Mitigation Action Plan
for the
McNary-John Day Transmission Line Project

This Mitigation Action Plan (MAP) is for the McNary-John Day Transmission Line Project, which involves construction and operation of a new 79-mile 500-kV transmission line between BPA's existing McNary and John Day substations.

This MAP includes all of the measures identified in the Final Environmental Impact Statement (EIS), DOE/EIS-0332, and committed to in the Record of Decision (ROD) for the proposed action to mitigate for adverse environmental impacts. The purpose of this MAP is to identify all mitigation commitments for the project, the responsible party for implementing each mitigation commitment, and the timing for this implementation.

BPA intends to hire a contractor to construct the transmission line. 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, Mark Korsness, at 360-619-6326. If you have any questions about the MAP, contact the Environmental Lead, Stacy Mason, at 503-230-5455 or Laura Roberts at 503-230-5073. This MAP may be amended if revisions are needed due to new information.

Persons Implementing the MAP

Various persons at BPA and the contractor will be responsible for implementation of mitigation measures during various phases of the project. In the MAP table, the following persons are identified as having mitigation responsibilities:

- **Project Manager:** Has the ultimate responsibility for the project (including construction specification, budget, schedule and environmental performance).
- **Environmental Specialist:** Works within either the Environmental Planning Analysis group or within the Pollution Prevention and Abatement group. Responsible for environmental planning and permitting, preparation of the MAP, contractor orientation, compliance monitoring and resolution of potential issues regarding measures.
- **Design Engineer:** Works with the Environmental Specialist to site facilities and use construction materials or techniques that minimize adverse environmental impacts.
- **Road Engineer:** Designs and locates access roads and drainage structures utilizing construction materials and techniques to minimize adverse environmental impacts.
- **Lands Specialist:** 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.
- **BPA District Staff (District Maintenance):** 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. Tricities District is responsible the transmission line in this area.
- **Contractor:** Hired by Bonneville to build the project; works with the BPA Contracting Officer's Technical Representative to ensure that all contract specifications are followed.

Mitigation Action Plan Table

Resource Area and Mitigation Measure	Person(s) Responsible for Implementation	Time of Implementation
Land Use and Recreation		
1. Locate towers and roads so as not to disrupt irrigation circles, where possible.	Design Engineer, Road Engineer	During design
2. Locate structures and roads outside of agricultural fields, orchards, and vineyards, where possible.	Design Engineer, Road Engineer	During design
3. Coordinate with landowners for farm operations, including plowing, crop dusting, and harvesting.	Lands Specialist, Contractor	Prior to and during construction
4. Redesign irrigation equipment and compensate landowner for additional reasonable costs where new right-of-way needs to be acquired.	Design Engineer, Lands Specialist	Prior to construction
5. Compensate farmers for crop damage and restore compacted soils.	Lands Specialist, Contractor	After construction
6. Control weeds around the base of the towers.	Environmental Specialist, Contractor, District Maintenance	After construction
7. Keep gates and fences closed and in good repair to contain livestock.	Contractor	During construction
8. Repair damages to access roads caused by or arising out of Bonneville use, leaving roads in good or better condition than prior to construction.	Contractor	After construction
Geology, Soils, and Seismicity		
1. Minimize vegetation removal.	Contractor	During construction
2. Avoid construction on steep slopes, where possible.	Design Engineer, Road Engineer	During design
3. Properly engineer cut-and-fill slopes.	Road Engineer, Contractor	During design and construction
4. Install appropriate roadway drainage to control and disperse runoff.	Contractor	During construction
5. In areas of potential wind erosion, apply gravel to access road surfaces.	Road Engineer, Contractor	During construction
6. In area of landslide (corridor miles 39 and 41) do not construct any new roads within 100 feet of slide area; reshape existing access road with out-slope to provide drainage; and site tower east of area, if possible.	Design Engineer, Road Engineer, Contractor	During design and construction
7. Apply erosion control measures such as silt fence, straw mulch, straw wattles, straw bale check dams, other soil stabilizers, and reseeding disturbed areas as required (prepare a Stormwater Pollution Prevention Plan).	Environmental Specialist, Contractor	Prior to and during construction
8. Regularly inspect and maintain project facilities, including the access roads, to ensure erosion levels remain the same or less than current conditions.	Environmental Specialist, Contractor	During and after construction

