

**Bonneville Power Administration
BPA/Lower Valley Transmission Project
Record of Decision**

Decision

As Administrator of the Bonneville Power Administration (BPA), I have decided to implement the Agency Proposed Action as described in the Final Environmental Impact Statement (FEIS) for the BPA/Lower Valley Transmission Project; a joint project between BPA and Lower Valley Power and Light, Inc. (Lower Valley).

The Agency Proposed Action will solve a voltage stability problem in the Jackson and Afton, Wyoming areas. Lower Valley buys electricity from BPA and then supplies it to the residences and businesses of these areas. Since the late 1980s, Lower Valley's electrical load has been growing and loads are expected to continue to grow. During winter, a transmission line outage could cause voltage on the transmission system to drop below acceptable levels causing brownouts or, under certain conditions, a blackout. The new 115-kilovolt (kV) transmission line proposed in the Agency Proposed Action will maintain voltage stability and accommodate load growth.

Alternatives

BPA considered five alternatives:

- For the Agency Proposed Action, BPA and Lower Valley will construct a new 115-kV line from BPA's Swan Valley Substation near Swan Valley in Bonneville County, Idaho, about 58 km (36 miles) east to BPA's Teton Substation near Jackson in Teton County, Wyoming. The new line will be adjacent to an existing 115-kV line. Most of the proposed line will be supported by a mix of single-circuit wood pole H-frame structures and single-circuit steel pole structures. About 0.8 km (0.5 mile) near Pine Creek, 4.8 km (3 miles) at Teton Pass, and 2.4 km (1.5 mile) near Teton Substation will be built using double-circuit structures.
- The Single-Circuit Line Alternative has all the components of the Agency Proposed Action except that the entire line would have been supported by single-circuit wood pole H-frame structures.
- The Short Line Alternative has all the components of the Single-Circuit Line Alternative except it would only be half as long, from Targhee Tap near Victor in Teton County, Idaho 29 km (18 miles) east to Teton Substation. BPA would also have constructed a new switching station on or near the existing right-of-way (ROW), west or north of Targhee Tap. Targhee Tap would have then been removed.

- For the Static Var Compensation Alternative, BPA would have installed a Static Var Compensator (SVC) at Teton or Jackson Substation. An SVC is a group of electrical equipment placed at a substation to help control voltage on a transmission system.
- The No Action Alternative assumes that no new transmission line is built, and no other equipment is added to the transmission system.

BPA considers the SVC Alternative and the No Action Alternative to be the environmentally preferred alternatives. The SVC and No Action Alternatives would not cause the impacts to the natural environment that the construction and operation of the transmission line would, but they would cause impacts to the human environment. The SVC Alternative would cause visual and noise impacts to homes immediately surrounding the Teton or Jackson substations. The extent of localized impact would depend on the exact final design of the SVC and mitigation. The socioeconomic and public health and safety impacts from the No Action Alternative could cause severe brownouts or blackouts. The severity of the impacts would depend on the frequency and duration of brownouts or blackouts during the winter season and the ability of Lower Valley's customers to generate their own energy for heat, lights, and other needed backup systems.

Rationale for Decision

I analyzed the environmental impacts of the five alternatives, how each alternative could meet the need for the project, and the public comments received on the Draft EIS. I then evaluated the alternatives against the project purposes. Project purposes are goals or objectives to be achieved while meeting the need for the project. For this project, BPA used the following purposes to evaluate alternatives:

- Maintain environmental quality;
- Minimize costs while meeting BPA and Lower Valley's long-term transmission system planning objectives for the area;
- Maintain BPA and Lower Valley's transmission system reliability.

The Agency Proposed Action was modified between the Draft and Final EIS to address the environmental concerns expressed by the public and the US Forest Service, which manages most of the land over which the new transmission line would cross. More double-circuit structures were added to decrease impacts in highly sensitive areas such as Pine Creek across from Pine Basin Lodge, Teton Pass and near Teton Substation. Substituting single steel pole structures for the originally proposed H-frame wood structures decreases the amount of ground disturbance at each structure site. It also reduces new right-of-way needed from an average of 23 m (75 feet) to 12 m (40 feet), significantly reducing the amount of vegetation to be cleared. These design changes makes the Agency Proposed Action more responsive to public and agency environmental concerns than the other transmission alternatives. While the Agency Proposed Action is not considered the environmentally preferred alternative, all (but one, see below) practical means to avoid or minimize environmental impacts caused by this alternative have been

adopted either through a change in the transmission line design (just described) or through other mitigation (see Table 1). One mitigation measure is pending adoption as discussed on page 4.

