

**Mitigation Action Plan**  
**for the**  
**Nisqually Transmission Line Relocation Project**  
DOE/EA-1485

**Summary**

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This Mitigation Action Plan (MAP) is part of the Finding of No Significant Impact (FONSI) for the Nisqually Transmission Line Relocation Project. The Project involves moving two miles of transmission line corridor off of the Nisqually Indian Reservation and onto the Fort Lewis Military Reservation in Thurston County, Washington.

This MAP is for the Proposed Action and includes all of the commitments made in the Environmental Assessment (EA) that pertain to the proposed action to mitigate adverse environmental impacts. Some of the mitigation measures are essential to render the impacts of the proposed action not significant and other measures will decrease impacts that did not reach the level to be considered significant.

The purpose of this MAP is to explain how the mitigation measures were or will be implemented, who is responsible for implementation, and at what time during the project they will be implemented.

A Bonneville Power Administration (Bonneville) contractor will rebuild these transmission lines. To ensure that the contractor will implement mitigation measures, the relevant portions of this MAP will be included in the construction contract specifications developed for the project. This will obligate the contractor to implement the mitigation measures identified in the MAP that relate to their responsibilities during construction and post-construction.

If you have general questions about the project, contact the Project Manager, Gary Beck, at 360-619-6596. If you have any questions about the MAP, contact the Environmental Lead, Stacy Mason, at 503-230-5455 or Greg Tippetts at 360-704-1638. This MAP may be amended if revisions are needed due to new information or if there are any significant project changes.

**Consultation Related To Mitigation Measures**

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Bonneville is in the process of consulting with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act. Bonneville submitted a Biological Assessment on 08/24/04 and expects a Biological Opinion by January 2005. The Biological Opinion may reveal conservation measures that will be followed, but are not identified in this MAP.

As part of Section 106 Consultation (Historic Properties), Bonneville submitted a cultural resources report to the Washington State Historic Preservation Office (SHPO) on 04/30/04. On 05/07/04, the SHPO concurred that there are No Historic Properties Affected and stated that no additional mitigation measures are required beyond what is in the EA.

## Mitigation Parcels

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To mitigate the impacts of removing up to 236 acres of designated critical spotted owl habitat, 400 acres (6 parcels) of undesignated land will be managed by Fort Lewis as spotted owl habitat under their Northern Spotted Owl Management Plan for Designated Conservation Area WA-43 Fort Lewis, Washington. This management plan is used to manage designated spotted owl habitat on the lands surrounding the newly managed 400 acres. The 400 acres are presently owned by Thurston County and are managed for timber production. As part of the project, the Nisqually Tribe will purchase the parcels from Thurston County and exchange them with Fort Lewis for a 168-acre parcel adjacent to the Nisqually Indian Reservation.

## Native Seed Mix

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The following native grass seed mix, if available, will be used for revegetating disturbed areas, at a seeding rate of 50 pounds per acre:

- Blue wild rye (*Elymus glaucus*), native grass, 35% by weight
- Red fescue (*Festuca rubra*), 35% by weight
- California brome (*Bromus carinatus*), native grass, 10% by weight
- Yarrow (*Achillea Millefolium*), native flower, 10% by weight
- Slender wheat grass (*Agropyron trachycalum* or *Canium va. Majus*), native grass, 10% by weight

## Persons Implementing Plan

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Bonneville, Fort Lewis, and the Contractor are responsible for implementation of mitigation measures during various phases of the project. In the MAP table, the roles of the persons responsible for the implementation of that measure are included in abbreviations. For example the Project Manager is referred to in the table as the PM. With the exception of the designations of Fort Lewis or the Contractor, all personnel listed below will be Bonneville employees. The following persons will be responsible for the implementation of mitigation measures:

**Project Manager (PM):** Has the ultimate responsibility for the project (including construction specification, budget, schedule and environmental performance).

