Hooper Springs Substation

and

Hooper Springs-Lower Valley Transmission Line Project

Preliminary Environmental Assessment

DOE/EA-1567

Bonneville Power Administration

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Purpose of and Need for Action

Bonneville Power Administration (BPA) is a federal agency that owns and operates more than 15,000 circuit miles of high-voltage transmission lines in the Pacific Northwest. BPA's transmission lines move most of the Northwest's high-voltage power from facilities that generate the power to customers throughout the region. BPA has a statutory obligation to ensure it has sufficient capability to serve its customers through a safe and reliable transmission system. The Federal Columbia River Transmission Act directs BPA to construct improvements, additions, and replacements to its transmission system that are necessary to maintain electrical stability and reliability, and to provide service to BPA's customers (16 U.S.C. § 838b(b-d).

BPA has proposed to build a substation and help fund construction of a new 22-mile long transmission line in southeastern Idaho. This chapter explains the need that BPA is responding to with its proposal, and provides the purposes that BPA is trying to achieve in meeting this need. This chapter also identifies the cooperating agencies that are participating in the preparation of this Environmental Assessment (EA), and describes the public involvement that has occurred. The project area is shown in Figure 1.

1.1 Need for Action

BPA needs to respond to a request from Lower Valley Energy (LVE) to help LVE improve the stability and reliability of the transmission system in southeastern Idaho. LVE is an energy cooperative based in Wyoming that is one of BPA's full requirements customers, that is, a customer who purchases all or almost all of the power required to serve their loads from BPA. LVE, along with another BPA customer Fall River Electric Cooperative (Fall River), provides electric power to their customers in eastern Idaho, northwestern Wyoming, and southwestern Montana.

Existing BPA transmission lines in the area that serve LVE and Fall River include the Palisades-Goshen transmission line, the Swan Valley-Goshen and Swan Valley-Teton lines, and the Goshen-Drummond line. BPA has completed various upgrades and other improvements of these lines over the last few years. These improvements have increased the voltage stability and reliability of these lines as well the Fall River transmission system and the northern portion of LVE's transmission system.

The reliability of the southern portion of LVE's transmission system, however, continues to be a concern. LVE's system experiences extreme peaks in electrical load during winter, when temperatures can drop to -50 °F and electricity is needed for heat. If a transmission line serving the southern portion of LVE's system were to go out of service due to weather or some other event, voltage instability could occur, and customers, including residential customers, could lose power and heat. Because of the potentially life-threatening low

temperatures that likely would be associated with such an outage, such an outage is a major concern.

BPA also needs to address ongoing load growth in southeast Idaho and the Jackson Hole valley area in Wyoming. Electricity use (load) in these areas has been growing at a rate of about 3 percent per year. As discussed above, BPA has recently upgraded and improved its existing lines in southeast Idaho. In addition to strengthening aging equipment, these improvements also help meet the growing electricity need in these areas by providing additional transmission capacity. However, additional action is needed to ensure that the transmission system can adequately handle all expected load growth in the area.

1.2 Purposes

In satisfying the underlying need for action, BPA would like to achieve the following purposes:

- Minimize costs
- Minimize impacts to the natural and human environment
- Maintain reliability of BPA's transmission system to BPA and industry standards
- Meet BPA's contractual and statutory obligations.

1.3 Cooperating Agencies

The proposed 22-mile transmission line that BPA is proposing to help fund would be owned and operated by LVE. Portions of the right-of-way for the proposed line would cross lands managed by the U.S. Forest Service, (USFS) Caribou-Targhee National Forest (C-TNF) (Soda Springs Ranger District) and the Bureau of Land Management (BLM), Pocatello Field Office (PFO). These two agencies have agreed to act as cooperating agencies under NEPA and assist with preparation of this EA. Upon completion of the EA, each of these agencies would need to make a decision about whether to grant LVE Special Use permits necessary for LVE to construct, operate, and maintain the transmission line on the respective lands that each agency manages. The USFS and BLM would use this EA to support their respective decisions for this project.

Each of these agencies also would use the EA to determine compliance with their respective planning documents. The C-TNF would decide if the proposed project complies with its currently approved forest plan. The BLM's PFO would decide whether the proposed project complies with its Resource Management Plan and other applicable planning documents.

1.4 Public Involvement

BPA initiated public involvement for the proposed project and this EA early in the project planning process. On May 18, 2006, BPA sent notice, via letter, of the proposed project and its intent to prepare this EA to potentially interested parties, including adjacent landowners, public interest groups, local governments, Tribes, and state and federal agencies. The letter

explained the project proposal, the environmental process, and how to participate. In addition to being mailed, this public letter also was posted on the BPA web site: http://www.efw.bpa.gov/environmental_services/Document_Library/HooperSprings/.

The public letter initiated the public scoping comment period for the EA, which closed July 14, 2006. During this scoping period, BPA held a public meeting on June 6, 2006 in Soda Springs, Idaho, to explain the proposed project and solicit public input about what issues should be considered in the EA. BPA also met with the Tribal Council for the Ft. Hall Shoshone-Bannock Tribe on June 7, 2006 in Ft. Hall, Idaho to discuss the project and receive input.

In summer 2007, the proposed route of the new LVE transmission line was changed. Due to this change, BPA reopened the scoping period for the proposed project. BPA mailed a letter on October 16, 2007 to potentially interested parties that provided notice of the route change (including a map showing the original and revised proposed route) and of a second scoping meeting. The letter also again explained the environmental process and how to participate. The second public meeting was held on November 1, 2007 in Soda Springs, Idaho, and the reopened scoping period closed on November 16, 2007.

Comments received at the public meetings and in 11 written comments submitted during the scoping periods expressed the following issues:

- Potential impacts to wildlife including construction during periods of fall/winter deer and elk migration near Blackfoot River Ranch and during elk calving season; habitat fragmentation caused by a new utility corridor; elk and deer habitat south of the Haul Road and west of Blackfoot River Road; Trumpeter swan and Sandhill crane habitat near Woodall Springs and the Blackfoot Reservoir; bald eagle nesting along the proposed route; sage grouse; and other migratory bird concerns
- Impacts to Wildlife Management Areas (WMAs) and other special areas (such as roadless areas) or avoiding these areas entirely
- Impacts to the future potential for wilderness designation of the area
- Impacts to native vegetation and noxious weed encroachment and impacts to aquatic resources in the Blackfoot River associated with soil erosion during construction
- Building the proposed line next to or within existing corridors
- Avoiding all Monsanto mineral leases
- Avoiding nearby cattle ranches
- Mitigating any farmland disturbance
- Avoiding the line on Government Dam Road or the old LVE line route headed north out of Hooper Springs
- Avoiding a new utility corridor to the extent possible
- Requests that a full environmental impact statement (EIS) be prepared in place of the EA and specific NEPA analyses be used in evaluating individual energy corridors

- Impacts to visual resources and recreation including the proximity of the proposed utility line to the Pioneer Historic Byway (PHB), and the disturbance of recreation corridors and the overall recreational experience associated with a visible utility line in the area
- Cumulative impacts associated with the energy corridor (specifically about future development, off-highway vehicle [OHV] use, and mining), and the need to develop specific restrictions on the type of use allowed within these energy corridors
- Preference for developing a corridor for renewable energy sources
- Concern that the proposed project was primarily to improve mining leases in the area and to supply more power to the mines
- Consideration be made for using Mountain Island Energy LLC's (MIE) property one mile southeast of the proposed line terminus for the proposed substation and line termination
- Coordination with the Idaho Department of Fish and Game (IDFG), USFS, US Fish and Wildlife Service (USFWS), BLM, and other agencies involved
- Groundwater contamination
- Decreased air quality from associated industries that would be using the power and utility corridor
- Wetlands destruction along the Blackfoot River
- Tribal off-reservation hunting and gathering treaty rights, and overall cultural resources and values
- Public health and safety (effects of electric and magnetic fields from transmission lines)
- Noise
- Need for the project
- The proposed project hastening development such as suburban sprawl, mining, and other power generation facilities.

All public letters and comments can be viewed at: http://www.efw.bpa.gov/environmental_services/Document_Library/HooperSprings/.

A list of interested parties, including adjacent landowners, public interest groups, local governments, Tribes, and state and federal agencies is included in Appendix A.

Chapter 2
Proposed Action and Alternatives

This chapter describes the Proposed Action; Alternatives 1, 2, 3, and 4; the No Action Alternative; and alternatives considered but eliminated from detailed study. This chapter also compares the five action alternatives and the no action alternative to the project purposes, as well as the potential environmental effects of each of these alternatives. Figure 2, Map Book Index, shows the Proposed Action and Alternatives 1, 2, 3, and 4.

2.1 Proposed Action

Under the Proposed Action, BPA proposes to construct, own, operate, and maintain a new 138/115-kilovolt (kV) substation near the City of Soda Springs, Idaho, and to partially fund construction by LVE of a new 22-mile, double-circuit 115-kV transmission line that would extend from this new BPA substation generally northeast to a connection with LVE's existing transmission system in Caribou County, Idaho (see Figure 2, Map Sheet 1). The following describes the proposed BPA substation and LVE transmission line in more detail, as well as the expected construction plan and schedule.

2.1.1 Proposed BPA Substation

Substations are an important part of the electric transmission system that interconnect transmission lines, transform (i.e., change) voltages to higher or lower levels, regulate voltage, and disconnect lines for maintenance, fault or outage conditions. The new substation proposed by BPA, referred to as the Hooper Springs Substation, would be located about 3 miles directly north of the City of Soda Springs, Idaho along Three Mile Knoll Road (see Figure 2, Map Sheet 1). BPA's proposed substation would be located next to PacifiCorp's Threemile Knoll Substation, a 345/138-kV substation that PacifiCorp has recently constructed to provide power to several large industrial customers in the Soda Springs, Idaho area, and as a second transmission source for residential and commercial customers in southeast Idaho. BPA's Hooper Springs Substation would connect to Threemile Knoll Substation so that BPA can serve LVE's proposed transmission line.

The proposed Hooper Springs Substation would contain electrical equipment typical of a utility substation, such as voltage transformer(s), breakers and switches, deadend structures for incoming transmission lines, rigid aluminum pipes called busing, and a control house. The proposed substation would occupy about 5.4 acres.

Construction of the proposed substation would begin with clearing and grading of the site. The substation then would be graveled and the substation equipment would be installed. A fence would be installed around the perimeter of the substation to provide for public safety and security. Access to the substation for construction activities would be via an existing county road.

The Hooper Springs Substation would be unmanned. The substation would be automated and could be controlled remotely. The substation operator would visit the substation as needed weekly or monthly. Maintenance crews would perform maintenance on equipment as necessary. Construction of the Hooper Springs Substation would cost about $18 million.

2.1.2 Proposed LVE Hooper Springs-Lower Valley Transmission Line

The proposed Hooper Springs-Lower Valley transmission line would be a 22-mile double-circuit 115-kV line that would be constructed, owned, operated, and maintained by LVE. BPA would partially fund, through a lease agreement, LVE's construction of this new transmission line. Under this agreement, BPA would sign a lease with LVE and pay two thirds of the estimated cost for construction of the line over a 43-year (life of the structures) lease period. Operation and maintenance rates would be fixed and included in lease payments. At the end of the 43-year term, BPA would have a right to any excess capacity above LVE loads, with the right to use and serve other customers with that capacity should wind or other generation or future loads develop in the area.

2.1.2.1 Transmission Line Route and Right-of-Way

The route of the proposed LVE transmission line would extend from the proposed Hooper Springs Substation generally northeast to a connection with LVE's existing transmission system at a point about 2 miles southeast of the intersection of Blackfoot River Road and Diamond Creek Road (see Figure 2, Map Sheets 1-4). This route was developed, in part, to address concerns in public and agency comments.

Beginning at the proposed substation, the proposed route would head due east for about 0.58 mile and then parallel the existing PacifiCorp 138-kV line until it crosses Highway 34 just south of Conda Road. The proposed route would then travel east, veering northeast to avoid the Simplot pumping station area and from that point head north (just to the east of the Conda plant) and parallel an existing PacifiCorp 46-kV line.

The line would continue along Haul Road to the east and north, crossing this road once before it turns in a south-easterly direction along the east side of Blackfoot River Road. The proposed route would follow Blackfoot River Road until it reaches the mouth of the Blackfoot River canyon known as the Narrows. The route would then cross perpendicular to the Blackfoot River just inside the west boundary of the C-TNF near the wider open area of the mouth of the canyon. The proposed route would continue easterly and north-easterly through the C-TNF property to an intersection with the existing LVE 115-kV transmission line that runs along Diamond Creek Road. The new double-circuit line would connect into the existing line along Diamond Creek Road through overhead line switches. One structure on the existing line would be removed and replaced with two steel poles that would each have a switch mounted on it. This would allow for any section of the new and existing line to be isolated for maintenance, emergency, etc.

The transmission line would require a 100-foot wide right-of-way (ROW) for its entire length. LVE would obtain permits and/or easements for the transmission line ROW from the owners and managers of land that would be crossed by the line.

Much of the specific routing of the ROW under the Proposed Action reflects input from various interested parties during the public scoping period for this EA. As discussed in

Chapter 1, BPA first provided notice of the proposed project and its potential route in 2006. Resulting public input suggested that the western portion of the originally proposed line be rerouted further east to follow existing transmission lines and other utilities in the area. In addition, Idaho Department of Fish and Game (IDFG) requested that the 0.5-mile eastern end of the originally proposed line be rerouted south to remain on C-TNF-administered lands until its intersection with the existing LVE line. These suggested changes have been incorporated into the Proposed Action, and the originally proposed route is included in this EA as Alternative 3 (see Section 2.4).

After these routing changes were incorporated, BPA reopened the public scoping period in October 2007 to accept comments on the new proposed route (see Chapter 1). The precise route of the ROW was further refined based on public and agency input during the reopened scoping period. These refinements have been incorporated into the Proposed Action, and the proposed route from 2007 is included in this EA as Alternative 1 (see Section 2.2).

2.1.2.2 Transmission Line Structures

The proposed transmission line would require approximately 210 new structures over 22 miles. The structures would be either wood or Corten™-steel single poles, about 85 feet tall, with six conductors (wires) and a ground wire (for lightning protection) strung between them (Figure 3). The steel poles are rust-inducing and blend well with the natural environment.

Structures would be generally spaced about 575 feet apart (i.e., there would be a distance of about 575 feet between structures). Most structures would be directly embedded into the ground. In rocky areas, a trackhoe or some other form of tracked vehicle would be used to excavate an area about 20 feet deep, and about 6 to 8 feet in diameter for each structure; all soil and rock removed during excavation would be used to backfill the areas once structures were installed.

To assemble and erect the structures, an area about 120 feet by 120 feet (0.33 acre) would be temporarily disturbed at each site for construction equipment maneuvering, structure assembly, etc. The diameter of the pole at ground level would be between 2-3 feet. A drill rig would be used to auger the holes for the poles in areas of minimal rock. The disturbed areas would be restored to their original contours and revegetated with native species. About 10 structures would need to be set on a drilled pier concrete foundation due to a landowner request for no guy wires to be located in a cultivated field, and where the transmission line is close to roads, railroads, or natural obstacles such as shallow bedrock that prohibits the use of guy wires. In these cases, the disturbance area would be approximately 6 feet in diameter and about 30 feet deep.

Figure 3
Photo simulation looking west of the boundary of the Caribou National Forest with typical Corten™ single steel poles strung with conductors and ground wire.

Some structures may require guy wires that provide stability to structures subject to stress, such as dead-end or angle structures. Guy wires attach at various points along the structure and are anchored into the ground with screw anchors or plate anchors attached to steel in concrete in the ground. The approximate disturbance area of each guy wire would be 100 square feet. Guy wires would be within the ROW, anchored no further than 110 feet from a structure.

2.1.2.3 Conductors

Conductors are the wires on the structures that carry the electrical current. Each transmission structure would carry six conductors. The conductors would be treated to reduce the shininess of their metal. Conductors are attached to the transmission structures by insulators. Insulators are bell-shaped devices that prevent the electricity from jumping from the conductors to the structure and going to the ground. The insulators would be made of porcelain or fiberglass and would be non-reflective, reducing the sun glare that some older glass insulators create.

Conductors would be a minimum of about 23 feet off the ground. There would be an additional ground wire attached at the top of the poles for lightning protection.

2.1.2.4 Vegetation Removal

Most of the proposed ROW crosses prairie and open areas with no tall-growing vegetation to remove. Approximately 5.9 miles (84.6 acres) of the proposed route would require vegetation removal from the ROW. All tall-growing vegetation would be cut to prevent vegetation from coming close enough to the conductor to cause an electrical arc, which could injure people, start fires, and put the line out of service.

Trees from the area outside the ROW that could potentially grow, fall, or bend close enough to the transmission line to cause an electrical arc, called danger trees, would need to be removed. To selectively identify danger trees for the initial clearing, LVE would measure the tree height, stability, growth rate, and other factors of the trees. To clear the proposed ROW on USFS lands, the USFS would mark and cruise merchantable timber to be directly sold to the primary contractor in a Settlement Sale. About 46 acres of timber (primarily on USFS lands) would be cleared for the ROW. LVE would coordinate with the C-TNF as danger trees are identified to ensure trees are properly designated and that sensitive species or habitat is not disturbed. Whole tree yarding is the preferred method for timber removal, however helicopter yarding may also be used in areas that are inaccessible to ground-based equipment. Slash from clearing the ROW would be cut into smaller pieces and spread throughout the ROW.

2.1.2.5 Access Roads

For construction access, LVE would use existing roads leading to the proposed ROW. No new permanent roads would be developed and no existing roads would be upgraded. Temporary roads extending from existing roads would need to be constructed on USFS land to remove timber and reach structure locations not accessible by existing roads. These temporary roads would be designed to facilitate the use of cranes, excavators, drill rigs, supply trucks, log trucks, and line trucks. The ROW on USFS land would require about 3 miles of temporary spur roads. Spur roads would not be more than about 25 feet wide. The temporary roads would be reclaimed according to USFS requirements, that is, erosion control measures installed, regraded, reseeded, etc., following completion of the project.

2.1.2.6 Staging Sites

Three temporary staging areas would be needed along the proposed project area to store and stockpile utility poles, conductor reels, trucks and other equipment. In addition, vehicles and other equipment would be staged at designated assembly points along the utility route. The staging areas would all be on private lands and are identified in the Figure 2 Map Sheets. Staging areas 1 and 2 would be about 2 acres each and staging area 3 would be about 5 acres. About 9 acres total would be required. Areas selected are on existing, flat, paved, and/or graveled areas.

2.1.2.7 Conductor-Pulling Sites

Conductors would be strung in travelers (pulleys) from structure to structure with a large piece of equipment pulling the conductor and a truck holding the reel of conductor cable. Conductor-pulling sites would be needed along the extent of the proposed route. The pulling sites typically disturb a small area within the ROW, but do not extend outside the ROW.

2.1.2.8 Costs

Construction of the proposed transmission line would cost about $9.3 million.

2.1.2.9 Operation and Maintenance

Once LVE completes construction of its transmission line and puts the line into operation, periodic maintenance associated with the repair of insulators or guys would likely be required over time, as needed. No pole maintenance would be required with the use of Corten™-steel poles. LVE would be responsible for all maintenance of its line. LVE would conduct maintenance and safety inspections by helicopter every two years.

In addition, vegetation along LVE's transmission line would need to be maintained for safe operation of the line and to allow access to the structures. On C-TNF lands, vegetation would be managed by LVE as guided by the C-TNF RFP. LVE would trim any trees that grow into or near enough to the line to pose a risk. Tree trimming would be completed by hand or tracked vehicles according to USFS and BLM management plans. LVE also would also work with agencies to follow area-wide plans for noxious weed control.

2.1.3 Construction Plan and Schedule

If BPA decides to proceed with the Proposed Action after completion of all necessary environmental review, construction of the proposed substation by BPA and the proposed transmission line by LVE could begin in summer 2009. If this occurs, it is expected that BPA would complete construction of the substation by 2010, and that LVE would complete construction of the transmission line in fall 2010. This expected schedule results in a total construction period of about 16 months. LVE expects to construct the proposed transmission line in one phase. However, weather or other factors could delay or prolong the construction schedule. The following lists the general construction sequence.

- The substation site would be cleared and graded. Areas of the site would be excavated for equipment placement. A control house would be built to house some equipment. The site would be graveled and fenced after construction. Access would be restricted.
- Trees would be cleared from the 100-foot transmission line ROW, the pulling sites, and from danger tree areas. The merchantable trees (under contract and paid for prior to operations) would be harvested using conventional ground/helicopter logging practices, decked on a designated landing and loaded on to trucks for transport. Slash and non-merchantable timber would be lopped and scattered (cut trunks and branches scattered on the ground and left to decompose) within 24 inches of the ground surface on USFS land.
- Temporary spur roads would be constructed, structure sites cleared and graded, as needed, and erosion control devices put in place. Transmission line materials would be stockpiled at the staging sites. Some areas along the ROW might require temporary workspace wider than the 100 feet ROW to allow for staging of materials or specialized construction techniques.
- Wheeled and tracked logging equipment necessary to clear the ROW and set structures could be needed where slopes exceed 40 percent.
- Holes would be excavated for structures. Drilling and blasting could be required in some areas. Structure pieces would be brought to each site, constructed, lifted into

place using a crane or helicopter, and set into the excavated holes. Holes would be backfilled with native material from the original excavation.

