Mitigation Action Plan
for the
Central Ferry-Lower Monumental 500-kilovolt Transmission Line Project

Mitigation Measures	Time of Implementation
Geology and Soils	
• Prior to construction, conduct a detailed geologic hazard assessment for the selected action alternative. This assessment will include a review of geologic maps and aerial photomaps combined with surface condition assessments at each proposed tower location and surrounding terrain. In addition, subsurface information will be obtained from water well logs, material exposed in existing road and stream-cut slopes, and construction/design information from the existing transmission lines in the project area. Particular attention will be given to on-site evaluation of the slope stability of each proposed tower location. Tower or road locations found to be within previously unidentified active slides, bedrock hollows, or other geologic hazard areas will be relocated outside the limits of these areas.	Prior to construction
• Prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) to lessen soil erosion and improve water quality of stormwater run-off. SWPPPs are developed to prevent movement of sediment off-site to adjacent water bodies during short term or temporary soil disturbance at construction sites. The SWPPP for this project will address stabilization practices, structural practices, and stormwater management.	Prior to, during, and after construction
• Design access roads to control runoff and prevent erosion by using low grades, outsloping, intercepting dips, water bars, or ditch-outs, or a combination of these methods.	During design
• Minimize construction equipment use within 150 feet of a water body (stream or river).	During construction
• Surface all permanent access roads with rock to help prevent erosion and rutting of road surfaces and to support vehicle traffic.	During construction
• Minimize construction on steep, unstable slopes, if possible.	During construction
• Save topsoil removed for structure and new access road construction for onsite restoration activities to promote regrowth from the native seed bank in the topsoil. If contaminated, follow-up weed control will be needed.	During and after construction
• Cover exposed piles of soil with plastic or similar material to reduce erosion potential from rain or wind.	During construction
• Cut or crush vegetation, rather than blade, in areas that will remain vegetated in order to maximize the ability of plant roots to keep soil intact and prevent sediment movement offsite.	During construction
• Revegetate or reseed all disturbed areas with a native plant/grass seed mixture, suited to the site and landowner, to promote vegetation that will hold soil in place.	After construction
• Till or scarify compacted soils before reseeding where necessary.	After construction

Mitigation Measures	Time of Implementation
• Monitor erosion control Best Management Practices (BMPs) to ensure proper function and nominal erosion levels.	During and after construction
• Monitor revegetation and site restoration work for adequate growth; implement contingency measures as necessary.	After construction
• Mark construction limits within agricultural fields or grasslands to minimize disturbance.	Prior to construction
• Inspect and maintain project facilities, including the access roads.	During and after construction
• Inspect and maintain tanks and equipment containing oil, fuel, or chemicals for drips or leaks and to prevent spills onto the ground or into state waters.	During and after construction
• Maintain and repair all equipment and vehicles on impervious surfaces away from all sources of surface water.	During and after construction
• Refuel and maintain equipment at least 25 feet from any natural or manmade drainage conveyance including streams, wetlands, ditches, catch basins, ponds, and pipes, and provide spill containment and cleanup. Utilize pumps, funnels, and absorbent pads for all equipment fueling and maintenance operations.	During and after construction
• Provide spill prevention kits at designated locations on the project site and at the hazardous material storage areas.	During construction
• Minimize the number of road stream crossings.	During design and construction
• Stabilize cut and fill slopes.	During and after construction
Land Use	
• Provide a schedule of construction activities to all landowners who could be affected by construction.	Prior to and during construction
• Compensate landowners for any new land rights required for right-of-way easements, or to construct new, temporary or permanent access roads.	After construction
• Plan and conduct construction activities to minimize temporary disturbance, displacement of crops, and interference with agricultural activities.	Prior to and during construction
• Use BMPs to limit erosion and the spread of noxious weeds.	Prior to, during, and after construction
• Restore compacted cropland soils to pre-construction conditions.	After construction
• Compensate landowners for any damage to property including crops during construction and maintenance activities.	After construction
• Minimize or eliminate public access to project facilities through postings and installation of gates and barriers at appropriate access points and, at the landowner's request, on private property.	During and after construction

