a detailed geotechnical evaluation and field survey would be completed so that no turbine locations or other project elements lie immediately above a high-risk fault. Geotechnical explorations would be conducted at each location where a deep foundation is required (i.e., at each turbine and meteorological tower location) and at the substations and O&M facility.

In addition, current engineering standards applicable in Kittitas County (the 1997 UBC) would be used in design of the project facilities, to assure that the facility performance is acceptable during a design earthquake. Given the relatively low level of earthquake risk for the site, application of the UBC in project design would provide adequate protection for the project facilities and for human safety (Wind Ridge Power Partners LLC 2004, Section 3.1).

The Applicant would prepare on-site emergency plans to protect the public health and safety and environment on and off the project site in case of a major natural disaster such as an earthquake. The Applicant proposes that detailed emergency plans developed prior to project construction and operation contain the following measures to mitigate for potential hazards during an earthquake (Wind Ridge Power Partners LLC 2004):

- Personnel would seek safety at the nearest protected location.

- Personnel would take cover to avoid falling debris.
- Personnel would check the immediate area to identify injuries and equipment failures and report to the site construction manager, O&M manager, or designee.
- Personnel would be instructed to report to a protected area, as necessary, or would continue monitoring the operating equipment.
- A determination would be made about missing personnel, and a search and rescue effort would be initiated if safe and appropriate.
- If the conditions warranted, the Kittitas County Emergency Communications Center and BPA or PSE (the electric transmission line operator) would be notified.
- Turbines could also be shut down manually as required depending on the severity of the earthquake and brought back online after they have been cleared for restart.
- Off-duty personnel would report to the site, if they are able, as designated in the emergency plan.
- If the structures are intact and other plant safety issues are under control, the O&M manager would approve re-entry of personnel to any turbines for search and rescue efforts.

#### **3.1.4.4 Volcanic Eruptions**

In the event of damage or potential impact from a volcanic eruption, the project facilities would be shut down until safe operating conditions return. If an eruption occurred during construction, a temporary shutdown would most likely be required to protect equipment and human health (Wind Ridge Power Partners LLC 2004).

To help protect against the impacts of dust and ash all key outdoor project facilities would be coated with corrosion-resistant materials. The turbine rotor blades and other fiberglass shrouds, such as those on the nacelles for example, are resistant to wind-blown dust and precipitation. The turbine towers would have venting and filtering in the doors to prevent wind blown dust from reaching the internal electrical equipment and machinery.

The Applicant would prepare on-site emergency plans to protect the human health and safety and the environment on and off the project site in case of a major natural disaster such as a volcanic eruption. The Applicant proposes the following actions be taken to reduce potential impacts from a volcanic eruption (Wind Ridge Power Partners LLC 2004).

- Close all O&M facility vents to prevent ash from entering buildings.
- Cover data processing equipment and computers not required for safe project operation or shutdown, and shut down other electronic equipment sensitive to dust (ash).
- If the dust load is heavy, shut down the project facilities.
- If the conditions warrant, notify the Kittitas County Emergency Communications Center and BPA or PSE (the electric transmission line operator).

- Determine whether employees should be sent home immediately before roads become unsafe or if personnel must be sheltered on-site.
- Initiate ash cleaning operations by personnel wearing protective equipment.
- Coordinate all ash disposal activities with local Kittitas County officials.

#### **3.1.4.5 Landslides**

The Applicant proposes to locate project facilities in areas with relatively low-gradient topography with a thin cover of soil that overlies basalt bedrock. No project facilities would be constructed on unstable slopes or landslide-susceptible terrain. A sufficient setback distance would be provided between the landslide identified in the southern portion of the project site and the nearest project facilities.

In addition, the following mitigation measure would be implemented. Prior to project construction, additional geotechnical explorations, including drilling and ground-penetrating radar (GPR) surveys, would be completed as necessary to delineate the limits of the landslide area to verify that the turbines are not placed in potentially unstable terrain and to provide final recommendations for safe setback distances from known or suspected slide areas.

#### **3.1.4.6 Unique Features**

In the unlikely event that unique physical or unique geological features such as petrified ginkgo deposits were discovered at the site during construction, the Applicant has stated that construction personnel would stop work at that location and notify the project manager. The project manager would immediately contact appropriate personnel at EFSEC and the Washington State Historic Preservation Office to coordinate an appropriate response.

#### **3.1.4.7 Contaminated Soils**

The Applicant commissioned KTA of Seattle, Washington, to conduct a Phase I Environmental Site Assessment (ESA) of the site to be developed. The Phase I ESA was performed in accordance with the scope and limitations of American Society of Testing and Materials Practice E 1527. The results of the Phase I ESA indicated no evidence of environmental contamination within the project site. Based on these findings, the potential for encountering environmental contamination during project construction or operation is low. In the unlikely event that contaminated soils are encountered, the Applicant has stated that they will notify EFSEC and appropriate personnel with the Washington State Department of Ecology (Wind Ridge Power Partners LLC 2004). Contaminated soils would be handled and disposed of according to state and local requirements.

#### **3.1.4.8 Decommissioning Plans**

Prior to commencement of construction the Applicant would obtain EFSEC approval, and in consultation with Kittitas County, establish a detailed Initial Site Restoration Plan

pursuant to WAC 463-42-655. The plan shall be developed with the active participation of the County, in consultation and coordination with EFSEC, and shall be submitted to the County for its review and approval, provided however such approval shall not be unreasonably withheld.

If the project were to terminate operations, the Applicant would obtain the necessary authorization from the appropriate regulatory agencies to decommission the facilities. A Final Site Restoration Plan would be developed and submitted to EFSEC for review and approval.

All foundations for above-grade facilities would be removed to a depth of 3 feet below grade and unsalvageable material would be sent to authorized sites for disposal. The soil surface would be restored as close as reasonable possible to its original condition. The projects substation(s) is generally valuable and, as is often the case on older power projects, the substation would revert to the ownership of the utility (PSE and/or BPA). If the overhead transmission feeder lines could not be used by the utility, all structures (including the portion of pole foundations within 3 feet below the ground surface), conductors and cables would be removed.

Reclamation procedures would be based on site-specific requirements and techniques commonly employed at the time the area is to be reclaimed, and would include regrading, adding topsoil, and reseeding all disturbed areas. Reseeding would be done with appropriate seed mixes, based on native plant types in the project site vicinity. Decommissioned roads would be reclaimed or left in place based on landowner preferences, and rights of way would be vacated and surrendered to the landowners.

Although no hazardous materials will be used on the site, an audit will be performed of the relevant operation records and a project site survey will be performed to determine if a release of any hazardous material has occurred. An inspection of all facilities will be performed to determine if any hazardous or dangerous materials (as then defined by regulation) are present. The inspection will record the location, quantity, and status of all identified materials. (Wind Ridge Power Partners LLC 2004)

# AIR QUALITY

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## 3.2.4 Mitigation Measures

The Applicant proposes the following mitigation measures for construction-related air emissions and dust:

- All vehicles used during construction will comply with applicable federal and state air quality regulations for tailpipe emissions;
- Operational measures such as limiting engine idling time and shutting down equipment when not in use will be implemented;
- Active dust suppression will be implemented on unpaved construction access roads, parking areas and staging areas, possibly using water-based dust suppression materials in compliance with state and local regulations;
- Housekeeping measures around batch plant and rock crushing facilities to prevent buildup of fine materials;
- Traffic speeds on unpaved access roads will be kept to 25 mph to minimize generation of dust;
- Carpooling among construction workers will be encouraged to minimize construction-related traffic and associated emissions;
- Disturbed areas will be replanted or graveled to reduce wind-blown dust; and
- Erosion control measures will be implemented to limit deposition of silt to roadways.