- Helicopters would be used on part of the transmission line route to limit the amount of new roads required for construction, especially on USFS lands with no roads.
- Conductors would be strung, tightened at pulling sites, and connected to the new BPA Hooper Springs Substation and the existing LVE line that runs along Diamond Creek Road. The new line then could be energized.
- After construction activities are completed, each structure site and pulling site would be recontoured and topsoil would be spread as necessary. Each site would then be reseeded with native plant species.
- After completion of transmission line installation, existing access roads would be repaired, as necessary. Temporary roads on USFS land would be reclaimed according to USFS requirements, that is, erosion control measures installed, land regraded, areas reseeded, etc., and then blocked to restrict unauthorized travel following completion of the project. Permanent roads are not planned.

2.2 Alternative 1 – 2007 Proposed Transmission Line Route

Alternative 1 is the transmission line route that was developed in 2007 to reflect comments received during the initial public scoping period for the proposed project (see Figure 2). Notice of this new proposed route and an opportunity to comment was provided to the public when BPA reopened the public scoping period for the project in October 2007.

Similar to the Proposed Action, this alternative transmission line route would begin at the proposed BPA Hooper Springs Substation. This alternative would follow the same route as the Proposed Action to a point past its crossing of Highway 34 just south of Conda Road (Figure 2, Map Sheet 1). Alternative 1 then would head east on the south side of Conda Road and loop around the south and eastern edge of Conda before heading north. At a point directly east of the Conda plant, this alternative would rejoin the same general route of the transmission line under the Proposed Action and head north-northeast along Haul Road to its intersection with Blackfoot River Road.

Like the Proposed Action, Alternative 1 then would follow Blackfoot River Road until it reaches the mouth of the Blackfoot River canyon known as the Narrows, which is located at the western boundary of the C-TNF. However, the precise routing of this portion of Alternative 1 would differ from the Proposed Action in some locations (see Figure 2 Map Sheets). From the Narrows to its connection with the existing LVE line that runs along Diamond Creek Road, this alternative would follow the same alignment as the Proposed Action.

ROW width, transmission structures and other components, access roads, and staging and conductor pulling sites under Alternative 1 would be the same as under the Proposed Action. Alternative 1 also would be constructed on the same schedule and using the same construction methods and activities as described for the Proposed Action, and would be operated and maintained in the same manner. Construction costs of the transmission line under Alternative 1 would be about $9.6 million.

2.3 Alternative 2 – Narrows Transmission Line Routing Option

This routing option, which was requested by the C-TNF, provides for an alternative crossing of the Blackfoot River at the Narrows. Under this alternative, the transmission line would cross the Blackfoot River near the wider, more open area at the mouth of the Narrows, just inside the west boundary of the C-TNF (see Figure 2, Map Sheet 4). This alternative crossing would be about 2,000 feet east of the proposed crossing under the Proposed Action, and roughly in the location as the crossing under Alternative 1.

The same ROW width, transmission structures and other components, access roads, staging and conductor pulling sites, and construction methods and activities would be used under this routing option as under the Proposed Action. Implementation of Alternative 2 would not affect the construction plan or schedule described for the Proposed Action, and would be operated and maintained in the same manner. Implementation of this routing option also would not affect estimated total construction costs for the transmission line under the Proposed Action.

2.4 Alternative 3 – Original Proposed Transmission Line Route

Alternative 3 is the transmission line route originally proposed by LVE when public involvement for the proposed project began in 2006. Similar to the Proposed Action, this alternative transmission line route would begin at the proposed BPA Hooper Springs Substation and would head due east out of the substation. After about 0.5 mile, however, this alternative would diverge from the proposed transmission line route at its crossing of Three Mile Knoll Road and head north for about 7 miles parallel to and about 1 mile west of Highway 34 (see Figure 2, Map Sheet 1). This alternative then would turn east, travel for 1 mile and then head to the northeast along Blackfoot River Road for about 0.75 mile. The route then would follow the section line eastward for about 2.65 miles before crossing over to the east side of the Blackfoot River Road.

From this point, this alternative would rejoin the same general corridor as the transmission line route under the Proposed Action to its point of connection with the existing LVE line that runs along Diamond Creek Road. However, the precise siting of this alternative's ROW in the corridor would be different from the Proposed Action (see Figure 2, Map Sheet 4).

ROW width, transmission structures and other components, and staging sites under Alternative 3 would be the same as under the Proposed Action. This alternative would, however, require the use of different access roads and conductor pulling sites for its western portion that does not follow the same general corridor as the Proposed Action. Alternative 3 would be constructed on the same schedule and using the same construction methods and activities as described for the Proposed Action, and would be operated and maintained in the same manner. Construction costs of the transmission line under Alternative 3 would be about $9.7 million.

2.5 Alternative 4 – Tailing Pond Transmission Line Route

Alternative 4 is essentially a combination of portions of Alternative 3 (the original proposed transmission line route) with Alternative 1 (the 2007 proposed transmission line route) (see

Figure 2 Map Sheets). The transmission line route of this alternative would follow Alternative 3 from the proposed BPA Hooper Springs Substation to a point approximately 4.5 miles north of this substation. This alternative then would head east for about 2.6 miles and pass directly north of an existing tailing pond associated with the Conda plant to Haul Road, where it would then follow the same ROW as Alternative 1 and head north-northeast along Haul Road to its intersection with Blackfoot River Road. From this intersection, Alternative 4 would follow the same route as Alternative 3 to its point of connection with the existing LVE line that runs along Diamond Creek Road.

ROW width, transmission structures and other components, and staging sites under Alternative 4 would be the same as under the Proposed Action. This alternative would, however, require the use of different access roads and conductor pulling sites for its western portion that does not follow the same general corridor as the Proposed Action. Alternative 4 would be constructed on the same schedule and using the same construction methods and activities as described for the Proposed Action, and would be operated and maintained in the same manner. Construction costs of the transmission line under Alternative 4 would be about $9.4 million.

2.6 No Action Alternative

Under the No Action Alternative, BPA would not construct the proposed Hooper Springs Substation or sign a lease agreement with LVE for construction of the proposed Hooper Springs-Lower Valley 115-kV transmission line. Without BPA funding of the proposed transmission line, it is expected that LVE would not construct this line. In addition, without the new line, it is expected that voltage stability and reliability problems on the transmission grid in this area could continue. The growing energy requirements of southeastern Idaho and the Jackson Hole valley area may not be met. .

2.7 Alternatives Considered But Eliminated From Detailed Study

Other alternatives, discussed below, were considered early in the planning stage for addressing the growing energy needs of eastern Idaho, western Wyoming, and LVE. These alternatives were eliminated from detailed study because they did not meet the identified need (see Section 1.1), had much greater environmental impacts, or were not feasible for economic or electrical reasons.

2.7.1 Non-Wires Alternatives

Non-wires alternatives encompass all activities not directly related to transmission facility construction that may allow development of new transmission facilities to be deferred. These activities include energy conservation measures that reduce overall and peak electrical demand, new generation at or near where the increasing electrical loads are, and contractual load reductions from industry and others to reduce peak demand.

In 2004, BPA studied non-wires alternatives to determine if these measures or a combination of these measures could meet the need for the project. The study assumed that a proposed natural gas pipeline would be built in the area to decrease electrical heating and power loads during peaks.

The findings of the 2004 report state that with a gas pipeline, some measures are cost-effective and could defer the project, but it is unclear whether the measures could be implemented and could meet the need to serve LVE during peak loads. Loads have increased since the report was completed, and the gas pipeline was completed in 2009. Since the study, LVE has increased the natural gas distribution system by 30 percent and peak loads continue to increase at a rate of 2.5 percent per year. LVE is also working on a plan to shed some load during winter peaks. Non-wires alternatives were eliminated from further consideration because the measures do not meet the need for the project.

2.7.2 Alternative BPA Substation Locations

As discussed in Section 2.1.1, BPA would need to build a new substation to connect the proposed LVE transmission line to PacifiCorp's existing Threemile Knoll Substation. BPA considered possible locations for its proposed substation farther away from Threemile Knoll Substation than currently proposed, but these locations would require longer transmission line connections and would increase costs. Because of the increased costs and the potential for increased environmental impacts from longer transmission line connections, BPA eliminated these sites from further consideration.

2.7.3 Goshen-Lanes Creek Transmission Line Alternative

BPA considered an alternative of constructing a new 161-kV transmission line from PacifiCorp's Goshen Substation near Idaho Falls, Idaho to a connection with LVE's existing transmission system at a point near Lanes Creek, Idaho, about 10 miles southeast of Grays Lake National Wildlife Refuge. This alternative also would require adding shunt capacitors on the system by 2013. The approximate length of this line alternative would be about 52 miles.

This alternative would require more capital from BPA due to increased length of the transmission line. This alternative also would require vegetation clearance and construction activities in a new 52-mile long transmission line corridor that would create more impacts to land use, vegetation, wildlife and other resources than the 22-mile long line that is part of the Proposed Action. Finally, this alternative would connect to the Goshen Substation. At this point in time, any additional interconnections to this substation would be difficult to configure and could result in reliability problems. This alternative was eliminated from further consideration because of the cost, potential environmental impacts, and reliability issues.

2.7.4 Blackfoot River Road Route Alternative

This transmission line routing alternative was requested by an owner of land in the vicinity of the northernmost staging area of the Proposed Action. This alternative would follow the same transmission line route as under the Proposed Action from BPA's proposed Hooper Spring Substation to a point near the power substation by the intersection of Haul Road and Blackfoot River Road. At this point, instead of following Blackfoot River Road, the line route under this alternative would continue in an easterly direction for about three miles. This alternative then would head generally south-southeast for about 2 miles to rejoin Alternative 3. After study of this route, it was eliminated because it would result in much

greater impacts to wetland areas in comparison to the Proposed Action, and would only shift (rather than lessen) land use impacts to other landowners.

2.8 Comparison of Alternatives

Tables 1 and 2 compare alternatives by construction requirements, purposes and impacts.

Table 1 Comparison of Alternatives						
Construction Requirements						
	No Action	**Proposed Action**	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**
Hooper Springs Substation	None	Yes	Yes	Yes	Yes	Yes
New transmission line (miles)	None	22	22.8	22.8	23.1	22.3
Number of new structures	None	210	218	218	221	215
ROW width (feet)	None	120	120	120	120	120
Miles of upgraded road	None	None	None	None	None	None
New temporary roads (miles)	None	3	3	3	3	3
New permanent roads (miles)	None	None	None	None	None	None
Purposes						
Minimize costs	Avoids upfront costs; future negative impacts to community	Substation $18 million; transmission line $9.3 million	Substation $18 million; transmission line $9.6 million	Substation $18 million; transmission line $9.6 million	Substation $18 million; transmission line $9.7 million	Substation $18 million; transmission line $9.4 million
Minimize impacts to the environment	Avoids construction impacts; future negative impacts to economy and public health and safety	Avoids impacts to visual and water resources, threatened, endangered and special status species.	More vegetation, wildlife, and wetlands impacts than Proposed Action.	More vegetation, wildlife, and wetlands impacts than Proposed Action.	More vegetation, wildlife, wetlands and visual impacts than Proposed Action.	More vegetation, wildlife, wetlands, and visual impacts than Proposed Action.
Maintain system reliability	Risks public health and safety during outages.	Improves system reliability by reducing risk of outages.	Improves system reliability by reducing risk of outages.	Improves system reliability by reducing risk of outages.	Improves system reliability by reducing risk of outages.	Improves system reliability by reducing risk of outages.
Meet BPA's contractual and statutory obligations	Does not improve system reliability and subsequent power deliveries.	Maintains system reliability and subsequent power delivery to BPA's customers.	Maintains system reliability and subsequent power delivery to BPA's customers.	Maintains system reliability and subsequent power delivery to BPA's customers.	Maintains system reliability and subsequent power delivery to BPA's customers.	Maintains system reliability and subsequent power delivery to BPA's customers.

Table 2 Impacts from Alternatives

	No Action	Proposed Action	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Air quality	None	Low	Low	Low	Low	Low
Cultural	None	None	None	None	None	None
Farmlands	None	None	None	None	None	None
Fisheries and wetlands	None	Low	Low	Low	Low	Low/Moderate
Land use, transportation, and recreation	None	Low	Low	Low	Low	Low
Noise	None	Moderate	Moderate	Moderate	Moderate	Moderate
Plants	None	Moderate	Moderate	Moderate	Moderate	Moderate
Public safety	Moderate	Low	Low	Low	Low	Low
Socioeconomic	Moderate	Low	Low	Low	Low	Low
Soils	None	Low	Low	Low	Low	Low
Vegetation	None	Moderate	Moderate	Moderate	Moderate	Moderate
Visual	None	Low	Low	Low	Low	Low
Wildlife	None	Moderate	Moderate	Moderate	Moderate	Moderate

*To evaluate potential impacts from construction, operation, and maintenance, four impact levels were used: high, moderate, low, and no impact. High impacts are considered to be significant impacts, while moderate and low impacts are not.

Chapter 3
Affected Environment, Environmental Impacts, and Mitigation Measures

This chapter identifies and evaluates the potential impacts of the Proposed Action, Alternatives and the No Action Alternative on the environment. To evaluate potential impacts from construction, operation, and maintenance activities, four impact levels were used: **high**, **moderate**, **low**, and **no impact**. This chapter also lists mitigation that could reduce impacts.

Both direct and indirect impacts were evaluated. Direct impacts are those that would occur within or next to the proposed transmission line ROW[1] during construction and would have an immediate effect on the environmental resource being evaluated. For example, removal of vegetation used for foraging or refuge during construction would constitute a direct impact on wildlife. Generally, direct impacts would be confined to the proposed ROW. Indirect impacts are those that would occur after construction or in an area adjacent to construction activities or outside the proposed ROW. For example, the introduction of noxious weeds following vegetation removal that results in lower quality habitat for wildlife would be an indirect impact. If the affected environment for a specific natural or other resource extends beyond the general limits of the proposed ROW, it is noted under the specific resource.

This chapter also includes the potential cumulative impacts of the Proposed Action under each of the resources evaluated. Cumulative impacts are the incremental effect of an action when added to other past, present, and reasonably foreseeable future actions. Foreseeable future actions can be undertaken by federal or non-federal entities. Cumulative impacts also can result from individually minor but collectively significant actions taking placed over time.

Though much of the project vicinity has remained undeveloped rangeland and forestland, agriculture, mining, timber harvest, and other rural developments have occurred in the area in the past two centuries. Typical past development includes cultivated fields and seeded grasslands for hay production and grazing, phosphate mining, livestock grazing on range land, recreation on USFS and BLM lands including hiking and Off-Highway Vehicle use, and timber harvest. These types of activities continue in the area and likely will continue into the future.

Because of its rural nature, there is limited current or proposed future development activity in the general project area. Typical activities that could occur are road construction, housing development, timber harvest, recreation, and some commercial and industrial expansion. No major projects or actions are known to be underway or planned in the county (Hopkins, 2009).

[1] Though the transmission line would require a 100-foot ROW, the analysis of environmental impacts assumed the ROW would be 120-feet wide.

The North Maybe Canyon phosphate mine, which has closed, may require a major rehabilitation effort to prevent selenium and other hazardous and harmful substances from leaching from its spoils piles. The area currently being investigated is crossed by all action alternatives.

3.1 Vegetation

3.1.1 Affected Environment

Vegetation in the vicinity of the proposed project includes a variety of vegetation communities, predominated by native plant communities with canopy tree species and understory. Cultivated crops and seeded grasslands are also present in the project vicinity, as are noxious weeds. There is also the potential for certain special status plant species to be present in the project vicinity.

3.1.1.1 Vegetation Communities

Mapping of vegetation communities present in the project vicinity was completed for the proposed project in 2007. Table 3 lists the types of vegetation and habitat that were identified during this mapping. The discussion summarizes the various vegetation communities present in the project vicinity.

Sagebrush-Dominated

Sagebrush-dominated habitat is the most prevalent vegetation community in the project vicinity. It occurs on a variety of sites, such as openings in coniferous forest, surrounding aspen stands at mid-elevation, and interspersed with grasslands and agricultural lands.

This vegetation community is characterized by the presence of mountain big sagebrush (*Artemisia tridentata* var. *vaseyana*) and silver sagebrush (*Artemisia cana*). Mountain big sagebrush generally is found at mid-elevation, cooler sites. Most sagebrush stands have a component of rabbitbrush (*Ericameria=Chrysothamnus viscidiflorus* and *Ericameria nauseosa*), spineless horsebrush (*Tetradymia canescens*), or bitterbrush (*Purshia tridentata*). Understory species include Sandberg's bluegrass (*Poa secunda*), Junegrass (*Koeleria macrantha*), needlegrass (*Stipa* sp.), bluebunch wheatgrass (*Pseudoroegneria spicata*), parsnipflower buckwheat (*Eriogonum heracleoides*), white hawkweed (*Hieracium albiflorum*), larkspur (*Delphinium* sp.), and biscuitroot (*Lomatium* sp.). Figure 4 is a view of sagebrush habitat on BLM land.

Mountain Shrub-Dominated

Mountain shrub communities are primarily dominated by chokecherry (*Prunus virginiana*), serviceberry (*Amelanchier alnifolia*), and buckthorn (*Rhamnus alnifolia*). Mountain shrub sites frequently have a few aspen mixed in with the shrub species. Most mountain shrub areas along the proposed ROW are found in openings next to conifer and aspen (*Populus tremuloides*) stands. Understory in dense stands is limited, but includes mule ears (*Wyethia amplexicaulus*), parsnipflower buckwheat, biscuitroot, and heartleaf arnica (*Arnica cordifolia*). Figure 5 shows an area of mountain shrub adjacent to conifer stands on the east side of the Blackfoot River.

Table 3 Vegetation/Habitat Types and Species In the Project Vicinity

Dominant Vegetation/Habitat	Subcategories	Primary Species
Sagebrush-dominated	Sagebrush/sagebrush-bitterbrush/ sagebrush-grassland/sagebrush mountain shrub	*Artemisia tridentata vaseyana/Artemisia cana/ Purshia tridentata*
Mountain Shrub-dominated	Mountain shrub/mountain shrub-aspen/mountain shrub-grassland/mountain shrub-sagebrush-grassland	*Prunus virginiana/Rhamnus alnifolia/ Amelanchier alnifolia/Populus tremuloides*
Grass-dominated (native, not seeded)	Grassland/grassland-sagebrush/ grassland-mountain shrub	*Calamagrostis rubescens/ Agropyron spicatum = Pseudoroegneria spicata/ Koeleria macrantha/Poa secunda/Festuca idahoensis*
Aspen-dominated	Aspen/aspen-mountain shrub/aspen-sagebrush	*Populus tremuloides*
Conifer-dominated	Douglas-fir/lodgepole pine/subalpine fir	*Pseudotsuga menziesii/Pinus contorta/Abies lasiocarpa*
Wetlands	Palustrine emergent (PEM) Palustrine scrub-shrub (PSS)	*Carex utriculata/Carex praegracilis/Phalaris arundinacea/Salix wolfii/Salix boothii/Salix exigua/Cornus sericea = stolonifera*
Basalt Outcrops with Native Vegetation	Sagebrush/mountain shrub/ grass	*Opuntia fragilis/Artemisia cana/ Elymus=Leymus cinereus/Amelanchier utahensis/alnifolia, Symphoricarpos albus*
Bitterbrush-dominated	Bitterbrush	*Purshia tridentata*
Weed-dominated	Invaded by weed species	*Circium arvense/Carduus nutans/Melilotus officinalis/Centaurea maculosa*
Other Areas (disturbed, dwellings, seeded grassland, agricultural)	Tilled land, seeded grassland, reseeded mined land, buildings	N/A

Figure 4
Sagebrush on BLM Land.

Figure 5
Mountain shrub, conifers, willow and moose.

Native Grassland

Areas mapped as grasslands along the proposed ROW generally have relatively sparse vegetative canopy cover of grasses and forbs. Grass species such as pinegrass (*Calamagrostis rubescens*), Junegrass and bluebunch wheatgrass occur relatively widely dispersed on rocky terrain in these areas, most of which are on south-facing slopes. Arrowleaf balsamroot (*Balsamorhiza sagittata*) is abundant in some of these areas. Other species such as lupine

(*Lupinus* sp.), buckwheat, biscuitroot, and creeping barberry (*Mahonia repens*) also occur in small numbers on these open slopes.

On gentle slopes along the western sections of the proposed ROW, soils are deeper, and native grass species dominate areas where the sagebrush overstory has been reduced or removed. Areas dominated by native grasses are typically adjacent to sagebrush-dominated sites. They have more substantial canopy cover of grasses than the steeper forest sites with shallow or rocky soils. Species on these sites include Idaho fescue (*Festuca idahoensis*), bluebunch wheatgrass, Junegrass, and Sandberg's bluegrass. Buckwheat, biscuitroot, lupine, and balsamroot are also present. Needle-and-thread grass (*Hesperostipa=Stipa comata*) occurs in a few areas in low amounts. Figure 6 shows an example of a native grass-dominated site. If left undisturbed, sagebrush may return to these areas.

Figure 6
Example of native grasslands with limited sagebrush overstory.