Resource Area and Mitigation Measure	Person(s) Responsible for Implementation	Time of Implementation
9. Consider helicopter construction in areas of steep slopes to lessen the size of access roads and temporary tower site impacts (laydown areas of materials).	Contractor	Prior to construction
Streams, Rivers, and Fish		
1. Place towers outside of stream riparian areas and utilize natural landscape features to span the conductor over existing shrub and tree riparian zones and avoid cutting.	Design Engineer	During design
2. Place new access roads outside of stream riparian areas, where possible.	Road Engineer	During design
3. Construct fords instead of culverts at access road crossings of dry washes or seasonal streams, where possible. Where culverts are required, design and install to accommodate flows associated with a 100-year flood event.	Road Engineer	During design
4. Where access roads cross a dry wash, the road gradient should be 0% to avoid diverting surface waters from the channel.	Road Engineer, Contractor	During design and construction
5. Preserve existing vegetation where practical, especially next to intermittent and perennial streams.	Contractor	During construction
6. Avoid construction within the 200-foot designated stream buffers in Klickitat and Benton Counties, Washington.	Design Engineer, Road Engineer, Contractor	During design and construction
7. Maximize the use of existing roads, minimizing the need for new road construction.	Road Engineer	During design
8. Avoid tower or access road construction on potentially unstable slopes, where feasible.	Design Engineer, Road Engineer	During design
9. Use erosion control methods during construction (see mitigation measures for Geology, Soils, and Seismicity), to minimize transport of sediments to streams via runoff.	Contractor	During construction
10. Install appropriate water and sediment control devices at all dry wash crossings, if necessary.	Contractor	During construction
11. Reseed disturbed areas following construction, where appropriate.	Contractor	During construction
12. Construct any required culverts using Washington Department of Fish and Wildlife culvert installation guidelines. Methods may include avoiding installation during periods of flow, armoring streambanks near the culvert entrance and exit, installing culverts on straight sections of stream to ensure unimpeded flow, and following the contour of the stream channel.	Road Engineer, Contractor	During design and construction
13. Repair existing road failures and drainage devices between corridor mile 33 to 47 to reduce potential impacts to dry washes.	Road Engineer, Contractor	During design and construction
14. Avoid blasting within 200 feet of fish-bearing or potentially fish-bearing streams during periods when salmonid eggs or alevins are present in gravels.	Contractor	During construction

Resource Area and Mitigation Measure	Person(s) Responsible for Implementation	Time of Implementation
15. Develop and implement a Spill Prevention and Contingency Plan to minimize the potential for spills of hazardous material including provisions for storage of hazardous materials and refueling of construction equipment outside of riparian zones, spill containment and recovery plan, and notification and activation protocols.	Environmental Specialist, Contractor	Prior to construction, implemented during construction
16. Keep vehicles and equipment in good-working order to prevent oil and fuel leaks.	Contractor	During construction
17. Return staging areas to pre-construction condition.	Contractor	After construction
18. Site staging areas away from streambeds.	Contractor	During construction
For Columbia River water work:		
19. Site staging area 150 feet or more from water body.	Contractor	During construction
20. If working within 150 feet of water body, check vehicles daily for leaks and diaper stationary power equipment.	Contractor	During construction
21. Construct during recommended Corps in-water work windows for the Columbia River (December 1 thru March 31).	Contractor	Implemented when tower pads built
22. Isolate in-water work area and capture and release fish from the work area under the supervision of a competent fisheries biologist experienced to capture ESA-list fish.	Contractor	Implemented when tower pads built
23. Use appropriate fish screens on all intakes and pumps.	Contractor	Implemented when tower pads built
Vegetation		
1. Locate the proposed transmission line adjacent to the existing corridor to minimize additional clearing.	Design Engineer	During design
2. Utilize the existing access road system to the extent possible to reduce the need for new access roads.	Road Engineer	During design
3. Keep vegetation clearing to the minimum required to maintain safety and operational standards.	Contractor, District Maintenance	During construction and line operation
4. Avoid construction activities or permanent tower or access road siting in native shrub-dominated shrub-steppe communities, if possible.	Design Engineer	During design
5. Reseed areas temporarily disturbed in higher quality shrub-steppe with native grasses and forbs (if recommended by local county) and salvage topsoil and bunchgrass plant material. Reseeding should occur at the appropriate planting season. Reseed all disturbed areas with seeds recommended by the local county.	Contractor	During and after construction
6. Equip all vehicles with basic fire-fighting equipment including extinguishers, shovels, and other equipment deemed appropriate for fighting grass fires.	Contractor	During construction
7. Avoid tree removal to the extent possible.	Design Engineer, Contractor	During design and construction

