# Attachment A

## Project Design Features and Best Management Practices
## for
## RECORD OF DECISION
## North Steens 230kV Transmission Line Project
## Case File Number: OR-65891

## INTRODUCTION

The PDFs and BMPs listed below will be incorporated into the project design and implemented during construction and operation of the Transmission Project.

## PROJECT DESIGN FEATURES AND BEST MANAGEMENT PRACTICES FOR THE TRANSMISSION PROJECT

The following PDFs and BMPs applicable to the Transmission Project were extracted from Appendix A of the FEIS for North Steens 230kv Transmission Line Project and are consistent with the "Standard Project Design Features and Environmental Protection Measures" described in the POD for the Echanis Substation to Diamond Junction 230kV Transmission Line Project or North Steens Mountain 230kV Transmission Line Project prepared by Columbia Energy Partners in February 2009 as revised August 2009 and May 2011. The transmission line facilities described in the POD will be designed and constructed by Echanis LLC.

The term "Holder" as used below refers to Echanis, LLC or its assigns. The term "Authorized Officer" refers to the BLM official responsible for managing compliance with the terms and conditions of the ROW grant.

### Project Design Features and Best Management Practices

Construction and future O&M activities will be conducted in a manner that minimizes damage to the environment and complies with the stipulations in the ROW grant, applicable BLM resource management plans, NEPA regulations, and other applicable federal, state and local regulations and guidelines. The following PDFs and BMPs will be included as conditions of approval in the ROW grant(s) for the transmission line.

### General PDFs and BMPs

- All construction vehicle movement outside of the ROW will be restricted to pre-designated access, contractor acquired access, or public roads.
- The limits of construction activities will be predetermined, with activity restricted to and confined within those limits. No paint or permanent discoloring agents will be applied to rocks or vegetation to indicate surveyor construction activity limits. The ROW boundary will be flagged in environmentally sensitive areas described in the plan of development to alert construction personnel that those areas will be avoided.
- In construction areas where recontouring is not required, vegetation will be left in place wherever possible to avoid excessive root damage and allow for resprouting.

- In construction areas where ground disturbance is significant or where recontouring is required, surface restoration will occur as required by the landowner or land management agency. The method of restoration typically will consist of returning disturbed areas to their natural contour (to the extent practical), reseeding or re-vegetating with native plants (if required), installing cross drains for erosion control, placing water bars in the road, and filling ditches. Seed will be tested and certified weed-free using an All States Weed Test. Seed viability also will be tested at a certified lab approved by the authorized officer.
- Watering facilities (e.g., tanks, developed springs, water lines, wells, etc.) will be repaired or replaced to their pre-disturbed conditions as required by the landowner or land management agency if they are damaged or destroyed by construction activities.
- Prior to construction, all construction personnel will be instructed on the protection of cultural, paleontological, and ecological resources. To assist in this effort, the construction contract will address, a.) Federal and state laws regarding antiquities, fossils, and plants and wildlife, including collection and removal; and b.) The importance of these resources and the purpose and necessity of protecting them.
- An initial intensive cultural resource inventory survey will be conducted prior to construction. Impact avoidance and mitigation measures developed in consultation with appropriate land management and regulatory agencies and other interested parties will be implemented subsequent to the completion of the NEPA compliance document. In addition, supplemental surveys of appurtenant impact zones beyond the corridor will be undertaken as needed.
- Any cultural and/or paleontological resource discovered during construction by the Holder or any person working on the Holder's behalf on public or federal land will be reported immediately to the authorized officer. The Holder will suspend operations in the area until an evaluation is completed to prevent the loss of cultural or scientific values.
- All construction and maintenance activities will be conducted in a manner that will minimize disturbance to vegetation, drainage channels, and intermittent and perennial streambanks. In addition, dust-control measures will be utilized as necessary during construction in sensitive areas. All existing roads will be left in a condition equal to or better than their condition prior to the construction of the transmission line.
- All requirements of those entities having jurisdiction over air quality matters will be adhered to and any necessary permits for construction activities will be obtained. Open burning of construction trash (cleared trees, etc.) will not be allowed on BLM administered lands.
- Fences and gates, if damaged or destroyed by construction activities, will be repaired or replaced to their original predisturbed condition as required by the landowner or the land management agency. Temporary gates will be installed only with the permission of the landowner or the land management agency.
- During operation of the transmission line, the ROW will be maintained free of construction related non-biodegradable debris.
- Totally enclosed containment will be provided for all hazardous materials (if needed) .and trash. All construction waste including trash, litter, garbage, other solid waste, petroleum

products, and other potentially hazardous materials will be removed to a disposal facility authorized to accept such materials.

- Structures will be constructed to conform to *Suggested Practices for Avian Protection on Power Lines: State of the Art in 2006 (Avian Power Line Interaction Committee (APLIC) 2006)*.
- Third-party environmental contractors will be used throughout the construction effort, from clearing through rehabilitation.
- The Holder will trim trees in preference to cutting trees, and will cut trees in preference to bulldozing them.
- Construction holes left open overnight will be covered to prevent livestock or wildlife from damage.
- The Holder will clean off-road equipment (power or high-pressure cleaning) of all mud, dirt, and plant parts prior to moving equipment onto public land to minimize introductions of noxious weeds.
- The Holder will respond to complaints of line-generated radio or television interference by investigating the complaints and implementing appropriate mitigation measures. The transmission line will be patrolled on a regular basis so that damaged insulators or other line materials that could cause interference are repaired or replaced.
- The Holder will apply necessary mitigation to minimize problems of induced currents and voltages onto conductive objects sharing a ROW, to the mutual satisfaction of the parties involved.
- The proposed hardware and conductor will limit the audible noise, radio interference (RI), and television interference (TVI), due to corona. Tension will be maintained on all insulator assemblies to assure positive contact between insulators, thereby avoiding sparking. Caution will be exercised during construction to avoid scratching or nicking the conductor surface, which may provide points for corona to occur.