In addition to these mitigation measures, the following will be implemented:

- Cease construction during periods of high wind strong enough to generate visible dust plumes from process equipment and unpaved roads;

The air quality permit for the temporary rock crusher and the temporary concrete batch plant will require the use of emission control devices to reduce dust generated by these processes. Water sprays will be used on the rock crusher and the concrete batch plant dry loading operations, and a fabric filter will be used for the Portland cement silo.

No air quality mitigation is proposed for project operations as there would be no air or odor emissions generated by stationary sources. Dust abatement measures implemented during operation would be continued as appropriate.

# WATER RESOURCES

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## **3.3.4 Mitigation Measures**

Mitigation measures proposed by the Applicant are described in the following sections. Due to the completeness of the proposed mitigation, no additional measures have been identified.

The proposed design of the project incorporates numerous features to avoid and/or minimize impacts on water resources. The project layout (Figure 1-2) has been designed to avoid any impacts on surface waters and groundwater. Features of the project that are designed to avoid or minimize impacts include:

- minimizing new road construction by improving and using existing roads and trails instead of constructing new roads;
- not developing wells on site, and using only off-site sources of water for construction and operation; and
- locating roads, underground cables, turbine foundations, transmission poles and other associated infrastructure outside any surface water or other sensitive resources.

Other mitigation measures include avoiding drainage crossings to the maximum extent feasible; complying with federal, state, and local ordinances; and implementing a formal SWPPP and BMPs during construction.

### **3.3.4.1 Construction General Stormwater Pollution Prevention Measures**

#### **Stormwater Pollution Prevention Plan**

A detailed Construction SWPPP will be developed for the project to help minimize the potential for discharge of pollutants from the site during construction activities. The SWPPP will be designed to meet the requirements of the Ecology General Permit to Discharge Stormwater through its stormwater pollution control program (Chapter 173-220 WAC) associated with construction activities. A SWPPP meeting the conditions of the Stormwater General Permit for Construction Activities will be prepared and submitted to EFSEC along with a Notice of Intent (NOI) for construction activities prior to the start of project construction. Similar to the Construction SWPPP, an Industrial SWPPP meeting the conditions of the Stormwater General Permit for Industrial Activities will be prepared along with an NOI for industrial activities prior to the start of project operation. The project National Pollutant Discharge Elimination System (NPDES) permit application is included in Appendix A. The project will meet the control requirements of the NPDES permit by complying with permit guidelines and statutory requirements.

Ecology's *Stormwater Management Manual for Western Washington* would be used for developing the SWPPP and BMPs, with modifications applicable to Eastern Washington

conditions, as Ecology's *Stormwater Management Manual for Eastern Washington* has not been finalized or adopted.

The SWPPP will include both structural and nonstructural BMPs. Examples of structural BMPs could include the installation of silt curtains and/or other physical controls to divert flows from exposed soils or otherwise limit runoff and pollutants from exposed areas of the site. Examples of nonstructural BMPs include management practices such as implementation of appropriate materials handling, disposal requirements, and spill prevention methods.

The SWPPP will be prepared along with a detailed project grading plan designed by the EPC Contractor when design-level topographic surveying and mapping are prepared for the project site. The final configuration of proposed improvements will be overlaid onto the detailed topographic maps, and the project civil design engineer will establish the locations and types of construction BMPs to be required of the EPC Contractor. These details will be included on an overall map of the project site and submitted to EFSEC prior to construction.

A narrative section of the SWPPP will describe the intended installation sequence and function of the selected BMPs, and present the sizing calculations. The plan will also identify the selected minimum standards to which each of the BMPs is to be constructed or installed. When prepared at this level of detail, the document would meet the requirements of the Stormwater Construction Activity NPDES permit system, and would accurately describe to the EPC Contractor and the project site construction management team the improvements and actions required during construction. When complete and submitted to EFSEC, the SWPPP will then be included in the construction bid and contract documents. The EPC Contractor will implement the construction BMPs, with enforcement supervised by the project's environmental monitor, who would be responsible for implementing the SWPPP.

### *General Stormwater Pollution Control Measures*

Site-specific BMPs will be identified on the construction plans for the site slopes, construction activities, weather conditions, and vegetative buffers. The sequence and methods of construction activities will be controlled to limit erosion. Clearing, excavation, and grading will be limited to the minimum areas necessary for construction of the project. Surface protection measures, such as erosion control blankets or straw matting, also may be required prior to final disturbance and restoration if potential for erosion is high.

All construction practices will emphasize erosion control over sediment control through such non-quantitative activities as:

- straw mulching and vegetating disturbed surfaces,
- retaining original vegetation wherever possible,
- directing surface runoff away from denuded areas,
- keeping runoff velocities low through minimization of slope steepness and length, and

- providing and maintaining stabilized construction entrances.

A more detailed description of the materials, methods, and approaches used as part of the BMPs for effective stormwater pollution prevention and erosion control are as follows:

- **Rain Level Monitoring**—The environmental monitor will be responsible for checking and recording precipitation levels at the project site using a rain gage. This benchmark will be used to determine the performance of the SWPPP measures that have been implemented during construction. After construction, the O&M group will also continue to monitor rainfall amounts and monitor the in-place erosion control systems while re-seeded areas become more established. Modifications will be performed where needed by the O&M group after project construction is completed.
- **Mulching**—Loose straw will be spread and punched into the ground in all areas where vegetation has been cleared.
- **Temporary Straw Bale and Silt Fence Sediment Barriers**—Temporary straw bale barriers and sediment fences will be inspected by the Contractor immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs, relocations, or additions will be made promptly. No more than 1 foot of sediment will be allowed to accumulate behind straw bales or silt fence sediment barriers. Sediment will be removed and re-graded into slopes. New lines of barriers installed uphill of sediment-laden barriers will be considered based on the rate at which the 1 foot of sediment accumulates.  
  
Silt fences and straw bale sediment barriers will be maintained throughout the construction period and beyond, until disturbed surfaces have been stabilized with vegetation. Silt fence construction specifications, including fabric type, support spacing, and total length will be determined by actual construction conditions during final design of the facilities.
- **Check Structures and Sediment Traps**—Check structures, such as rock dams, hay bale check dams, dikes and swales will be used, where appropriate, to reduce runoff velocity as well as to direct surface runoff around and away from cut-and-fill slopes. Swales and dikes may also be used to direct surface water toward sediment traps.
- **Matting and Erosion Control Blankets**—Depending on weather conditions during the construction period, straw or jute matting or other suitable erosion control blankets will be used on the pad slopes and the drainage channel slopes if direct rainfall on the slopes would result in erosion prior to stabilization (see Figure 3.3-2).
- **Control of Excavation Dewatering**—Although no dewatering is anticipated, excavation work requiring dewatering discharge will be directed to the surrounding upland areas, away from sensitive resources (e.g., wetlands, drainages, and seeps). Dewatering water will be pumped through a hose that will be moved as the water is pumped out to distribute the groundwater over a large surface area to allow it to evaporate and/ or infiltrate and avoid causing increased erosion or stormwater pollution. There will be no direct discharge to surface waters or riparian areas from dewatering activities.