Mitigation Measures	Time of Implementation
Vegetation	
• Maintain vegetation within the transmission line corridor as guided by BPA's Transmission System Vegetation Management Program EIS.	After construction
• Limit ground-disturbing activities to tower sites, access roads, and staging areas; stake or flag native grassland or sensitive cropland areas prior to initiating construction.	Prior to and during construction
• Limit road improvements to the minimum amount necessary to safely move equipment, materials, and personnel into and out of the construction area.	During construction
• Avoid introduction of non-native seed into areas of native grassland and/or areas where non-native species are not yet well established.	During and after construction
• Use an approved native seed mix to re-vegetate areas of native grassland disturbed during construction activities.	After construction
• Use an approved mixture of native and non-native species or seed for re-vegetation in areas where non-native species are already well established (i.e., disturbed grassland).	After construction
• Use a seed mix approved by the local Farm Service Agency to re-vegetate areas of Conservation Reserve Program land that are disturbed during construction activities.	After construction
• Threatened, Endangered, and Sensitive Plant Species (TES) ➢ Conduct additional surveys for TES plant species in all areas of native grassland, as well as areas classified as potential habitat, during spring/summer 2010. ➢ Consult with the US Fish and Wildlife Service concerning any federally listed TES plant species that are identified and implement any mitigation measures to eliminate or reduce adverse impacts to these species.	Prior to construction
• Noxious Weeds ➢ Comply with all federal noxious weed control regulations and guidelines, and comply with state and county noxious weed control regulations and guidelines to the extent practicable. ➢ Wash all equipment using pressure or steam before entering the project area and when leaving discrete patches of noxious weeds. ➢ Map and flag noxious weed populations for construction crews so these populations can be avoided when possible. Clean vehicles after leaving these areas to avoid the spread of noxious weeds. ➢ Use seed mixes to revegetate construction areas that meet the requirements of federal, state, and county noxious weed control regulations and guidelines. ➢ Use certified weed-free straw for erosion control during construction and restoration activities. ➢ Cooperate with private, county, state, and federal landowners to treat noxious weeds along access roads that will be used to bring construction equipment into the project area to reduce the introduction and spread of noxious weeds and noxious weed seeds.	Prior to, during, and after construction

Mitigation Measures	Time of Implementation
➢ Apply herbicides according to labeled rates and recommendations to ensure protection of surface water, ecological integrity, and public health and safety. ➢ Conduct a post-construction noxious weed survey to determine whether noxious weeds have been spread within the project area. Take corrective action if needed	
Recreation	
Impacts to recreational use will largely be associated with changes in viewsheds and the general recreational experience from the presence of the proposed transmission line. Mitigation measures concerning these potential visual effects are identified below under Visual Resources.	Prior to and after construction
Wildlife	
• Install bird flight diverters where the project corridor crosses the riparian corridor of the Tucannon River.	During construction
• Avoid construction activities within 0.6 mile of any active raptor nest during the raptor nesting season (e.g., March 1 to August 15 for ferruginous hawks, February 15 to July 15 for golden eagles), if possible.	During construction
• Avoid construction activities within Priority Habitats and Species-designated mule deer winter range during the mule deer winter range period from November 1 through March 31, if possible.	During construction
• If identified, confirmed Washington ground squirrel colonies will be avoided during peak above-ground activity in the spring	During construction
• Maintain all existing BPA gates. Wherever permitted by landowners or land managing agencies, gates will be installed to limit vehicular use of new access roads.	Prior to, during, and after construction
• Use slow speeds when operating vehicles or equipment during construction activities located in grasslands or croplands.	During construction
Water Resources and Fish	
• Design culverts and drainage controls placed in non-fish bearing streams to preserve natural drainage patterns.	During design
• Maintain unobstructed passage for water at all culverts placed in non-fish bearing streams and promptly remove any blockages to protect the roadbed and prevent sedimentation of downstream waterbodies.	During and after construction
• Install and maintain water and sediment control measures at all waterbodies (including dry waterbodies) crossed by access roads or otherwise impacted by surface disturbance.	Prior to and during construction
• Regularly inspect and maintain the condition of access roads, culverts, and sediment control measures to prevent long-term impacts during operation and maintenance.	During and after construction
• Avoid storing, transferring, or mixing of oils, fuels, or other hazardous materials where accidental spills could enter surface or groundwater. Have spill response and clean-up materials onsite and clean-up all spills immediately.	During and after construction