**Approved Work Areas**

- All construction and future O&M activities will occur within the Holder's permitted ROW. Activities that extend outside the permitted ROW on BLM land are not permitted without the approval of the BLM.
- In construction areas where recontouring is not required, disturbance will be limited to overland driving where feasible to minimize changes in the original contours. Large rocks and vegetation may be moved within these areas to allow vehicle access.
- In an effort to minimize the general environmental impacts of construction, structures will be placed to avoid sensitive features, especially riparian areas and watercourses and/or to allow conductors to clearly span the features, within limits of standard pole design.
- All waste products and food garbage from construction sites will be deposited in a covered waste receptacle and removed daily. Garbage will be hauled to a suitable disposal facility.

- Ground disturbance will be limited to that necessary to safely and efficiently install the proposed facilities.
- Existing improvements will be repaired or replaced to their condition prior to disturbance if they are damaged or destroyed by construction activities, as agreed to by the parties involved.
- Fences and gates will be installed, replaced, or repaired to their condition prior to disturbance if they are damaged or destroyed by construction activities, or as required by the Authorized Officer.
- Hazardous materials will not be drained onto the ground or into streams or drainage areas. Totally enclosed containment will be provided for all trash.
- Where blasting is required, appropriate safety guidelines will be followed, as required by state and federal regulations relating to blasting operations.
- Fire protection measures will be followed, as required by state and federal regulations, to prevent wildfires that may cause damage to wildlife habitat.
- Appropriate traffic control measures will be used to ensure public safety during construction. Prior notice will be given for any extended delays or road blockage.

Access roads will usually be inspected annually. Maintenance requirements will vary depending on the type of road, level of use, and condition of the road. Typically, maintenance will be conducted when road conditions threaten resource values or public safety or impede access for transmission-line maintenance personnel. In the event of a conflict between the Holder's requirements and the requirements of the BLM, the requirements of BLM will take precedence.

### Vegetation Management

Vegetation can interfere with the flow of electric power, pose safety problems, and interfere with future O&M activities. Maintaining adequate clearance between vegetation and conductors is essential to safe and reliable operations. The rights-of-way for the Project are dominated by grassland and sagebrush vegetation communities and interference with conductors is not anticipated. However, if vegetation management is required, the Holder will generally schedule it according to maintenance cycles (e.g., 5- or 10-year cycles). Tall trees and shrubs will be trimmed and hazard trees removed. Hazard trees are those trees or snags likely to interfere with transmission lines or associated facilities. To minimize potential fire damage, the Holder will clear vegetation within a 10-foot radius around each pole and apply an approved herbicide within the area to minimize regrowth.

#### *Noxious Weed Control*

Under the requirements of the ROW grant, the Holder will be responsible for control of noxious weed species that result or will result from the construction, operation and maintenance of the improvements authorized under the grant. Therefore, a noxious weed control strategy has been developed to reduce the opportunity for weeds to invade new areas and to minimize the spread of weeds within the Project Area.

To decrease the potential for the introduction or spread of undesirable vegetation, the following BMPs and PDFs will be followed during construction and O&M activities:

- Personal vehicles, sanitary facilities, and work areas will be confined to areas specified in the POD. For construction and prolonged O&M projects, maintenance equipment, materials, and vehicles will be stored at the sites where activities will occur or at specified maintenance yards.
- The responsible party will clean all equipment that may operate off-road or disturb the ground before beginning construction and O&M activities within the Project Area. This process will clean tracks and other parts of the equipment that could trap soil and debris and will reduce the potential for introduction or spread of undesirable exotic vegetation. Preferably, the cleaning will occur at a Holder operation center, commercial car wash, or similar facility. Vehicles traveling only on established roads are not required to be cleaned.
- The transmission line and wind farm would be monitored and treated for noxious weeds annually. The Holder will minimize the use of herbicides to control plants, to the extent consistent with the required control.
- The Holder will prepare a revegetation plan in consultation with the BLM when necessary. The plan will specify appropriate re-vegetation timing, techniques, and seed mixes. Adherence to this plan will also help limit the spread and establishment of noxious weeds. Certified "noxious weed-free" seed will be used on all areas to be restored. Other construction material, such as fill, shall also be free of noxious weed seed.