The Agency Proposed Action is less reliable than the Single-Circuit Line Alternative (the most reliable alternative) because double-circuit structures would be used in several areas, and separate lines on separate structures (as proposed in the Single-Circuit Line Alternative) are safer in avalanche and slump prone areas. While the risk is low, steep terrain and extreme weather conditions in the project area combine to increase avalanche hazard and the probability that both lines would go out of service if a double-circuit structure goes down. However, the Agency Proposed Action does maintain transmission system reliability by allowing BPA to provide power to Lower Valley with a high probability that power would be available when Lower Valley needs it. The Short Line and SVC Alternatives do not maintain transmission system reliability as well as the Agency Proposed Action or Single-Circuit Line Alternative. While the Short Line Alternative does not have double-circuit structures, reliability is compromised if the existing Swan Valley-Teton line goes down because power would need to flow north to Drummond and back down to Jackson. The SVC Alternative consists of electrical equipment with more switching mechanisms and moving parts. This may require more emergency maintenance compared to a line that has more routine maintenance. In addition, the Short Line and SVC alternatives require a new line to be built in future years to maintain system reliability.

The up-front and long-term costs to build the alternatives were relatively close. The higher material and labor costs associated with double-circuit structures in the Agency Proposed Action makes this alternative about \$300,000 more in the up-front and long-term costs than the Single-Circuit Line Alternative. However, the margin of error present in the calculations for 30-year costs makes the long-term costs about the same. The Short Line and SVC Alternative have lower up-front costs but over a 30-year period, the Agency Proposed Action and Single-Circuit Line Alternative cost about the same to build as the Short Line Alternative and would be slightly cheaper to build than the SVC Alternative. BPA can meet long-term planning objectives and minimize costs by choosing to build any one of the transmission line alternatives.

By choosing the Agency Proposed Action, BPA will minimize impacts to the environment while it increases reliability to the transmission system at a cost that is slightly more expensive in the short-term but essentially the same cost as all other alternatives over the long-term.

Mitigation

A Mitigation Action Plan will be prepared that will include all mitigation shown in Table 1. The Plan will also include a description of any mitigation monitoring and enforcement that will be needed. All mitigation has been developed by BPA and US Forest Service resource specialists, design engineers, access road specialists, maintenance personnel, and specialists from local and state agencies. Input from interested and concerned parties was also used to help design mitigation. Mitigation, where appropriate, will be included in the construction specifications for the project.

BPA studied and considered many ways to mitigate for visual impacts. BPA will implement the mitigation identified in Table 1. BPA will also leave the option open to implement the following mitigation until August 30, 1998:

- Underground the last mile of new and possibly the existing line from a point near Fish Creek Road to Teton Substation.

As those parties who requested BPA leave this option open are well aware, this particular mitigation option becomes viable only if another party were to pay the entire costs of implementation.