Mitigation Measures	Time of Implementation
• Maintain, fuel, and repair heavy equipment and vehicles using spill prevention and control measures. Contaminated surfaces will be cleaned immediately following any spill incident.	During and after construction
• Use secondary containment for on-site fueling tanks.	During and after construction
• Limit fuel tank and truck storage to at least 100 feet from all streams, dry or flowing. Limit vehicle fueling to 25 feet from all streams, dry or flowing.	During and after construction
Visual Resources	
• Preserve vegetation within the 150-foot-wide right-of-way that would not interfere with the conductor or maintenance access needs. Most of the vegetation along the proposed transmission line routes is low-growing sagebrush or agricultural crops, both of which are compatible with transmission line safety and operations.	During construction
• Locate construction staging areas away from visually sensitive locations. The contractor hired to construct the transmission line will be responsible for determining appropriate staging locations, but potential staging locations include parking lots in Starbuck and Dayton, and possibly Pomeroy.	During construction
• Use non-reflective conductors.	During design and construction
• Use non-reflective insulators (i.e., non-ceramic or porcelain).	During design and construction
• Locate new access roads within previously disturbed areas wherever possible.	During design and construction
• Revegetate disturbed areas with approved species.	After construction
• Require that contractors maintain a clean construction site and all related equipment, materials, and litter be removed following completion of construction.	During construction
Cultural Resources	
• Design the transmission line so that tower sites are placed to avoid cultural resources.	During design
• Design new access roads to avoid cultural resources, and minimize the potential for trespassing access, where possible.	During design
• Improve the existing road system in a manner that minimizes new roads and avoids cultural resource sites. If improvements are needed on existing roads that cross through cultural resources sites, such improvements would be constructed in a manner to avoid/minimize impacts, such as using fabric and rock or other mitigation agreed to during the consultation process.	During design and construction
• Consult with the Washington Department of Archaeology and Historic Preservation (DAHP) , the Nez Perce Tribe, and the Confederated Tribes of the Umatilla Indian Reservation regarding National Register of Historic Places eligibility of cultural sites and Traditional Cultural Properties(TCPs).	Prior to construction

Mitigation Measures	Time of Implementation
• Develop an Inadvertent Discovery Plan that details crew member responsibilities for reporting in the event of a discovery during construction.	Prior to construction
• Ensure tribal monitors from the Nez Perce Tribe and/or the Confederated Tribes of the Umatilla Indian Reservation are present if work within prehistoric sites or TCPs cannot be avoided.	During construction
• Prevent unauthorized collection of cultural materials by ensuring a professional archaeologist and tribal monitor are present during any excavation within known sites.	During construction
• Prepare a Mitigation Plan to address adverse effects to potentially eligible TCPs; protect sites in-situ if final placement of project elements results in unavoidable adverse impacts to other significant cultural resources	Prior to construction
• Stop work immediately and notify local law enforcement officials, appropriate BPA personnel, Washington DAHP, the Nez Perce Tribe, and the Confederated Tribes of the Umatilla Indian Reservation, if cultural resources, either archaeological or historical materials, are discovered during construction activities. Also contact Washington Department of Natural Resources (WDNR) if on state lands.	During construction
Socioeconomics and Public Facilities	
• Compensate landowners at market value for any new land rights required for corridor easements or acquired for new temporary or permanent access roads on private lands.	After construction
• Initiate discussions with local fire districts prior to construction and work with the districts and other appropriate emergency response to develop a Fire and Emergency Response Plan that addresses potential wildland fires and other emergencies.	During and after construction
Transportation	
• Obtain a Haul Road Agreement and any additional permits or approvals from state and local agencies prior to construction. These documents will identify any special conditions to be addressed by BPA and their contractors during construction and operation of the project.	Prior to and during construction
• Prepare an erosion control plan that includes measures to stabilize construction entrances and exits to prevent sediments from being transported onto adjacent roadways.	Prior to construction
• Route traffic around affected intersections if construction vehicles cause temporary traffic blockages on local roadways.	During construction
• Employ traffic control flaggers and post warning signs of construction activity and merging traffic when necessary.	During construction
• Comply with applicable seasonal road restrictions for construction traffic, where practicable.	During construction
• Restore public roadways to their pre-construction conditions or better upon completion of project construction activities.	After construction