No project facility would be located closer than approximately 200 feet from a riparian area, although the maximum setback that would be required by WDOE guidelines would be only 50 feet.

- **Stormwater Pollutants (Waste, Debris, Chemicals)**—In addition to erosion and sedimentation control on the project site, it is important to reduce potential for chemical pollution of surface waters and groundwaters during construction. Source control is the most effective method of preventing chemical water pollution. All potential pollutants, including waste materials and demolition debris, that occur on site during construction will be handled and disposed of in a manner that does not cause contamination of stormwater.

The only potential water pollutants that would be transported and used in significant quantities during construction are diesel fuels and gasoline, which will be transported and stored in accordance with state and federal regulations by appropriately licensed and trained petroleum transport professionals. Other potential water pollutants include lubricating and mineral oils, chemical cleaners, and herbicides in small quantities below state and federal regulatory thresholds. Handling of these materials will be conducted in a manner that is protective of the environment and in accordance with applicable federal and state requirements and with the BMPs and the Spill Prevention, Containment, and Control Plan described in Section 3.15.2, "Health and Safety—Impacts of the Proposed Action."

In the unlikely event of a fuel, oil, or chemical spill, project personnel will activate the Spill Prevention, Containment, and Control Plan described in Section 3.15.2, "Health and Safety—Impacts of Proposed Action."

- **Environmental Monitor**—The proposed environmental monitor will be responsible for locating any necessary clean fill disposal sites for excess excavation spoils. To control the release of sediment from the disposal sites, silt fencing with a straw bale barrier will be installed on the downslope side of all disposal areas if additional sediment or erosion control measures are determined to be necessary. The site environmental monitor will be responsible for planning, implementing, and maintaining BMPs for:

neat and orderly storage of any construction chemicals and spent containers in lined, bermed areas;

materials handling and spill prevention procedures; and

regular disposal of construction garbage and debris using on-site dumpsters.

- **Revegetation**—All areas that are affected by the construction outside of the graveled areas and rock quarries will be seeded when there is adequate soil moisture. They will be re-seeded if healthy cover vegetation does not grow. The sediment fence and check dams will remain in place until the affected areas are well vegetated and the risk of erosion has been eliminated. The project operations group will remove the sediment fence at this time.

In addition the following specific facility control measures and BMPs for effective stormwater pollution prevention and erosion control measures will be implemented as part of the SWPPP:

- **Foundation Construction Stormwater Pollution Control Measures**—Foundation construction would require significant excavation at each wind turbine location as described in Section 3.1.2, “Earth—Impacts of the Proposed Action.” Excavation materials will be stored adjacent to the foundation holes as the forms, rebar and bolts are assembled and as the concrete cures after it is cast in place. Sediment fences, hay bales or matting will be installed on steeper down slopes near the storage piles as necessary. Once the concrete cures, excavated materials would be used for backfilling. In affected areas adjacent to pads, mulch will be spread and the area will be re-seeded. Cobbles and rocks too large for backfilling will be crushed for gravel and used in rock check dams or to support other on-site erosion control measures.
- **Access Roads Stormwater Pollution Control Measures**—Work on the access roads would include grading and re-graveling existing roads and constructing new roads. The site would have gravel roadways that generally would be a low-profile design, allowing water to flow over them in most areas. Erosion control measures to be installed during the work on the access roads include:
  - maintaining vegetative buffer strips between the affected areas and any nearby waterways;
  - installing sediment fence/straw bale barriers on disturbed slopes and other locations shown on the SWPPP;
  - using straw mulching at locations adjacent to the road that have been affected;
  - providing temporary sediment traps and sediment type mats downstream of seasonal stream crossings;
  - installing silt fencing on steeper exposed slopes; and
  - planting designated seed mixes at impacted areas.
- **Turbines**—At each turbine location, a crane pad area of approximately 4,000 square feet would be graded in place and covered with road rock. During construction, silt fences, hay bales, or matting will be placed on the down slope side of the crane pad areas. Wind turbine equipment such as the blades, tower sections, and nacelles would be transported and off-loaded at each turbine location near the foundation and crane pad. After construction, disturbed areas around all crane pad staging areas will be re-seeded with an appropriate seed mix.
- **Underground Cable Trenching Stormwater Pollution Control Measures**—Underground electrical and communications cables would be placed in 3- to 5-foot-wide trenches along the length of each wind turbine string corridor. In some cases, trenches would run from the end of one turbine string to the end of an adjacent turbine string to link turbines via the underground network. Trenches would be excavated from 1.5 to 4 feet deep, depending on the underlying soil/rock conditions. Excavated materials would be piled alongside the cable trenches for backfilling after cable installation. The excavated materials typically would remain in an exposed

state for approximately 2 weeks. Sediment fences, hay bales, or matting will be installed on steeper downslopes near the storage piles. After backfilling is completed, excess excavated soils will be spread around the surrounding area and contoured to the natural grade. Cobbles and rocks too large for backfilling will be crushed for gravel and used in rock check dams or to support other on-site erosion control measures. Finally, the area will be re-seeded with an appropriate seed mix.

- **Overhead Collector Line Construction Stormwater Pollution Control Measures**—Construction of the overhead pole lines would require excavation for setting the poles. Excavated materials would be piled alongside the excavations for backfilling after pole installation. Pole excavations are typically in an exposed state for approximately 1 week. Sediment fences, hay bales, or matting will be installed on any steep downslopes near the storage piles. After backfilling, excess excavated soils will be spread around the surrounding area and contoured to the natural grade. Cobbles and rocks too large for backfilling will be crushed for gravel and used in rock check dams or to support other on-site erosion control measures. Finally, the area will be re-seeded with an appropriate seed mix.
- **Substation Construction Stormwater Pollution Control Measures**—The substation is generally flat, and the base area would be graded and covered with a sub-base rock and a graveled surface on top. Foundation and underground trenching excavation spoils would be handled in the same manner as described in the above sections regarding foundations and underground cable trenches. Disturbed areas surrounding the substation perimeter will be contoured to the natural grade, covered in straw mulch, protected for erosion control, and re-seeded as appropriate to the adjacent slopes. The main substation transformers, which are filled with mineral oil, are equipped with an oil level meter and float switch. Oil containment catch trenches would surround the outer foundation perimeters of transformers, as described in more detail in Section 2.2.3, “Project Facilities.”
- **Final Road Grading and Site Clean Up Stormwater Pollution Control Measures**—The project would use dumpsters or drop boxes from a local waste management company to collect recyclable materials and dispose of waste materials that cannot be reused. A final site cleanup will be made before turning the project over to the O&M group. In accordance with the Erosion and Sediment Control Plan for access road improvement and construction, County roads will be restored to at least their preproject condition and to the satisfaction of the County Public Works Department.
- **Cement Batch Plant Stormwater Pollution Control Measures**—The cement batch plant would be located on site at a central location within a flat area approximately 500 ft x 500 ft, surrounded by a 1-foot-high earth berm to contain spilled water runoff (see Proposed Layout of Most Likely Scenario (136 Turbines/1.5 MW) in Figure 1-2).

The batch plant would use outdoor stockpiles of sand and aggregate. These stockpiles would be located to minimize exposure to wind. Sediment fences, hay bales, or matting will be installed near the storage areas as necessary. Cement would be discharged via screw conveyor directly into an elevated storage silo without

outdoor storage. Construction managers will exercise good housekeeping practices and conduct regular cleanings of the plant, storage, and stockpile areas to minimize buildup of fine materials.