Issued in Portland, Oregon, on _____, 1998

Judith A. Johansen, Administrator

Table 1. BPA/Lower Valley Transmission Project Mitigation

Resource Category	Mitigation
1. Land Use	<ul style="list-style-type: none"> •BPA would compensate landowners for any farmland removed from production. Compensation would be offered for the fair market value of the land rights acquired. •The US Forest Service would be compensated for the marketable timber. •Work closely with the US Forest Service, other land managers, and landowners to minimize conflicts and inconvenience from construction and maintenance activities. •Locate structures outside of agricultural fields where possible or next to existing structures and schedule activities to avoid crop damage. •Compensate farmers for crop damage, help them control weeds, and restore compacted soils. •Keep gates and fences closed and in good repair to contain livestock. •BPA would notify the Palisades and Teton Basin ranger districts of the construction schedule and when staging areas will be in use. This information would be passed on to the grazing permit holders. •The construction contractor would exercise caution on Highway 31 and 33, access roads to and on the ROW, and U.S. Forest Service Road #253 (at Pine Creek Pass) for the presence of cattle and sheep. U.S. Forest Service Road #253 (at Pine Creek Pass) would be kept open for passage. No materials or equipment would block the road at any time. •Develop and implement a landscaping plan around Teton Substation.A Concept Plan is included as Appendix A to this Record of Decision. •Use double-circuit structures from below Phillips Ridge to Teton Substation and work with landowners next to the existing ROW from Fish Creek Road to Teton Substation on the color and placement of these new structures. •Continue to work with landowners near Teton Substation on placement of new transmission structures along the last mile of ROW into Teton Substation and on timing and other logistical requirements of construction.
2. Visual Resources	<ul style="list-style-type: none"> •Structures and above ground improvements would use native materials where feasible. •Where the use of native materials is not possible, treat structures and related hardware to reduce reflectivity and obtain a dark finish. •Use non-reflective conductors. •Use non-luminous insulators (i.e., non-ceramic insulators [a polymer] or porcelain that match existing lines). •Coordinate with the Forest Service on the use of stains or paints on structures on lands managed by the Forest Service. •Minimize ground disturbing activities. •Preserve the existing topsoil, if present, near disturbed structure sites by stockpiling it during construction and spreading it after construction so native plant communities would regenerate and blend exactly with the surroundings.

Phase and integrate these activities with the project construction schedule to ensure the quickest rehabilitation of sites.

- When clearing forested ROW areas, take additional trees beyond the additional ROW in critical viewshedsto create a jagged (scalloped or feathered), more natural edge to the clearing. This would blend the ROW into the surrounding vegetation rather than forming a clear straight line across the mountains. Coordinate and mark specific tree removal with the Forest Service. On the Targhee, this will be from structure 18/7 to 20/2. BPA will continue to coordinate with the Forest Service on identifying specific areas on the BT.
- Where technically feasible and cost effective, use double-circuit single pole structures instead of double-circuit lattice steel structures.
- Where feasible, site new structures next to or very near existing structures and use the same structure type. This would lessen visual clutter that can result when different types of structures are visible in a vast open landscape.
- Site new structures where feasible to minimize visual impacts by taking advantage of existing screening offered by topography and/or vegetation.
- Install new conductor at about the same height as existing conductor where possible to lessen visual clutter.
- Use techniques as needed to revegetate cut and fill slopes on access roads and near structure locations.
- Minimize, where possible, access road placement in highly sensitive areas.

Visual Assessment Area 2, State Route 31, Targhee National Forest:

- Construct Option D , which uses double-circuit structures across from Pine Basin Lodge.

Visual Assessment Area 4, Idaho State Route 33 and Wyoming State Route 22, Targhee National Forest:

- Use double-circuit structures from structures 26/2 to 28/5.

Visual Assessment Area 5, Summit of Teton Pass, Bridger-Teton National Forest:

- BPA and LVPL will work with the US Forest Service to meet the requirements of the Palisades Wilderness Study Area designated Preservation. Use double-circuit structures from 28/5 to 29/3 to eliminate the need to clear a wider easement.
- BPA will not build new access roads in the WSA.

Visual Assessment Area 7, Below Phillips Ridge to Teton Substation:

- Continue to work with landowners next to Teton Substation on placement of new transmission structures and equipment at Teton Substation and on timing and other logistical requirements of construction.
- Work with landowners next to the existing ROW from Fish Creek Road to Teton Substation on placement of new structures.
- Use double-circuit single steel pole structures to reduce visual impacts to