**Revegetation and Restoration**

- The Holder will provide all seed. Seed will meet the requirements of the Federal Seed Act and applicable Oregon State laws about seeds and noxious weeds. Only seed certified as "noxious weed free" will be used. If requested, the Holder will provide the BLM with evidence of seed certification. In addition, the seed must be appropriate to the geographic and elevation characteristics of the area to be seeded (2,870 to 3,480 feet). The actual seed mix applied may depend on the availability of seed but will have a minimum of 98.0 percent purity, 84.0 percent germination and 0.0 percent weed content. The Authorized Officer will approve any changes to the seed mix.
- The Holder, or its designated contractor, is to seed an area after construction or after ground disturbing O&M activities are completed. The best time to seed is in the fall (September to November). If fall seeding cannot be done, spring seeding should take place in February or March, as conditions dictate. Ground maintenance patrols will review the line periodically. Routine maintenance will include replacing damaged insulators as needed and tightening nuts and bolts. The Holder will follow its safety protocols with respect to line operation and maintenance. Maintenance activities require minimal and infrequent access. Such activities will typically be performed overland. Winter access if required can be performed overland except in the cases of heavy snowfall in which case over-snow vehicles will be utilized.
- The Holder will be responsible for repairing measurable damage to resources and roads resulting from construction and O&M activities. The primary objective will be to restore denuded areas, reduce the spread of noxious weeds, and reduce storm water runoff and soil erosion. Any measurable damage will be repaired as soon as weather, ground, and scheduling conditions permit. In some cases, reclamation methods may not be necessary, given the limited amount of soil compaction and vegetation destruction. The BLM will

decide the degree of reclamation needed for the construction project and for ground disturbing O&M activities.

- The Holder will follow the specifications outlined in this section when roads and other disturbed areas are re-vegetated. If the Holder no longer requires a road for patrolling and maintenance, the access road will be abandoned, re-vegetated, and stabilized by erosion control methods, if necessary.
- The Holder, or its designated contractor, will seed an area after construction or after ground disturbing O&M activities are completed. The preferred time to seed will be in the fall (September to November). If fall seeding cannot be done, spring seeding will take place in February or March, as conditions dictate.
- The Holder will also minimize the use of herbicides to control plants, but will undertake a plan to control noxious weeds resulting from the construction and operation of the Facilities. The Holder will treat vegetation and weeds under State and Federal herbicide application guidelines, in consultation with the BLM Weed Coordinator, MNWR Weed Personnel, and the Harney County Weed Supervisor. Application would occur in the appropriate season and phenology with an appropriately licensed two man crew. Vehicle-mounted sprayers (e.g., handgun, boom, and injector) would be used in open areas that are readily accessible by vehicle. Hand application methods (e.g., backpack spraying) that target individual plants would be used to treat small or scattered weed populations in rough terrain.

**Streams, Riparian Areas, and Wetlands**

The Holder will exercise care to ensure protection of all aquatic, riparian, and wetland habitat on BLM administered land. To minimize the amount of disturbance, structures locations will be chosen to avoid features such as riparian areas and watercourses and/or to allow conductors to clearly span the features, within limits of standard pole design. During future O&M activities, if woody vegetation within 100 feet of streams needs to be managed, it will be cut with a chainsaw. Herbaceous plants and low-growing shrubs will be left in place.

- Clearly mark wetland boundaries and buffers in the field until construction is complete;
- Conduct construction in wetland areas during the dry season, to minimize water flow through exposed soils;
- Use sediment barriers to prevent sediment flow into wetland and riparian areas;
- Prohibit the storage of hazardous materials and equipment refueling within 100 feet of any wetland, riparian areas, or water body (500 feet on BLM land);
- Restore disturbed areas to preconstruction contours, restore or replace damaged vegetation, and implement any required vegetation monitoring plans; and
- Develop and adhere to the Erosion and Sediment Control Plan.
- Riparian vegetation will be avoided to the extent compatible with construction objectives.
- If riparian vegetation has been trampled or otherwise disturbed, revegetation planting will include riparian meadow species.

- "End haul" construction methods will be considered for portions of the main access road to Echanis where the road parallels riparian and wetland areas. End haul construction refers to situations where a cut is made in a side slope and the spoils are hauled to a disposal site or used for fill in less critical areas. This method helps to avoid placing fill above water features and ensures downslope vegetation remains intact between the road and water feature to act as a buffer and sediment filter.

**Sensitive Plants**

The following PDFs and BMPs will help minimize construction and O&M effects on sensitive plant species identified during the environmental review of the Project:

- Prior to construction, all supervisory personnel will be instructed on the protection of natural resources, including sensitive plant species and habitats. The construction contract will address, a.) Federal and state laws regarding plants; b.) The importance of these resources; c.) The purpose and necessity of protecting them; and d.) Methods for protecting sensitive resources.
- Sensitive plant populations that occur within the ROW and work areas will be marked on the ground, where practical, to ensure that the species are avoided. If species are discovered during the work, the Holder will establish a spatial buffer zone and immediately contact the BLM. The Authorized Officer may evaluate the adequacy of the buffer on a case-by-case basis. Until the BLM authorizes the Holder to proceed, either orally or in writing, all activities will cease within the buffer zone. After the Project is complete, or no longer will poses a threat to the plant population, the marking (stakes) promptly be removed to protect the site's significance and location from unwanted attention.
- Sensitive plant populations near the ROW, but not within work areas, will be protected by marking the edges of the ROW and access roads in the general vicinity to ensure that workers do not leave those areas. If the plants are within work areas that have, or will have, ground disturbance, the Holder will establish a species appropriate buffer zone around the population. Marking will be immediately removed at the end of construction activities within that area. As needed, marking will be reinstated during the land rehabilitation period.
- For sensitive resource issues where marking is not appropriate, work in designated areas will be modified or curtailed during critical periods. The Authorized Officer, in advance of construction or maintenance, will approve sensitive areas and time frames. Emergency repair situations are excluded from this restriction.
- Contractors will be provided with maps showing avoidance areas; these will include established work zones as well as ROW areas where overland travel should be avoided.
- In the event any sensitive plants require relocation, permission will be obtained from BLM. If avoidance or relocation is not practical, the topsoil surrounding the plants will be salvaged, stored separately from subsoil and respread during the restoration process.