Following completion of construction activities the Applicant's contractor will rehabilitate the sites by dragging the top of both of the 500-square foot crushing and batch plant areas with a blade machine and re-seeding the area with a designated seed mixture.

- **Rock Quarry Stormwater Pollution Control Measures**—A total of three temporary on-site rock quarries are planned for the project (see Proposed Layout of Most Likely Scenario (136 Turbines/1.5 MW) in Figure 1-2). Each rock quarry would have a disturbance footprint of approximately 5 acres, and the depth would be approximately 10–20 feet, depending on the type of rock encountered at each location. Sediment fences, hay bales, or matting will be installed near the quarries to control stormwater run on and runoff, as necessary.

A rock crusher would be located at one of the three on-site quarry pits for the duration of the construction period. The crusher would be located in an area approximately 500 ft x 500 ft, surrounded by a 1-inch high earth berm to contain spill water runoff. This area will be sprayed by a water truck several times each day for dust suppression. The crusher will contain several dust-suppression features, including screens and water spray. Effective dust-control measures will be operating at all emission points during operation, including start-up and shut-down periods. During periods of sustained high winds, contractors will shut down operation of the rock crusher if reduced visibility poses a safety hazard.

It is not anticipated that surface runoff control facilities beyond the control measures described above would be required. Project engineers will determine specific siting of the control measures after final design has been completed. The applicant will provide design assumptions, including storm events and plans, when they have been completed.

### **3.3.4.2 Operational General Stormwater Pollution Prevention Measures**

As described above, the Applicant will prepare and define a SWPPP as part of the final design. The project operations group will be responsible for monitoring the SWPPP measures that were implemented during construction to ensure they continue to function properly. Final designs for the permanent BMPs will be incorporated into the final construction plans and specifications prepared by the civil design engineer. An operations manual for the permanent BMPs will be prepared by the EPC Contractor civil design engineer and the project's engineering team.

Operational BMPs will be adopted, as part of the SWPPP, to implement good housekeeping, preventive and corrective maintenance procedures, steps for spill prevention and emergency cleanup, employee training programs, and inspection and recordkeeping practices, as necessary, to prevent stormwater and groundwater pollution.

Examples of good operational housekeeping practices, which will be employed by the project, include the following:

- prompt cleanup and removal of spillage;
- regular pickup and disposal of garbage;
- regular sweeping of floors;
- HAZMAT data sheet cataloging and recording; and
- proper storage of containers.

No project facility would be located closer than approximately 200 feet from a riparian area, although the maximum setback that would be required by WDOE guidelines. The County does not require a setback.

The project operations group will periodically review the SWPPP against actual practice. The plant operators will ascertain that the controls identified in the plan are adequate and that employees are following them.

### **Transformer Oil Containment**

The oil containment system for the substations would consist of a perimeter containment system, large enough to contain the full volume of transformer mineral oil with a margin of safety, surrounding the main substation transformers. The trough would be poured as part of the transformer concrete foundation or would consist of a heavy oil-resistant membrane that is buried around the perimeter of the transformer foundation.

The trough and/or membrane would drain into a common collection sump area that would be equipped with a sump pump designed to pump rainwater out of the trough to the surrounding area away from nearby surface waters or sensitive areas (e.g., wetlands, springs, seeps). In order to prevent the sump from pumping oil out to the surrounding area, it will be fitted with a sensor that would shut off the sump if oil is detected. A failsafe system with redundancy is built into the sump controls—the transformers are also equipped with oil-level sensors. If the oil level inside a transformer drops as a result of a leak in the transformer tank, it would also shut off the sump pump system to prevent it from pumping oil, and an alarm would be activated at the substation and in the main project control (SCADA) system. The trough would be large enough to contain the full volume of oil plus 10% reserve volume.

Discharges from the containment system would be directed to upland areas and away from nearby surface waters or sensitive areas (e.g., wetlands, springs, seeps). Discharge from the containment system will be in compliance with laws governing the discharge of oil as specified in the Code of Federal Regulations (CFR) under 40 CFR Part 110.3:

§ 110.3 Discharge of oil in such quantities as "may be harmful" pursuant to section 311(b)(4) of the Act. [See below Note]

For purposes of section 311(b)(4) of the Act, discharges of oil in such quantities that the Administrator has determined may be harmful to the public health or welfare or the environment of the United States include discharges of oil that:

- (a) Violate applicable water quality standards; or

(b) Cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines. [61 FR 7421, Feb. 28, 1996]

Note: Act means the Federal Water Pollution Control Act, as amended 33 U.S.C. 1251 et seq., also known as the Clean Water Act.

Water in the containment system that shows obvious indicators of potentially violating appreciable water quality standards, i.e., the water exhibits an oily sheen as specified under 40 CFR Part 110(b), will be removed from the containment system and disposed of in accordance with applicable federal, state and local laws.

# VEGETATION AND WETLANDS

## 3.4.4 Mitigation Measures

Shrub steppe is considered a priority habitat by WDFW. As such, the Applicant has proposed to mitigate all permanent and temporary impacts on vegetation caused by the proposed project in accordance with the guidelines outlined in the WDFW Wind Power Guidelines (WDFW, August 2003) for siting and mitigating wind power projects east of the Cascades. A mitigation parcel has been identified within the 8,600-acre project area. The mitigation parcel is located in T18N, R21E, Section 27 and is approximately 600 acres in size. A portion of this section (String L follows a ridgeline that dissects Section 27 from north to south) would be excluded from mitigation and developed as part of the project. The WDFW has indicated that the Applicant's proposed mitigation is responsive to discussions with WDFW (WDFW 2004; see Appendix A). The 600-acre mitigation parcel would meet or exceed the required habitat replacement ratios under the WDFW Wind Power Guidelines for any of the three scenarios proposed. The Applicant has agreed to fence this parcel to exclude livestock grazing, if grazing practices continue on adjacent properties at the time the project goes into operation. In addition to Section 27, the Applicant proposes to fence several springs within the project area to eliminate livestock degradation. Fencing used for the mitigation parcel and the springs will be designed to keep livestock out but allow game species to cross. The Applicant intends to coordinate with WDFW regarding fence specifications.

As noted above, WDFW has prepared a set of guidelines for wind power projects east of the Cascades to provide guidance for siting and mitigation. These guidelines were followed during selection of Section 27 as a mitigation site for the project. Section 27 provides opportunity for "like-kind" replacement habitat of equal or higher habitat value than the impacted area and it occurs in the same geographical region as the impacted habitat. Furthermore, the Applicant has an option to purchase the property if the project goes forward, and the Applicant will provide legal protection and protection from degradation for the life of the project. Consistent with WDFW's guidelines, permanent impacts on habitat would be replaced at a ratio equal to or greater than 1:1 for grassland and 2:1 for shrub-steppe.

Use of Section 27 as a mitigation parcel would result in protection of an approximately 1-mile segment of Whiskey Dick Creek near its headwaters. Protection of waterways and their adjacent riparian habitat provide additional benefits beyond replacement of like-kind habitat at agreed upon ratios. Protection of this segment of Whiskey Dick Creek provides benefits for water quality, wildlife, and species diversity. In addition, Section 27 is adjacent to state-owned lands. Washington Department of Natural Resources (WDNR) administers Section 34 to the south and WDFW administers Section 26 to the east. Use of Section 27 for mitigation will provide continuity of habitat with these adjacent state-owned sections. Finally, a variety of habitat types that occur in the general project area are found in Section 27, so a diversity of habitat types would be preserved. These include shrub-steppe (moderate and dense), herbaceous, herbaceous/rock outcrop, and woody riparian.