	<p>landowners adjacent to the existing ROW from Fish Creek Road to Teton Substation. Locate new structures in the same place as old structures or move slightly to take advantage of existing vegetative screening and/or to keep the lowest conductor at the same height above ground.</p> <ul style="list-style-type: none"> •Develop and implement a landscaping plan around Teton Substation. BPA and landowners surrounding Teton Substation jointly developed a landscape plan which is included as Appendix A to this Record of Decision.
3. Recreation	<ul style="list-style-type: none"> •Use mitigation listed for Visual Resources to reduce impacts to the visual experience of recreationists and sightseers. •Continue to coordinate with each Ranger District on the Targhee and Bridger-Teton National Forests to develop gating plans that would promote the types and levels of use desired at each access road.
4. Wilderness, Wilderness Study Areas, Roadless Areas	<ul style="list-style-type: none"> •Use the mitigation listed for Visual Resources to reduce impacts to the experience of recreationalists. •Continue to coordinate with each Ranger District on the Targhee and Bridger-Teton National Forests to minimize impacts to the WSA and the Palisades Roadless Area.
5. Water Quality, Soils and Geology	<ul style="list-style-type: none"> •Properly space and size culverts, use crossdrains, water bars, rolling the grade, and armoring of ditches and drain inlets and outlets. •Improve all existing culverts and stream crossings found to pose a risk to riparian, wetland or aquatic conditions to accommodate at least a 50-year flood and associated bedload and debris as prescribed in the revised Targhee Forest Plan. •Coordinate all culvert installations with the U.S. Army Corps of Engineers, appropriate state agencies, and the U.S. Forest Service. •Existing vegetation would be preserved where possible, and disturbed portions of the site stabilized. Stabilization measures would be started where construction activities have temporarily or permanently ceased, as soon as practicable. •Promptly seed disturbed sites with an herbaceous seed mixture suited to the site. •Use vegetative buffers and sediment barriers to prevent sediment from moving off-site and into water bodies. •Assist farm operators with subsoiling to restore soil productivity. •Design and construct all fords and bridges to minimize bank erosion. Specific locations and measures would be determined when road and line design are finalized. •When possible, schedule construction and maintenance operations during periods when precipitation and runoff possibilities are at a minimum to reduce the risk of erosion, sedimentation, and soil compaction. •Design facilities to meet regional seismic criteria. •Use double-circuit and/or helicopter construction (if feasible) to reduce impacts to moderate on Teton Pass (structures 26/2 to 29/3). •Site structures outside of known avalanche chutes or unstable areas to preserve transmission line integrity and slope stability.

	<ul style="list-style-type: none"> •Consider full-bench road construction and end hauling excess sidecast material on slopes exceeding 55 percent if needed to stabilize the roadbed. Prior to construction, suitable waste areas would be located where excess materials could be deposited and stabilized. •Construct access roads consistent with the standards and guidelines of the revised forest plans for the Targhee and Bridger-Teton National Forests and the BMP's instituted by the states of Idaho and Wyoming. •Use the BMP's that would prevent further impairment of Water Quality Limited (WQL) drainages. The Teton River (headwaters to Trail Creek) is listed as WQL. •Avoid riparian areas, drainage ways, and other water bodies. Where these areas cannot be avoided, apply sediment reduction practices to prevent degradation of riparian or stream quality. Riparian plantings may be used where needed to restore streamside vegetation and insure streambank stability. •Restrict road construction to the minimum needed and obliterate roads in agricultural land. •Avoid or mitigate water quality and fish habitat degradation. Design and maintain roads so that drainage from the road surface does not directly enter live streams, ponds, lakes, or impoundments. Direct water off roads into vegetation buffer strips or control through other sediment-reduction practices. Restrict road construction to areas physically suitable based on watershed resource characteristics. Design stream crossings to avoid adverse impacts to stream hydraulics and deterioration of stream bank and bed characteristics. •Avoid discharge of solid materials, including building materials, into waters of the United States unless authorized by a Section 404 permit of the Clean Water Act. Off-site tracking of sediment and the generation of dust shall be minimized. Vegetative buffers would be left along stream courses to minimize erosion and bank instability. •Prepare a stormwater pollution prevention plan (as required under the National Pollution Discharge Elimination System General Permit). •Set crossing structures as far back from stream banks as possible near any water body. Avoid refueling and/or mixing hazardous materials where accidental spills could enter surface or groundwater. This information will also be included in the Project Plan. •Design the project to comply with local ordinances and laws and state and federal water quality programs to prevent degradation of the quality of aquifers and not jeopardize their usability as a drinking water source.
6. Floodplains and Wetlands	<ul style="list-style-type: none"> •Locate structures and any new roads where possible to avoid floodplains. •Remove debris from construction and clearing. •Design and construct bridges to minimize bank erosion, accommodate flood waters and associated bedload and debris. •Where possible, use helicopter construction in areas where road construction on steep slopes would impact wetlands. •Limit disturbance to the minimal amount necessary when working adjacent to and around wetlands and floodplains.