**Sensitive Wildlife**

Sensitive wildlife are wildlife species with the potential to occur near the Project that are designated either as threatened, endangered, candidate, species of concern by the FWS or as

BLM sensitive species. If these species are found to occur near construction or O&M activities, the Holder will implement the following PDFs and BMPs:

- Prior to construction, all supervisory personnel will be instructed on the protection of natural resources. To assist in this effort, the construction contract will address: (a) Federal and state laws regarding plants and wildlife; (b) the importance of these resources and the purpose and necessity of protecting them; and (c) methods for protecting sensitive resources (e.g., Endangered Species Act, MBTA, BGEPA, and BLM wildlife policy).
- If sensitive wildlife species are discovered during construction and O&M activities, and the animals are not directly within ground disturbance areas, they will be protected by marking the edges of the ROW and access roads in the general vicinity to ensure that workers do not leave those areas. If the animals are within work areas that have, or will have, ground disturbance, the Holder will establish a species and temporal appropriate buffer zone and then will contact BLM immediately. The Authorized Officer may evaluate the adequacy of the buffer on a case-by-case basis. Until BLM authorizes the Holder to proceed, either orally or in writing, all activities must cease within the buffer zone. After the Project is completed, or no longer poses a threat to the species, the marking (stakes) will be removed to protect the site's significance and location from unwanted attention. As needed, marking will be reinstated during the land rehabilitation period.
- For sensitive resource issues where marking is not appropriate, work in designated areas will be modified or curtailed during critical periods. The Authorized Officer, in advance of construction or maintenance, will approve sensitive areas and time frames. Emergency repair situations are excluded from this restriction.
- If sensitive wildlife species are killed or injured due to construction or O&M activities, the ODFW, the FWS, and the Authorized Officer will be notified.
- If construction activities affect wintering deer from December 1 to March 15, the Authorized Officer may restrict activities if impacts are deemed to be excessive.
- The Construction Manager will ensure all construction workers are knowledgeable of the legal harvest seasons, methods of take, and bag limits for deer, elk, pronghorn, upland game birds, and cottontail rabbits. All on-site personnel will be made aware that all birds of prey are protected by Federal and State laws.
- To facilitate identification of potential conflicts with sensitive wildlife species, the Holder will maintain a spatial database of known locations near access road and transmission-line ROW. This database will be updated following construction of the new line to protect sensitive wildlife during future O&M activities.
- With the exception of emergency repair situations, major O&M activities in designated areas with sensitive wildlife species will be modified or curtailed during sensitive periods (e.g., nesting and breeding periods). BLM will be notified in advance of major activities therefore, sensitive periods and areas of concern can be approved in advance of maintenance by the Authorized Officer.
- Contractors will be provided with maps showing avoidance areas; these will include established work zones as well as ROW areas where overland travel should be avoided.

- The Holder will conduct pre-construction surveys to identify raptor and migratory bird nests. Empty nests will be removed. If occupied nests are found, the Holder, in consultation with the BLM and or FWS, will establish a suitable buffer around the nest and avoid the area or relocate the nest.
- New structures will be built in accordance with raptor-safe standards specified in APLIC (2006).
- Small migratory bird nests in both grassland and sagebrush are difficult to locate and are only occupied for a few weeks in late spring. However, if an occupied nest is found within an active, or soon to be active, work zone it could be flagged and avoided, or possibly moved. The Authorized Officer will decide on a case by case basis.
- Echanis, LLC would implement a Habitat Mitigation Plan, under which it would mitigate the habitat impacts from the Project through the use of conservation easements and other offset mechanisms described in the ROD.

**Raptor and Owl Protection**

The ferruginous hawk, short-eared owl, and burrowing owl are the only raptor species of special concern likely to nest in the Project Area. These species will be present from about March through July. For the ferruginous hawk, young or eggs could be directly impacted if nests are abandoned or have to be removed by construction crews. This is a highly unlikely event as ferruginous hawks typically prefer to nest in juniper trees, on rock outcrops, and on the ground. Burrowing owls nest underground so eggs and young could be killed by heavy vehicles or any surface disturbance.

The Holder's biologists will conduct surveys prior to structure removal or rebuild, to identify potential conflict areas of raptor nesting territories in the immediate vicinity of the ROW. Nests under construction, but not yet with eggs that are present in an area scheduled for work during that nesting season will be removed. However if nests with eggs or young need to be moved the Holder will consult with the ODFW and the FWS to decide on the proper action and to obtain an additional permit to move the nest. In the event that a successful move was unlikely, construction activities in that area may be delayed or access roads rerouted as appropriate. The Authorized Officer will make this decision.

If occupied raptor territories are observed off of the poles, the extent of likely construction disturbance will be assessed. If necessary, spatial and temporal management buffers could protect occupied territories. White and Thurow (1985) recommended no activities within 250 meters of an occupied ferruginous hawk nest, and Richardson and Miller (1997) recommended no major actions within 800 meters of an occupied nest.

Burrowing owls are mostly crepuscular and nocturnal and will not likely be significantly disturbed by construction or O&M activities as long as their burrows were not directly impacted. A buffer of 100 meters will be established for occupied burrows. Buffers for other raptor species will be decided as needed by the BLM biologist and Authorized Officer.