In addition to the above-mentioned mitigation parcel, additional mitigation measures contained in the WDFW guidelines would be implemented. These guidelines include implementing a WDFW approved restoration plan for the impacted areas that will include:

- site preparation,
- reseeding with appropriate vegetation,
- noxious weed control, and
- protection from degradation

Best management practices (BMPs) will be implemented during construction, as discussed in Sections 3.1 Earth and 3.3 Water, to control erosion and surface water runoff, and as presented below for noxious weed control.

#### **3.4.4.1 Wetlands**

Since no impacts on wetlands are anticipated, no mitigation is proposed. During the design of the project, all project facilities, including access roads, electric lines, and turbine strings, were intentionally laid out to avoid the limited water features in the project area (particularly springs).

#### **3.4.4.2 Special-Status Plants**

The only special-status plant species that may be impacted by the project is hedgehog cactus, a Washington State Review listed species. Access to the site will be controlled during both construction and operations, which should provide greater protection than is currently afforded to this species. As collection of this species for gardens has been cited as a reason for its decline, if such collection becomes a problem at the project site despite the controlled access, the Applicant proposed to post signage indicating that collection of any plants in the project area is prohibited.

#### **3.4.4.3 Noxious Weeds**

To avoid, minimize, or reduce the impacts of noxious weeds, the Applicant proposes the following mitigation measure:

- The contractor will clean construction vehicles prior to bringing them in to the project area from outside areas.
- Disturbed areas will be reseeded as quickly as possible with native species.
- Seed mixes will be selected in consultation with WDFW and Kittitas County Weed Control Board.
- If hay is used for sediment control or other purposes, hay bales will be certified weed free.
- Access to the site will be controlled which may result in a lower level of disturbance and fewer opportunities for noxious weeds to be introduced and/or spread.

- Noxious weeds that may establish themselves as a result of the project will be actively controlled in consultation with the Kittitas County Weed Control Board.

# **WILDLIFE**

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## **3.5.4 Mitigation Measures**

The potential direct wildlife impacts from the project can be grouped into two main categories, loss of habitat from construction and operation of the project, and potential mortality to individual birds or other animals from construction and operation of the project. The loss of habitat associated with the project can be further broken down into “temporary” and “permanent” habitat impacts. “Temporary” impacts are those arising from ground disturbance necessary for the construction of project infrastructure but that will not be permanently occupied once construction is complete. Examples include trenches for underground electrical collector cables and construction staging areas. These areas will be disturbed during the construction period but will be reseeded and restored after construction is finished. The vast majority (approximately 75%) of the total area impacted by construction of the project would be temporarily disturbed (i.e., for less than one year.) The remainder (approximately 25%) will continue to be occupied by the project, such as string roads, turbine foundation pads, project substation, and the O&M facility. These are considered “permanent” impacts for the purpose of this analysis.

The Applicant has proposed a comprehensive mitigation package for plants and animals for this project. It consists of several categories of actions that include the following list, and described in greater detail in the following sections:

- Thorough study and analysis to avoid impacts;
- Project design features to minimize impacts;
- Construction techniques and Best Management Practices (BMPs) to minimize impacts;
- Post-construction restoration of temporarily disturbed areas;
- Operational BMPs to minimize impacts;
- Monitoring and adaptive management to minimize impacts during operations; and
- Protection and enhancement of on-site habitat; specifically providing protection for the life of the project for over 600 acres of shrub-steppe and riparian habitat in Section 27 and the fencing of springs in other areas of project to protect the springs from degradation by livestock.

### **3.5.4.1 Study and Analysis**

Studies have been conducted on the project site by qualified wildlife biologists and data gathered was used in the project design to avoid impacts on sensitive populations. These studies, results of which are included as appendices to the ASC, include the following:

- Rare plant surveys;
- Habitat mapping;

- Avian use point count surveys;
- Aerial raptor nest surveys;
- Sage grouse surveys
- Big game surveys;
- Non-avian wildlife surveys;

The results and recommendations of these studies have been incorporated into the proposed design, construction, operation and mitigation for the project.

### **3.5.4.2 Project Design**

The proposed design of the project incorporates numerous features to avoid and/or minimize impacts on plants and wildlife. These features are based on site surveys, experience at other wind power projects, and recommendations from consultants performing studies at the site. Features of the project that are designed to avoid or minimize impacts on wildlife include the following:

- Avoidance of construction in sensitive areas such as streams, riparian zones, wetlands, and forested areas;
- Avoidance of locating wind turbines in prominent saddles along the main Whiskey Dick Ridge;
- Minimization of new road construction by improving and using existing roads and trails instead of constructing new roads;
- Choice of underground (vs. overhead) electrical collection lines wherever feasible to minimize perching locations and electrocution hazards to birds;
- Choice of turbines with low RPM and use of tubular towers to minimize risk of bird collision with turbine blades and towers;
- Use of unguayed permanent meteorological towers to minimize potential for avian collisions with guy wires;
- Equipping all overhead power lines with raptor perch guards to minimize risks to raptors; and
- Spacing of all overhead power line conductors to minimize potential for raptor electrocution.

### **Construction Techniques**

Construction of the project has the potential to impact both habitat and wildlife in a variety of ways. The Applicant proposes the use of construction techniques and BMPs to minimize these potential impacts. These include the following:

- Use of BMPs to minimize construction-related surface water runoff and soil erosion (these are described in detail in Section 3.3.2.1, "Water – Impacts of the Proposed Action – Construction – Surface Water Runoff/Absorption");

- Use of certified "weed free" straw bales during construction to avoid introduction of noxious or invasive weeds;
- Flagging of any sensitive habitat areas (e.g., springs, raptor nests, wetlands) near proposed areas of construction activity and designation of such areas as "off limits" to all construction personnel;
- Development and implementation of a fire control plan, in coordination with local fire districts, to minimize risk of accidental fire during construction and respond effectively to any fire that does occur;
- Establishment and enforcement of reasonable driving speed limits (max 25 mph) during construction to minimize potential for road kills;
- Proper storage and management of all wastes generated during construction;
- Require construction personnel to avoid driving over or otherwise disturbing areas outside the designated construction areas;
- Limiting construction activities during winter months to minimize impacts on wintering big game;
- Designation of an environmental monitor during construction to monitor construction activities and ensure compliance with mitigation measures.

### **Postconstruction Restoration**

All temporarily disturbed areas which have been cleared of vegetation will be reseeded with an appropriate mix of native plant species as soon as possible after construction is completed to accelerate the revegetation of these areas and to prevent spread of noxious weeds. The Applicant will consult with Washington Department of Fish and Wildlife regarding the appropriate seed mixes for the project area.