Aspen Forest

Aspen are found as a minor component in many conifer-dominated stands, but aspen also occur in relatively pure stands. Aspen stands are found in a variety of situations along the proposed ROW. They occur adjacent to conifer forests, adjacent to mountain shrub along the top of ridges, or in isolated stands surrounded by sagebrush. Understory plants found in aspen stands along the ROW include snowberry (*Symphoricarpos oreophilus*), rose, mule ears, western coneflower (*Rudbeckia occidentalis*), pinegrass, chokecherry, northern bedstraw (*Galium boreale*), elegant aster (*Eucephalus elegans=Aster perelegans*), and serviceberry.

Coniferous Forest

Coniferous forest types are located on the eastern end of the proposed ROW, primarily in the area that crosses the Caribou-Targhee National Forest. Many conifer stands include at least a few aspen (less than 15 percent canopy). Tree density and species composition vary,

but Lodgepole pine (*Pinus contorta*) and Douglas-fir (*Pseudotsuga menziesii*) are the most abundant conifer species. There also are a few smaller inclusions of subalpine fir (*Abies lasiocarpa*). Engelmann spruce (*Picea engelmannii*) may be present in some areas, because it typically grows with subapline fir. Canopy cover of conifers varies. Some areas on north and east slopes near ridge tops support relatively dense stands of conifers and other areas support fewer, large trees (primarily Douglas-fir). When present, subalpine fir is typically less than 10 percent cover.

Understory plant cover is sparse in dense conifer stands, but understory along the edge of and under more open conifer stands includes arrowleaf balsamroot, alpine timothy (*Phleum alpinum*), rose (*Rosa* sp.), sticky geranium (*Geranium viscosissimum*), snowberry, heartleaf arnica, Piper's anemone (*Anemone piperi*), woodland strawberry (*Fragaria vesca*), and spike trisetum (*Trisetum spicatum*).

Wetlands

Two categories of wetlands are found along the proposed ROW; palustrine emergent wetlands (PEM) and palustrine scrub-shrub wetlands (PSS). PEM wetlands within the proposed ROW (Figure 7) are dominated by sedges (*Carex praegracilis* and *Carex utriculata*), meadow barley (*Hordeum brachyantherum*), and, in some cases by reed canarygrass (*Phalaris arundinacea*). Cattails (*Typha latifolia*) only occur in one small man-made pond. Other species found in PEM wetlands include horsetail (*Equisetum arvense*), slender cinquefoil (*Potentilla gracilis*), false hellebore (*Veratrum californicum*), and spikerush (*Eleocharis palustris*).

Figure 7
PEM wetland along Mill Canyon Creek, a tributary to the Blackfoot River.

PSS wetlands are shrub dominated wetlands that primarily occur along the Blackfoot River. These wetlands are dominated by shrub species, primarily willow (*Salix boothii, S. wolfii*, and *S. exigua*) and red osier dogwood (*Cornus sericea*).

For more information on wetlands in the project vicinity, see Section 3.4.

Basalt Outcrop with Native Vegetation

Within agricultural lands on the western section of the proposed ROW are small remnants of native vegetation growing in basalt outcroppings that were not suitable for farming. These areas have remnants of species that once were more widespread. Species growing in these areas include basin wildrye (*Elymus=Leymus cinereus*), golden currant (*Ribes aureum*), mule ears, brittle pricklypear (*Opuntia fragilis*), silver sagebrush, chokecherry, spineless horsebrush, and Utah serviceberry (*Amelanchier utahensis*). Figures 8 and 9 provide views of two of these rocky areas with remnant native vegetation.

Figure 8
Silver sagebrush on basalt.

Figure 9
Chokecherry and wildrye on basalt.

Bitterbrush-Dominated

Bitterbrush is present as a component of several sagebrush sites, but it rarely occurs as the dominant overstory species. Figure 10 shows one of these areas. Bluebunch wheatgrass and arrowleaf balsamroot are the most abundant understory and interspace species on the few bitterbrush sites along the proposed ROW.

Figure 10
Bitterbrush with bluebunch wheatgrass.

Weed-Dominated

Weeds are non-native plants that encroach into native vegetation on disturbed lands. Although weeds typically occur in patches that are too small to constitute a vegetation community, some areas along the proposed ROW are so infested with weeds from all categories that they are considered to be weed-dominated. The proposed ROW has a variety of non-native species including cheatgrass (*Bromus tectorum*), Japanese brome (*Bromus japonicus*), smooth brome, horseweed (*Conyza canadensis*), yellow sweetclover (*Melilotus officinalis*), bull thistle (*Cirsium vulgare*), common mullein (*Verbascum thapsis*), Kentucky bluegrass (*Poa pratensis*), and desert madwort (*Alyssum desertorum*).

Other Areas

This category includes all other lands that do not support naturally occurring vegetation, such as disturbed areas, land-covering dwellings and other buildings, and farmland. Farmland in the project vicinity includes cultivated fields and seeded grasslands that are used for grazing and hay production. Primary cultivated crops are small grains, mostly without irrigation. The proposed 5.4-acre substation site is in a seeded grassland area. In addition, there are approximately 27.8 acres of seeded grasslands and 41.6 acres of cultivated fields within the proposed ROW.

3.1.1.2 Noxious Weeds

The Federal Noxious Weed Act of 1974 (as amended in 1994) provides for the control and management of non-indigenous weeds that injure or have the potential to injure the interests of agriculture and commerce, wildlife resources, or the public health (7 U.S.C. §§ 2801-2814, January 3, 1975, as amended 1988, 1994). The Act requires federal agencies to develop management programs to control undesirable plants on federal lands under each agency's jurisdiction. This includes adequately funding the program, implementing cooperative agreements with state agencies to coordinate management of undesirable plants

on federal lands, and establishing integrated management systems to control undesirable plants targeted under cooperative agreements. A federal agency is, however, not required to carry out management programs on federal lands unless similar programs are being implemented on state or private lands in the same area.

For this proposed project, noxious weeds are nonnative plants that have been legally designated as noxious by Idaho state law. Economically, noxious weeds degrade farm and rangeland. Ecologically, noxious weeds degrade and threaten native plant communities by displacing native species, decreasing species diversity, increasing runoff, and degrading wildlife habitat. Under Idaho state law, landowners are primarily responsible for controlling noxious weeds. County weed superintendents have the authority to write tickets ordering landowners to curb weeds and to allow access to private land for weed inventories (or face fines).

In Idaho, 57 species of weeds have been designated as noxious. Idaho divides these into three categories based upon the level of concern.

- **EDRR** (Early Detection and Rapid Response) status noxious weeds include nine weed species that must be positively identified within 10 days of observation, and controlled within the same growing season as identified.
- **Control** status noxious weeds include 24 weed species that must be controlled with a plan and action to reduce population levels with 5 years.
- **Containment** status noxious weed species include 24 weed species that must be controlled or contained, so that population boundaries do not expand beyond the current extent.

The proposed ROW is within the Highlands Cooperative Weed Management Area (CWMA). Major weed concerns in this area are Dyer's woad (*Isatis tinctoria*), leafy spurge (*Euphorbia esula*), perennial pepperweed (*Lepidium latifolium*), and yellow toadflax (*Linaria vulgaris*) (CWMA, 2005). Major efforts are being made to control these weeds in the CWMA. No weed focused surveys of the entire proposed ROW were conducted. However, weeds were noted during other field inventories along the proposed ROW. Several species of state-listed Control and Containment noxious weeds were documented within the proposed ROW. These include the following species:

- Canadian thistle (*Cirsium arvense*) is an Idaho Containment status species. It is a tall herbaceous perennial plant that reproduces from both seeds and from extensive underground rhizomes, which send up numerous stems. It was found in the bottom of swales, drainages, and other areas where soil stays moist and in upland areas near Wetland C (refer to Section 3.4).
- Musk thistle (*Carduus nutans*) is an Idaho Control status species. It is a biennial thistle that reproduces from seeds. One plant can produce up to 20,000 seeds, of which two-thirds are typically viable. It was found in only a few places in disturbed sagebrush sites.
- Spotted knapweed (*Centaurea maculosa*) is an Idaho Containment species. It is a biennial that produces up to 25,000 seeds per plant, and these may remain in the soil for up to 8 years. Knapweed was found in abundance in one area of the proposed ROW in upland areas adjoining Wetland C. Canada thistle and smooth brome (*Bromus inermis*), which is

not designated as a noxious weed, but is an invasive non-native grass were also present in this area.

3.1.1.3 Special Status Plant Species

Special status plant species are those species that have been identified for protection under federal or state laws. One of the primary federal laws that provide protection for special status plant species is the Endangered Species Act of 1973 (ESA), 16 USC §1536 *et seq*. No ESA-listed, proposed, or candidate plant species are known to occur in or adjacent to the proposed substation or ROW. Wetlands along the proposed ROW were searched for Ute ladies' tresses (*Spiranthes diluvialis*), a wetland species listed as threatened under the ESA. Although this orchid has been found in adjacent counties of Idaho, none were found within the proposed ROW.

USFS and BLM sensitive species are designated plant and animal species that are susceptible to habitat changes or impacts from activities. The USFS lists three sensitive plants species with the potential to occur in the proposed ROW: Payson's bladderpod (*Lesquerella paysonii)*, compact (cache) beardtongue (*Penstemon compactus*), and Starveling milkvetch (*Astragalus jejunus jejunus*). BLM lists two sensitive species with the potential to occur in the proposed ROW: hoary willow (*Salix candida*) and Idaho sedge (*Carex idahoa*).

In the State of Idaho, the Idaho Native Plant Society (INPS) maintains a list of rare plants for the state. INPS rare plant species in the project vicinity include Idaho sedge, red glasswort (*Salicornia rubra*), hoary willow, and green needlegrass (*Stipa=Nassella viridula*). Idaho sedge is identified as a global priority. Two rare plant species, red glasswort and hoary willow are identified as state sensitive plant species and green needlegrass is identified as a state review plant species (Idaho Native Plant Society, 2009.).

Surveys for three of these species with the potential to occur in wetlands (i.e., Idaho sedge, red glasswort, and hoary willow) were conducted in all wetland areas within the proposed ROW, and portions of the Proposed Action transmission line route on USFS and BLM parcels were surveyed for all four species. In addition, a search of the Idaho Conservation Data Center database for all four species was conducted. This search indicated that there are several known occurrences of hoary willow and Idaho sedge within a mile of the proposed ROW. Based on these surveys and the database search, none of the four state-listed species are currently known to occur at the proposed substation site or within the proposed ROW.

Payson's Bladderpod. In Idaho, Payson's bladderpod are found on ridgelines on gravelly soils in openings in sagebrush or forest stands (Moseley 1996). These soils are typically from carbonate parent material. Most populations occur over 8,000 feet. Microsites for this species are the windward side of upper slopes in areas with low snow accumulation (Moseley 1996). There is marginal habitat on the western side of the C-TNF crossing east of the Blackfoot River crossing. Exposed areas of rocky soil along the eastern segment of the proposed ROW appear to be appropriate for this species. This species was not observed during late season surveys of this area.

Compact (Cache) Beardtongue. This penstemon species is found on dry, rocky soils more than 50 miles south of the project ROW in the upper Logan River-Franklin Basin area. It was not observed during any surveys of the project analysis area on the C-TNF. A few areas of

suitable rocky substrate along Mill Canyon Creek on the east side of the project area appear to be suitable habitat for this beardtongue. This penstemon was not observed in these areas during late season surveys in August 2007.

Starveling Milkvetch. In Idaho, this species is found on barren, eroding shale substrata of the Twin Creek Limestone formation (Montpelier District of the Caribou NF) (Appendix J of Curlew National Grassland Plan, March 2002). There is no suitable habitat for Starveling Milkvetch within the proposed ROW and it was not observed during any surveys of the project analysis area on the C-TNF.

Hoary willow was not found in any of the willow habitats along the proposed ROW. This low willow grows in bogs and swampy areas because this willow species seems to prefer anchored floating mats on the edge of lakes or ponds (Walford et al., 1997). Habitat is marginal in the proposed ROW. Additionally, there are no wetlands within the proposed ROW on BLM lands.

Idaho sedge was not identified in any wetlands, although suitable habitat does occur within some wetland areas along the proposed ROW. Additionally, there are no wetlands within the proposed ROW on BLM lands. Idaho sedge is a relatively low, inconspicuous sedge that typically grows scattered in small patches in the border between wet meadow, emergent wetlands, and sagebrush-steppe vegetation (Mancuso and Severud, 2004). Idaho sedge occurs in moist mountain and riparian meadows. Several populations of Idaho sedge have been found about one mile from the east end of the proposed ROW. Although one of the sedges found in a wetland on the east side on Caribou-Targhee National Forest land could not be keyed to species because no flowers or fruits were present, the foliage did not match descriptions for Idaho sedge.

Red glasswort was not found in any wetlands. It prefers moist or seasonally moist stream banks and meadows that are high in salt concentrations with open and exposed soils (Jankovsky-Jones, 2001). None of the wetlands along the Proposed Action's ROW appear to provide suitable habitat for this species.

Green needlegrass was not found during surveys of BLM and USFS parcels. Suitable habitat consists of sandy, well-drained soils and grows in grassland and sagebrush slopes.

3.1.2 Environmental Impacts—Proposed Action

3.1.2.1 Vegetation Communities

The proposed Hooper Springs Substation would be constructed on approximately 5.4 acres of tilled agricultural land. There would be no impacts on native vegetation or communities from construction of the substation (see Section 3.5.2.1 for a discussion of potential impacts to agricultural uses from construction of the substation).

Clearance of vegetation from the transmission line ROW and construction of the proposed transmission line would impact approximately 230 acres of native vegetation communities (see Table 4). The overall impact of the Proposed Action on vegetation communities would be moderate because most plant species likely to be impacted are common, similar to the surrounding areas.

Table 4 Vegetation Types Affected by the Proposed Action[1]

Dominant Vegetation Habitat	Proposed Action (Acres)	Alternative 1 (Acres)	Alternative 2 (Acres)	Alternative 3 (Acres)	Alternative 4 (Acres)
Sagebrush-dominated	120.57	95.55	97.21	73.72	83.05
Mountain Shrub-dominated	39.05	39.84	39.40	8.33	27.45
Grass-dominated (native, not seeded)	18.95	29.90	29.89	22.89	22.39
Aspen-dominated	23.78	23.35	23.70	4.72	16.50
Conifer-dominated	22.04	18.44	18.21	15.79	17.59
Wetlands & Waters of the U.S.	3.58	4.93	3.89	2.624	17.69
Basalt Outcrops with Native Vegetation	1.06	1.33	1.33	33.34	33.60
Bitterbrush-dominated	0.52	0.59	0.59	0.56	0.59
Weed-dominated	1.43	1.77	1.52	0.08	1.77
Other Areas	92.66	116.53	115.84	180.07	111.36
Total	**323.64**	**332.23**	**331.58**	**342.124**	**331.99**

[1]Includes substation site and transmission line ROW (120 feet wide) for the Proposed Action and each alternative.

About 46 acres of aspen dominated and conifer dominated habitat would be affected through tree clearing and removal for the proposed transmission line ROW. The trees that would be cleared include those species listed in Table 3. Of these 46 acres to be cleared, approximately 19 acres have been identified as suitable for timber harvest by the C-TNF. These 19 acres would be withdrawn from the suitable timber base. Routine vegetation maintenance of the line would discourage tree re-growth in the proposed ROW and remove subsequently identified danger trees.

Indirect impacts from tree clearing activities would include increased sunlight penetration to the understory of some dense stands of conifer, aspen, and mountain shrub communities, which currently have shade-tolerant plants, duff, and considerable debris. Some of these plants may not survive the increased sunlight and the plant community would likely change to more light-tolerant species. Many noxious weeds do extremely well in light, open areas, especially on disturbed sites. Noxious weeds, such as knapweed and thistles, would likely increase if not controlled, because they already are in the general area.

Removal of mature conifers and aspen also would increase the amount of precipitation directly striking the ground surface. Trees and their duff layer can intercept and lessen the impacts of water droplets on soil surfaces and slow runoff. Runoff also can increase after vegetation removal because the amount of water up-take by vegetation in the area decreases, and mature trees that shade winter snowpacks and slow the release of water from watersheds are removed. Removal of these trees thus would increase the potential for sediment and erosion.

The clearing of a line of trees also would fragment forest stands, which may result in a decrease in stand stability of adjacent trees. This is because interior trees that were previously protected are exposed to wind and sun. This could lead to future tree blowdowns during high winds and storm events until the stand becomes more stable over time (Kimmins, 1987).

Low-growing understory vegetation would not be disturbed in the proposed ROW, except where structure and access road construction is required. Development of tension sites would require removing native vegetation and disturbing soil (grading). The construction of each structure is expected to disturb about 0.33 acre of ground surface and vegetation. There are 210 structures planned for the proposed ROW. Total vegetation disturbance at ground level would be about 69 acres. The construction of 210 structures would require disturbance at continuous intervals throughout the proposed ROW. However, disturbance intervals for structures can be adjusted somewhat in most cases to avoid impacts to important vegetation components. Impacts to wetland areas and floodplains would be avoided. In addition, other important vegetation components, specifically aspen stands and unfragmented sagebrush stands, would be avoided to the fullest extent possible.

Tree and brush removal would create moderate impacts to vegetation communities in this area. Lower stature vegetation at the structure footing sites would be allowed to grow back. Impacts to USFS lands have the potential to be high if mitigation measures to avoid weed spread are not strictly followed. Weeds are already present in the proposed ROW and new weed sources could be brought on site with construction or maintenance vehicles. Mitigation measures identified in Section 3.1.8 would avoid or reduce the potential for this impact to occur.

Heavy equipment used to dig footing holes, assemble structures, or pull conductor may compact the soil at structure assembly and pulling sites, making re-growth and recovery of vegetation difficult. If substantial soil compaction occurs, it would increase precipitation runoff. This likely would result in changes to vegetation because species that are adapted to higher sunlight levels and compact soils, such as weeds, would spread.

No permanent access roads are proposed for this project. Temporary impacts on vegetation, however, would occur during the construction of about 3 miles of temporary access roads. Based on a proposed road width of 25 feet, the temporary access roads would impact about 9 acres of vegetation, primarily in sagebrush and conifer dominated habitats (see Table 5). Given the large amounts of these habitats in the area, the very small area of disturbance in each habitat, and the temporary nature of this disturbance, impacts to vegetation communities from construction of project access roads would be low. In addition, access roads constructed on USFS lands would be constructed in accordance with Forest Plan BMPs to reduce erosion potential to the extent possible and minimize any impact to resources.

Table 5 Vegetation Impacts from Temporary Access Roads

Dominant Vegetation/Habitat	Proposed Action (Acres)
Sagebrush-dominated	3.45
Mountain Shrub-dominated	1.41
Grass-dominated	1.17
Aspen-dominated	0.83
Conifer-dominated	2.22
Other Areas	0.01
Total	9.09

3.1.2.2 Noxious Weeds

Soil disturbance, removal of current vegetation, and increased sunlight penetration to the understory would increase the spread of several noxious weed species if proposed mitigation is not implemented (refer to Section 3.1.8). Noxious weeds degrade farm and rangeland and native plant communities by displacing wanted plant species. With the proposed mitigation, impacts from the Proposed Action would be low.

3.1.2.3 Special Status Plant Species

Payson's Bladderpod. This species was not observed in suitable habitat areas of the Forest. The Proposed Action is not expected to impact this species.

Compact (Cache) Beardtongue. This species was not observed in suitable habitat areas of the Forest. The Proposed Action is not expected to impact this species.

Starveling Milkvetch. There is no suitable habitat for Starveling Milkvetch within the proposed ROW and it was not observed during any surveys of the project analysis area on the C-TNF.

Hoary Willow. There are no suitable habitat areas on BLM lands. The Proposed Action is not expected to impact this species.

Idaho Sedge. There are no suitable habitat areas on BLM lands. The Proposed Action is not expected to impact this species.

Red glasswort. This species was not observed in potentially suitable habitat areas of the proposed ROW. The Proposed Action is not expected to impact this species.

Green needlegrass. This species was not found during surveys of BLM and USFS parcels. The Proposed Action is not expected to impact this species.

3.1.3 Environmental Impacts—Alternative 1

3.1.3.1 Vegetation Communities

The impacts of this alternative would be similar to the Proposed Action (moderate impacts). Approximately 332 acres would be impacted, slightly more than the Proposed Action (Table 4). The Hooper Springs Substation would remove 5.4 acres of agricultural land. Of the approximately 42 forested acres to be cleared, about 18 acres have been identified as suitable for timber harvest by the C-TNF. These 18 acres would be withdrawn from the suitable timber base. The changes in the crossing of the Blackfoot River would not impact wetlands because wetland impacts would be avoided for all alternatives. Impacts to aspen and mountain shrub would increase slightly compared to the Proposed Action. Temporary impacts to vegetation associated with temporary spur roads are anticipated and would be about the same as the Proposed Action because this alternative does not differ from the Proposed Action with respect to where temporary access roads would occur.

3.1.3.2 Noxious Weeds

Impacts would be similar to the Proposed Action.

3.1.3.3 Special Status Plant Species

Payson's Bladderpod. This species was not observed in suitable habitat areas of the Forest. This Alternative would not impact this species.

Compact (Cache) Beardtongue. This species was not observed in suitable habitat areas of the Forest. This Alternative would not impact this species.