## Cultural Resources

Any cultural and/or paleontological resource [fossil(s) or historic or prehistoric site or object] discovered by the Holder, or its designated contractor, on BLM land will be immediately reported to the Authorized Officer. If new probable historic, cultural, or paleontological resources are discovered during construction, potentially destructive work within 300 feet of the find will be halted. Pursuant to 43 CFR 10.4(g), the holder of the authorization must notify the Authorized Officer, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), activities in the vicinity of the discovery must be stopped and protected for 30 days or until notified to proceed by the Authorized Officer. The Holder's construction inspector will immediately implement the following measures:

- Flagging will be erected to prohibit potentially destructive activities.
- The Holder's archaeologist will make a preliminary assessment of the newly discovered resource.
- If the archaeologist determines that the discovery represents a potential new site or an undocumented feature of a documented site, the BLM will be notified and processes identified by the respective agencies will be followed.
- Construction will not resume in the identified area until cleared by the archaeologist (private land) or Authorized Officer (public lands managed by the BLM).

PDFs and BMPs for cultural resources include the following:

- Prior to construction, all supervisory personnel will be instructed on the protection of cultural resources. The construction contract will address a.) Federal and state laws; b.) The importance of these resources; c.) The purpose and necessity of protecting them; and d.) Methods for protecting sensitive resources.
- <u>For sites to be avoided, the boundaries of identified cultural resources and buffer zones will be staked in the field and flagged as no-disturbance areas to avoid inadvertent disturbance during construction. These site markings will be removed following construction.</u>
- Construction crews and vehicles will be constrained to designated access roads and not allowed to travel cross-country near known sites. Where an access road intersects a site, the road sides will be posted to indicate that no off-road activity may occur. Marking will be coordinated with the BLM and installed by personnel appointed by the Holder. After construction or the O&M activity is complete or no longer poses a threat to the cultural resources, the stakes will promptly be removed to protect the site's significance and location from unwanted attention.
- Contractors will be provided with maps showing avoidance areas; these will include established work zones as well as ROW areas where overland travel should be avoided.
- The Holder will avoid, where possible, potential NRHP eligible archaeological resources and historic cultural features with the Project APE by relocating the transmission line, changing

pole placement, shifting the alignment of access roads, or narrowing the construction corridor.

- If avoidance is not possible, further testing and formal evaluations for eligibility for listing in the NRHP will be conducted for each resource.
- Formal evaluations will include further documentation and inventory and boundary delineation through testing.

**Unanticipated Discovery of Human Remains**

All human interments will be treated with the respect accorded them by state and federal laws applying to human remains. If the discoveries are unanticipated, state law does not distinguish between historic or prehistoric burials as far as what steps are required for initial notification or disinterment. If human remains are discovered on BLM administered lands during construction or future O&M activities, the Holder will stop all work in the immediate area to protect the integrity of the find and notify the county sheriff and BLM as soon as possible. In addition, the location of the find will be flagged or fenced off to protect it from further impacts. The BLM will determine what mitigation is necessary and, once the mitigation is complete, work can resume in the area.

**Aesthetic Resources**

The Holder will implement the following PDFs and BMPs to protect aesthetic resources:

- No paint or permanent discoloring agents will be applied to rocks or vegetation to indicate limits of survey or construction activity.
- Weathered steel poles, which have a rusted appearance, will be used for the 230 kV transmission line to reduce visual contrasts.
- Nonspecular conductors will be used to reduce visual impacts.
- All stakes and flagging will be removed from the construction area and disposed of in a State approved landfill.

**Geology, Soils, Biological Soil Crusts, and Erosion**

- An Erosion and Sediment Control Plan will be developed and implemented for the Project as required by the Oregon DEQ National Pollutant Discharge and Elimination System Stormwater Discharge Permit (Oregon DEQ 2005) and pursuant to Oregon Revised Statutes 468B.050 and Section 402 of the Federal Clean Water Act.
- Turbine, tower and other structure locations will be surveyed for active faults and landslide hazards prior to finalizing site locations. In addition, structures will be built to seismic specifications and landslide hazard precautions (Smith 2008).
- Areas to be cleared will be clearly marked and sensitive areas to be avoided will be flagged. Any areas that will not be cleared will retain vegetation in place.

- Sediment control structures and application will be used to minimize erosion. Measures include stabilization of site entrances and access roads prior to earthwork and perimeter sediment control, e.g. sediment basins, traps and barriers.
- Construction vehicles will be restricted to access roads, public roads and the ROW. Roads will be cleared of mud and debris and tracking of sediment onto roads will be minimized. Work will temporarily stop if conditions are wet enough to cause ruts greater than three inches deep.
- Disturbed surfaces will be returned to original contours where possible and revegetation using salvaged native vegetation or BLM (or property owner) approved seed mixes will be performed following construction activities.
- Good housekeeping measures will be implemented during construction and after completion. All refuse will be kept out of the ROW and disposed of properly. Hazardous materials will be contained and disposed of in an authorized facility.
- A Hazardous Substance Control and Emergency Response Plan will be put into place and workers will be trained in its implementation.
- An Erosion and Sediment Control Plan will be developed and implemented for the Project as required by the Oregon DEQ National Pollutant Discharge and Elimination System Stormwater Discharge Permit (Oregon DEQ 2005) and pursuant to Oregon Revised Statutes 468B.050 and Section 402 of the Federal Clean Water Act.
- All development will be constructed under guidelines presented in Chapter 7 of the Harney County Comprehensive Plan (Harney County 2009) and Section 4.070 of the Harney County Zoning Ordinance (Harney County 2002).