	<ul style="list-style-type: none"> •Locate new access roads to avoid wetlands and floodplains. •Locate staging areas to avoid wetlands and floodplains. •Place all structures in upland where possible. •Minimize vegetation removal where road construction impacts riparian zones. •Delineate wetlands before final design so avoidance of wetlands is maximized. •Identify and flag wetlands in project area for avoidance during construction. •Use erosion control measures when conducting any earth-disturbing work uphill from a wetland. •Stockpile wetland topsoil when excavating. Redeposit soil in place for site restoration after construction. •Refuel equipment in designated areas away from water resources. •Construct access roads and bridges consistent with the standards and guidelines of the revised forest plans for the Targhee and Bridger-Teton National Forests and the best management practices instituted by the states of Idaho and Wyoming. •Coordinate activities between BPA and regulatory agencies to ensure compliance with wetland and floodplain regulations. •Mitigation would be monitored throughout the construction and post-construction phases to ensure effectiveness. Where adverse impacts could not be avoided, any necessary mitigation would be determined with appropriate jurisdictional agencies.
7. Vegetation	<ul style="list-style-type: none"> •Locate proposed project adjacent to existing corridor to keep clearing to a minimum. •Use existing access road system with minimal development of new roads. •Keep additional vegetation clearing to the minimum needed to maintain safety and operational standards. •Delineate and flag sensitive species populations to avoid direct and indirect impacts from occurring. •Ensure that adequate topsoil depth and texture are in place. Promptly reseed or revegetate disturbed areas with native seed mix as soon as construction in an area is completed. •All reclamation plans would consist of native plant seed mixes approved by the USFS. •Seed mix composition, rates and reclamation plans would be approved by the USFS. •Any disturbed areas would require a minimum of 10.2 cm (4inches) of native topsoils. •Mulches would be approved by the USFS. <p><i>Control measures for sensitive plant species:</i></p> <ul style="list-style-type: none"> •Designate vegetation management zones that restrict certain activities. •If possible, delay tree removal until the fall to avoid trampling species while they are flowering and fruiting. The areas should be disturbed as little as possible. Leave felled trees on-site if they fall within the habitat of these species. •Spot spray weed species within habitats of sensitive plants. Use extra caution

	<p>in these areas. Crews responsible for spraying should be able to identify these species so they can avoid spraying near them or inadvertently trampling them. A knowledgeable person could accompany spray crew members or flag sensitive populations prior to any spraying.</p> <ul style="list-style-type: none"> •To minimize impacts to <i>Lesquerella paysonii</i>, road construction to access structure 28/2 will be coordinated with the USFS botanists. <p><i>Control measures for undesirable plant species:</i></p> <ul style="list-style-type: none"> •Minimize disturbance to native species to the greatest extent possible during construction to prevent invasion by non-native species. •Work with the Forest Service and county agencies to determine appropriate methods for treating existing weed populations before construction. •Conduct preconstruction weed survey to document existing weed populations. •Wash all earthmoving equipment at established wash stations prior to entry into project area. •If earthmoving equipment has been operating in an area heavily infested with noxious weeds, wash equipment before moving into another area. •Ensure that earth materials (such as gravel, fill, etc.) brought in from other sites are free of weed seed. •Seed applied will be Wyoming and Idaho “CERTIFIED” as noxious weed free. •Use certified noxious weed-free mulch.
8. Wildlife	<p><i>To minimize raptor nest disturbance and comply with the Migratory Bird Treaty Act:</i></p> <ul style="list-style-type: none"> •Time project activity to avoid critical nesting periods (nest trees may be removed once young have fledged and/or a permit has been issued from the USFWS). •Prior to initiating ground disturbing activities, conduct wildlife surveys, as determined through coordination with the USFS. BPA has worked closely with the Forest Service on survey timing and requirements. All surveys will be conducted in 1998 per an Interagency Agreement with attached protocols jointly developed by the Forest Service and BPA in 1997. •After wildlife surveys are completed, coordinate with the USFS, USFWS, and the state wildlife agencies (IDFG or WDGF) on mitigation strategies. •Mitigation would incorporate the Revised Forest Plan for the Targhee National Forest standards and guidelines and may include nest site monitoring, shortened work days, or minimizing disturbance during the most critical early nesting period. •If required, survey in spring (from March to June) to identify nest site locations for Cooper’s and sharp-shinned hawks, Swainson’s hawks, red-tailed hawks, northern harriers, goshawk, and owls. If necessary, BPA will develop site-specific management prescriptions in consultation with the Forest Service to protect nest sites or other sensitive features identified during pre-construction surveys. BPA and the Forest Service would implement construction constraints pending the results of the surveys. •For danger trees that would be cut outside the new ROW, BPA will work with