Starveling Milkvetch. There is no suitable habitat for Starveling Milkvetch within this Alternative. This Alternative would not impact this species.

Hoary Willow. There are no suitable habitat areas on BLM lands. Alternative 1 would not impact this species.

Idaho Sedge. There are no suitable habitat areas on BLM lands. This Alternative would not impact this species.

Red glasswort. This species was not observed in potentially suitable habitat areas of this Alternative. This Alternative would not impact this species.

Green needlegrass. This species was not found during surveys of BLM and USFS parcels. The Proposed Action is not expected to impact this species.

3.1.4 Environmental Impacts—Alternative 2

3.1.4.1 Vegetation Communities

The impacts of this alternative would be similar to the Proposed Action (moderate impacts). Approximately 332 acres would be impacted, slightly more than the Proposed Action (Table 4). The Hooper Springs Substation would remove 5.4 acres of agricultural land. Of

the approximately 42 forested acres to be cleared, about 19 acres have been identified as suitable for timber harvest by the C-TNF. These 19 acres would be withdrawn from the suitable timber base. The changes in the crossing of the Blackfoot River would not impact wetlands because wetland impacts would be avoided for all alternatives. Impacts to aspen and mountain shrub would increase slightly as compared to the Proposed Action. Temporary impacts to vegetation associated with temporary access roads are anticipated and would be about the same as the Proposed Action because this alternative does not differ from the Proposed Action with respect to where temporary access roads would occur.

3.1.4.2 Noxious Weeds

Impacts would be similar to the Proposed Action because this alternative would entail soil disturbance and removal of vegetation, which in turn increase sunlight penetration to the understory that could increase the spread of several noxious weed species if mitigation is not implemented.

3.1.4.3 Special Status Plant Species

Payson's Bladderpod. This species was not observed in suitable habitat areas of the Forest. This Alternative would not impact this species.

Compact (Cache) Beardtongue. This species was not observed in suitable habitat areas of the Forest. This Alternative would not impact this species.

Starveling Milkvetch. There is no suitable habitat for Starveling Milkvetch within this Alternative. This Alternative would not impact this species.

Hoary Willow. There are no suitable habitat areas on BLM lands. Alternative 2 would not impact this species.

Idaho Sedge. There are no suitable habitat areas on BLM lands. This Alternative would not impact this species.

Red glasswort. This species was not observed in potentially suitable habitat areas of this Alternative. This Alternative would not impact this species.

Green needlegrass. This species was not found during surveys of BLM and USFS parcels. The Proposed Action is not expected to impact this species.

3.1.5 Environmental Impacts—Alternative 3

3.1.5.1 Vegetation Communities

Alternative 3 would impact similar types of native vegetation as the Proposed Action. About 342 acres would be impacted (Table 4); approximately 18 fewer acres than the Proposed Action. The impacts of this alternative would be somewhat less than the Proposed Action (moderate impacts). Fewer acres of native vegetation (primarily sagebrush and mountain brush communities) would be impacted, because this alternative would go north from the substation through agricultural lands and avoid a few areas with sagebrush. Fewer acres of aspen and conifers would be impacted because this alternative would go along the base of treed slopes on the east end of the alternative instead of over the top. Of the

approximately 21 forested acres that would be cleared under this alternative, approximately 10 acres have been identified as suitable for timber harvest by the C-TNF. These 10 acres would be withdrawn from the suitable timber base. The Hooper Springs Substation would remove 5.4 acres of agricultural land. Temporary impacts to vegetation associated with temporary access roads are anticipated; however, they have not been identified for this alternative.

3.1.5.2 Noxious Weeds

Impacts would be similar to the Proposed Action because this alternative would entail soil disturbance and removal of vegetation, which in turn increase sunlight penetration to the understory that could increase the spread of several noxious weed species if mitigation is not implemented.

3.1.5.3 Special Status Plant Species

Payson's Bladderpod. This species was not observed in suitable habitat areas of the Forest. This Alternative would not impact this species.

Compact (Cache) Beardtongue. This species was not observed in suitable habitat areas of the Forest. This Alternative would not impact this species.

Starveling Milkvetch. There is no suitable habitat for Starveling Milkvetch within this Alternative. This Alternative would not impact this species.

Hoary Willow. There are no suitable habitat areas on BLM lands. Alternative 3 would not impact this species.

Idaho Sedge. There are no suitable habitat areas on BLM lands. This Alternative would not impact this species.

Red glasswort. This species was not observed in potentially suitable habitat areas of this Alternative. This Alternative would not impact this species.

Green needlegrass. This species was not found during surveys of BLM and USFS parcels. The Proposed Action is not expected to impact this species.

3.1.6 Environmental Impacts—Alternative 4

3.1.6.1 Vegetation Communities

Alternative 4 would impact similar types of native vegetation as the Proposed Action. Approximately 332 acres would be impacted. The impacts of this alternative would be 8 acres more than the Proposed Action (moderate impacts). Fewer acres of native vegetation (primarily to sagebrush, mountain brush, and aspen communities) would be impacted because this alternative would go north from the substation through agricultural lands and avoid a few areas with sagebrush. Slightly greater disturbed and agricultural areas would be impacted; however, the line would span a larger area of wetlands. Of the approximately 34 forested acres to be cleared, approximately 18 acres have been identified as suitable for timber harvest by the C-TNF. These 18 acres would be withdrawn from the suitable timber base. The Hooper Springs Substation would remove 5.4 acres of agricultural land.

Temporary impacts to vegetation associated with temporary access roads are anticipated; however, they have not been identified for this alternative.

3.1.6.2 Noxious Weeds

Impacts would be similar to the Proposed Action because this alternative would entail soil disturbance and removal of vegetation, which in turn increase sunlight penetration to the understory that could increase the spread of several noxious weed species if mitigation is not implemented.

3.1.6.3 Special Status Plant Species

Payson's Bladderpod. This species was not observed in suitable habitat areas of the Forest. This Alternative would not impact this species.

Compact (Cache) Beardtongue. This species was not observed in suitable habitat areas of the Forest. This Alternative would not impact this species.

Starveling Milkvetch. There is no suitable habitat for Starveling Milkvetch within this Alternative. This Alternative would not impact this species.

Hoary Willow. There are no suitable habitat areas on BLM lands. Alternative 4 would not impact this species.

Idaho Sedge. There are no suitable habitat areas on BLM lands. This Alternative would not impact this species.

Red glasswort. This species was not observed in potentially suitable habitat areas of this Alternative. This Alternative would not impact this species.

Green needlegrass. This species was not found during surveys of BLM and USFS parcels. The Proposed Action is not expected to impact this species.

3.1.7 Environmental Impacts—No Action Alternative

No plant communities would be disturbed and no protected species would be impacted. This alternative would not have an effect on the spread of noxious weeds. There thus would be no impacts from this alternative.

3.1.8 Mitigation Measures

The following mitigation measures have been identified to avoid or reduce potential adverse vegetation impacts from the proposed project:

- Limit grubbing to the area around structure sites to lessen the impact on the roots of low-growing vegetation, increasing the chances of plant survival and re-sprout.
- Limit the amount of new temporary roads constructed and re-opening of existing roads to the extent possible.
- Minimize vegetation clearing at sides of access roads to 2 feet or less, where possible, to minimize impacts to adjacent forested areas.
- No grading, clearing or other construction work in wetlands or riparian corridors.

- Save topsoil removed for structures and temporary spur road construction and use onsite for restoration activities, to promote re-growth from the native seed bank in the topsoil.
- Require that all temporary access on C-TNF follow the proposed ROW. Tracked vehicles would be used and vegetation would be cut, but the soil surface would not be bladed.
- Follow the guidelines in the noxious weed strategies used by land managers on federally managed land. Seed all disturbed areas as soon as possible with certified noxious weed-free seed (as certified by the state) to stabilize the sites. On the C-TNF, use a pre-approved native seed mixture approved by the Forest Officer. On BLM lands, use a native seed mixture approved by the BLM botanist.
- Break up compacted soils where necessary by ripping, tilling, or scarifying before re-seeding.
- Monitor re-vegetation and site restoration work for adequate growth; implement contingency measures as necessary.
- Coordinate weed control activities with the USFS and the Caribou County weed supervisor to reduce the threats of noxious and invasive weeds on the native plant community. Follow the guidelines in the "Caribou-Targhee Noxious Weed Strategy" on USFS land.
- Revegetate areas where danger trees have been removed with native grasses and forbes.
- Monitor for weed populations, re-vegetation, and restoration success.

3.1.9 Unavoidable Impacts Remaining After Mitigation

Spur road and ROW construction would affect about 333 acres of vegetation, of which 239 acres are native vegetation communities. Areas cleared of mature plant communities that can be revegetated would have a temporary loss of mature plants, habitat complexity, and species diversity. Based on the prolific nature of noxious weeds and the difficulty in controlling them, their unintentional spread to areas not currently colonized may not be fully mitigated. Because of the limited length of proposed ROW and the temporary nature of the disturbance, unavoidable impacts remaining after mitigation are expected to be low.

3.1.10 Cumulative Impacts

The cumulative conversion of land from native vegetation to cropland or rangeland, mines, timber harvest or rural development have degraded native vegetation in the area. Loss of native vegetation can have far reaching effects to associative wildlife, soils, and other resource areas discussed in this EA. Fragmentation and the removal of native vegetation types that would occur with future mining or other extractive industries such as timber harvest or clearing for development would increase fragmentation and habitat connectivity.

Some agricultural development has given way to conversion to residential development. Suppression of sagebrush on private lands continues and would be expected to increase relative to future development. Invasive species also represent a current and foreseeable

future threat to native habitats in the area. For example, Cheatgrass has invaded private lands and is likely to spread even without further disturbance or disturbance associated with the Proposed Action. Development and urbanization, though not expected in the near term, could increase as some could seek more rural landscapes in which to live. By removing vegetation for the transmission line and temporary access roads, the Proposed Action would contribute to the cumulative impact to vegetation in the area. However, because the low-growing vegetation would remain and be used to revegetate the transmission line ROW and access roads, the Proposed Action's contribution to this cumulative impact would be minor.

3.2 Wildlife

3.2.1 Affected Environment

3.2.1.1 Wildlife Habitats

As described in Section 3.1, the proposed project area primarily consists of eight native vegetation communities and two other types of vegetation communities. These vegetation communities vary in their suitability and value as potential habitat for wildlife. For instance, weed-infested lands have virtually no value as wildlife habitat. Agriculture lands and disturbed lands may provide some useful habitat for some species; for example gray partridge (*Perdix perdix*) and coyote (*Canis latrans*) were seen in such areas. However, the open nature and frequent disturbance by humans and domesticated range animals of these lands prevent them from serving as permanent or important habitat for most species. Instead, high quality wildlife habitats are associated with native vegetation types. Descriptions of mapped vegetation types, the habitat that each provides, and wildlife species expected or observed in each are described below by vegetation type.

Coniferous Forest

Coniferous forest types are located on the eastern end of the project on the section of the proposed ROW that crosses the C-TNF. Most coniferous forest habitat is mixed with at least a few aspen. Wildlife species documented in this habitat include mule deer (*Odocoileus hemionus*), snowshoe hare (*Lepus americanus*), pine squirrel (*Tamiasciurus hudsonicus*), chipmunk (*Tamias sp.*), and many species of migratory birds.

Conifer stands on the C-TNF are interspersed with openings and small stands of aspen. As a result, bird species diversity is relatively high. Raptors, such as red-tailed hawks (*Buteo jamaicensis*), were observed in conifer stands near openings. Other bird species observed along the proposed ROW in coniferous forest include: ruby-crowned kinglet (*Regulus calendula*), golden-crowned kinglet (*Regulus satrapa*), western wood pewee (*Contopus sordidulus*), mountain chickadee (*Parus gambeli*), black-capped chickadee (*Parus atricapillus*), pine siskin (*Carduelis pinus*), northern flicker (*Colaptes auratus*), downy woodpecker (*Picoides pubescens*), hairy woodpecker (*Picoides villosus*), American robin (*Turdus migratorius*), Cassin's finch (*Carpodacus cassinii*), house wren (*Troglodytes aedon*), dark-eyed junco (*Junco hyemalis*), mountain bluebird (*Sialia currucoides*), American kestrel (*Falco sparverius*), white-breasted nuthatch (*Sitta carolinensis*), and red-breasted nuthatch (*Sitta canadensis*).

Sagebrush

Sagebrush habitat is home to a variety of species. In Idaho, sagebrush is primary habitat for a number of high priority or target species, such as sage grouse (*Centrocercus urophasianus*), ferruginous hawk (*Buteo regalis*), long-billed curlew (*Numenius americanus*), Brewer's sparrow (*Spizella breweri*), sage sparrow (*Amphispiza belli*), Swainson's hawk (*Buteo swainsoni*), sharp-tailed grouse (*Tympanuchus phasianellus columbianus*), burrowing owl (*Athene cunicularia*), sage thrasher (*Oreoscoptes montanus*), loggerhead shrike (*Lanius ludovicianus*), prairie falcon (*Falco mexicanus*), and western meadowlark (*Sturnella neglecta*)(Ritter, 2000). Bird species that typically use sagebrush habitat for nesting include Brewer's sparrow (*Spizella breweri*), vesper sparrow (*Pooecetes gramineus*), sage thrasher, sage sparrow, and western meadowlark. Mountain bluebirds were seen using sagebrush habitat that bordered aspen stands. In addition, because mountain bluebirds are cavity nesters, it is assumed that there is potential nesting habitat in any aspen stands located in this habitat. Mule deer were seen in this habitat. A pair of prairie falcons (*Falco mexicanus*) appeared to be defending their nesting territory in sagebrush on the top of a ridge at the mouth of the Narrows. Sage grouse droppings were found on BLM sagebrush parcels and a sage grouse was flushed on an area of sagebrush adjacent to aspen on C-TNF lands.

Mountain Shrub

Many bird species are expected to use this habitat type, including Lazuli bunting (*Passerina amoena*), yellow-breasted chat (*Icteria virens*), and various warbler species. This is an important seasonal habitat component for sharp-tailed grouse, as described in Section 3.2.1.3. Bear scat was abundant in several mountain shrub areas within the proposed ROW.

Aspen Forest

Aspen stands support a variety of wildlife species. Whitetail deer (*Odocoileus virginianus*), moose (*Alces alces*), and elk (*Cervus canaden*sis) appear to use aspen along the ROW at least seasonally. A variety of bird species were found in aspen. On the C-TNF, woodpeckers have constructed cavities in large diameter aspen. Aspen was the only habitat where warbling vireos (*Vireo gilvus*) were heard singing in the proposed ROW. Other birds noted in aspen were American robin, American goldfinch (*Carduelis tristis*), dark-eyed junco, Townsend's solitaire (*Myadestes townsendi*), and black-capped chickadee. Ruffed grouse (*Bonasa umbellus*) is a high priority bird species in Idaho for which aspen is primary nesting habitat (Ritter, 2000).

Grasslands

Native grasslands differ considerably from grasslands seeded with non-native species in regards to conservation and sustaining native plant species. From the standpoint of wildlife habitat, both types of grasslands probably support similar species. Western meadowlarks and Savannah sparrow (*Passerculus sandwichensis*) are the species most likely to use grasslands for nesting. Long-billed curlew and sharp-tailed grouse are high priority bird species in Idaho for which grasslands are primary habitat (Ritter, 2000). They are both also USFS and BLM special status species. Another special status species, sage grouse, uses grass areas near sagebrush for courtship displays and foraging.

Wetlands

Lincoln's sparrow (*Melospiza lincolnii*), song sparrow (*Melospiza melodia*), and yellow warbler (*Dendroica petechia*) were heard in willows associated with the Blackfoot River near the Narrows. A bald eagle (*Haliaeetus leucocephalus*) was seen soaring over this area as well. Moose appear to use all of the wetlands on Forest lands.

Trumpeter swans (*Cygnus buccinators*) are present in the Blackfoot Reservoir where they use the vegetated shallows and open water for habitat and feeding (Idaho Department of Fish and Game, 1997).

Bitterbrush

Bitterbrush is important winter browse for wild ungulates, particularly mule deer (Griffith and Peek, 1989). Loggerhead shrikes, a priority species in Idaho, nest primarily in sagebrush (60 percent), but bitterbrush is chosen as nesting substrate 20 percent of the time (Woods and Cade, 1996). Bitterbrush is an important food source for microtines, which eat the large seeds. Deer mice (*Peromyscus maniculatus*) harvest and store the large seeds for later consumption (Clements and Young, 1996).

Basalt Outcrops with Native Vegetation

Basalt outcrops are similar to sagebrush habitats in wildlife use. They also provide some areas that could be used as overnight bat roosts or snake shelters.

3.2.1.2 Threatened and Endangered Species

Certain wildlife species have been identified for protection or special consideration under the federal ESA. For the Proposed Action, BPA requested information from the USFWS on wildlife species potentially occurring in the project area that have been listed or otherwise specially designated under the federal ESA (USFWS, 2007, 2008, and 2009). Table 6 shows the three species with special ESA designations that have the potential to occur within the area of the Proposed Action.

Table 6 Endangered, Threatened, and Candidate Species

Common Name (*scientific name*)	Status
Canada lynx (*Lynx canadensis*)	Threatened
Gray wolf (*Canis lupus*)	Endangered in Wyoming
Yellow-billed cuckoo (*Coccyzus americanus occidentalis)*	Candidate

Threatened (T)—Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Endangered (E) - Species in danger of extinction within the foreseeable future throughout all or a significant portion of its range

Candidate (C)—Species for which there is sufficient information on biological vulnerability and threats to support proposals to list them as endangered or threatened.

Canada Lynx

Canada lynx (*Lynx canadensis*) was listed under the ESA as a threatened species in 2000 with no designated critical habitat. Lynx are solitary carnivores, generally occurring at low densities in boreal forest habitats. Within most of their range, Canada lynx densities and population dynamics are strongly tied to the distribution and abundance of snowshoe hare (*Lepus americanus*), their primary prey. Kittens are born in May or June after a 60- to 74-day gestation period, and typically remain with their mothers until about 10 months of age. Females may not reproduce during food shortages, and food availability directly correlates with the survival probability of young Canada lynx. Few kittens survive when food is scarce (Koehler 1990).

On a landscape scale, suitable Canada lynx habitat should include a mosaic of early seral stages that support snowshoe hare populations and late seral stages of dense old growth forest that provide ideal denning, security, and red squirrel habitat. Connectivity between Canada lynx populations is critical. Dispersal corridors should be several miles wide with only narrow gaps. Large tracts of continuous coniferous forest are the most desirable for Canada lynx travel and dispersal.

Historical range of the Canada lynx in the Greater Yellowstone Area includes Idaho, Montana, and Wyoming (USFS, 2007). Both Montana and Idaho classify the Canada lynx as a furbearer, but no longer allow trapping. In Wyoming, the Canada lynx has been protected as a non-game species with no open season since 1973.

In response to the uncertain population status of Canada lynx populations and habitat in the contiguous United States and to the onset of the listing process, an interagency Canada lynx coordination effort was initiated in March 1998. The USFWS, USFS, BLM, and National Park Service participated in this effort. As a result, documents significant to the conservation of Canada lynx on federally managed lands were published (Ruggerio et al. 2000; Ruediger et al. 2000; USFS, March 2007).

One of the actions put forth in the Lynx Conservation Agreement (LCA) was that Forest Plans should include measures necessary to conserve lynx on all administrative units identified as having lynx habitat. National forests in Montana and parts of Idaho, Wyoming, and Utah completed the Final EIS for lynx management in the Northern Rocky Mountains in March 2007. This EIS includes assessment of Forest Plans on all northern Rocky Mountain Forests, including the C-TNF, and the designation and incorporation of conservation measures and management actions for Canada lynx and its habitat on forest units (USFS, March 2007).

Historically, lynx have been found within 2 miles of the west side of the Proposed Action on C-NTF lands. Although the USFS has not designated any lynx analysis units (LAUs) within the project corridor, it is within an area designated as linkage habitat by the Forest (USFS, March 2007). Suitable foraging habitat for lynx occurs in the analysis corridor on C-TNF lands on the east side of the proposed ROW. Young and mixed-age conifer forest and aspen stands are present in many areas on the Forest. Snowshoe hare tracks were found in April 2007 in aspen-conifer habitat on USFS land, and rabbit droppings were seen during other surveys on the Forest. Suitable areas of lynx denning habitat were not found within the Proposed Action.

Gray Wolf

Gray wolves (*Canis lupus*) were listed as endangered in 1967. The project area is within the range of the northern Rocky Mountain Distinct Population Segment (DPS) of gray wolves. This DPS includes all of Montana, Idaho, and Wyoming, the eastern one-third of Washington and Oregon, and a small port of north-central Utah. In March 2009, all of this DPS (except for the Wyoming portion) was removed from ESA listing by the USFWS in large part due to the successes in wolf recovery in the last few years. Although wolves in Wyoming remain listed and protected under the ESA, additional flexibility was provided for their management under the provisions of the final rule and special regulations promulgated for the nonessential experimental population on November 22, 1994.

Gray wolves use a variety of habitats, including coniferous forests, montane meadows, and shrub-steppe. Key components of suitable habitat include sufficient year-round prey base of ungulates and alternate prey; suitable and semi-secluded denning and rendezvous sites; and sufficient space with minimal exposure to humans. Preferred wolf prey species of deer, elk, and moose are all found in and adjacent to the proposed ROW.