**Water Resources (surface and groundwater) and Floodplains**

- All Erosion and Sediment Control (ESC) measures will be in place and functioning before any construction activities occur. Sediment barriers will include sediment fences, berms, straw wattles. Run-on and run-off control measures include slope drains, check dams, surface roughening, and bank stabilization.
- Long-term slope stabilization measures will include the establishment of permanent vegetative cover via seeding with approved mixes and application rates. Slopes to receive temporary or permanent seeding will be roughened by means of track-walking or other approved implements. Surface roughening improves seed bedding and reduces run-off velocity.
- The ESC measures will be maintained until construction is complete and all vegetation is established.
- Long term slope stabilization measures including matting will be in place over all exposed soils by October 1.
- Temporary slope stabilization measures may include covering exposed soil with plastic sheeting, straw mulching, or other approved measures.
- Each site will have constructed entrances, exits and parking areas with exit tire wash to reduce the tracking of sediment onto roads. These areas will be kept clean.

- Stockpiled soil or strippings will be placed in a stable location and configuration. Soil stockpiles will have temporary stabilization or covering at the end of each workday. Sediment fences will be installed around stockpiles.
- Areas to be cleared will be clearly marked and sensitive areas to be avoided will be flagged.
- Any areas that will not be cleared will retain vegetation in place.
- Sediment controls will be installed and maintained along the site perimeter on all down-gradient sides of the construction.
- Temporary and/or permanent soil stabilization measures will be applied immediately on all disturbed areas as grading progresses and on all roadways.
- Sediment will be removed from behind a sediment fence when it reaches a height of 1/3 the height of the fence and also before fence removal. Sediment will be removed from behind other barriers when it reaches a height of two inches and before removal. Trapped sediment in a sediment basin will be removed when the sediment retention capacity has been reduced by fifty percent and at the end of the Project.
- If construction activities cease for thirty days or more, the entire site will be temporarily stabilized using vegetation, a heavy mulch layer, temporary seeding, or other method. If construction ceases for 15 days or more temporary stabilization will occur with straw, compost, or other tackified covering.
- All pumping of sediment laden water will be discharged over an undisturbed, preferably vegetated area, and through a sediment control BMP such as a filter bag.
- BMPs will be inspected before, during, and after major storm events. Daily inspections will occur during rainfall and runoff events.
- Construction activities will avoid or minimize excavation and creation of bare ground on slopes greater than five percent from October 1 through May 31.
- All exposed soils will be covered during the wet weather period.
- Temporary stabilization of the site will be installed at the end of the workday if rainfall is forecast in the next 24 hours.
- Large amounts of sediment leaving the site will be cleaned up within 24 hours and placed back on the site and stabilized or properly disposed. Preventative measures for recurrence will be in place within the same 24 hours.
- In areas subject to wind erosion, appropriate PDFs and BMPs will be used, such as the application of fine water spray, plastic sheeting, mulch or other approved measures.
- No non-sediment pollutants will be allowed to enter stormwater, such as from of concrete truck wash water, vehicle and equipment cleaning, vehicle and equipment fueling, maintenance, and storage, other cleaning and maintenance activities.
- Any toxic or other hazardous materials will be properly stored, applied and disposed.
- The application rate of fertilizers used to reestablish vegetation will follow manufacturer's recommendations to minimize nutrient releases to surface waters.

- To reduce the potential for erosion, riprap, boulders and vegetation will be used to stabilize slopes outside of the streams. Slash and boulders will be placed at the side or downslope of the roads to act as a sediment filter. Disturbed surfaces will be revegetated using salvaged native vegetation or BLM (or property owner) approved seed mixes and will be performed following construction activities.
- Areas to be cleared will be clearly marked and sensitive areas to be avoided will be flagged.
- Any areas that will not be cleared will retain vegetation in place.
- Construction vehicles will be restricted to access roads, public roads and the ROW. All construction equipment and vehicles will cross the water bodies over bridges and existing access routes. Roads will be cleared of mud and debris and tracking of sediment onto roads will be minimized.
- Heavy construction equipment will work from the banks rather than the water body as much as practicable.
- A water truck will be used to minimize dust. The water source will be local surface water. Dust control may also use straw, wood chips, dust reducing agents, and gravel. The temporary pipe and storage tanks or any other water facilities will be returned to the pre-construction condition.16
- Erosion and sediment controls will be installed within 100 feet of riparian areas or water bodies during construction. Measures include stabilization of site entrances and access roads prior to earthwork and perimeter sediment control, e.g. sediment basins, traps and barriers.
- Good housekeeping measures will be implemented during construction and after completion. All refuse will be kept out of the ROW and disposed of properly. Hazardous materials will be contained and disposed of in an authorized facility.
- The use of herbicides will be minimized as much as possible, but noxious weed control will be required.
- Equipment used near or in water bodies will be checked for leaks of oil or other fluids on a daily basis.
- Any potential spills of hazardous material will be addressed through standard construction PDFs and BMPs. See Section 3.17.2 Public Health and Safety: Hazardous Materials for further details.
- Dewatering locations will be sited in areas of adequate vegetation or dry drainages.
- Should dewatering locations be sited in dry drainages, there will be a minimum of 0.25 mile within the drainage between the dewatering location and any water.
- Dewatering locations will not be located within 100 feet of any drainage that contains water, wetlands, or specific cultural sites. Discharge water will be directed to prevent flow from moving to these areas.
- The duration of dewatering discharges will be minimized by scheduling dewatering operations immediately prior to backfilling.