Mitigation Measures	Time of Implementation
• Design and construct new access roads to minimize runoff and soil erosion.	During design and construction
• Reclaim any road-related disturbance areas after construction is completed.	After construction
• Install gates at the entrances to access roads when required or requested by landowners to reduce unauthorized use. Coordinate gate locks with landowners to ensure that both BPA and the landowner have access.	After construction
• Work with WDNR concerning a possible cooperative agreement for the control of unauthorized public access and use on state lands that could result from the proposed project. The agreement could address various provisions related to unauthorized access, such as additional measures to be taken to discourage unauthorized use of the project corridor and associated access roads, periodic inspection for unauthorized access and any resulting damage, and repair of any damage from unauthorized access.	During and after construction
• Install marker balls on the conductor and lights on towers at the Tucannon River crossing if required by the FAA.	During construction
Noise, Public Health and Safety	
• Install sound-control devices on all construction equipment.	During construction
• Muffled exhaust will be installed on all construction equipment and vehicles except helicopters.	During construction
• Notify landowners directly impacted along the corridor prior to construction activities, including blasting.	Prior to construction
• Hold crew safety meetings during construction at the start of each workday to go over potential safety issues and concerns.	During construction
• Secure the site at the end of each workday to protect equipment and the general public.	During construction
• Train employees as necessary, in structure climbing, cardiopulmonary resuscitation, first aid, rescue techniques, and safety equipment inspection.	Prior to, during, and after construction
• Fuel all highway-authorized vehicles off-site to minimize the risk of fire. Fueling of construction equipment that is transported to the site via truck and is not highway authorized will be done in accordance with regulated construction practices and state and local laws. Helicopters will be fueled and housed at local airfields or at staging areas.	During construction
• Adhere to BPA's specifications for grounding fences and other objects on and near the existing and proposed rights-of-way during construction.	During construction
• Construct and operate the new transmission line in accordance with the National Electrical Safety Code, as required by law.	During and after construction
• Restore reception quality if radio or television interference occurs as a result of the transmission line. Reception needs to be as good or better than before the interference.	After construction
• Carry fire suppression equipment including (but not limited to) shovels, buckets, and fire extinguishers on all construction, operation and maintenance vehicles.	During and after construction

Mitigation Measures	Time of Implementation
• Use established access roads during routine operation and maintenance activities.	After construction
• Clear vegetation according to BPA standards to avoid contact with transmission lines.	During and after construction
• Contact the appropriate BPA representative if hazardous materials, toxic substances, or petroleum products are discovered within the project area that would pose an immediate threat to human health or the environment. Other conditions such as large dump sites, drums of unknown substances, suspicious odors, stained soil, etc. must also be reported immediately to BPA.	During and after construction
• Limit construction activities to daytime hours (i.e., only between 7:00 a.m. and 7:00 p.m.)	During construction
• Prepare and maintain a safety plan in compliance with Washington requirements. This plan will be kept on-site and will detail how to manage hazardous materials such as fuel, and how to respond to emergency situations.	During construction
• Ensure that helicopter pilots and contractors take into account public safety during flights. For example, flight paths could be established for transport of project components to avoid flying over populated areas or near schools.	During construction
• Take appropriate safety measures for blasting consistent with state and local codes and regulations. Lock up or remove all explosives from the work site at the end of the workday.	During construction
• Install implosive fittings used to connect the conductors in a way that minimizes potential health and safety risks.	During construction
• Stay on established access roads during routine operation and maintenance activities.	After construction
• Submit final tower locations and conductor heights to the FAA for review. Install lights or marker balls as required.	During design and construction
Air Quality	
• Use water trucks to control dust during construction operations.	During construction
• Cover construction materials if they are a source of blowing dust.	During construction
• Limit the amount of exposed soil, including dirt piles and open pits, to a minimum.	During construction
• Prevent wind erosion by reseeding disturbed areas with grass or an appropriate seed mixture as soon as reasonably possible following construction activities.	After construction
• Avoid burning during construction activities.	During construction
• Ensure construction vehicles travel at low speeds on gravel roads and at the construction sites to minimize dust.	During construction
• Comply with Washington State tailpipe emission standards for all on-road vehicles.	During construction
• Ensure all vehicle engines are in good operating condition to minimize exhaust emissions.	During construction