Gray wolves were historically widespread, but were virtually exterminated from the western United States by the 1940s. In 1995 and 1996, wolves were reintroduced into Yellowstone National Park. The project area is within the Yellowstone nonessential experimental population area that currently has more than six breeding pairs. At the end of 2005, there were 46 wolf packs, 20 breeding pairs, and a minimum fall wolf population of 325 animals.

Packs or den sites have not been found in southeast Idaho, but sightings of wolves (usually single animals) have been documented. The project area is within dispersal distance of wolves from packs in northeast Idaho and northwest Wyoming; specifically, the packs south of Yellowstone National Park are closer to southeast Idaho and the Caribou zone of the C-TNF.

Yellow-billed Cuckoo

The yellow-billed cuckoo (*Coccyzus americanus occidentalis*) is considered a candidate species under the ESA. The USFWS received a petition to list the yellow-billed cuckoo as an endangered species in 1998. In 2000, the USFWS found that the petition presented substantial scientific and commercial information to indicate that the listing of the yellow-billed cuckoo may be warranted. In 2001, the USFWS determined that listing the yellow-billed cuckoo was warranted but precluded by higher priority species. The Western Distinct Population Segment (DPS) of the yellow-billed cuckoo was thereby given status as a candidate species by the USFWS.

The yellow-billed cuckoo is a neotropical migrant that breeds in North America and winters primarily south of the United States-Mexico border. It once flourished in western cottonwood and willow riparian forests and thickets, but is now considered to be nearly extinct west of the Continental Divide, where it has disappeared from large portions of its former range and is extremely rare in the interior West.

Members of this species may go unnoticed because they are slow-moving and prefer dense vegetation. Population densities based on long-term data may be underestimates because of

this bird's quiet demeanor and furtive behavior, which make this species relatively easy to overlook when it is not singing. In the West, yellow-billed cuckoos prefer sites with a dense understory of willow (*Salix* spp.) combined with mature cottonwoods (*Populus* spp.) and generally within 100 meters of slow or standing water (Gaines and Laymon 1984). The yellow-billed cuckoo is also known to use non-riparian, dense vegetation such as wooded parks, cemeteries, farmsteads, tree islands, Great Basin shrub-steppe, and high-elevation willow thickets (DeGraff et al. 1991). They feed on insects (mostly caterpillars), but also beetles, fall webworms, cicadas, fruit, and, especially, berries. Breeding often coincides with the appearance of massive numbers of cicadas, caterpillars, or other large insects (Ehrlich et al. 1988).

Recent surveys were completed across Idaho for all areas with historic records of yellow-billed cuckoos. More than half (51 percent; 40 of 78) of the historic yellow-billed cuckoo records in Idaho were from southeastern Idaho, most from the Snake River Corridor (Reynolds and Hinckley 2005). Results indicate that yellow-billed cuckoos in Idaho are mainly associated with cottonwood galleries along the Snake River in southeast Idaho.

No historical records exist for this species within 2 miles of the Proposed Action. Suitable dense willow and willow-dogwood habitat exists along the Blackfoot River crossing on the east side of the proposed ROW.

3.2.1.3 USFS Sensitive and Management Indicator Species and BLM Special Status Species

USFS sensitive species are designated animal species that are susceptible to habitat changes or impacts from activities. The official designation is made by the USFS at the regional level and is a separate designation from being listed under the ESA. USFS Management Indicator Species (MIS) are identified in the Land and Resource Management Plans for each national forest and are generally identified to represent habitat types that occur within the national forest boundary and/or because they are thought to be sensitive to National Forest System management activities.

BLM special status species includes sensitive species that are not already listed under the ESA. BLM policy is to provide these species with the same level of protection as is provided for ESA-candidate species in BLM Manual 6840.06 C, that is to "ensure that actions authorized, funded, or carried out do not contribute to the need for the species to become listed." The special status species designation is normally used for species that occur on BLM administered lands for which the BLM has the capability to significantly affect the conservation status of the species through management. BLM special status species overlap in some cases with USFS sensitive species and MIS. However, these two species lists can differ considerably, primarily because of the different habitat types managed by each of these agencies.

Table 7 lists the USFS sensitive species, USFS MIS, and BLM special status species that may occur in the project area. In addition to the following discussion of each of these species, additional detail on USFS sensitive species and MIS is provided in the Biological Evaluation Technical Report (CH2M HILL, 2007) prepared for this project.

Table 7 USFS Sensitive Species, USFS MIS, and BLM Special Status Species Potentially Occurring the Project Vicinity

Species	Habitat Requirements	Status
Boreal Owl (*Aegolius funereus*)	High elevation spruce-fir forest; nests in dense trees with an open understory and multi-layered canopy.	FS Sensitive
Flammulated Owl (*Otus flammeolus*)	Breeds in mature and old forests of Douglas-fir, ponderosa pine, mixed conifer, aspen with moderate density of large trees and snags.	FS Sensitive
Great Gray Owl (*Strix nebulosa*)	Mature coniferous and mixed coniferous forests interspersed with small clearings.	FS Sensitive
Bald Eagle (*Haliaeetus leucocephalus*)	Closely associated with lakes and large rivers with mature trees. Nest near open water in late-succession forests with low levels of human disturbance.	FS and BLM Sensitive
Northern Goshawk (*Accipiter gentilis*)	Mature coniferous and mixed coniferous and aspen forests with small clearings. Typically nests in mature and old forests.	FS Sensitive
Ferruginous Hawk (*Buteo regalis*)	Semi-arid grasslands and shrub-steppe with scattered trees, rocky outcrops, and shallow canyons overlooking open valleys.	BLM Sensitive
Loggerhead Shrike (*Lanius ludovicianus*)	Sagebrush-steppe, grasslands, open areas with scattered trees, open grassy woodlands, and deserts.	BLM Sensitive
Columbian Sharp-tailed Grouse (*Tympanuchus phasianellus columbianus*)	Mountain shrub-grassland communities. Typically found in high elevation grassland areas interspersed with serviceberry, chokecherry, Gambel's oak, sagebrush, snowberry, and aspen.	FS and BLM Sensitive
Sage Grouse (*Centrocercus urophasianus*)	Obligate sagebrush species throughout the year. Prefer relatively tall sagebrush for nesting areas and open sites surrounded by sagebrush for lek (breeding display) areas.	FS and BLM Sensitive
Long-billed Curlew (*Numenius americanus*)	Breed in short grasslands where nests are located on the ground in flat, open grasslands and prairies near higher clumps of grass. Winter in wetlands and marine areas.	BLM Sensitive
Three-Toed Woodpecker (*Picoides tridactylus*)	Mature conifer and mixed conifer forests; uses dead standing timber left by stand- replacing fires.	FS Sensitive
Brewer's Sparrow (*Spizella breweri*)	Closely associated with dense sagebrush stands intermixed with grassy areas. In the northern part of their range, also use sub-alpine fir, dwarf birch, or montane pinon-juniper woodlands habitats.	BLM Sensitive
Sage Sparrow (*Amphispiza belli*)	Sagebrush obligate that breeds in areas with tall sagebrush in patchy cover and low grass cover.	BLM Sensitive
Pygmy Rabbit (*Brachylagus idahoensis*)	Closely associated with clumps of tall dense sagebrush coupled with deep loose textured soils for burrow construction.	FS and BLM Sensitive
Wolverine (*Gulo gulo*)	Alpine and arctic tundra, boreal and mountain forests (primarily coniferous) in areas with substantial snow cover during the winter.	FS Sensitive
Columbia Spotted Frog (*Rana luteiventris*)	Fish-free, spring fed creeks and ponds for breeding. Willow and riparian shrubs for adults. Bank sites with high oxygen potential for over-wintering.	FS Sensitive
Common Garter Snake (*Thamnophis sirtalis*)	Variety of habitats, forests, mixed woodlands, grassland, chaparral, farmlands. Often found near ponds, marshes, or streams.	BLM Sensitive

Boreal Owl

Boreal owls (*Aegolius funereus*), a USFS sensitive species, prefer high elevation spruce-fir forests or aspen for foraging and nesting. Nesting habitat consists of forests with a relatively high density of large trees, open understory, and multi-layered canopy. The boreal owl is a secondary cavity nester and is generally associated with mature and old spruce-fir forests. As a secondary cavity nester, boreal owls rely on woodpeckers to excavate snags and decaying trees, which they subsequently use for nesting and roosting. In Idaho, boreal owls prefer mixed conifer, spruce-fir, Douglas-fir, and aspen stands for nesting (Hayward, 1989). In studies in Montana, all boreal owl nests found were in lodgepole pine and spruce-fir forests (Hayward and Verner, 1994). Boreal owls appear to favor nest trees close to open meadows where vole populations are high (Palmer and Ryder, 1984). Habitat structural diversity is important in order to provide suitable habitat for both nesting and foraging. Boreal owls primarily prey on small mammals, particular red-backed voles. These prey species inhabit montane stands of coniferous, deciduous and mixed trees, but are typically more abundant in small montane or alpine meadows surrounded by forest.

This species occurs on the C-TNF in several high elevation mixed conifer breeding habitats. Surveys have documented them in Cold Spring (Bear Camp Gulch), Danish Flat, Mill Creek (Bear River Range) and Johnson Creek (Aspen Range) (USFS, 2005). Suitable habitat, containing both structural diversity and cavity trees, is found on the C-TNF segment of the proposed ROW.

Flammulated Owl

The flammulated owl (*Otus flammeolus*), a USFS sensitive species, prefers ponderosa pine habitat, but would also use Douglas-fir, aspen, and limber pine for habitat. Douglas-fir and aspen are present within the analysis area. Flammulated owls are secondary cavity nesters that primarily feed on nocturnal lepidopteron moths, which they glean from the foliage. Two key habitat features that are likely to limit flammulated owl populations are availability of nest cavities and prey availability/foraging habitat. Preferred species are beetles, grasshoppers, and moths (McCallum, 1994). Nesting territory occupancy has been highly correlated with high percentages of old growth ponderosa pine and Douglas-fir (Linkhart and Reynolds, 1997). In other areas, nesting territories were highly correlated with aspen stands (Marti, 1997).

C-TNF surveys have found flammulated owls in the Bannock Range, Bear River range, and Smoky Canyon area. They have been documented at Clark Mine on Worm Creek (nesting in dead aspen) in July 1993, Left Fork Fish Haven Canyon in August 1992 (dead in water trough), Smoky Canyon in May 1999, head of East Fork Mink Creek in July 1989, and Porcelain Pot Gulch (Bannock Range) in July 1989 (USFS, 2005).

The proposed ROW has a few areas with trees large enough for suitable nesting cavities. There is more potential habitat consisting of larger diameter trees with cavities on the Alternative 2 alignment to the south than on the proposed ROW. Most of the aspen stands that are within the proposed ROW are of relatively small stature, but they do have some cavities for potential nest sites. There are many areas with a mix of several large aspen and

large conifers that could be potential suitable nesting habitat, but they did not appear to have large numbers of cavities.

Great Gray Owl

Great gray owls (*Strix nebulosa*) use mixed coniferous forests usually bordering small openings or meadows. Semi-open areas, where small rodents are abundant, near dense coniferous forests, for roosting and nesting, is optimum habitat for the great gray owls. Broken top snags, stumps, dwarf-mistletoe platforms, or old hawk and raven nests are used for nesting.

A comprehensive long-term study in northeast Oregon found that great gray owls, a USFS sensitive species, nest on stick platforms, on top of broken-off dead trees, and on artificial wooden platforms (Bull and Henjum, 1990). Of the stick nests, 68 percent were originally made by northern goshawks, 12 percent were made by red-tailed hawks, and 20 percent were natural platforms formed by dwarf-mistletoe brooms. These nests were in a variety of habitats, but the majority was in mature or older, un-logged stands of mixed conifer greater than 12 inches in diameter at breast height (dbh). On nest sites in areas geographically closer to the project area, great gray owls have been found between 6,500 and 7,800 feet in elevation in lodgepole pine stands close to wet meadow complexes (van Riper and van Wagtendonk, 2006). The great gray owl diet, when based on biomass, consists primarily of northern pocket gophers (67 percent) and voles (27 percent) (Franklin, 1988; Bull and Henjum, 1990).

Great gray owls have been found in many areas of the C-TNF. Observations are particularly concentrated near the proposed ROW. Early season, evening callback surveys were completed along the proposed ROW within the C-TNF on April 12 and 13, 2007 following the protocol for great gray owls in the Northwest Forest Plan. However, there were no replies to the calls.

In 2006 and 2007, suitable nesting sites consisting of mature conifers with large mistletoe clumps were mapped. These are most abundant on the Alternative 2 alignment. In addition to mistletoe clumps, a hawk nest was mapped that could potentially become a nest site as well. While suitable habitat occurs south of the Proposed Action's corridor, portions of Alternative 2 appear to have the highest value. A few areas with suitable habitat exist along the proposed ROW.

Bald Eagle

Bald eagles are listed as sensitive by both the USFS and BLM. Bald eagles are closely associated with lakes and large rivers in open areas, forests, and mountains. They nest near open water in late-successional forest with multiple perches and nest sites, and low levels of human disturbance (McGarigal, 1988; Wright and Escano, 1986). Nest sites are usually within 1/4 mile to 1 mile of open water, with less than 5 percent of the lake shore or river bank developed within 1 mile. Perches are generally located at the edge of forest stands, near foraging areas, or near nest trees with panoramic views of surrounding areas. Bald eagles need large trees along rivers with good visibility, preferably snags, but also use trees or boulders for perching. Protected, deep ravines with large trees are often used as night

roosts. Their food base is largely aquatic species (fish) and riparian-wetland dwelling birds, such as waterfowl. Carrion and small terrestrial mammals are also eaten.

Critical bald eagle winter habitat is generally located near food sources, such as lakes, rivers, and uplands with big game winter range. These areas have adequate perch sites, abundant food sources, and nearby sheltered roost sites. Human activity may be a major factor limiting bald eagle distribution in wintering habitats (Steenhof, 1976).

Ranger districts in the Caribou zone are listed primarily as wintering habitats for the bald eagle. One bald eagle nest site is known near Thayne, Wyoming. The nearest historic nest site is north of the Narrows approximately 10 miles. Bald eagles are known to winter in several areas of the C-TNF (Tincup, Diamond Creek, Narrow/Lane Creek, and Crow Creek). The Diamond Creek area is very near the proposed ROW. One bald eagle was observed soaring within the project corridor in the Narrows on April 13, 2007, during surveys for northern goshawk/great gray owls. The suitability of this area for foraging may be due to the open water area and the potential for road-killed ungulates. Bald eagles do use the proposed ROW.

Northern Goshawk

The northern goshawk (*Accipiter gentilis*), a USFS sensitive species, is a large accipiter that inhabits forested lands. Northern goshawks nest in mature to old forest stands with relatively large-diameter trees and high canopy closure (Hayward and Escano, 1989; Siders and Kennedy, 1996). They nest in a variety of forest types, including Douglas-fir, lodgepole pine, aspen, ponderosa pine, Engelmann spruce, and subalpine fir (Siders and Kennedy, 1996; Squires and Ruggiero, 1996; Weber, 2006). Studies indicate that nest trees are located on the bottom third of moderate slopes (15 percent to 35 percent), often on north-facing aspects (Hayward and Escano, 1989). Nest sites are often close to a perennial water source. Pairs of nesting goshawks typically maintain large territories, which they return to year after year. Goshawks that survive from one year to the next exhibit strong nest site fidelity for their territory. Within a single territory, a pair will often have several alternative nest sites. They are highly sensitive to disturbance around the nest site. They typically return to their breeding territories in late-March or April and lay eggs in May. The chicks hatch by mid-June, fledge by late-July and are generally independent by early September. Goshawks prey upon a variety of small and medium-sized mammals (such as red squirrels, snowshoe hares) and birds (woodpeckers, grouse, jays, etc.) (Reynolds and Meslow, 1984; Good, 2001, as cited in Kennedy, 2003).

Northern goshawks have been documented as nesting in many areas of the C-TNF. At the request of the C-TNF, two northern goshawk surveys were completed on suitable Forest lands within the proposed ROW:

- On July 27, 2006, a call-back survey, which included mapping of potential nest sites in conifers with mistletoe infestations, was completed. Research indicates that northern goshawks would use mistletoe clumps as nesting substrate (Shuster, 1980). Locations of these potential nest sites were mapped. During this survey, a pluck pile was observed and mapped as well. This pluck pile (grouse) was found at the base of a large tree next to an opening with downed woody debris in the understory. The site fit descriptions for northern goshawk pluck piles, but it may have been the leavings of another raptor

species. July callback surveys were completed too late in summer to be conclusive for nest surveys. They did not result in any definitive northern goshawk responses. At one location, a distant reply was heard north of the proposed alignment at a distance of more than half a mile from the callback point. The call was not repeated and the bird did not come any closer, so positive identification could not be made. It appeared to be the call of an accipiter and could have been the answer of a distant northern goshawk.

- In April 12 and 13, 2007, early season callback surveys for nesting northern goshawks were completed within the proposed ROW on USFS land. These surveys did not result in any northern goshawk responses.

Suitable, but apparently unoccupied, potential northern goshawk platform nest sites were found primarily to the south of the eastern end of the project corridor, closer to the Alternative 3 alignment. Other suitable habitat in aspen and conifer stands is present in the proposed ROW, but only a few potential platform nest trees were found. One adult northern goshawk was observed flying overhead during a field reconnaissance trip to Mill Canyon Creek along the eastern segment of proposed ROW as it crosses the C-TNF. This adult flew through the area west to east.

Ferruginous Hawk

Ferruginous hawk (*Buteo regalis*) is listed as sensitive by BLM. Ferruginous hawks occur across southern Idaho in a semicircular swath that vaguely follows the Snake River Plain with extensions toward Utah and Nevada. Breeding ferruginous hawks consume ground squirrels, black-tailed jackrabbits, pocket gophers, western meadowlarks, and snakes depending upon abundance in their territory (Fitzner, et al., 1977; Schmutz, 1989; Smith et al., 1981). They nest on cliffs and small trees (typically junipers less than 30 feet tall) in dry habitats (Bechard et al., 1990). Some research indicates that nests located in juniper are more successful at fledging young (Fitzner et al., 1977). They nest at relatively low elevations relatively far from water and human disturbance in a variety of grasslands, shrublands, and juniper forest, even when these areas are interspersed with patches of wheat fields (Bechard, et al., 1990; Schmutz, 1989).

The BLM parcels have no potential nest sites along the proposed ROW. They are both close to high human disturbance from either mining and roadways and lack juniper and cliff nest sites. If present in nearby areas, they may use BLM parcels for foraging.

Loggerhead Shrike

The loggerhead shrike (*Lanius ludovicianus*) is a BLM sensitive species associated with semi-arid regions with sagebrush-steppe habitats. Loggerhead shrikes nest in both shrubs and trees across their broad range of distribution. However, in Idaho, loggerhead shrike nests are primarily placed in sagebrush (65 percent) or else in large bitterbrush or greasewood shrubs (Woods and Cade, 1996). Sagebrush shrubs with nests varied in size, but were significantly smaller in stature relative to the size of other shrub species used for nests. Nests also were placed relatively low to the ground within these shrubs. Loggerhead shrikes forage on a broad range of insects, small birds, lizards, and rodents (Craig, 1978; Morrison, 1980; Groves et al., 1997).

BLM parcels within the proposed ROW have areas of suitable sagebrush habitat for loggerhead shrike. However, they are primarily found in counties to the west and north of Caribou County in Idaho (Groves et al., 1997).

Columbian Sharp-tailed Grouse

Columbian sharp-tailed grouse (*Tympanuchus phasianellus columbianus*) is listed as sensitive by both the USFS and the BLM. The "Columbian" subspecies historically occurred in California, Oregon, Washington, Nevada, Idaho, Utah, Montana, Colorado, Wyoming, New Mexico, and British Columbia. This subspecies currently occupies less than 10 percent of its historic range (Hoffman and Thomas, 2007).

Sharp-tailed grouse use a variety of seasonal habitats each year. These habitats are in areas of high quality shrub/meadow steppe, primarily grasslands and open-canopy sagebrush. Columbian sharp-tailed grouse need these grassland and grassland low shrub-dominated habitats for nesting and brood rearing habitat (Moyles, 1981). Green plant materials constitute the majority of the diet of the Columbian sharp-tailed grouse during the spring and summer months, with grass comprising half of the volume in spring and 75 percent of the volume in summer (Jones, 1966). Forbs constituted another 25 percent of the diet in the spring and summer months. Deciduous shrub (mountain shrub) and riparian habitats are critical habitats in winter because they provide both winter food and escape cover (Moyles, 1981; Marks and Marks, 1988; Saab and Marks, 1992). In Idaho, the fruit of hawthorn and snowberry and the buds of serviceberry and chokecherry are favored winter food (Ulliman et al., 1998).

There are numerous leks (male breeding display areas) documented adjacent to C-TNF lands, but no documented leks are within the proposed ROW on C-TNF (USFS, 2005). Survey data for lek attendance on leks adjacent to the C-TNF are intermittently collected by the Idaho Fish and Game (IDFG). Observations of this species occur nearby but no observations are known directly within the proposed ROW. However, sagebrush, grassland, and mountain shrub cover types on the C-TNF segment, as well as other areas of the proposed ROW, are expected to provide nesting, brood-rearing, and winter habitat.