Resource Area and Mitigation Measure	Person(s) Responsible for Implementation	Time of Implementation
8. Limit construction equipment to tower sites, access roads, and conductor tensioning sites.	Contractor	During construction
9. Avoid construction or construction activities at location of desert evening-primrose (Oenothera caespitosa ssp. marginata) near tower 47/1.	Contractor	During construction
10. Minimize disturbance to native shrub-dominated shrub-steppe communities and cryptogamic crusts, where possible, during construction. Where not possible, consider compensatory habitat through either restoration or acquisition and preservation of shrub-steppe communities.	Contractor	During construction, compensatory habitat acquired in 2002
11. Conduct a pre-construction and a post-construction noxious weed survey to determine if construction contributed to the spread of noxious weed populations.	Project Manager	Prior to and after construction
12. Enter into active noxious weed control programs with land owners/mangers or county weed control districts where activities may have caused or aggravated an infestation.	District Maintenance	During line operation
13. Wash vehicles that have been in weed-infested areas (removing as much weed seed as possible) before entering areas of no known infestations.	Contractor	During construction
14. Use certified weed-free mulching.	Contractor	After construction
Wildlife		
1. Prior to construction, conduct raptor nest surveys (for existing and new nests) of cliffs located within 0.25 mile of the right-of-way (corridor miles 3, 54, 56, 57, 72, 73). See potential mitigation measures below for specific species.	Environmental Specialist	Prior to construction
2. Between January 1 and July 30, avoid using helicopters within 0.25 mile of cliffs identified as Priority Habitat by the Washington Department of Fish and Wildlife (use ground-based equipment near cliffs. Avoid blasting cliffs identified as Priority Habitat by Washington Department of Fish and Wildlife and consult with the Washington Department of Fish and Wildlife or Oregon Department of Wildlife regarding measures to minimize nest disturbance on a site-by-site basis if nests are found.	Contractor	During construction
3. If bald eagle nests are found on the cliffs, restrict construction during nesting season (January 1 through July 15).	Contractor	During construction
4. **Mitigation for burrowing owls.** If possible, avoid disturbance within 160 feet of occupied burrows during the non-breeding season of September 1 through January 31 or within 250 feet during the breeding season of February 1 through August 31.	Contractor	During construction
5. Mitigation for peregrine falcon. If possible, avoid disturbance within 0.25 mile of any active nests during the breeding season (March through June).	Contractor	During construction

Resource Area and Mitigation Measure	Person(s) Responsible for Implementation	Time of Implementation
6. **Mitigation for prairie falcon.** If possible, avoid construction activities between February 15 and July 15 within 0.25 mile of active nests.	Contractor	During construction
7. **Mitigation for red-tail hawk.** If possible, avoid construction activities within 320 feet between February 15 and July 15.	Contractor	During construction
8. **Mitigation for other raptors.** Consult with Oregon Department of Fish and Wildlife and Washington Department of Fish and Wildlife.	Environmental Specialist	Prior to construction
9. Install line markers in avian flight paths or migration corridors, near crop circles in the vicinity of the town of Paterson (north of the Umatilla National Wildlife Refuge) and at the Columbia River crossings and the Rock Creek crossing.	Contractor	During construction
10. For the McNary Substation Alternatives, avoid placing towers and lines across wetlands to minimize risk of bird collision.	Design Engineer	During design
11. Minimize the amount of shrub-steppe plant communities removed by clearing only the amount of vegetation necessary to prepare tower footings or build roads.	Contractor	During construction
12. Minimize road construction in shrub-steppe areas with burrows (near corridor miles 19, 21, 63, and 76).	Road Engineer, Contractor	During design and construction
13. Span riparian corridors to minimize removal of shrubs or trees within riparian areas.	Design Engineer	During design
Wetlands and Groundwater		
1. Locate structures, new roads, and staging areas so as to avoid waters of the U.S., including wetlands. Where avoidance is not possible, provide compensation for wetland impacts in accordance with Corps Section 404 permitting requirements.	Design Engineer, Road Engineer, Contractor	During design and construction
2. Avoid construction within designated Klickitat and Benton Counties, Washington wetland and stream buffers to protect potential groundwater recharge areas (Klickitat County Critical Areas Ordinance; Benton County Code Title 15).	Design Engineer, Road Engineer, Contractor	During design and construction
3. Avoid mechanized land clearing within wetlands and riparian areas to avoid soil compaction from heavy machinery, destruction of live plants, and potential alteration of surface water patterns to reduce groundwater turbidity risk.	Contractor	During construction
4. Anticipate and avoid, as required, contaminated soil and underground tanks during construction activities near pipelines and agricultural and other historic projects. Anticipate and avoid orphaned wells, as required, particularly near the communities of Plymouth, Paterson, Roosevelt, Sundale, and Towal.	Design Engineer, Road Engineer, Contractor	During design and construction