Mitigation Measures	Time of Implementation
• Use low sulfur fuel for on-road diesel vehicles.	During construction
Greenhouse Gases	
• During construction, operation, and maintenance, trucks and heavy equipment will limit engine idling time and equipment will be shut down when not in use except when activities occur in cold weather. Provide clear signage that posts this requirement for workers at all entrances to the work sites.	During and after construction
• During construction, operation, and maintenance, all vehicles will comply with applicable federal and state air quality regulations for tailpipe emissions. Certification that vehicles meet applicable regulations will be provided to BPA in writing.	During and after construction
• Encourage carpooling and the use of shuttle vans among construction workers to minimize construction-related traffic and associated emissions.	During construction
• Locate all staging areas as close to construction areas as practicable to minimize driving distances between staging areas and construction sites.	During construction
• Locate staging areas in previously graded or graveled areas to minimize soil and vegetation disturbance where practicable.	During construction
• Maintain and certify in writing that all construction equipment is in proper working condition according to manufacturer's specifications.	During construction
• Train equipment operators in the proper use of equipment.	During construction
• Use the proper size of equipment for the job.	During construction
• Use alternative fuels such as propane or solar for generators at construction sites, or use electrical power where practicable.	During construction
• Reduce electricity use in the construction office by using compact fluorescent bulbs, and powering off computers every night.	During construction
• Submit a plan for approval to recycle or salvage non-hazardous construction and demolition debris where practicable.	During construction
• Submit a plan for approval to dispose of wood poles locally where practicable.	During construction
• Use locally sourced rock for road construction.	During construction

Possible Measures on WDNR Parcels

Measure	Implementation
Implement the Memorandum of Agreement (MOA) with WDNR that reduces noxious, invasive and undesirable species including tall growing woody plants and works towards compatible and native low growing species vegetation on WDNR lands. The MOA also will provide coordination between WDNR and BPA for the use of herbicides on lands where WDNR uses herbicides and minimizes the use of herbicides on lands where WDNR does not use herbicides.	Washington Statewide Rights-of-Way MOA / Central Ferry-Lower Monumental Easement Documents/Operations and Maintenance Agreement
Commit to developing and complying with mutually agreeable definitions, classifications, and responsibilities for BPA sole and joint use access roads for the proposed project that would be located on WDNR lands, with the goal of addressing operations and maintenance compatibility of the proposed transmission line with WDNR trust land management.	Washington Statewide Rights-of-Way MOA / Central Ferry-Lower Monumental Easement Documents/Operations and Maintenance Agreement
For any noxious weed management plans prepared for proposed weed control and other vegetation maintenance on WDNR managed trust lands as part of future line maintenance activities, coordinate preparation of these management plans with WDNR staff.	Noxious Weed Management Plans
Commit to coordinating with WDNR regarding the 1989 DNR Agricultural and Grazing Lands Policy Plan, Agriculture Business Plan, Strategic Plan, and related Resource Management Plans for affected WDNR parcels during construction and maintenance of the line and access roads over WDNR trust lands. Provide WDNR with notice of potential impacts to affected lands enrolled in the Conservation Reserve Program. Request permission to disturb ground cover as needed to complete the project and agree to restore impacted lands outside of lands developed to tower pads and access roads to the same type of cover at no expense to any applicable WDNR lessee or to WDNR as landowner.	Washington Statewide Rights-of-Way MOA
Implement the Appraisal Memorandum of Understanding (MOU) with WDNR to pay fair market value for any easement conveyances granted to BPA on trust lands.	Appraisal MOU
Utilize the Appraisal MOU with WDNR to assess the value for any reduction in CRP acreage due to construction of access roads or towers.	Appraisal MOU
Work with WDNR concerning a possible cooperative agreement for the control of unauthorized public access and use on state lands that could result from the proposed project. The agreement could address various provisions related to unauthorized access, such as additional measures to be taken to discourage unauthorized use of the project corridor and associated access roads, periodic inspection for unauthorized access and any resulting damage, and repair of any damage from unauthorized access. BPA will strive to design the corridor to prevent trespass and provide signs that discourage unauthorized use of the corridor.	Washington Statewide Rights-of-Way MOA / Central Ferry-Lower Monumental Easement Documents/Operations and Maintenance Agreement
In strategic locations identified by WDNR or BPA, mark the line easement corridor boundary so that BPA, contractors, adjacent landowners, and the public can clearly recognize when they are within the corridor to prevent uncompensated corridor expansion and vegetation management conflicts, and to reduce trespass.	Washington Statewide Rights-of-Way MOA/ Central Ferry-Lower Monumental Easement Documents/Operations and Maintenance Agreement

Measure	Implementation
Develop a mutually agreeable fire prevention and suppression plan with WDNR that addresses managing and controlling the risks associated with wildland fire due to construction, operation, and maintenance of the transmission line.	Washington Statewide Rights-of-Way MOA / Central Ferry-Lower Monumental Easement Documents/Operations and Maintenance Agreement