BLM parcels within the proposed ROW also have suitable habitat for sharp-tailed grouse. There also are observations of this species in several areas near BLM parcels.

Sage Grouse

Greater sage grouse (*Centrocercus urophasianus*) is both a USFS MIS for sagebrush habitat and a USFS sensitive species. It is also a BLM sensitive species. Sage grouse are closely linked to sagebrush habitats during all seasons of the year. They require a variety of sagebrush cover types based on annual migratory patterns (Connelly et al., 2000). They prefer relatively tall sagebrush for nesting areas and open sites surrounded by sagebrush for lekking. Hens usually nest near the lekking grounds, but some are known to move as far as many miles to preferred nesting and brood-rearing sites. Other research has found that preferred nesting and brooding sites have a selection of native forbs and grasses in the understory as well as sagebrush overstory (Barnett and Crawford, 1994; Connelly et al., 1991; Klebenow and Gray, 1968). Early movements from nesting to summer range begin before chicks are able to fly. A special habitat feature for sage grouse during the brood-

rearing period is riparian vegetation, especially wet meadows and riparian edges with forbs. Native forbs provide spring and summer food for hens and broods (Klebenow, 1969; Peterson, 1970). Summer movements to higher elevations also provide access to green forbs as lower elevation areas dry. Because the chicks' diet consists of forbs and insects, diverse plant communities with abundant insect populations are especially important. Sage grouse tend to winter on south- or west-facing, relatively flat sagebrush areas (Beck, 1977).

Approximately 56 percent of the sagebrush on C-TNF is within 10 miles of known sage grouse leks (USFS, 2005). There is a lek site near the eastern boundary of the proposed ROW. On the west side of the proposed ROW, a sage grouse was flushed on C-TNF land in April 13, 2007, during great gray owl and northern goshawk surveys.

Sage grouse also use areas of the proposed ROW crossing BLM parcels. Droppings were found in 2007. There is a lek location adjacent to the project corridor very near the easternmost BLM parcel.

Long-billed Curlew

Long-billed curlews (*Numenius americanus*) are found on prairies and grassy meadows, often near water (Groves et al., 1997). This BLM sensitive species prefers short vegetation areas with both low vertical and horizontal canopy for nesting and breeding displays (McCallum et al., 1977; Pampush and Anthony, 1993). Long-billed curlews apparently prefer nest sites with low vegetation, including shortgrass prairie, grazed pastures, areas infested with cheatgrass, and fallow fields, possibly because the young get tangled in high vegetation once hatched; however, research indicates that nest survival is significantly lower on sites with low vegetation values, such as brome and recent burns, and higher on sites with higher grass and forb cover (Clarke, 2006). Long-billed curlews forage on the ground in breeding territories although they can probe into loose soil for insect larvae (Groves et al., 1997).

The proposed ROW passes between five known long-billed curlew breeding areas that are within 2 miles of the project alignment centerline. However, no occurrences are listed within 1 mile of the proposed ROW, including BLM parcels within the corridor. Habitat for this species is available on BLM parcels and many areas of the project ROW, but long-billed curlews are expected to return to known breeding locations for nesting (Redmond and Jenni, 1986).

Three-toed Woodpecker

Three-toed woodpeckers (*Picoides tridactylus*) are associated with recently burned coniferous forests and bark beetle infestations in coniferous forests (Koplin, 1969; Hoffman, 1997; Hutto and Young, 1999). Three-toed woodpeckers are a USFS sensitive species. They are typically found in mature stands of spruce-fir and lodgepole pine where they forage on insects in dead or dying trees. This species occurs in climax coniferous forest, coniferous riparian areas, and sub-alpine rock/scree with a component of dead or dying trees or recently burned conifer forest (Imbeau et al., 1999). Snags are highly preferred over live trees for foraging (possibly because of the kinds or number of insect species involved) (Imbeau and Desrochers, 2002). Post-fire conditions are important to this species for both feeding and nesting purposes. Persistence of the species requires the presence of both old-growth and recently burned coniferous forests or forests with

old-growth structural characteristics (Hoyt and Hannon, 2002). A 4-year winter foraging study found three-toed woodpeckers were highly associated with post-burn stands in winter, regardless of the number of years after burn (Kreisel and Stein, 1999). They excavate a new cavity annually for nesting and need a succession of large diameter trees for this purpose. They are primarily associated with mature forests because of snag requirements for nesting. Hoffman (1997) found that three-toed woodpeckers preferred to nest in moist, coniferous forests in relatively gentle terrain.

On the C-TNF, three-toed woodpeckers have been documented in the Bear River Range, in the north end of the Soda Springs Ranger District, and in the Manning Creek area. During surveys, a three-toed woodpecker was heard at a distance from the proposed ROW. The foraging pattern of flaking off the outer bark of trees while searching for insects was not observed within the proposed ROW. There are no obvious insect outbreaks in the project corridor and neither the Proposed Action area nor adjacent areas have burned recently.

Brewer's Sparrow

Brewer's sparrows (*Spizella breweri*) are a BLM listed sensitive species that prefer to nest at mid-level in tall, living sagebrush plants (Schroeder and Sturges, 1975). Brewer's sparrows select tall, dense sagebrush plants for nest sites to help conceal both the nest and the adults' activities near the nest site (Peterson and Best, 1985b).

There is suitable marginal sagebrush habitat for Brewer's sparrows on BLM parcels within the proposed ROW. This species has widespread distribution across southern Idaho and would be expected to occur in remaining tracts with tall, relatively dense sagebrush cover.

Sage Sparrow

Sage sparrow (*Amphispiza belli*) is a BLM sensitive species that is a sagebrush habitat obligate that typically nest in the canopy of the peripheral smaller branches of larger sagebrush plants (Reynold, 1981; Rich, 1980). If large sagebrush plants are in short supply, such as after a range fire, sage sparrows nest on the ground under remnant short sagebrush (Winter and Best, 1985a). Sage sparrows feed their young a wide variety of insects (Peterson and Best, 1986).

Sage sparrows are predicted to be distributed throughout southern Idaho where relatively large patches of sagebrush habitats persist, including such habitat within the proposed ROW (Groves et al., 1997). They may occur on BLM parcels within the proposed ROW.

Pygmy Rabbit

Pygmy rabbit (*Brachylagus idahoensis*) is listed as sensitive by both the USFS and BLM. The pygmy rabbit is a sagebrush obligate uniquely dependent on sagebrush, which comprises up to 99 percent of its winter diet (Green and Flinders, 1980). Pygmy rabbits are one of a very few species, including pronghorn antelope and sage grouse, that can ingest large amounts of sagebrush leaves without major digestive disturbances and death (White et al., 1982). Occupied pygmy rabbit habitats typically have a high cover of shrubs, especially big sagebrush; high forb cover; and sandy soils (Heady et al., 2001). In southeast Idaho, this species was found to occupy sites with dense shrubs, particularly big sagebrush, bitterbrush, and three-tip sagebrush (Green and Flinders, 1980). It is one of only two North

American rabbits that dig their own burrows. It typically inhabits big sagebrush and rabbitbrush communities with deep soil for digging burrows or with rocky areas.

Sagebrush occurs in the project corridor on BLM parcels, but most deep soils have been converted to agriculture. This species is known in adjacent counties to the west, but there is very little tall, dense sagebrush habitat anywhere on along the proposed ROW, including BLM parcels. Idaho does not include Caribou County as potential habitat (Groves et al., 1997). Historical records for pygmy rabbit occurrences within the Pocatello Field Office management area are rare, at only four. Extensive BLM surveys for Idaho in 2002 included lands managed by Pocatello Field Office lands and produced two new records, both on BLM land from Pegram Creek area in Bear Lake County (Roberts, 2003). These surveys did not find this species within the project area. No occurrence observations are on record with the Idaho Fish and Game Conservation Data Center (CDC) within 2 miles of the proposed ROW.

Wolverine

Wolverines (*Gulo gulo*) are a USFS sensitive species and inhabit high mountain forests of dense conifers, primarily in true fir (*Abies sp.*) cover types as well as subarctic-alpine tundra. Lack of human disturbance is an important component of wolverine habitat. They are solitary animals, requiring from 148 to 610 square miles of land for a single territory (females-males) (Groves et al., 1997). Maintenance of wolverine populations is dependent on large areas free from land-use activities that permanently alter their habitat (Ruggiero et. al., 1994). They seasonally move between higher and lower elevations in search of food.

Wolverines prefer mature montane forest in association with subalpine rock and scree habitats with boulders and wood debris for denning (Krebs and Lewis, 1999). In Idaho, spring snow cover is expected to be more important than alpine meadows on defining suitable denning habitat, especially snow cover that remains during the later part of the of the denning cycle from April 15 to May 14 (Aubry, et al., 2007). The segment of the proposed ROW on forested lands is an area where snow lingers relatively late in the season, often well into April and even May. Although mostly gone, a few areas of snow remained under trees during the May 17, 2006 field visit.

USFS aerial surveys in 2002 reported wolverine trails in the snow in mountains east of Soda Springs. Although the IDFG-CDC does not report any occurrences of wolverines within 2 miles of the proposed ROW, even historically, wolverines are notoriously difficult to observe. Summer security habitat (areas over one-half mile from an open route and greater than 250 acres) is fairly limited on most of the C-TNF (USFS, 2005). The project corridor has several flat rocky, steep-sloped areas adjacent to dense stands of conifers, but these areas do not meet talus criteria necessary to provide suitable denning sites. No potential denning areas were found within the proposed ROW. No wolverine snow trails or tracks were found in the proposed ROW during late spring raptor surveys in 2007.

Columbia Spotted Frog

Columbia spotted frogs (*Rana luteiventris*), a USFS sensitive species, are adapted to mountainous areas in or near cold, slow moving streams, springs or marshes, ponds, and small lakes where emergent vegetation is not extensive (USFS, 2007). After breeding, they

typically move into riparian scrub-shrub habitat, especially willows (Munger et al., 1998). In high velocity river systems, habitat primarily consists of oxbow ponds (without fish) with emergent sedges (*Carex* sp.) located in wet meadows at the edge of lodgepole pine forest. Riparian areas provide critical breeding, foraging, and over-wintering habitats for amphibians, such as spotted frogs. Columbia spotted frogs overwinter in the banks along streams and ponds where oxygen levels remain high even after freeze-up (Bull and Hayes, 2002). The Columbia spotted frog begins breeding as soon as snow melt permits, which ranges from February to July depending on location (USFS, 2007). Columbia spotted frogs are not known to occur on C-NTF (USFS, 2003) and no frogs were observed during wetland delineations.

Common Garter Snake

The common garter snake (*Thamnophis sirtalis*) is a BLM sensitive species found in a variety of habitats, but it is most commonly associated with wetlands or moist sites, such as wet meadows, damp woodlands, streambanks, and the fringes of ponds and lakes. Although they prefer dense cattails, bulrush, and spikerush along pond margins that are near open hillsides where they can sun, feed, and find cover in rodent burrows, they are able to successfully use less optimal sites. This species primarily feeds on frogs, toads, salamanders, fish, and earthworms, but on rare occasions also eat slugs, leeches, small mammals, birds, and even insects (Groves et al., 1997).

This species occurs across the Pocatello BLM Management Area in many habitats, including grasslands and wooded areas, but it prefers moist habitats in this part of Idaho (BLM, 2006). BLM is concerned that this once-common species appears to be decreasing in abundance. BLM parcels within the Proposed Action area provide only marginal habitat for this species. The proposed alignment on BLM parcels crosses hill slopes with no wetlands or even roadside ditches. However, field evaluations did find that the proposed ROW crosses moister swales in a few areas that have slightly lower topography. These swales collected runoff and developed denser vegetation. These areas could be moist enough in spring to serve as marginal habitat or as travel corridors for the common garter snake, which is known to move relatively far from its winter hibernation areas to foraging areas (Groves, et al., 1997).

3.2.2 Environmental Impacts—Proposed Action

Wildlife could be impacted by the Proposed Action through the following:

- Removal of wildlife habitat (agricultural land, tree and brush clearing) that causes animals to either permanently or temporarily move elsewhere, or experience increased exposure to predators, and/or lack of food and shelter
- Noise and human activity from construction that causes disturbance and displacement during breeding or nesting seasons
- Heavy equipment and vegetation removal that injures or kills wildlife unable to flee during construction activities
- Presence of conductors that could create hazards for birds
- The spread of weeds onto and from newly disturbed sites following construction.

3.2.2.1 Direct Habitat Loss

The proposed Hooper Springs Substation site is currently tilled for agriculture. About 5.4 acres of habitat would be lost to the few wildlife species that use the existing area. Impacts would be low. No impacts to special status wildlife would occur from construction of the substation because special status wildlife do not use the area.

Table 4 in the Vegetation section notes that there would be about 324 acres of temporary impacts to habitat associated with structure sites, staging areas, and temporary access roads. There would be about 85 acres of permanent loss of habitat, mostly through construction of structures and temporary access roads. The Proposed Action would permanently change about 46 acres of conifer and aspen forest habitats to early succession habitat. Mobile species of wildlife using these areas would be permanently displaced to nearby similar habitats. If these similar habitat areas are not already occupied the displaced animals would likely survive. If the similar habitats are fully occupied, then the displaced animals or others that use the same resources could be lost from the population. Given the minor overall acreage of habitat that would be affected and the relatively abundance of similar habitats in the area, impacts from habitat loss would be low and would not be expected to result in significant displacement of wildlife species. The effect of these very minor habitat losses on species with large home ranges such as deer or elk also would not be expected to affect their range or cause any population level effects, and thus would be low.

3.2.2.2 Construction Noise and Human Activity

Noise levels would be fairly substantial during construction in the immediate vicinity of each structure site, at conductor pulling and retensioning sites, and during temporary access road construction. Current noise levels are generally low throughout most of the ROW. Exceptions include intermittent noise associated with rail traffic on the Union Pacific Railroad line that runs north near the proposed ROW and noise from OHVs and recreation traffic within C-NTF.

Both noise and human activity have been demonstrated to displace wildlife from occupied habitats, interfere with the ability to hear territorial songs in birds, interfere with mating and alarm calls in amphibians and ground squirrels, and interfere with raptor foraging activities. Numerous studies document wildlife avoidance of roads and facilities and wildlife disturbance from human activity at varying distances (Madsen 1985; Van der Zande et al. 1980; Fyfe and Olendorff 1976).

Audible noise is measured in decibels (dBA) on the A weighted scale. The A weighted scale describes sound which corresponds to human perception. The equivalent sound level (Leq) is the level of a constant sound for a specified period of time. It is an average sound level. The maximum noise levels (Lmax) is the maximum noise level expected to occur during an event, such as during replacement of structures.

Maximum construction noise levels may approach 82-dBA Lmax at a distance of 50 feet from the construction site, with sustained levels of 78-dBA Leq. This would be a substantial increase from the 40- to 50-dBA Leq typical of rural settings along most of the line. Therefore, some displacement of wildlife from otherwise useable habitat can be expected to occur in the vicinity of construction sites during the construction period. The degree of displacement would generally be proportional to the change in noise levels and the type of

human activity. It would also vary by species depending on sensitivity to noise and human activity. After construction work concludes, these species would be expected to return to the usable habitat near the ROW over time. Although these impacts would be temporary, they would be considered a moderate impact because they could occur during the breeding season.

3.2.2.3 Direct Mortality

Heavy equipment and vegetation removal activities could possibly kill or injure any less mobile species of wildlife that are in the area and unable to leave the area during these activities. However, given that these activities would typically be preceded by other human activities in the area, species that are inclined to leave the area, such as birds and medium and large mammals, would probably do so. Species such as small mammals and reptiles that typically retreat to shallow burrows to escape danger would be most likely to suffer direct mortality. A minor increase in vehicle collisions would also result from construction-related traffic on existing roads. Most, though not necessarily all, removal of tall vegetation or trees would occur outside of the migratory bird breeding season. Any removal of tall vegetation or trees during the migratory bird breeding season could result in loss of nestlings. These impacts would be low to moderate.

3.2.2.4 Bird Strike Hazard

The presence of conductors could create hazards for flying birds, especially where the line crosses the Blackfoot River. To reduce the potential bird strike hazard, bird flight diverters would be installed where the new transmission line crosses the Blackfoot River. With the installation of bird flight diverters, impacts would be low.

3.2.2.5 Threatened and Endangered Species

Canada Lynx

BPA determined that the Proposed Action would have no effect on Canada lynx or potential linkage habitat. The "no effect" determination is based upon shrub-steppe habitats that are able to achieve mid seral conditions; native plant communities and patterns; and potential lynx prey habitat—all of which are expected to be maintained with the 2003 C-TNF Revised Forest Plan Grazing Standards (CNF RFP GSs). Noxious weed control measures are an ongoing District activity, which means that dispersal could continue in and around the project area. Reestablishment of vegetation is expected to continue after the disturbance treatments. Therefore, the Montpelier and Soda Springs RDs and the W-C NF could continue to serve as a "Linkage Zone" between the "Lynx Habitat" on the Bridger-Teton and Targhee NFs, and the Ashley NF. The project would not affect the potential for this part of the Forest to provide linkage habitat (suitable forage and cover, and low human activity levels and road density providing connectivity, movement, and dispersal) for lynx.

Gray Wolf

The Proposed Action would have no effect on the gray wolf experimental population in the Greater Yellowstone Ecosystem. The project area is within the range of the northern Rocky Mountain Distinct Population Segment of gray wolves. This DPS includes all of Montana,

Idaho, and Wyoming, the eastern one-third of Washington and Oregon, and a small port of north-central Utah. In March 2009, all of this DPS (except for the Wyoming portion) was removed from ESA listing by the USFWS in large part due to the successes in wolf recovery in the last few years. In addition to the proposed project being in a portion of the gray wolf's range where it is no longer listed under the ESA, there are no pack or den sites in the immediate project vicinity.

Yellow-Billed Cuckoo

The Proposed Action would have no effect on the yellow-billed cuckoo or its potential habitat. There are no known occurrences of this species within 2 miles of the proposed ROW and impacts to wetlands and riparian river zones would be avoided during construction.

3.2.2.6 USFS Sensitive Species, USFS MIS, and BLM Special Status Species

For sensitive, MIS, and special status species and their habitat, the USFS and BLM are concerned about project construction and operation activities that could result in any of the following:

- Substantially alter the numbers of any special status species, or interfere with their survival, growth, or reproduction
- Result in direct or indirect impacts on candidate or special status species populations, or habitat substantially reducing species numbers, or by resulting in the permanent loss of habitat essential for the continued existence of a species
- Introduce new, invasive weeds to an area, or create a potential health hazard, or involve the use, production, or disposal of materials that pose a hazard to special status species populations in the project area.

Boreal Owl. Boreal owls and their habitat may be disturbed during the construction phase of this project. These are cavity nesters. Some individuals may have fewer potential nest trees with the permanent removal of approximately 24 acres of aspen-dominated forests and 22 acres of conifer-dominated forests. This disturbance may impact individuals or habitat, but would not likely contribute to a trend towards federal listing or loss of viability to the population or species. This would be a low impact.

Flammulated Owl. Only very marginal habitat for this species exists along the proposed alignment. The Proposed Action may impact individuals or habitat, but would not likely contribute to a trend towards federal listing or loss of viability to the population or species. This would be a low impact.

Great Gray Owl. Habitat modification from the project would impact suitable habitat and the results could affect individual birds or pairs. Impacts would be expected to be less than Alternative 3, which was nearer to the majority of potential mistletoe nest sites. No adverse effects at the population level however would be expected. Any owls that happen to be present in or near the proposed ROW during construction would be disturbed by human activity and displaced from the immediate area. Great gray owl habitat may be adversely impacted during the construction phase. Therefore, the Proposed Action may impact

individuals or habitat, but would not likely contribute to a trend towards federal listing or loss of viability to the population or species. This would be a low impact.

Bald Eagle. It is unlikely that the Proposed Action would negatively impact this species with mitigation measures implemented (such as placing bird diverters on utility lines crossing the Blackfoot River and Mill Canyon Creek). Therefore, the Proposed Action may impact individuals or habitat, but would not likely contribute to a trend towards federal listing or loss of viability to the population or species. This would be a low impact.

Northern Goshawk. The removal of trees reduces potential nesting sites and foraging habitat for this species. While substantial areas of similar suitable habitat occurs on the C-TNF, the proposed ROW would result in some habitat loss, but not as much as would have occurred on Alternate 3 where the majority of potential platform trees were found to occur. Therefore, while it is likely that project construction could disturb individual birds or pairs, no adverse impacts at the population level would be expected. Any goshawks present in or near project corridor areas would be disturbed by human activity and displaced from the immediate area around the construction sites. The Proposed Action may impact individuals or habitat, but would not likely contribute to a trend towards Federal listing or loss of viability to the population or species. This would be a low impact.

Ferruginous Hawk. If this hawk uses the proposed ROW for foraging, implementation of mitigation measures (such as placing bird diverters on utility lines crossing the Blackfoot River and Mill Creek to increase visibility) would provide means of avoiding impacts. The Proposed Action is not expected to impact this species.

Loggerhead Shrike. BLM parcels within the proposed ROW have areas of suitable sagebrush habitat for loggerhead shrike. However, the loggerhead shrikes are primarily found in counties to the west and north of Caribou County in Idaho (Groves *et al*. 1997). Therefore, it is unlikely that the Proposed Action would negatively impact this species.