**Fort Lewis Military Reservation (Fort Lewis):** Owns the land where the line will be built and the parcels that will be used to mitigate impacts.

**Design Engineer (DE):** Works with the Environmental Specialist to site structures and other project elements, and to use construction materials and techniques that minimize adverse environmental impacts.

**Environmental Specialist (ES):** Works within either the Environmental Planning Analysis group or within the Pollution Prevention and Abatement group. Responsible for environmental planning and permitting, the preparation of the MAP, contractor orientation, monitoring of compliance with mitigation measures and resolution of any issues regarding measures.

**Contracting Officer's Technical Representation (COTR):** Includes the inspector and other Bonneville personnel who work with the contractor on a daily basis to

ensure the contractor follows the MAP and other portions of the construction specifications.

**Road Engineer (RE):** Designs and locates access roads and drainage structures utilizing construction materials and techniques to minimize adverse environmental impacts.

**Political Strategy and Public Affairs Specialist (PSPA):** Disseminates information to the public concerning the project plans and schedule.

**Lands Specialist (LS):** Works with landowners to ensure they are informed of project activities and given the opportunity to provide input; works with landowners to achieve resolution of any issues that arise.

**Construction Specifications Writer (CSW):** Works with project team members to write the construction specifications (the document the contractor will follow to implement the project).

**Forester (FOR):** Determines which trees need to be cut to ensure the safe construction and operation of the transmission line. Will work with Fort Lewis foresters and the Environmental Specialist to determine how to limit the area where trees will be removed.

**Bonneville Olympia Region staff (Olympia Region):** Responsible for ongoing operation and maintenance of the transmission line, including vegetation management and any repairs or necessary maintenance activities to structures, conductor, roads and other facilities associated with the transmission line.

**Contractor (Contractor):** Hired by Bonneville to build the project; works with the COTR to ensure that all contract specifications are followed.

Prior to project implementation, a **Contact Information Table** will be created that lists the names of persons in these roles, issues they can address, and contact information, including alternate contacts if that person is unavailable. The contact information sheet will be distributed to all Bonneville project members, contractors, and Federal and State agencies with permits or other recommendations that are within the MAP.

## MITIGATION ACTION PLAN TABLE

Resource Area and Mitigation Measure	Notes and Person(s) Responsible for Implementation	Time of Implementation
<b>Vegetation</b>		
1. Coordinate weed control activities with the Thurston County Weed Control Agency to reduce the threats of noxious weeds on the native plant community.	Conduct baseline weed survey. (FOR) Contact Thurston County Weed Control Agency to determine long-term maintenance measures. (Olympia Region)	Completed (July 2004)
2. Manage some of the County-owned parcels according to the Owl Plan, which will help maintain the integrity of native plant communities in the larger Rainier Training Area by only allowing timber harvest that benefits potential spotted owl use (such as thinning, creating mixed-age stands) and preserving the parcels from future clear-cutting.	Land exchange. (Fort Lewis and Tribe)  Manage 400 acres under Northern Spotted Owl Management Plan for Designated Conservation Area WA-43 Fort Lewis, Washington. (Fort Lewis)  See details in <b>Mitigation Parcels</b> .	Prior to construction  Once land is acquired and through life of project
3. Clean all construction vehicles before entering the Proposed Action right-of-way during construction to prevent the spread of noxious weeds.	Pressure wash all vehicles and construction equipment before entering the job site. If vehicles leave site to off-road areas, wash again before entering site. Equipment will be inspected before being brought on-site and checked periodically. (Contractor, COTR)	During construction
4. If using grillage footings, save topsoil removed for tower and new access road (spur road) construction and use onsite for restoration activities, to promote re-growth from the native seed bank in the topsoil.	(Contractor, ES)	During construction
5. Reseed tower sites as soon after disturbance as possible and when conditions are most conducive to germination. Use seed of native plant species for vegetation restoration efforts.	Reseed using native seed mix and rate described in <b>Native Seed Mix</b> above. (Contractor)	After disturbance between September 15 <sup>th</sup> and April 15 <sup>th</sup>