#### **3.5.4.3 Operational BMPs**

During project operations, appropriate operational BMPs will be implemented to minimize impacts on plants and animals. These include the following:

- Implementation of a fire control plan, in coordination with local fire districts, to avoid accidental wildfires and respond effectively to any fire that might occur;
- Establishment and enforcement of reasonable driving speed limits (max 25 mph) during operations to minimize potential for road kills;
- Operational BMPs to minimize storm water runoff and soil erosion;
- Implementation of an effective noxious weed control program, in coordination with the Kittitas County Noxious Weed Control Board, to control the spread and prevent the introduction of noxious weeds;
- Identification and removal of all carcasses of livestock, big game, etc. from within the project that may attract foraging bald eagles or other raptors;
- Control public access to the site to minimize disturbance impacts on wildlife, especially in the winter months;

- Allow limited and controlled hunting on the site and allow WDFW access to the site to manage big game herds and minimize potential big game damage to nearby agricultural lands.

#### **3.5.4.4 Monitoring and Adaptive Management**

The Applicant plans to convene a Technical Advisory Committee (TAC) to evaluate the mitigation and monitoring program and determine the need for further studies or mitigation measures. The TAC will be composed of representatives from Washington Department of Fish and Wildlife, EFSEC, Kittitas County, local interest groups (e.g., Kittitas Audubon Society), project landowners, and the Applicant. The role of the TAC will be to review results of monitoring studies to evaluate impacts on wildlife and habitat, and address issues that arise regarding wildlife impacts during operation of the project. The post-construction monitoring plan will be developed in coordination with the TAC.

The Applicant proposes to develop a postconstruction monitoring plan for the project to quantify impacts on avian species and to assess the adequacy of mitigation measures implemented. The monitoring plan will include the following components: 1) fatality monitoring involving standardized carcass searches, scavenger removal trials, searcher efficiency trials, and reporting of incidental fatalities by maintenance personnel and others; and 2) a minimum of one breeding season raptor nest survey of the study area and a 1-mile buffer to locate and monitoring active raptor nests potentially affected by the construction and operation of the project.

The protocol for the fatality monitoring study will be similar to protocols used at the Vansycle Wind Plant in northeastern Oregon (Erickson et al. 2000) and the Stateline Wind Plant in Washington and Oregon (FPL et al. 2001).

# **FISHERIES**

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## **3.6.4 Mitigation Measures**

The proposed design of the project incorporates numerous features to avoid and/or minimize impacts on fisheries. The project layout (Figure 1-2) has been designed to avoid any impacts to streams and riparian areas. Features of the project that are designed to avoid or minimize impacts include:

- Minimizing new road construction by improving and using existing roads and trails instead of constructing new roads.
- Roads, underground cables, turbine foundations, transmission poles, and other associated infrastructure will not be located within any riparian areas or streams or other sensitive resources.

Many of the wildlife measures outlined in Section 3.5.4, "Wildlife—Mitigation Measures" and surface water measures outlined in Section 3.3.4, "Water Resources – Mitigation Measures" also apply here. A formal SWPPP would be implemented and BMPs would be initiated to retain sediment from disturbed areas and minimize areas of disturbance. In addition, the proposed construction activities for the transmission feeder lines would not involve the use of any heavy equipment in streambeds or riparian areas.

### **3.6.4.1 Construction Techniques and BMPs to Minimize Impacts**

Constructing the project has the potential to impact fisheries in a variety of ways. Even though no fisheries issues were identified in the project area, the Applicant proposes using construction techniques and BMPs to minimize these potential impacts. These include the following:

- Using BMPs to minimize construction-related surface water runoff and soil erosion.
- Flagging sensitive habitat areas (e.g., wetlands, seeps, and drainages) near proposed areas of construction activity and designating such areas as "off limits" to all construction personnel.
- Properly storing and managing all wastes generated during construction.
- Requiring construction personnel to avoid driving over or otherwise disturbing areas outside the designated construction areas.
- Designating an environmental monitor during construction to monitor construction activities and ensuring compliance with mitigation measures.

### **3.6.4.2 Post-Construction Restoration of Temporarily Disturbed Areas**

The following measures would be taken to restore temporarily disturbed areas after construction:

- All temporarily disturbed areas would be reseeded with an appropriate mix of native plant species as soon as possible after construction is completed to accelerate the revegetation of these areas and to prevent the spread of noxious weeds.
- The Applicant would consult with WDFW regarding the appropriate seed mixes for the project area.

# **ENERGY AND NATURAL RESOURCES**

## **3.7.4 Mitigation Measures**

As the project would have a positive impact overall on the use of non-renewable resources, no mitigation is necessary or proposed.

### **3.7.4.1 Conservation and Renewable Resources Measures**

During construction, conservation measures will include recycling of construction wastes where possible and encouraging carpooling among construction workers to reduce emissions and traffic.

The Applicant proposes several conservation measures that will be undertaken during operations:

- The O&M facility will utilize station power for electricity needs.
- Water usage at the site will be closely monitored during operations due to the limited capacity of the on-site water storage tank.
- Carpooling among operations workers will be encouraged.
- High-efficiency electrical fixtures and appliances in the O&M facility and substation control house will be used.
- Low-water-use flush toilets will be used in the O&M facilities
- Recycling of waste office paper and aluminum will be encouraged.

# **NOISE**

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## **3.8.4 Mitigation Measures**

Although no specific receivers are identified as being impacted by construction noise at the remote project site, and the Applicant has not proposed any mitigation measures associated with noise impacts, the following contractor practices are recommended to minimize the effects of construction noise in the project area:

- Implement work-hour controls so that noisy activities occur between 7 a.m. and 10 p.m., which would reduce the impact during sensitive nighttime hours.
- Do not allow heavy-duty haul trucks to travel through the town of Kittitas during evening or nighttime hours.
- Do not allow haul trucks to park and idle within 100 feet of a residential dwelling.
- Conduct blasting only during daylight hours.
- Maintain equipment in good working order and use adequate mufflers and engine enclosures to reduce equipment noise during operation.
- Coordinate construction vehicle travel to reduce the number of passes by sensitive receivers.

## **LAND USE**

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### **3.9.4 Mitigation Measures**

- During project construction, it would be necessary to remove cattle from areas where blasting or heavy equipment operations are taking place. The Applicant would make arrangements with property owners and livestock owners to keep livestock out of these areas during those periods.
- After construction is completed, disturbed areas would be returned as closely as possible to their original state, excluding service and access roads, which would remain in place for the life of the facility.
- The Applicant would allow controlled hunting to avoid creating a sanctuary for elk and deer that may cause an increase in agricultural damage to neighboring landowners.

# VISUAL RESOURCES/LIGHT AND GLARE

## 3.10.5 Mitigation Measures

Mitigation measures proposed by the Applicant and incorporated into the project's design include the following:

- Active dust suppression will be implemented to minimize the creation of dust clouds during the construction period.
- Areas temporarily disturbed during the construction process will be reseeded to facilitate their return to natural-appearing conditions when construction is complete.
- The wind turbine towers, nacelles, and rotors used will be uniform and will conform to the highest standards of industrial design to present a trim, uncluttered, aesthetically attractive appearance.
- The turbines will have neutral gray finish to minimize contrast with the sky backdrop.
- A low-reflectivity finish will be used for all surfaces of the turbines to minimize the reflections that can call attention to structures in a landscape setting.
- The rotors will be turning approximately 80–85% of the time as a result of local wind conditions and the equipment used. This will minimize the appearance of the turbines being non-operational.
- The small cabinets containing pad-mounted equipment that will be located at the base of each turbine will have an earth-tone finish to help them blend into the surrounding ground plane.
- The only exterior lighting on the turbines will be the aviation warning lighting required by the FAA. This lighting will be kept to the minimum required intensity to meet FAA standards. It is anticipated that the FAA will soon be issuing new standards for marking of wind turbines that will entail lighting fewer turbines in a large wind farm than is now required, as well as synchronizing all the lights. These potential regulatory changes are being closely monitored and if, as is likely, they are made before project construction begins, the aviation safety marking lighting will be designed to meet these revised standards.
- Most of the project's electrical collection system will be located underground, eliminating potential visual impacts.
- Where feasible, existing road alignments will be used to provide access to the turbines, minimizing the amount of additional surface disturbance required. Where possible, access road widths will be restricted to 20 feet (approximately half of all access road miles.) The access roads will have a gravel surface and will have grades of no more than 15%, minimizing erosion and its visual effects.
- The O&M facility building will have a low-reflectivity earth-tone finish to maximize its visual integration into the surrounding landscape.