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5. Use erosion control measures (see mitigations listed in the Soils, Geology, and Seismicity section) when conducting any earth disturbance within 100 feet of wetlands, or within the resource buffer as established by Benton and Klickitat Counties.	Contractor	During construction
6. Avoid refueling and/or mixing hazardous materials where accidental spills could enter surface or groundwater.	Contractor	During construction
7. Use existing road systems, where possible, to access tower locations and for the clearing of the transmission line alignment.	Design Engineer, Road Engineer, Contractor	During design and construction
8. Avoid construction on steep, unstable slopes if possible.	Design Engineer, Road Engineer, Contractor	During design and construction
9. Place tower footings on upland basalt outcroppings and limit access road construction in wetlands complex and buffers between corridor miles 70 and 74, if possible.	Design Engineer, Road Engineer, Contractor	During design and construction
10. Place tower footings and access roads within uplands within the wetland complex between corridor miles 48 and 50.	Design Engineer, Road Engineer	During design
Cultural Resources		
1. Locate structures, new roads, and staging areas so as to avoid known cultural resource sites.	Design Engineer, Road Engineer	During design
2. Utilize existing access road system to the extent possible to reduce the need for new access roads.	Road Engineer	During design
3. Limit construction equipment to tower sites, access roads and conductor tensioning sites.	Contractor	During construction
4. On maps and in specifications provided to construction contractors, indicate cultural sites as generic avoidance areas to maintain site confidentiality.	Environmental Specialist	Prior to construction
5. Have a monitor on site for ground disturbing activities.	Contractor	During construction
6. Continue consultation with the Umatilla Tribes, Warm Spring Tribes, and the Yakama Nation to set up consultation protocols on site mitigation and management.	Environmental Specialist	Prior to and during construction
7. Continue consultation with the Umatilla Tribes, the Warm Springs Tribes, and the Yakama Nation to ensure that the cultural and natural resources are protected.	Environmental Specialist	Prior to and during construction
8. Conduct offsets and buffers around previously recorded and newly identified archaeological sites based on Bonneville practices for avoiding adverse effects to historic properties, tribal concerns and the Oregon and Washington SHPO concurrence.	Environmental Specialist	Prior to construction

Resource Area and Mitigation Measure	Person(s) Responsible for Implementation	Time of Implementation
9. Stop all construction activities in the immediate area should any previously unknown artifacts be identified during construction until the resource can be evaluated by an archaeologist meeting the Secretary of the Interior's Qualifications Standards for Archaeology (48 FR 44738-39). 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.	Contractor	During construction
10. If previously unknown artifacts are identified during construction, immediately contact representatives of the affected tribes.	Environmental Specialist	During construction
11. For previously unknown artifacts, identify type and significance of discovered resource for determining if avoidance is necessary, depending on the type and significance of any discovered resource, procedures may include testing the site with shovel test probes to determine site boundaries and any possible subsurface components. If results of the shovel test probes determine the presence of an extensive subsurface component, move structure location to a suitable location that avoids the site. Alternatively, develop and implement a full data recovery program for the site or other mitigation in consultation with the affected tribes and the Oregon and Washington State historic preservation officers.	Environmental Specialist	During construction
12. Stop construction in the area immediately 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 archeologist and appropriate tribes.	Contractor	During construction
Visual Resources		
1. Site all construction staging and storage areas away from locations that would be clearly visible from SR 14 as much as practical.	Contractor	During construction
2. Provide a clean-looking facility following construction by cleaning-up after construction activities.	Contractor	During and after construction
3. Keep the areas around the towers clean and free of debris.	Contractor	During and after construction
4. Provide regular maintenance of the access roads and fences within and leading to the corridor.	Contractor	During and after construction
Transportation		
1. Coordinate routing and scheduling of construction traffic with state and county road staff and Burlington Northern Santa Fe Railway.	Contractor	Prior to and during construction