<b>Resource Area and Mitigation Measure</b>	<b>Notes and Person(s) Responsible for Implementation</b>	<b>Time of Implementation</b>
6. Break up compacted soils at tower sites by tilling and scarifying soils, if necessary, before reseeding.	(Contractor)	After construction and before reseeding
7. Plant tree seedlings in danger tree clearing areas to help control the spread of noxious weeds and restore native plant communities.	Plant seedlings at a rate of about 400 seedlings per acre where possible. 60% Douglas fir and 40% red cedar, using cedar where root-rot pockets are found. Oak seedlings will be used in place of red cedar, if costs are acceptable and seedlings available. Coordinate with Fort Lewis Environment and Natural Resources Division. (PM, FOR, Contractor)	After construction between September 15 <sup>th</sup> and March 30 <sup>th</sup>
8. Manage slash from tree clearing by piling, pile and burning, or lop and scattering, as appropriate.	If lop and scatter, limit scatter material to one-foot high and scatter where fallen, in right-of-way and danger tree areas. (Contractor, ES)	After tree cutting
9. Limit grubbing in the area around tower sites to lessen the impact on the roots of low-growing vegetation, so they may resprout.	Area may be mowed, if necessary, instead of grubbed to create work area. (Contractor)	During construction
10. Limit work area, including vehicle traffic, to a 200' x100' area around tangent structures, and 200' x200' at dead-end structures.	(Contractor)	During construction
11. Designate truck and equipment parking areas on roads to limit crushing of vegetation and other off-road disturbance.	(ES, Contractor)	Prior and during construction
12. Monitor all disturbed areas for restoration and revegetation success.	Disturbed areas will be inspected for final stabilization. (Contractor, ES) Reseed areas that have inadequate growth. (ES, Contractor) Tree seedlings will be monitored for approximately 5 years for survival. (FOR, Olympia Region)	During and after construction

Resource Area and Mitigation Measure	Notes and Person(s) Responsible for Implementation	Time of Implementation
13. Apply herbicide to maple stumps within newly cleared right-of-way to prevent resprouts.	Apply appropriate Garlon mixture by hand application to freshly cut maple stumps, only within the right-of-way. (Contractor) Record pounds of active ingredient applied. Record to be submitted to Fort Lewis. (Contractor, ES)	During or after tree cutting.
14. Place rock to be used for back-fill on removable fabric for stock piling. Place leftover rock to approved site.	(Contractor, ES)	During construction
<b>Wildlife</b>		
1. Manage some of the County-owned parcels according to the Owl Plan to compensate for habitat removed along the proposed right-of-way and for the Fort-owned parcel being taken out of spotted owl habitat management.	See Vegetation Mitigation Measure #2 and <b>Mitigation Parcels.</b>	
2. Limit removal of forest habitat to those trees that will interfere with or pose a potential hazard to transmission lines or access roads.	Remove tall growing vegetation from the right-of-way and access roads. (Contractor) Outside of the right-of-way, identify and remove trees that could present a threat to the lines with a 8-year growth rate. (FOR, Fort Lewis, Contractor)	During danger tree identification, tree cutting, and future maintenance
3. Revegetate disturbed areas with native plant seed.	See Vegetation Mitigation Measure #5.	
4. Create habitat piles with woody debris to enhance small animal habitat.	Using lop-and-scatter material, create about one five-foot-high pile per acre. (Contractor, ES)	During and after tree cutting
5. Restrict helicopter flight patterns to reduce disturbance to sensitive species. ▪ Instruct helicopter crew during pre-construction meetings about flight restrictions.	If helicopters are used for tower construction, tower removal or conductor stringing, use measure identified. (Contractor)	During construction