- The parking areas at the O&M facility will be covered with gravel, rather than asphalt, to minimize contrast with the site's soil colors.
- Outdoor night lighting at the O&M facility and the substation(s) will be kept to the minimum required for safety and security, sensors and switches will be used to keep lighting turned off when not required, and all lights will be hooded and directed to minimize backscatter and offsite light trespass.
- All equipment at the substation(s) will have a low-reflectivity neutral gray finish to minimize visual sensitivity.
- All insulators in the substations and takeoff towers will be non-reflective and non-refractive.
- The control buildings located at each substation will have a low-reflectivity earth-tone finish.
- The chain-link fences surrounding the substations will have a dulled, darkened finish to reduce their contrast with the surroundings.

## **POPULATION, HOUSING AND ECONOMICS**

### **3.11.4 Mitigation Measures**

There is an adequate supply of temporary housing available to accommodate non-local workers; therefore, no mitigation measures are proposed. The overall socioeconomic impact of the project for the County would be increased property tax base and employment opportunities; therefore, no mitigation measures are planned for population, housing, and economics.

# **PUBLIC SERVICES AND UTILITIES/RECREATION**

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## **3.12.4 Mitigation Measures**

Potential impacts to public services and utilities will be mitigated by tax revenues generated by the project. Fiscal impacts of the project are addressed in Section 3.11, "Population, Housing and Economics."

### **3.12.4.1 Construction**

Because construction activities at the project are not expected to result in significant impacts to medical services, schools, public utilities, communications, water supplies, sewage/solid waste disposal, or stormwater systems, no mitigation measures will be necessary for those services or utilities.

The following mitigation measures will be implemented to reduce impacts to public services resulting from construction of the project:

- All operations personnel working on the turbines will work in pairs. In the unlikely event that an injury occurs while working in the nacelle, all staff will be trained in lowering injured colleagues from the nacelle. A rescue basket, specially designed for this purpose, will be kept at the operations and maintenance facility and will be available for use by local emergency medical services personnel. Training in rescue basket recovery will also be provided to local EMS personnel by the Applicant.
- The Applicant will provide all police, fire, and emergency medical personnel with emergency response details for the project including detailed maps of the project site access roads, Applicant contact information, procedures for rescue operations to the nacelles, and location of the rescue basket.
- The Applicant will consult with the County regarding the impact on county law enforcement staffing. If additional staffing is required, the Applicant shall pay the additional costs for law enforcement associated with construction impacts and activities to be provided by the County Sheriff's office or a private onsite security, as deemed necessary.
- Potential impacts on fire services will be mitigated by the following:
  - The Applicant has entered in to a contract with Ellensburg Rural Fire District #2 to provide fire protection services during both construction and operation of the Project. Applicant will provide Kittitas County with copies of signed agreements with the Fire District for staff review prior to work starting on any phase of the project;
  - Provisions for special training of fire district personnel for fires related to wind turbines;

- Training for EMS personnel in the use of a rescue basket that will be kept at the operations and maintenance facility for the purpose of removing injured employees from the WTGs;
- Providing detailed maps to fire districts that show all access roads to the project;
- Providing keys to a master lock system to fire districts that will enable emergency personnel to unlock gates that would otherwise limit access to the project;
- Use of spark arresters on all power equipment (e.g., cutting torches and cutting tools), when necessary due to extreme fire danger conditions;
- Informing workers at the project of emergency contact phone numbers and training them in emergency response procedures;
- Carrying fire extinguishers in all maintenance vehicles;
- Providing water supply for fire fighting locations beyond the contracted fire districts;
- Conducting FCC-style communication study or appropriate study to ensure that emergency responders communications will not be derogated by the wind generators, thus eliminating or reducing all communications on site by any emergency responders;
- Implementing an FAA-style lighting plan to prevent aircraft mishaps to limit fire response;
- Having an environmental clean-up company under contract to provide services to protect the environment up to and beyond small incidents, including planning, implementing, and storing of all material considered to be harmful; and
- Supplying water for fire fighting at locations up and beyond the contracted fire districts to keep the fire in a manageable size incident.

### **3.12.4.2 Operation and Maintenance**

During operation of the project, impacts to local services and utilities are expected to be insignificant. However, emergency preparedness planning will be implemented as mentioned above, to reduce potential impacts in the event of an emergency.

- The Applicant will make arrangements with the Kittitas Valley Community Hospital for helicopter transportation service in the unlikely event that any operations personnel are seriously injured and require evacuation from a remote location within the project area.
- The Applicant has entered in to a contract with Ellensburg Rural Fire District #2 to provide fire protection services during both construction and operation of the Project. Applicant will provide Kittitas County with copies of signed agreements with the Fire District for staff review prior to work starting on any phase of the project.
- The Applicant will work with Kittitas County Fire Marshal and effected fire districts for all aspects of operations.

## **CULTURAL RESOURCES**

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### **3.13.4 Mitigation Measures**

The Applicant has identified the mitigation measures described below.

As recommended by the Assistant Archaeologist at OAHP, 100-foot design and construction buffers will be maintained around the archaeological and historical sites identified during this current cultural resource survey, even though they do not meet the standard qualifications for NRHP. OAHP requested that the project archaeologist flag off or otherwise delineate the archaeological sites with a 100-foot buffer. Ground disturbing actions within a specified radius of any archaeological sites, either recorded during the initial survey or previously documented, will be monitored by a professional archaeologist to prevent damage or destruction to both known and unanticipated archaeological resources.

If any archaeological materials, including but not limited to human remains, are observed, excavation in that area will cease, and OAHP, EFSEC, the affected tribes and the Applicant will be notified. At that time, appropriate treatment and mitigation measures will be developed and implemented. If the project cannot be moved or re-routed to avoid resources, the resources will be tested for eligibility for listing in the NRHP. Any excavation or disturbance to the archaeological sites will require an excavation permit from OAHP per RCW 27.53.060. The archaeologist will remove any flagging tape or pin flags at the end of the construction-monitoring phase of the project.

If a tribe requests to have one of their representatives present during earth-disturbing construction activities, the Applicant will comply with their wishes. In all cases, the project shall note all concerns raised through tribe requests.

# **TRAFFIC AND TRANSPORTATION**

## **3.14.4 Mitigation Measures**

No significant unavoidable adverse impacts on traffic and transportation are associated with construction or operation of the proposed action. However, the Applicant has proposed the implementation of the following measures.