	<p>the Forest Service on the possibility of topping some of these trees for wildlife habitat.</p> <p><i>To minimize disturbance of big-game winter range and disturbance related to new or expanded roads:</i></p> <ul style="list-style-type: none"> •Avoid construction at lower elevations (Swan Valley, Teton Basin, and the Jackson area) during extreme winter weather or unusually heavy snow accumulations, when big-game species are less mobile and more vulnerable to disturbance. Coordinate with the state wildlife agencies to ensure that construction does not significantly interfere with big-game wintering. •Construct from the Idaho state line to Mail Cabin Creek (from structure 22/8 to about structure 27/2) prior to November 15 or after April 30 to protect big-game winter range. •Follow IDFG recommended seasonal restrictions on construction activities (prior to December 15 and after April 15) from Poison Creek southwest to the Swan Valley substation. If unusually adverse weather conditions occur, restrictions are requested prior to December. •If an early spring occurs, BPA will coordinate construction in agricultural fields near Swan Valley before April 15 with the USFS and IDGF. BPA will request USFS and IDFG biologists to assess whether evidence of wintering deer, elk, and moose is in the area and whether construction may affect populations. •Timing restrictions for activities in deer, elk, and moose wintering habitat would begin on November 15. Work in the fall may continue past November 15 for emergency reasons, and will be coordinated with the Forest Service, WDFG, and IDFG. Timing restrictions would not conflict with timing restrictions for other species. •Gate new roads and consider posting some or all of the new roads for no trespassing. <p><i>To reduce avian collisions:</i></p> <ul style="list-style-type: none"> •Consult an expert on avian power line collisions to identify appropriate line markers, such as aerial marking spheres, spiral vibration dampers, or bird flight diverters. Areas where markers should be considered include the Swan Valley area (between Swan Valley Substation and structure 4/3), the second crossing of Pine Creek (location depends on which Pine Creek Routing Option is chosen), Teton Pass (between structures 28/1 and 28/5), and the Jackson area (between structure 35/2 and Teton Substation). •Where possible, line up new structures with existing structures to minimize the vertical separation between the two sets of lines. •After construction, periodically monitor potential problem areas to identify unmitigated problem areas and increase or modify markers as appropriate.
9. Fisheries	<ul style="list-style-type: none"> •Because BPA would use standard bridge and culvert construction, and stabilization and erosion control measures, no other mitigation is required.
10. Cultural Resources	<ul style="list-style-type: none"> •Mitigation in the form of recordation for two historic sites will be done before construction. BPA will work with the USFS and the SHPO's on mitigation.

11. Socio-economics	<ul style="list-style-type: none"> •BPA would compensate private landowners for the fair market value of any land taken out of production. •BPA would work with the landowners/land managers to site the proposed line and individual structure locations to minimize the impact.
12. Air Quality	<ul style="list-style-type: none"> •If necessary, water trucks would be used to spray roadways and construction areas to minimize dust. •All on-road vehicles would be in good running condition, thus minimizing their emissions. •On-road vehicles would use low sulfur fuel •BPA would try to avoid burning slash because of its potential detrimental effects on local air quality and visibility in nearby Class I areas. •Burning permits and ignition approval would be obtained from Wyoming and Idaho and all permit requirements would be met. •Burning on national forests would be coordinated with the USFS. •Burn as little material as possible. •Burning would not occur during inversions. •Initiate burning in late October or early November, after the first snows. Burning during this period would allow the slash to dry, decreasing emissions; provide fire protection (because of the snow); and adequately disperse smoke from the fires, reducing impacts to the Jackson Valley and to the surrounding Class I areas. •Lop and scatter residues on the ROW to degrade.

Appendix A - Landscape Plan