- Trench disturbance (i.e., additional excavation) will be minimized to the extent practicable while dewatering is in progress.
- The hose intake will be suspended above the bottom of the trench to minimize sediment taken in during the pumping operation.
- Burial of the distribution line will occur during the dry season to minimize the effects of trenching through intermittent water ways.

**Transportation and Access**

Public use of access roads will be determined on a case-by-case basis by the BLM. The Holder is responsible for road closures mutually agreed to by the Holder and the BLM (that is, roads that are closed to the public, but accessible to the BLM, and the Holder for maintenance purposes). The following PDFs and BMPs will help to minimize access road effects on resources.

- In areas where recontouring is not required, disturbance will be limited to overland driving where feasible to minimize changes in the original contours. Large rocks and vegetation may be moved within these areas to allow vehicle access
- In areas where soils are particularly sensitive to disturbance, existing access roads will be repaired only to where they are passable with an overland vehicle.
- Work will be temporarily halted where wet conditions cause excessive rutting (>3 inches deep) of roads and/or work areas.
- When overland routes in the ROW are chosen, contractors will avoid destruction of sagebrush and slick spots when alternative routes within the ROW are available (e.g., existing spurs to old poles).
- To limit new or improved accessibility into the area, all new access roads that were neither desired nor required for maintenance will be closed using the most effective and least environmentally damaging methods appropriate to that area, with concurrence of the Authorized Officer.
- All existing roads will be left as close to an undeveloped nature (i.e., two-track road) as possible without creating environmental degradation (e.g., erosion or rutting from poor water drainage) or unsafe conditions.
- Where appropriate, roads will be maintained to have crossroad drainage in order to minimize the amount of channeling or ditches needed. Water bars will be installed at all alignment changes (curves), significant grade changes, and as requested by the Authorized Officer.
- All existing road drainage structures will be maintained or repaired by the Holder during construction and future O&M activities.
- Access roads and other areas of ground disturbance, within the construction limits will be watered, as needed, to remain compact and to avoid the creation of dust. This may also require the limitation of types of equipment, vehicle speeds, and routes utilized during construction. Water, weed-free straw, wood chips, dust reducer, gravel, or a combination of these or similar control measures may be used.

- In areas where soils are particularly sensitive to disturbance, existing roads will be repaired only to where they are passable with an overland vehicle.
- Work will be temporarily halted where wet conditions cause excessive rutting of roads and work areas.
- When overland routes in the ROW are chosen, contractors will avoid destruction of sagebrush and slickspots when alternative routes within the ROW are available (e.g. existing spurs to old poles).
- To limit new or improved accessibility into the area, all new access roads that were neither desired nor required for maintenance will be closed using the most effective and least environmentally damaging methods appropriate to that area.
- All existing access roads will be left as close to an undeveloped nature (i.e. two-track road) as possible without creating environmental degradation (e.g. erosion or rutting from poor water drainage) or unsafe conditions.
- Where appropriate, access roads will be maintained to have crossroad drainage in order to minimize the amount of channeling or ditches needed. Water bars will be installed at all alignment changes (curves) and significant grade changes.
- All existing road drainage structures will be maintained or repaired during construction and future operation and maintenance activities.
- Access roads will be inspected annually. Maintenance requirements will vary depending on the type of road, level of use, and condition of the road. Typically, maintenance will be conducted when road conditions threaten resource values or public safety or impede access for transmission-line maintenance personnel. In the event of a conflict between owner/operator's maintenance requirements and the maintenance requirements of the BLM, the requirements of BLM will take precedence.

## Public Health and Safety

### *Fire Hazards*

- O&M activities will follow industrial fire precaution levels and regulations. Fire regulations are generally effective between April 1 and October 31 and at other times with unusual weather conditions. The Holder will clear trees and tall objects to provide adequate distance from objects over and under the transmission line for the life of the Project.
- The Holder is responsible for inspecting the transmission line for fire hazards. When working on or around transmission lines on BLM administered lands during fire season, the Holder's employees and contractors will have approved suppression tools and equipment. All power-driven equipment, except portable fire pumps, will be equipped with one fire extinguisher and one long handled round point shovel. In addition, each truck and passenger-carrying vehicle will be equipped with a double-bit axe (i.e. Pulaski). In some conditions each internal combustion engine will be equipped with a spark arrester.
- If the Holder becomes aware of an emergency situation that is caused by a fire on, or threatening, BLM administered lands that could damage transmission lines or their operation, it will notify the appropriate BLM contact. Likewise, if the BLM becomes aware of an

emergency situation that is caused by a fire on, or threatening, BLM administered lands that could damage transmission lines or their operation, BLM will notify the appropriate Holder contact.