Columbian Sharp-tailed Grouse. Sharp-tailed grouse and their habitat may be disturbed during construction of the proposed ROW. Mitigation measures would be implemented to avoid impacts to this species however a minimal risk of disturbance would remain. This disturbance may impact individuals or habitat, but likely would not contribute to a trend towards federal listing or loss of viability to the population or species. This would be a low impact.

Sage Grouse. The proposed ROW crosses several areas with suitable sagebrush habitat for this species. Sage grouse and their habitat may be disturbed during the construction phase of the Proposed Action. Mitigation measures would be implemented to avoid impacts to this species; however, a minimal risk of disturbance would remain. This disturbance may impact individuals or habitat, but likely would not contribute to a trend towards federal listing or loss of viability to the population or species. (In terms of its designation as an MIS, the Proposed Action may impact this species, though it should not force sage grouse into a higher risk category than the moderate risk category currently designated by C-TNF.) This would be a low impact.

Long-billed Curlew. Long-billed curlews are expected to return to known breeding locations that are outside of the proposed ROW for nesting (Redmond and Jenni 1986). Therefore, it is unlikely that the Proposed Action would negatively impact this species.

Three-toed Woodpecker. Three-toed woodpeckers would not be expected to be drawn to the proposed ROW due to the lack of suitable habitat as described in the affected environment section above. With mitigation measures to ensure that no active nest trees are removed during the nesting season, no impacts to this species from the Proposed Action are expected.

Brewer's Sparrow. This Proposed Action may result in short-term impacts to this species. Mitigation measures would be implemented to avoid impacts to this species. The Proposed Action may still, however, impact individuals, but is not expected to be at a level that would impact populations of sage sparrows potentially occurring within the project area. This would be a low impact.

Sage Sparrow. This Proposed Action may result in short-term impacts to this species. Mitigation measures would be implemented to avoid impacts to this species. Regardless, the Proposed Action may impact individuals, but is not expected to impact populations of sage sparrows in the project area. This would be a low impact.

Pygmy Rabbit. The Proposed Action is not expected to impact this species because tall, dense sagebrush habitat is not available anywhere on along the proposed ROW and historical pygmy rabbit occurrences in the area are rare.

Wolverine. C-TNF has identified the loss of linkage habitat as one of the greatest threats to wolverine because forest fragmentation produces barriers and isolates populations (USFS, 2003). The Proposed Action is not expected to create a significant barrier for this species, especially as compared to agricultural lands, towns, roads, highways and other more inhospitable habitats that currently limit linkage. Therefore, the Proposed Action is not expected to impact wolverines.

Columbia Spotted Frog. The Proposed Action would not impact potential wetland breeding habitats for Columbia Spotted frogs and is not expected to impact this species in any way that would add to long-term declines. This would be considered a low impact of the Proposed Action.

Common Garter Snake. It is unlikely the proposed ROW would be used for long periods because of the lack of preferred prey species. Therefore, the Proposed Action is not expected to negatively impact this species.

3.2.3 Environmental Impacts—Alternative 1

3.2.3.1 Direct Habitat Loss

The impacts of this alternative would be slightly larger than the Proposed Action with 332 acres of habitat impacted. The changes in the crossing of the Blackfoot River would result in impacts similar to the Proposed Action. Impacts to aspen and mountain shrub would be the same and impacts to sagebrush would be less under this Alternative (25 fewer acres of sagebrush would be crossed by this alternative). Conifer impacts would be less under this alternative by approximately 4 acres.

Similar to the Proposed Action, it is anticipated that mobile species of wildlife using these areas would be permanently displaced to nearby similar habitats. If these similar habitat areas are not already occupied, the displaced animals would likely survive. If the similar habitats are fully occupied, then the displaced animals or others that use the same resources could be lost from the population. Given the minor overall acreage of habitat that would be affected by this alternative and the relative abundance of similar habitats in the area, impacts from habitat loss would be low and would not be expected to result in significant displacement of wildlife species. The effect of these very minor habitat losses on species with large home ranges such as deer or elk also would not be expected to affect their range or cause any population level effects, and thus would be low.

3.2.3.2 Construction Noise and Human Activity

Potential temporary impacts from construction noise and human activity would be similar to the Proposed Action. Although these impacts would be temporary, they would be considered a moderate impact because they could occur during the breeding season.

3.2.3.3 Direct Mortality

Potential impacts from direct mortality would be similar to the Proposed Action. These impacts would be low to moderate.

3.2.3.4 Bird Strike Hazard

Potential impacts from the conductors would be similar to the Proposed Action. With the installation of bird flight diverters, impacts would be low.

3.2.3.5 Threatened and Endangered Species

Like the Proposed Action, Alternative 1 would have no effect on Canada lynx, the yellow-billed cuckoo or their potential habitat and the gray wolf experimental population in the Greater Yellowstone Ecosystem.

3.2.3.6 USFS Sensitive Species, USFS MIS, and BLM Special Status Species

Potential impacts to USFS sensitive species, USFS MIS, and BLM sensitive species would be similar to the Proposed Action. With the implementation of mitigation measures, impacts to USFS sensitive species, USFS MIS, and BLM sensitive species would be low.

3.2.4 Environmental Impacts—Alternative 2

3.2.4.1 Direct Habitat Loss

The impacts of this alternative would be slightly larger than the Proposed Action with 332 acres of habitat impacted. Impacts from this alternative are virtually the same as Alternative 1. Impacts to aspen and mountain shrub are the same as the Proposed Action. Impacts to sagebrush habitat would be less under this alternative. Impacts to native grass habitat would be more than the Proposed Action.

Similar to the Proposed Action, it is anticipated that mobile species of wildlife using these areas would be permanently displaced to nearby similar habitats. If these similar habitat areas are not already occupied, the displaced animals would likely survive. If the similar habitats are fully occupied, then the displaced animals or others that use the same resources could be lost from the population. Given the minor overall acreage of habitat that would be affected by this alternative and the relatively abundance of similar habitats in the area, impacts from habitat loss would be low and would not be expected to result in significant displacement of wildlife species. The effect of these very minor habitat losses on species with large home ranges such as deer or elk also would not be expected to affect their range or cause any population level effects, and thus would be low.

3.2.4.2 Construction Noise and Human Activity

Potential temporary impacts from construction noise and human activity would be similar to the Proposed Action. Although these impacts would be temporary, they would be considered a moderate impact because they could occur during the breeding season.

3.2.4.3 Direct Mortality

Potential impacts from direct mortality would be similar to the Proposed Action. These impacts would be low to moderate.

3.2.4.4 Bird Strike Hazard

Potential impacts from the conductors would be similar to the Proposed Action. With the installation of bird flight diverters, impacts would be low.

3.2.4.5 Threatened and Endangered Species

Like the Proposed Action, Alternative 2 would have no effect on Canada lynx, the yellow-billed cuckoo or their potential habitat and the gray wolf experimental population in the Greater Yellowstone Ecosystem.

3.2.4.6 USFS Sensitive Species, USFS MIS, and BLM Special Status Species

Potential impacts to USFS sensitive species, USFS MIS, and BLM sensitive species would be similar to the Proposed Action. With the implementation of mitigation measures, impacts to USFS sensitive species, USFS MIS, and BLM sensitive species would be low.

3.2.5 Environmental Impacts—Alternative 3

3.2.5.1 Direct Habitat Loss

The potentially impacted habitat from this alternative is slightly higher than the Proposed Action at 342 acres (324 acres for the Proposed Action). More basalt outcrops with native vegetation would be crossed and this may affect some species of wildlife, but no priority species are known to occur in these areas. Alternative 3 has fewer impacts than the Proposed Action to sagebrush habitat because the alternative goes north from the substation through agricultural lands and avoids several sagebrush areas. In addition, about 19 fewer acres of aspen (80 percent less) and 7 fewer acres of conifers would be impacted under this

alternative (along the base of treed slopes at the entrance of the C-TNF). Temporary impacts to Mill Creek and riparian areas would be within the same context and intensity as the other alternatives. Similar to the other alternatives, impacts to wildlife would be low.

3.2.5.2 Construction Noise and Human Activity

Potential temporary impacts from construction noise and human activity would be similar to the Proposed Action. Although these impacts would be temporary, they would be considered a moderate impact because they could occur during the breeding season.

3.2.5.3 Direct Mortality

Potential impacts from direct mortality would be similar to the Proposed Action. These impacts would be low to moderate.

3.2.5.4 Bird Strike Hazard

Potential impacts from the conductors would be similar to the Proposed Action. With the installation of bird flight diverters, impacts would be low.

3.2.5.5 Threatened and Endangered Species

Like the Proposed Action, Alternative 3 would have no effect on Canada lynx, the yellow-billed cuckoo or their potential habitat and the gray wolf experimental population in the Greater Yellowstone Ecosystem.

3.2.5.6 USFS Sensitive Species, USFS MIS, and BLM Special Status Species

Alternative 3 would cross about the same amount (3.6 miles) of lands within C-TNF, but would cross substantially fewer acres of land managed by BLM. Impacts to USFS sensitive species and USFS MIS would be similar to the Proposed Action. Overall, potential impacts to wildlife special status species would be low because there are fewer acres of impacts to priority species habitats that are associated with sagebrush and aspen habitats.

3.2.6 Environmental Impacts—Alternative 4

3.2.6.1 Direct Habitat Losses

The impacted habitat of this alternative is slightly higher than the Proposed Action at 332 acres (324 acres for the Proposed Action). More basalt outcrops with native vegetation would be crossed and this may affect some species of wildlife, but no priority species are known to occur in these areas. Similar to Alternative 3, Alternative 4 has fewer impacts than the Proposed Action to sagebrush habitat because the alternative goes north from the substation through agricultural lands and avoids several sagebrush areas. Temporary impacts to Mill Creek and riparian areas would be within the same context and intensity as the other alternatives. Similar to the other alternatives, impacts to wildlife would be low.

3.2.6.2 Construction Noise and Human Activity

Potential temporary impacts from construction noise and human activity would be similar to the Proposed Action. Although these impacts would be temporary, they would be considered a moderate impact because they could occur during the breeding season.

3.2.6.3 Direct Mortality

Potential impacts from direct mortality would be similar to the Proposed Action. These impacts would be low to moderate.

3.2.6.4 Bird Strike Hazard

Potential impacts from the conductors would be similar to the Proposed Action. With the installation of bird flight diverters, impacts would be low.

3.2.6.5 Threatened and Endangered Species

Like the Proposed Action, Alternative 4 would have no effect on Canada lynx, the yellow-billed cuckoo or their potential habitat and the gray wolf experimental population in the Greater Yellowstone Ecosystem.

3.2.6.6 USFS Sensitive Species, USFS MIS, and BLM Special Status Species

Alternative 4 would cross about the same amount (3.6 miles) of lands within C-TNF, but would cross substantially fewer acres of land managed by BLM. Impacts to USFS sensitive species and USFS MIS would be similar to the Alternative 3. Overall, potential impacts to wildlife special status species would be low because there are fewer acres of impacts to priority species habitats that are associated with sagebrush and aspen habitats.

3.2.7 Environmental Impacts—No Action Alternative

The No Action Alternative would not disturb plant communities or impact wildlife species that use the area. There would be no impacts to threatened and endangered species, USFS sensitive species, USFS MIS, and BLM sensitive species.

3.2.8 Mitigation Measures

The following mitigation measures have been identified to avoid or reduce potential adverse impacts on wildlife species and their habitat from the proposed project:

- Provide "avian-safe" transmission structures, which are defined as those that provide adequate clearances to accommodate a large bird between energized and grounded parts.
- In areas where birds frequently collide with conductors or ground wires, or where agencies are concerned about the safety of protected birds (such as at wetlands, stream crossings, historic staging areas, roosts, and nesting colonies), install visibility enhancement devices on lines to reduce the risk of collision on new lines. These devices include marker balls, bird diverters, or other line visibility devices placed in varying configurations, depending on the line design and location. These would be placed on

all lines that cross or are near streams, including all Blackfoot River crossings and wetlands.

- Do not use herbicides or pesticides that cause egg-shell thinning—as determined by EPA labeling—to manage noxious weeds for this project.
- Reseed any temporary disturbance areas with native seed mix acclimated to the project elevation and climate to avoid activities or habitat alterations that could adversely affect prey availability.
- Reseed disturbed areas in sagebrush habitats with a mix of native species that includes sagebrush, native forb species preferred by sage grouse, and native grass species preferred by sharp-tailed grouse.
- Avoid disturbance of sagebrush habitats to the greatest extent possible.
- Prohibit construction activity within 10 miles of an active sage grouse lek and within 2 miles of active sharp-tailed grouse leks until after May.
- Do not manipulate or alter sagebrush stands with tall, relatively thick sagebrush that are suitable as nesting habitat during the nesting period (May to June).
- Do not spray sagebrush with herbicide under utility lines.
- Avoid impacts to wetlands.
- Install buffer zones and construction fencing prior to construction so that construction vehicles do not drive across, push dirt into, or otherwise impact wetland areas.
- Minimize construction of temporary spur roads on USFS land.

3.2.9 Unavoidable Impacts Remaining After Mitigation

Direct and indirect habitat loss and degradation, as well as wildlife disturbance and displacement, would occur as a result of vegetation clearance for the transmission line ROW and temporary spur road construction. Noxious weeds would likely spread as a result of the project, thereby degrading wildlife habitat value. Overall, relative to the area of habitat available, this should not substantially affect wildlife or their habitat because of mitigation measures, seasonal work restrictions, and the short-term nature of most of the project activities. Therefore, impacts would be low.

3.2.10 Cumulative Impacts

Cumulative impacts to wildlife and its habitat in the project area has occurred mainly from mining, timber harvest, grazing, and agriculture activities. Mining occurs extensively in the area and primarily impacts wildlife and their associative habitats through fragmentation and removal of native vegetation types. In some locations mining has created significant habitat change or eliminated habitat completely. Any future mining or other extraction activity would further fragment habitat.

Past timber harvests have impacted wildlife by directly altering and removing habitat. Past timber harvests have, in some instances, also reduced the recruitment of large woody debris essential for nutrient cycling and riparian functions (e.g., shading to reduce stream temperatures), and altered soil stability through erosion and altered water flows.

Cattle grazing has also changed the native wildlife habitats in the area by removing native vegetation. Though grazing is limited in the project area, it continues to have some impact.

Native vegetation has also been lost as land has been converted to agricultural use for crops.

In the future, there may be more residential development in the area. Though no large developments are planned in the near term, future residential development would reduce the native vegetation in the area. Invasive species also represent a foreseeable future threat to native habitats in the area.

The proposed project would contribute in a minor way to cumulative impacts to wildlife and its habitat through wildlife disturbance and displacement and habitat loss and degradation. Wildlife disturbance would generally only occur during project construction, and mitigation measures are identified to minimize disturbance of sensitive species potentially present in the project areas. In addition, habitat effects would mainly be the conversion of certain widely available habitats.

3.3 Geology and Soils

3.3.1 Affected Environment

The variety and type of soils present, as well as ground cover, land use, slope, fertility, and a variety of other factors affect the potential for erosion in the project area. Sensitivity to these variables, as well as an understanding of how current and historic land use has affected the integrity of soils in the project area, is important to minimize potential management effects.

The proposed transmission line ROW extends from the Northern Basin and Range Ecoregion in Idaho eastward into the Middle Rockies Ecoregion (McGrath et al., 2002). The steep, dry, and partly forested mountains vary in elevation from about 6,000 feet to over 9,000 feet.

According to the Fall Creek Watershed Analysis (C-TNF, 2002) mountains and ridges in the area are formed of soils moderately deep to very deep (20 inches or greater), with some shallow soils (less than 20 inches) located on the ridgetops. Because these soils formed on steep slopes and with sedimentary parent material, erosion potential can be high, especially when the protective ground cover is removed. Furthermore, when these soils become saturated with water, the potential for mass movement increases (C-TNF, 2002). The basins and foothills of this area are covered by loess, soils developed from windblown silt, and for the most part are very deep and well drained. Sagebrush, aspen and mountain shrubs are the dominant vegetation. These soils have less potential to erode than those formed on the mountains and ridges because they formed on slopes less than 40 percent. Maintenance of ground cover on these soils is important to maintain stable conditions (C-TNF, 2002). Soils formed in the drainages are almost always very deep and influenced by moisture during at least some period of the year. They are some of the most productive in the watershed, demonstrated by established riparian vegetation assemblages including willows and sedges. Most of these soils have well established cover and are at minimal risk from erosion. Soils on ridges and slopes of the C-TNF are formed from limestone parent material, such as dolomite. They are part of the Wells formation (Ppw). Although this formation is comprised of several rock types, the corridor appears to cross a section composed primarily of dolomite

limestone. Soils are shallow with many areas of exposed rocks. Vegetation cover helps stabilize these soils.

Detailed individual soil series descriptions for identified soil series were not available in the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) State Soil Geographic (STATSGO) database site. Finer scale soils information from county soil surveys or STATSGO was not available from the NRCS webpage. According to the NRCS, no soil surveys exist for Caribou County (Hoover, January 15, 2008).

STATSGO soil maps were used to characterized soil types and characteristics for the area of interest. The STATSGO soils maps and descriptions are general and describe large soil series complexes across the landscape. The soil complexes identified within the area of investigation include the following:

- Outlet-Enochville (s1771)
- Nielsen-Dranyon-Dra (s2168)
- Robin-Lantonia-Lanark (s1776)
- Turnerville-Tongue River Tetonia-Rock outcrop-Midfork-Buffork-Adel (s9065).

The Outlet-Enochville complex is made up of Enochville, Foxcreek, and Furniss soil series, which are all considered hydric by NRCS. The Outlet and Enochville soil series are characterized as silty loam and silty clay loam in texture, respectively.

The Nielsen-Dranyon-Dra soil complex does not contain any hydric soil type inclusions. Nielsen soils are characterized as shallow and well drained sandy clay loams on mountain sides at 6,000 to 7,500 feet above sea level (asl) (USDA-SCS, 1981). The Dranyon soil series is characterized as a deep stony silty loam, stony loam, or stony clay loam. The Dranyon soils are deep (greater then 40 inches thick) well drained soils, located in sloping to very steep mountainsides at 6,000 to 8,000 feet above sea level (asl) (USDA-SCS, 1981).

The Robin-Lantonia-Lanark soil complex does not contain any hydric soil type inclusions. Robin series consists of very deep well drained silt loam soils located on foothills at 6,000 to 7,500 feet asl (USDA-SCS, 1981). The Lantonia series consists of well-drained, medium-textured, silt loam soils that formed in very deep loess. These soils are located on undulating to hilly landforms at an elevation range of 5,800 to 1,000 feet asl (Daniels et al., 1969). The Lanark series is a deep, well drained silt loam soil located on mountain sides between the elevation of 6,000 and 7,000 feet asl (USDA-SCS, 1981).

The Turnerville-Tongue River-Tetonia-Rock Outcrop-Midfork-Buffork-Adel soil series complex contains up to 5 percent of hydric Newfork soils. The Turnerville soils are medium-textured, well drained, silt loam soils located at 6,500 to 7,000 feet asl. The natural vegetation that overlies this soil includes lodgepole pine, Douglas-fir, and pinegrass (Daniels et al., 1969). Tongue River soils are sandy loams associated with the Tetonia series that are very deep and well drained silt loams. Tetonia soils are located on undulating to hilly landforms at 6,000 to 7,000 feet asl (Daniels et al., 1969). The Midfork, Buffork, and Adel series are loam, sandy loam, and fine loamy mixed soils, respectively.

3.3.2 Environmental Impacts—Proposed Action

Approximately 5.4 acres of agricultural field would be taken out of production to construct the Hooper Springs Substation. Soil productivity on these 5.4 acres would be lost, but this is a common soil type in the county and the amount removed from production is small. Impacts from the substation would be low.

Vegetation clearing from the transmission line ROW and construction of the proposed transmission line would impact approximately 230 acres of soil and native vegetation communities. Building the transmission line would require grading of structure sites and approximately 3 miles of temporary access roads, and tree clearing. The temporary access roads would be about 25 feet wide and would impact about 9 acres of soil. About 69 acres would be disturbed to construct the structures at each structure site. These activities would expose soils to rain, possibly resulting in erosion. Soil would be exposed at structure sites and for temporary spur road construction. Holes would be dug for each structure to embed the footings or poles. Soil from these holes would be piled and then used for backfilling the holes once the footings were put in place. The piles of exposed soil could erode during rain.

Tree clearing would also expose soils to more weather (direct rain, wind), but lower-growing vegetation (when left intact) should continue to provide some protection. The extent that tree clearing would expose soils depends primarily on how much lower-growing vegetation was impacted during logging activities.

On most of the proposed ROW, where the terrain is level, little erosion would occur. In areas of hilly terrain, where greater water flows are possible, the potential for surface runoff and erosion could cause moderate impacts. Most at risk are slopes on USFS lands that exceed 40 percent. Potential impacts on exposed soils would continue to occur if soils were left bare or were slow to re-vegetate after construction.

Localized changes in runoff and erosion patterns could occur due to placement or removal of soil for temporary access roads and leveling of structure sites.