<b>Resource Area and Mitigation Measure</b>	<b>Notes and Person(s) Responsible for Implementation</b>	<b>Time of Implementation</b>
<p>specifically bald eagle and marbled murrelet sensitive areas.</p> <ul style="list-style-type: none"> <li>▪ Restrict helicopters from flying east of the existing transmission line right-of-way, specifically the Nisqually River area.</li> <li>▪ Restrict helicopter ingress and egress to avoid the Nisqually River area.</li> <li>▪ Maintain helicopter altitudes above 1,300 feet from ground level until over the project area pursuant to Fort Lewis regulations (IAW FL Reg. 420-5).</li> </ul>		
<p>6. Do not locate staging areas near any known protected species.</p>	<p>Staging site has been identified south of the project, west of SR 510 on a Fort Lewis Landing Strip #19. No protected species are located in the vicinity. (LS, ES)</p>	<p>Completed</p>
<b>Soils &amp; Geology</b>		
<p>1. Assess each tower to determine appropriate Best Management Practices (BMPs) for erosion control. Maintain BMPs for proper function.</p>	<p>(Contractor, ES)</p>	<p>Prior to and during construction</p>
<p>2. If possible, construct during the dry season (summer-fall) to minimize erosion, sedimentation, and soil compaction.</p>	<p>Construction is scheduled for May through November. (PM)</p>	<p>Completed</p>
<p>3. If using grillage footings, save topsoil removed for tower and new access road (spur road) construction and use onsite for restoration activities, to promote re-growth from the native seed bank in the topsoil.</p>	<p>See Vegetation Mitigation Measure #4.</p>	

Resource Area and Mitigation Measure	Notes and Person(s) Responsible for Implementation	Time of Implementation
4. Cover exposed piles of soil (or use other erosion control measures) if there is a threat of rain, to reduce erosion potential.	See Soils & Geology Mitigation Measure #1.	
5. Limit grubbing to the area around tower sites to lessen the impact on the roots of low-growing vegetation, so they may resprout.	See Vegetation Mitigation Measure #9.	
6. Minimize vegetation clearing at sides of access roads to two feet or less, where possible, to minimize impacts to adjacent forested areas.	(Contractor, ES)	During construction
7. Retain existing low-growing vegetation where possible to prevent sediment movement offsite.	Remove lower-growing vegetation only where necessary (tower sites and access roads). During tree removal, leave lower-growing brush species that will not cause a threat to the lines. (FOR, Contractor)	During tree cutting and construction
8. Design access roads to control runoff and prevent erosion by using low grades, outsloping, intercepting dips, water bars, culverts, or ditch-outs.	(RE, Contractor)	Design completed, supplement during construction, as necessary
9. Rock all new and existing access roads to prevent erosion and rutting.	(RE, Contractor)	Design completed, implement during construction
10. Seed all disturbed areas with a native seed mixture suited to the site, to promote re-vegetation that will hold soil in place.	See Vegetation Mitigation Measure #5.	
11. Break up compacted soils at tower sites by tilling and scarifying soils, if necessary, before reseeding.	See Vegetation Mitigation Measure #6.	

<b>Resource Area and Mitigation Measure</b>	<b>Notes and Person(s) Responsible for Implementation</b>	<b>Time of Implementation</b>
12. Monitor erosion control BMPs to ensure proper function and nominal erosion levels.	See Soils & Geology Mitigation Measure #1.	
13. Monitor revegetation and site restoration work for adequate growth; implement contingency measures as necessary.	See Vegetation Mitigation Measure #12.	
<b>Water Quality</b>		
1. Develop and implement a Spill Prevention, Control and Countermeasure Plan to minimize the potential for spills of fuels, oils, or other potentially hazardous materials to reach the seasonal perched water table or surface water bodies.	(ES, Contractor)	Prior to construction
2. Keep vehicles and equipment in good working order to prevent oil and fuel leaks.	Equipment will be inspected before being brought on-site and will be checked periodically. (ES, Contractor, COTR)	During construction
3. Contain any concrete or water contaminated with concrete and dispose of appropriately.	(Contractor)	During construction of poles or towers with concrete footings
<b>Land Use</b>		
1. Ensure that Bonneville's Project Manager was available to meet with concerned landowners to discuss issues and concerns to avoid potential land use conflicts.	Landowners were contacted by letter and some were visited to determine issues to consider with the proposed project. (PSPA, ES, LS) During construction, all information on landowner contacts will be promptly routed to Project Manager to address. (All Project Members, Contractor, PM) If landowners raise concerns, call or schedule a meeting to discuss as appropriate. (PM, LS)	Completed during planning process  Inform PM of landowner concerns within 2 business days  As needed