### **3.14.4.1 Construction**

- The Applicant will prepare a Traffic Management Plan (to be submitted to EFSEC and Kittitas County prior to construction for review), with the construction contractor outlining steps for minimizing construction traffic impacts;
- The Applicant will provide notice to adjacent landowners when construction takes place to help minimize access disruptions;
- The Applicant will provide proper road signage and warnings of "Equipment on Road," "Truck Access," or "Road Crossings" along Vantage Highway;
- When slow or oversized wide loads are being hauled, appropriate vehicle and roadside signing and warning devices will be deployed per the Traffic Management Plan. Pilot cars will be used as the DOT dictates, depending on load size and weight;
- The Applicant will construct necessary site access roads and an entrance driveway that will be able to service truck movements of legal weight and provide adequate sight distance;
- The Applicant will encourage carpooling for the construction workforce to reduce traffic volume;
- In consultation with Kittitas County, the Applicant will provide detour plans and warning signs in advance of any traffic disturbances;
- The Applicant will employ flaggers as necessary to direct traffic when large equipment is exiting or entering public roads to minimize risk of accidents;
- Where construction may occur near the roadway, one travel lane will be maintained at all times;

In addition to mitigation measures proposed by the Applicant, the following will be implemented:

- Applicant will videotape Transporter Route 1 roadways to document pavement conditions before and after construction and address changes in discussions with the City of Kittitas and Kittitas County.

### **3.14.4.2 Operation**

Operation and maintenance of the WHWPP would not significantly affect traffic. However, the following measure is proposed.

- Follow FAA guideline for a wind turbine lighting and warning system.

# HEALTH AND SAFETY

## 3.15.4 Mitigation Measures

In addition to those mitigation measures already identified above, the following would be implemented to reduce the risks to health and safety.

### 3.15.4.1 Fire and Explosion

Table 3.15-2 provides the mitigation measures that would be implemented to reduce risk of fire and explosion.

Table 3.15-2. Fire and Explosion Risk Mitigation Measures

Type of Impact Construction (C) Operation (O) Decommissioning (D)	Potential Fire or Explosion Source	Mitigation Measures
C, O, D	General fire protection	All onsite service vehicles will be fitted with fire extinguishers.  Fire station boxes with shovels, water tank sprayers, etc., will be installed at multiple locations on site along roadways during summer fire season.  A minimum of one water truck with sprayers will be present on each turbine string road during construction activities during fire season.
C, O, D	Dry vegetation in contact with hot exhaust catalytic converters under vehicles	No gas-powered vehicles will be allowed outside of graveled areas.  Mainly diesel vehicles (i.e., without catalytic converters) will be used on site.  Any vehicles used off road on site will be high-clearance vehicles.
C, O, D	Smoking	Restricted to designated areas (outdoor gravel covered areas).
C, O	Explosives used during blasting for excavation work	Only state-licensed explosive specialist contractors are allowed to perform this work. Explosives require special detonation equipment with safety lockouts.  Vegetation will be cleared from the general footprint area surrounding the excavation zone to be blasted.  Standby water spray trucks and fire suppression equipment will be present during blasting activities.
C, O	Electrical fires	All equipment will be designed to meet NEC and NFPA standards.  All area surrounding substation, fused switch risers on overhead pole line, junction boxes and pad switches will be graveled with no vegetation.

Type of Impact Construction (C) Operation (O) Decommissioning (D)	Potential Fire or Explosion Source	Mitigation Measures
C, O, D	Lightning	A fire suppressing, rock-filled oil containment trough will be created around the substation transformer. Specially engineered lightning protection and grounding systems will be used at wind turbines and at substation. Footprint areas around turbines and substation will be graveled with no vegetation.
C, D	Portable generators – hot exhaust	Generators will not be allowed to operate on open grass areas. All portable generators will be fitted with spark arrestors on exhaust system.
C, D	Torches or field welding on site	Immediate surrounding area will be wetted with water sprayer. Fire suppression equipment will be present at location of welder/torch activity.
C, O	Electrical arcing	Electrical designs and construction specifications will meet or exceed requirements of NEC and NFPA.

## Release or Potential Release of Hazardous Materials

### *Phase I Environmental Site Assessment*

The applicant conducted a Phase I Environmental Site Assessment (ESA) for the project site. The Phase I ESA did not reveal the presence or potential presence of any environmental contamination on the project site. In the event that contaminated soil would be encountered during construction, the applicant would coordinate with the Washington Department of Ecology to determine the measures to be taken.

### **Emergency Medical Response**

Medical emergencies would normally be handled by calling 911 and alerting the Emergency Medical Services (EMS) system. The City of Ellensburg Fire Department provides EMS for the entire County, directly billing for services that include treating burns, fractures, lacerations, fall injuries, and heart attacks. Ambulances are located in Ellensburg and Kittitas; Cascade Search and Rescue is located in Ellensburg. Emergency calls are dispatched through the sheriff's office to the fire districts that provide search and rescue support.

Kittitas Valley Community Hospital in Ellensburg serves the entire County. The hospital has level four trauma service, with a limited number of specialists available. Patients with head injuries, severe burns, and/or trauma are transported to a different facility, usually Harbor View Medical Center in Seattle. Less severe accident victims are sometimes transported to Yakima for hospitalization and treatment. There is a heliport on the roof of the hospital, and a helicopter is available for emergency response.

MedStar, a critical care transport service located in Moses Lake, Washington, also provides air ambulance support services to the County.

All operations personnel working on the turbines would work in pairs. All turbine maintenance staff would be trained in lowering injured personnel should an injury occur while working in the nacelle. A rescue basket, specifically designed for that purpose, would be kept at the operations and maintenance facility and would be available for use by local EMS staff. Training in use of the basket would be provided to local EMS staff.

### **Compliance with Standards**

The wind turbines for the proposed project would meet international engineering design and manufacturing safety standards including the International Electrotechnical Commission standard 61400-1: Wind Turbine Generator Systems—Part I: Safety Requirements.

### **Aircraft Impact**

The project facilities would be marked and lighted in accordance with FAA regulations to minimize the potential for a low-flying aircraft to collide with a structure.

### **Transmission Line Audible Noise and Electromagnetic Interference**

The conductors for the proposed transmission line would be of sufficient diameter to control corona effects. Also, the applicant has indicated that special care would be employed during construction to minimize nicks and scrapes to the conductors.

### **Emergency Plans**

Emergency plans would be prepared by the applicant to protect public health and safety, and the environment on and off the site in the case of a major natural disaster or industrial accident relating to or affecting the proposed project. The applicant would be responsible for implementing the plans in coordination with the local emergency response support organizations. The plans would address the following:

- medical emergencies;
- construction emergencies;
- project evacuation;
- fire protection and prevention;
- floods;
- extreme weather abnormalities;
- earthquakes;
- volcanic eruption;
- facility blackout;
- spill prevention, control, and countermeasures;
- blade or tower failure;

- aircraft impact;
- terrorism, sabotage, or vandalism; and
- bomb threat.

Section 4.6 of the ASC provides a brief description of the plans. EFSEC, as well as local emergency response organizations, would review and approve all plans before they were implemented. During the construction and startup period, the emergency plans would be revised, as needed, to conform to manufacturer and vendor safety information for the specific equipment installed. Preliminary operations and maintenance emergency plans would similarly be developed and approved prior to the start of project operations.

The project operating and maintenance group and all contractors would receive regular emergency response training as part of the regular safety-training program to ensure that effective and safe response actions would be taken to reduce and limit the impact of emergencies at the project site.