Resource Area and Mitigation Measure	Person(s) Responsible for Implementation	Time of Implementation
2. Employ traffic control flaggers and post signs warning of construction activity and merging traffic, when necessary for short interruptions of traffic.	Contractor	During construction
3. Repair any damage to local farm roads caused by the project.	Contractor	During and after construction
4. Install gates on access roads when requested by property owners to reduce unauthorized use.	District Maintenance	During construction and line operation
Air Quality		
1. Water exposed soil surfaces, if necessary, to control blowing dust.	Contractor	During construction
2. Cover construction materials if they are a source of blowing dust.	Contractor	During construction
3. Limit vehicle speeds along dirt roads to 25 miles per hour.	Contractor	During construction
4. Shut down idling construction equipment, if feasible.	Contractor	During construction
Noise		
1. All equipment to have sound-control devices no less effective than those provided on the original equipment.	Contractor	During construction
2. No equipment to have an unmuffled exhaust.	Contractor	During construction
3. Limit construction activities to daytime hours.	Contractor	During construction
4. Do not conduct noise-generating construction activity within 1,000 feet of a residential structure between the hours of 10:00 p.m. and 7:00 a.m.	Contractor	During construction
5. Notify landowners directly impacted along the corridor prior to construction activities.	Contractor	During construction
6. Restore TV or radio reception to a quality of reception as good or better than before line construction.	Project Manager	After construction
Public Health and Safety		
1. Prior to construction, contractor will prepare and maintain a safety plan in compliance with Washington and Oregon requirements. Keep plan on-site; include details on how to manage hazardous materials such as fuel, and how to respond to emergency situations.	Contractor	Prior to and during construction
2. During construction, hold contractor crew safety meetings at the start of each workday to go over potential safety issues and concerns.	Contractor	During construction
3. Secure the site to protect equipment and the general public at the end of each workday.	Contractor	During construction
4. Ensure that employees are trained, as necessary, in tower climbing, cardiopulmonary resuscitation, first aid, rescue techniques, and safety equipment inspection.	Contractor	During construction

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5. To minimize the risk of fire, fuel all highway-authorized vehicles off-site. Fuel of construction equipment, that is not highway authorized, in accordance with regulated construction practices and state and local laws. Fuel and house helicopters at local airfields or at staging areas.	Contractor	During construction
6. Consider public safety during helicopter flights (for example, flight paths could be established for transport of project components in order to avoid flying over populated areas or near schools; coordination could take place with local crop dusters and agricultural businesses to minimize interruption in agricultural activity during construction).	Contractor	During construction
7. Provide notice to public of construction activities, including blasting.	Contractor	During construction
8. Take appropriate safety measures for blasting consistent with state and local codes and regulations. Remove all explosives from the work site at the end of the workday.	Contractor	During construction
9. If implosion bolts are used to connect the conductors, install in such a way as to minimize potential health and safety risks.	Contractor	During construction
10. Inform construction and operation/maintenance workers that there is a Umatilla Army Depot emergency preparedness program in the event of a chemical release.	Contractor	During construction
11. Carry fire suppression equipment including (but not limited to) shovels and fire extinguishers, in vehicles.	Contractor	During construction
12. Adhere to local fire district regulations for fire-prevention measures.	Contractor	During construction
13. Stay on established access roads during routine operation and maintenance activities.	Contractor	During construction
14. Keep vegetation cleared according to Bonneville standards to avoid contact with transmission lines.	District Maintenance	During line operation
15. Submit final tower locations and heights to the Federal Aviation Administration for review and potential marking and lighting requirements.	Design Engineer	After construction
16. Construct and operate the new transmission line to meet the National Electrical Safety Code.	Regional Maintenance	During line operation
17. During construction, follow Bonneville specifications for grounding fences and other objects on and near the proposed right-of-way.	Contractor	During construction
18. Should contaminated media be unexpectedly encountered during construction, work will stop and an environmental specialist called to characterize the nature and extent of contamination and determine appropriate State-approved measures to prevent spread and protect health and safety.	Contractor	During construction