- As part of routine maintenance, the Holder will visually and physically inspect the transmission line route to check for structural and conductor defects, as well as for conductor clearance problems.
- Reduction of fuel loads around poles in fire-prone areas will occur by removing vegetation within a 10-foot radius and treating the area with an herbicide and applying a fire retardant to the base of all poles in compliance with corresponding regulations on Agency lands.
- Conduct pre-construction survey and engineering activities in late spring prior to the presence of fire danger. Roads construction will occur in the fall after the fire danger declines. Additionally, for any construction activities required during times when a fire danger exists, a fire fighting apparatus will be deployed in conjunction with construction activities.
- When working on or around transmission lines on BLM lands during fire season, the Holder's employees and contractors will have approved suppression tools and equipment. All power-driven equipment, except portable fire pumps, will be equipped with one fire extinguisher and one long handled round point shovel. In addition, each truck and passenger-carrying vehicle will be equipped with a double-bit axe. In some conditions each internal combustion engine will be equipped with a spark arrester.
- Construction activities will follow industrial fire precaution levels and regulations. Fire regulations are generally effective between April 1 and October 31 and at other times with unusual weather conditions. The Holder will construct the towers and transmission lines to comply with minimum ground clearances set forth by state and federal regulators and will clear trees and tall objects to provide adequate distance from objects over and under the transmission line.
- Personal vehicles, sanitary facilities, and work areas will be confined to areas specified in the POD. For construction and prolonged O&M Projects, maintenance equipment, materials, and vehicles will be stored at the sites where activities will occur or at specified maintenance yards.
- Construction and O&M activities will follow industrial fire precaution levels and regulations. Fire regulations are generally effective between April 1 and October 31 and at other times with unusual weather conditions.
- The Holder will be responsible for inspecting the transmission line for fire hazards. When working on or around transmission lines on BLM lands during fire season, the Holder's employees and contractors will have approved suppression tools and equipment. All power-driven equipment, except portable fire pumps, will be equipped with one fire extinguisher and one long handled round point shovel. In addition, each truck and passenger-carrying vehicle will be equipped with a double-bit axe or Pulaski. In some conditions each internal combustion engine will be equipped with a spark arrester.
- If the Holder becomes aware of an emergency situation that is caused by a fire on or threatening, BLM administered lands and that could damage transmission lines or their

operation, it will notify the appropriate BLM contact. Likewise, if the BLM becomes aware of an emergency situation that is caused by a fire on or threatening, BLM lands and that could damage transmission lines or their operation, BLM will notify the appropriate Holder contact.

- All wildfire protection measures will be followed as required by state and federal regulations. During construction, fire management will primarily be provided by the developer. This is often accomplished by ensuring that there are fire response equipment (e.g. water truck and bull dozer) and trained personnel on site.

**Noise and Vibration**

- Construction noise will be limited to daytime, weekday hours (e.g., 6 a.m. to 10 p.m.).
- Noise reduction features (e.g. mufflers and engine shrouds) will be used on all pieces of construction equipment and will be no less effective than those originally installed by the manufacturer.
- Where feasible construction traffic will be routed away from residences.
- Unnecessary construction vehicle use and idling time will be minimized. The ability to limit construction vehicle idling time is dependent upon the sequence of construction activities and when and where vehicles are needed or staged. A “common sense” approach to vehicle use will be applied; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. (Note: certain equipment, such as large diesel-powered vehicles require extended idling for warm-up and repetitive construction tasks.)
- To the extent possible, construction crews will not conduct pile driving or blasting within 100 feet of fragile structures or areas with sensitive uses.
- To the extent possible, construction equipment will not be operated within 25 feet of fragile structures or areas with sensitive uses.

**Hazardous Materials**

- Hazardous materials will not be drained onto the ground or into streams or drainage areas. Totally enclosed containment will be provided for all trash.
- Secondary containment will be provided for all hazardous materials and waste, including fuel. Fuel stored on site for construction vehicles and equipment would be temporary and would only occur to support construction activities.
- Totally enclosed containment will be provided for all hazardous materials (if needed) and trash. All construction waste including trash, litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials will be removed to a disposal facility authorized to accept such materials.
- Construction sites, material storage yards, and access roads will be kept in an orderly condition throughout the construction period. Refuse and trash, including stakes and flags,

will be removed from the sites and disposed of in an approved manner. No construction equipment oil or fuel will be drained on the ground. Oils or chemicals will be hauled to an approved site for disposal. No open burning of construction debris will occur on BLM administered lands.

- The Holder will also minimize the use of herbicides to control plants, but will undertake a plan to control noxious weeds resulting from the construction and operation of the facilities.
- In the event any pesticides or herbicides will be used on the site, the facility operator will comply with all State of Oregon and federal laws and regulations regulating the handling, storage, use, and disposal of those pesticides or herbicides. Pesticides or herbicides will be applied only by the landowner or, upon consultation with the landowner, by a professional charged with observance of all regulations governing use and selection of herbicides.
- The Holder will provide for solid waste disposal at a regulated and licensed landfill.
- The Holder will provide BLM with a comprehensive list of hazardous materials that will be used, stored, transported, or disposed of during activities associated with site construction, operation, and maintenance. The Holder will develop a hazardous materials management plan which establishes inspection procedures for storage, quantity limits, inventory control, use, non-hazardous product substitutions, transportation, and disposal of each hazardous material expected to be used on site. The plan will also include an emergency response plan and identify requirements for notices to federal and local emergency response authorities.
- The Holder will develop a waste management plan for both solid and liquid waste that identifies wastes that are expected to be generated at the site. This plan will address hazardous waste determination procedures, waste storage locations, waste-specific management and disposal requirements, inspection procedures, and waste minimization procedures.
- The Holder will develop a spill prevention and response plan. The plan will identify the location of stored hazardous wastes and materials, spill prevention measures, training requirements, the appropriate spill response actions for each hazardous material or waste, and the locations of spill response kits. The plan will also include a requirement to ensure that spill response kits will be adequately stocked at all times and procedures for making timely notification to local, state, and federal authorities.
- An integrated pest management plan will be developed if pesticides will be used. The plan will ensure that pesticides applications will be within the framework of BLM and DOI policies. Only non-persistent, immobile, EPA-registered pesticides will be applied. Pesticides will be applied in accordance with terrestrial and aquatic application permits and labels directions.