Resource Area and Mitigation Measure	Notes and Person(s) Responsible for Implementation	Time of Implementation
2. Distribute a proposed schedule of construction activities to all potentially-affected landowners and nearby residents along the corridor so they know when they might experience construction-related disruptions.	A letter will be sent to landowners to announce the general construction schedule. (PSPA, PM, ES or Contractor)	About 2 weeks prior to start of construction
3. Work with the Washington Department of Transportation on the construction activities and a proposed schedule to identify any traffic advisories needed.	The contractor will develop a Traffic Safety Plan that will address when signs and flaggers are needed along SR510. Bonneville will approve the Plan. (COTR, Contractor)	Prior to construction
4. Use traffic safety signs and flaggers to inform motorists and manage traffic during construction activities along SR 510.	See Land Use Mitigation Measure #3 above.	
5. Use traffic controls during construction activities to conform with industry safety standards.	See Land Use Mitigation Measure #3 above.	
<b>Visual</b>		
1. Use non-lustrous insulators (i.e., non-ceramic insulators) and non-reflective conductors.	Specify non-lustrous conductors and insulators in materials order. (DE, COTR)	During material order
2. Maintain corridor free of debris resulting from transmission line construction.	Inspect construction sites and inform contractor if there is any unwanted material that must be removed. (ES, COTR, Contractor)	During construction on a regular basis and when construction is finished.
3. Leave as many trees as possible to screen the line from view.	See Wildlife Mitigation Measure # 2.	
4. Plant tree seedlings in danger tree clearing areas to promote vegetative screen.	See Vegetation Mitigation Measure # 7.	

Resource Area and Mitigation Measure	Notes and Person(s) Responsible for Implementation	Time of Implementation
<b>Cultural Resources</b>		
<p>1. Immediately stop all construction activities in the vicinity should any previously unknown artifacts be discovered during construction until the resource can be evaluated by a qualified archaeologist. <i>Prehistoric site indicators include, but are not limited to, chipped stone, obsidian tools and tool manufacture debitage (waste flakes), grinding implements such as mortars and pestles, and darkened soil that contains organic remains of food production such as animal bone and shellfish remains. Historic site indicators include, but are not limited to, ceramic, glass, wood, bone, and metal remains.</i></p>	(Contractor, COTR, ES)	During construction
<p>2. If previously unknown artifacts are identified during construction, immediately contact representatives of the affected tribes.</p>	Contact the Fort Lewis Cultural Resource Program Manager and representatives of the Nisqually Tribe, Squaxin Island Tribe, Chehalis Tribe, Yakama Nation, Wanapum, and Puyallup Tribe. (Contractor, COTR, ES)	Immediately after artifacts are identified
<p>3. Immediately stop all construction activities in the vicinity should human remains and/or burials be encountered. Secure the area, placing it off limits for anyone but authorized personnel and immediately notify proper law enforcement, Bonneville archaeologist, and appropriate tribes.</p>	In addition to law enforcement and Bonneville personnel, contact the Fort Lewis Cultural Resource Program Manager and representatives of the Nisqually Tribe, Squaxin Island Tribe, Chehalis Tribe, Yakama Nation, Wanapum, and Puyallup Tribe. (Contractor, COTR, ES)	Immediately after remains are encountered
<b>Noise</b>		
<p>1. Use mufflers on all equipment with exhaust.</p>	(Contractor)	During construction

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2. Do not conduct noise-generating construction activities within 1,000 feet of a residential structure between the hours of 10:00 p.m. and 7:00 a.m (Washington Administrative Code).	(Contractor)	During construction
3. Restore radio or television reception to a quality as good or better than before project, if the relocated transmission lines were found to be the source of interference.	<p>If Bonneville is notified of a problem, contact and meet with the affected landowner and determine if the problem is caused by Bonneville’s transmission line. (LS, PM, Olympia Region)</p> <p>If the problem is caused by the transmission line, determine what steps are needed to remedy the problem and implement the solution. (PM, Olympia Region)</p>	<p>Respond to landowner within two weeks to schedule meeting</p> <p>As soon as possible</p>
<b>Health &amp; Safety</b>		
1. Prior to starting construction, the contractor will prepare and maintain a safety plan in compliance with Washington requirements. This plan will detail how to manage hazardous materials such as fuel, and how to respond to emergency situations. It will be kept onsite at all times.	COTR will review the plan and determine where safety plan is kept on site. (Contractor, COTR)	Prior to construction
2. During construction, the contractors will hold crew safety meetings, as appropriate, to go over potential safety issues and concerns.	(Contractor)	During construction
3. At the end of each workday, the contractor and subcontractors will secure the site to protect equipment and the general public.	(Contractor)	During Construction

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4. Employees will be trained, as necessary, in tower climbing, cardiopulmonary resuscitation, first aid, rescue techniques, and safety equipment inspection.	(Contractor)	During construction
5. To minimize the risk of fire, fuel all highway-authorized vehicles offsite. Fueling of construction equipment that was 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.	(Contractor)	During construction
6. Comply with all forest fire laws, rules and regulations of the State of Washington.	Keep apprised of fire danger levels and potential shut-downs during fire season. (Contractor, COTR)	Prior and during construction
7. Provide notice to the public of construction activities.	See Land Use Mitigation Measure #2.	
8. If implosive fittings are used when installing the conductor, employ in such a way as to minimize potential health and safety risks.	(Contractor)	During construction
9. Stay on established access roads during construction activities.	(Contractor)	During construction
10. Keep vegetation cleared to avoid contact with transmission lines.	Coordinate with Fort Lewis Environment and Natural Resources Division. (Olympia Region)	During line operation
11. During construction, follow Bonneville specifications for grounding fences and other objects on and near the proposed right-of-way.	(Contractor)	During construction

Resource Area and Mitigation Measure	Notes and Person(s) Responsible for Implementation	Time of Implementation
<b>Air Quality</b>		
1. Use water trucks on an as-needed basis to minimize dust.	Apply water to ground if soil is dry and creating dust when driven on or working in. (Contractor)	During Construction
2. Gravel or rock access roads before tower construction to minimize dust.	See Soils & Geology Mitigation Measure #9. (Contractor)	Prior to construction activities
3. Drive all construction vehicles at low speeds to minimize dust, if necessary.	(Contractor, and all others)	During construction
4. Limit burning of woody debris.	If burning of slash is necessary, obtain appropriate burning permits and coordinate timing with the Olympic Region Clean Air Agency. Provide copy of permit to Fort Lewis Environment and Natural Resources Division. (Contractor)	During construction
5. Comply with Washington State tailpipe emission standards for all on-road vehicles.	(Contractor)	During construction
6. Keep off-road vehicles in good running condition to minimize emissions.	(Contractor)	During construction
7. Use low sulfur fuel for on-road diesel vehicles.	(Contractor)	During construction
8. Reseed and revegetate the right-of-way to minimize exposed soil prone to erosion to minimize dust.	See Vegetation Mitigation Measure #5.	