The existing roads on the proposed ROW are susceptible to erosion because there is limited vegetation growing on the roadbeds and the roadbeds have been compacted. Most water runs off or down the surface of the road, causing some erosion. Although not anticipated, existing roads may need to be improved with water bars or similar water diversions. No new permanent road construction would take place. A minimal amount of temporary access or spur roads (about 3 miles) would be constructed to access some structure sites on USFS lands and would slightly increase the amount of non-vegetated land in the area temporarily. If built across hills, these temporary spur roads would require roadcuts, which could interrupt subsurface water flow and cause erosion on the temporary roads or road failure. Temporary roads have the potential to increase erosion, however mitigation (including water bars, revegetation, and concurrence with Forest Plan BMPs) would minimize impacts.

Heavy machinery (logging trucks, graders, excavators) and log movement would compact soils, reducing soil productivity and making it harder for plants to re-vegetate or grow back. Construction or tree clearing occurring in early spring, when the soils are usually very wet, would make rutting and compaction worse than if construction occurred in the dry season.

Maintenance and vegetation management over the life of the line would create low to moderate impacts to soils. Maintenance vehicles on access roads or around structure sites would cause minor soil disturbance. Vegetation management could result in low to moderate impacts depending on the timing of removal, amount of vegetation cleared, soil compaction, and subsequent erosion.

Impacts from construction and operation and maintenance of the transmission line would be low to moderate. Use of mitigation measures would prevent or lessen the potential for impacts.

3.3.3 Environmental Impacts—Alternatives

3.3.3.1 Alternatives 1, 2, 3, and 4

The impact to soils from Alternatives 1, 2, 3, and 4 would be similar to the Proposed Action, low with the implementation of the mitigation measures identified in Section 3.3.4. The greatest risk for impact on soils (through erosion) would occur in areas where slopes approach 40 percent or more.

3.3.3.2 No Action Alternative

There would be no geologic or soil-related impacts from the No Action Alternative because soil would not be disturbed and no new construction activity would take place.

3.3.4 Mitigation Measures

The following mitigation measures have been identified to avoid or reduce potential adverse soils impacts from the proposed project:

- Prepare and implement a Storm Water Pollution Prevention Plan.
- Follow all applicable soil and water conservation measures listed in the relevant Forest Service Handbook on USFS-managed land.
- Save topsoil removed for structure and temporary spur road construction and use onsite for restoration activities, to promote regrowth from the native seed bank in the topsoil.
- Cover exposed piles of soil (or use other erosion control measures) if there is a threat of rain, to reduce erosion potential.
- Limit grubbing to the area around structure sites to lessen the impact on the roots of low-growing vegetation, so they may resprout.
- Minimize vegetation clearing at sides of existing access roads and temporary spur roads to 2 feet or less, where possible, to minimize impacts to adjacent areas of native vegetation.
- Install sediment barriers and other suitable erosion and runoff control devices prior to ground-disturbing activities at construction sites to minimize off-site sediment movement.

- Leave erosion and sediment control devices in place and monitor their effectiveness until all disturbed sites are revegetated and erosion potential has returned to pre-project conditions.
- Retain existing low-growing vegetation where possible to prevent sediment movement offsite.
- Design temporary spur roads to control runoff and prevent erosion by using low grades, out sloping, intercepting dips, water bars, and ditch-outs as needed to minimize erosion.
- Re-vegetate or seed all disturbed areas with a native plant/grass seed mixture suited to the site, to promote revegetation that would hold soil in place.
- Break up compacted soils where necessary by ripping, or scarifying down to 8 inches before reseeding.
- Monitor erosion control BMPs during construction to ensure proper function and nominal erosion levels.
- Monitor reseeding efforts for adequate growth. Implement contingency measures as necessary.

3.3.5 Unavoidable Impacts Remaining After Mitigation

Implementation of the mitigation measures and BMPs would reduce potentially adverse soil impacts. Unavoidable, impacts, however, may remain after mitigation including the potential for increased erosion throughout the proposed ROW, soil compaction, and loss or changes in soil productivity next to and under new structures and on spur roadbeds.

3.3.6 Cumulative Impacts

Soils in the lowlands of the area undisturbed by agriculture or other activities are generally productive and contribute to good watershed health.

Erosion of upland soils and rock outcrops has occurred and continues to occur from natural weathering processes and from the cumulative impact of mining, livestock grazing, logging, and recreational use of these upland areas. Erosion potential is highest in the project area on soils that formed on the mountains and ridges. As geologic materials weather and are exposed, they erode downslope. Sediment is transported to water bodies and can impact water quality.

Soils in the area will likely continue to be cumulatively affected by livestock grazing, logging, recreation including off-road vehicle trips, mining, agriculture and rural development. These activities will increase cumulative soil erosion and compaction. The Proposed Action could cause an incremental increase in the erosion and compaction of the soils in the construction area. However, no permanent roads are proposed. The project's contribution to these cumulative impacts would be minimal because best management practices, including erosion control measures, would limit erosion, compacted soils would be broken up after construction, and all disturbed areas would be reseeded after construction.

3.4 Water Resources, Wetlands, and Fisheries

3.4.1 Affected Environment

3.4.1.1 Water Resources

Water resources include all watersheds, surface water, groundwater, and floodplains associated with the project area. Watersheds in the vicinity of the proposed ROW are, for the most part, in good health with undisturbed and productive soils.

The proposed ROW would cross the Blackfoot River at two locations: one on private land near the Union Pacific Railroad crossing at River Mile 90.8 and another near the entrance of C-TNF land at the Narrows. In addition to these two primary crossings over the Blackfoot River, the proposed ROW also crosses 14 minor tributaries to the Blackfoot River (see Figure 11).

Historically, the Blackfoot River and its tributaries supported cold water aquatic life and also provided water for agriculture and recreation. Most streams maintained spawning populations of salmonids. Currently, some portions of the Blackfoot River and some of its tributaries do not support some uses, such as cold water aquatic life and salmonid spawning, because pollutants have changed the water quality (IDEQ, 2001).

According to the Idaho Department of Environmental Quality's 2002 Integrated (303(d) and 305(b) Report and the draft 2008 Integrated (303(d) and 305(b) Report, there are several streams within the Blackfoot River subbasin that are 303(d) listed, with Total Maximum Daily Loads (TMDLs) developed (IDEQ 2005, 2008). TMDL is the maximum amount of pollution that a waterbody can assimilate without violating state water quality standards. Pollutants and sediments in the waterways have been caused by agricultural and livestock practices, changes in the natural hydrograph, roads, mining activities, and mass wasting (for example, landslides). Agriculture, grazing, and recreation (human wastes linked to camping areas) have been associated with nutrient input into streams (IDEQ, 2001). The proposed ROW would span the Blackfoot River and Mill Canyon, both of which have TMDLs for sedimentation and siltation and are listed as impaired waters for selenium (IDEQ 2005, 2008).

A portion of the proposed ROW is within the C-TNF. Lakes, reservoirs, ponds, perennial and intermittent streams, and wetlands that occur in this area are prescribed as Aquatic Influence Zones (AIZs). These zones control the biotic and abiotic processes that affect water quality and habitat characteristics important for aquatic plant and animal species. Many vegetation types and habitats within AIZs are rare and sensitive to disturbance. Site specific boundary widths for various habitat types identified as AIZs are identified in the C-NF Revised Forest Plan (USFS 2003) and vary relative to management goals and objectives. AIZ management direction overrides direction from other overlapping management areas.

There are no officially mapped floodplains in the project area. Floodplains in the affected area appear for the most part intact and are functioning adequately. The Blackfoot River Road, however, does run along the banks of the Blackfoot River and confines the floodplain

in those sections of the river. The natural geology of the Narrows Canyon also acts to confine the floodplain of the Blackfoot River at the proposed transmission line crossing.

In 1985, the CNF scored streambank stability within the proposed ROW as good. Macroinvertebrate indices and Instream Flow Incremental Methodology (IFIM) analysis were used to rate streams for water quality. Marcroinvertebrate communities (with the exception of the lower reaches of Diamond Creek) were good and reflected good general water quality (IDEQ, 2001).

3.4.1.2 Wetlands

Wetlands are areas of transition between aquatic and terrestrial systems, where water is the dominant factor determining the development of soil characteristics and associated biological communities. Intact wetland systems provide a myriad of benefits to aquatic systems and the ecosystem as a whole including sediment capture, large woody debris (LWD) recruitment, temperature buffering, nutrient input, habitat, cover, and many more. Wetlands can also filter heavy metals and pollutants out of the water and capture them in soils. They are important communities that have declined over the years due to an increase in agriculture practices and development in the project area.

Wetland areas within the project corridor are commonly vegetated by reed canarygrass, various sedge species including clustered field sedge, beaked sedge, and an unknown grazed sedge species. Cattail, and creeping spikerush also occur in the emergent layer. Currant species, red osier dogwood, coyote willow, and Booth's willow were typically observed in the wetland shrub layer. No wetlands observed in the corridor contained a tree layer. Wetland soils within the proposed alignment are typically dark silty loams with gravel, but also include profiles with a surface layer of organic material overlaying greenish-black, sandy, clay loam with medium, dark yellowish brown mottles.

Within the proposed ROW, six wetlands were found. The six wetlands were either palustrine emergent (PEM) or scrub-shrub wetlands (PSS). These wetlands are associated with the Blackfoot River, smaller drainages, and, to a lesser degree, depressional wetlands (CH2M HILL, 2008). Most of these wetland areas are considered high-quality wetlands (Category II, Berglund 1999) and total about 3 acres. In addition to field delineated wetlands identified within the proposed ROW wetland survey corridor, potential wetland areas located outside of the corridor were noted and mapped. These areas were mapped based on topographic, vegetative, and hydrologic conditions, but were not formally delineated. Potential wetland areas are provided as supplemental wetland habitat information outside of the proposed ROW survey corridor, or in areas where no formal wetland delineation was conducted.

The wetlands identified within the proposed ROW are likely jurisdictional as they either abut a Traditional Navigable Water (TNW) or abut a non-navigable, Relatively Permanent Water (RPW) that flows to a TNW. Table 8 summarizes wetland acreages and classifications identified within the proposed ROW and alternatives.

Table 8 Wetland Resources Identified Within the Proposed ROW for the Proposed Action, and Alternatives 1, 2, 3, and 4

Proposed Action		Alternative 1		Alternative 2		Alternative 3		Alternative 4	
Wetland Type[a]	**Acreage**	**Wetland Type[a]**	**Acreage**	**Wetland Type[a]**	**Acreage**	**Wetland Type[a]**	**Acreage**	**Wetland Type[a]**	**Acreage**
Wetland A		Wetland A		Wetland A		-	-	Wetland A	
PEM	0.43	PEM	0.32	PEM	0.32			PEM	0.32
PSS	0.84	PSS	0.30	PSS	0.30			PSS	0.30
Wetland B		Wetland B		Wetland B		-	-	Wetland B	0.16
PEM	0.19	PEM	0.16	PEM	0.16			PEM	0.26
PSS	0.26	PSS	0.26	PSS	0.26			PSS	
Wetland C		Wetland C		Wetland C		-	-	Wetland C	0.01
PEM	0.01	PEM	0.01	PEM	0.04			PEM	0.23
PSS	0.44	PSS	0.22	PSS	0.37			PSS	
Wetland D		Wetland D		Wetland D		-	-	Wetland D	1.22
PEM	<0.01	PSS	1.22	PSS	0.66			PSS	
PSS	0.61								
Wetland E		Wetland E		Wetland E		Wetland E		Wetland E	
PEM/PSS	0.12	PEM/PSS	0.10	PEM/PSS	0.10	PEM/PSS	0.27	PEM/PSS	0.10
Wetland F		Wetland F		Wetland F		Wetland F		Wetland F	-
PEM	<0.01	PEM	-	PEM	-	PEM	-	PEM	
PSS	0.08	PSS		PSS		PSS		PSS	
Potential Wetland[b]	-	Potential Wetland[b]	<0.01	Potential Wetland[b]	<0.01	Potential Wetland[b]	2.21	Potential Wetland[b]	12.76
Open Water	0.59	Open Water	2.33	Open Water	1.67	Open Water	0.14	Open Water	2.33
Total PEM	***0.65***		***0.49***		***0.52***		**-**		***0.49***
Total PSS	***2.23***		***2.00***		***1.59***		**-**		***2.01***
Total PEM/PSS	***0.12***		***0.10***		***0.10***		***0.27***		***0.10***
Total Open Water	**0.59**		**2.33**		**1.67**		**0.14**		**2.33**
Total Wetland[c]	**3.00**		**2.60**		**2.22**		**2.48**		**15.36**

[a] Cowardin et al., 1979
[b] Wetland Habitat mapped based on vegetation, topography and evidence of hydrology.
[c] Including Potential Wetland Acreage

3.4.1.3 Fisheries

The Blackfoot River and its tributaries support an assemblage of fish and aquatic resources with extensive fish habitat. The South Fork Snake River (of which the Blackfoot is a tributary) is recognized worldwide as a premier fishery. Local community livelihoods, as well as the ecological function of the drainage as a whole are dependent on the long-term sustainability of the fishery. Stakeholders are focused on preserving water quality and riparian habitat, while also working toward restoring those areas already highly impacted by past and present land use strategies.

Fish in the Blackfoot River and its tributaries are a mixture of native and introduced species. Native species include some of the few remaining healthy populations of Yellowstone cutthroat trout (YCT) (*Onchoryncus clarki bouvieri*), mountain whitefish (*Prosopium williamsoni*), Utah chub (*Gila atraria*), longnose dace (*Rhinichthys cataractae*), speckled dace (*Rhinichthys osculus*), redside shiner (*Richardsonius balteatus*), Utah sucker (*Catostomus*

ardens), mountain sucker (*Catostomus platyrhynchus*), bluehead sucker (*Catostomus discobolus*), mottled sculpin (*Cottus bairdi*), and Piute sculpin (*Cottus beldingi*). Species that have been introduced are rainbow trout (*O. mykiss*), brown trout (*Salmo trutta*), brook trout (*Salvelinus fontinalis*), black bullhead (*Ictalurus melas*), fathead minnow (*Pimephales promelas*), and carp (*Cyprinus carpio*). Coho salmon (*O. kisutch*) were, at one time, stocked in Blackfoot Reservoir (Hillman and Chapman, 1996).

There are no threatened or endangered aquatic species in the area. The YCT is listed as a sensitive species by BLM and species of special concern by IDFG. The USFS retains it as a Regional Forester's Sensitive Species. On both the BLM and IDFG lists (sensitive and species of special concern), the leatherside chub (*Cila copei*), is also possibly found in the area (IDEQ, 2001).

The abundance of native fish species in the Blackfoot River drainage has been limited in part by channelization, poor water quality, temperature change, removal of riparian vegetation, invasion and introduction of nonnative species, and other factors associated with historic land use practices (Rothrock et al., 1998). On USFS land, other activities include, but are not limited to, dispersed camping, vegetation management, grazing, road building and maintenance, and motorized recreation (C-TNF, 2002). All these land uses have affected the quality and quantity of habitat available to fish in the drainage. Excessive sediment loading has been identified as detrimental to salmonids (Thurow and King, 1994) and other aquatic life. Increased temperature, reduced dissolved oxygen content, a decline in growth and feeding rates, and slower alarm responses have all been positively correlated to the concentration and duration of suspended sediment in aquatic systems (Newcombe and MacDonald, 1991).

Overall, available fisheries habitat appeared to be in fair condition and field observations of the channel and fisheries habitat upstream of the USFS boundary indicated habitat to be in good overall condition. Downstream of the USFS boundary, habitat was in poor to very poor condition with down-cutting channels, raw banks, large width to depth ratios, increased amounts of aquatic vegetation, and turbid water.

3.4.2 Environmental Impacts—Proposed Action

3.4.2.1 Water Resources

Because no water bodies are within the proposed Hooper Springs Substation site, there would be no impact to water resources from construction or operation of the proposed substation.

The proposed transmission line route would span the Blackfoot River in two locations, span 14 minor tributaries of the Blackfoot River, and all associated floodplains. No work needed to construct, operate, or maintain the proposed transmission line would occur within actively flowing channels. No permanent roads are proposed for construction. However, the Proposed Action would require the construction of approximately 3 miles of temporary spur roads. The construction of temporary roads and new transmission structures has the potential to increase both sediment loading and temperature in the Blackfoot River and its tributaries (see Fisheries below). As noted in the Targhee National Forest Roads Analysis (2002), direct channel encroachment by roads and water flows, and sediment delivery from ditches and road surfaces are the most probable negative effects that may occur relative to

new road construction. These modifications occur primarily where roads intersect streams or riparian areas. Sediment load in area streams and rivers can be increased through road construction and maintenance and through stream erosion caused when roadbeds confine streams. When trees and shrubs are removed from the riparian corridor, woody debris recruitment potential is diminished. This reduces the amount of woody substrate in the stream—thus affecting aquatic habitat and channel processes. No permanent impacts to watersheds, surface or groundwater, or floodplains are expected from the Proposed Action because all construction work associated with pole placement would take place outside of riparian areas and floodplains. Only the transmission line conductors would span the Blackfoot River and a number of smaller tributaries associated with this system. Additionally, implementation of proposed mitigation measures would further protect water resources associated with the Blackfoot River, minor tributaries, and floodplains (see Section 3.4.8 for mitigation measures).

Seven proposed structures would be in areas defined as AIZs. One structure would be near the Blackfoot River, five structures would be in Mill Canyon, and one structure would be in the AIZ of an unnamed tributary to Mill Canyon. All proposed structures would be in the buffer zones of the AIZs and would be located above the high water line of the streams. Additionally, implementation of proposed mitigation measures would further protect AIZ resources (see Section 3.4.8 for mitigation measures). The Proposed Action is not expected to result in temporary or permanent impacts to AIZs.

3.4.2.2 Wetlands

Because no wetlands are within the proposed substation site, there would be no impact to wetlands from construction or operation of the proposed substation.

No permanent access roads are proposed and no permanent road impacts are expected. Temporary impacts on wetlands and waters of the U.S., however, are anticipated during the construction of about 0.003 mile of temporary access roads on USFS lands across an unnamed tributary to Mill Canyon Creek. This will cause temporary impacts to approximately 0.01 acres to wetlands and waters of the U.S. Actions affecting this area of temporary impact will be conducted in accordance with Forest Plan BMPs, the general and regional conditions of the U.S. Army Corps of Engineers Nationwide Permit 12 (Utility Line Activities), and State 401 Water Quality Certification, to reduce erosion potential to the extent possible to minimize any impact to aquatic resources.

All transmission structures would be accessed for operation and maintenance via tracked vehicle or helicopter. Therefore, no permanent or temporary impacts on wetlands or waters of the U.S. are anticipated during the proposed transmission line operation and maintenance.

3.4.2.3 Fisheries

No water bodies are within the proposed substation site. There would be no impact to fisheries.

Construction of spur roads and transmission structures has the potential to increase both sediment loading and temperature in the Blackfoot River and its tributaries (USDA, 2001). Excessive sediment loading has been demonstrated to adversely impact salmonid fisheries,

most notably through the smothering of redds (the spawning area of trout or salmon). In addition, destruction of canopy cover in riparian corridors has been associated with increased water temperatures (Bartholow, 2000). Any work that poses the risk of increased sediment loading into the river and its tributaries or wetlands would be mitigated during the initial construction phase. Sediment traps, water barring, and other proven methods of sediment capture would be used to prevent the flow of loose sediment that may occur in association with seasonal or event runoff. Moreover, vegetation clearing within the riparian corridor or wetland areas would be avoided unless deemed absolutely necessary due to the safety risks associated with arcing. Disturbed areas would be rehabilitated immediately with native seeds and plantings.

Another concern is the high levels of selenium in Mill Canyon. To avoid disturbing this area, no work would take place within the riparian corridor of Mill Canyon Creek. With these mitigation strategies in place, no to low impacts to aquatic resources (including fisheries) are expected to occur.

No permanent impacts to fish are expected from the Proposed Action because all construction work would take place outside of the riparian areas, floodplains, and wetlands.

3.4.3 Environmental Impacts—Alternative 1

3.4.3.1 Water Resources

Alternative 1 would cross the Blackfoot River at two locations, in addition to crossing 14 minor tributaries to the Blackfoot River (Figure 11). No permanent impacts are anticipated because the proposed transmission line is designed to span these resources, so no in-stream work is expected.

3.4.3.2 Wetlands

Five wetlands (2.6 acres) were identified within the Alternative 1 ROW alignment. A small area (<0.01 acres) of potential wetland and 2.33 acres of open water were identified within the Alternative 1 alignment. The wetland areas identified within Alternative 1 are considered high quality (Category II, Berglund 1999) and are typically palustrine emergent, and scrub-shrub wetlands associated with the Blackfoot River or smaller drainages.

Vegetation commonly identified within wetland areas are similar to those described for the Proposed Action and commonly include reed canarygrass, several sedge species, cattail creeping spikerush, currant, red osier dogwood, and willow. Wetland soils within Alternative 1 are typically dark silty loams with gravel, but also include profiles with a surface layer of organic material.

Most wetlands identified within Alternative 1 are likely jurisdictional as they either abut a traditional navigable waterway (TNW) or abut a non-navigable, relatively permanent water (RPW) that flows to a TNW. Table 8 summarizes wetland acreages and classifications identified within Alternative 1. Similar to the Proposed Action, Alternative 1 would result in about 0.01 acre of temporary impact to an unnamed tributary to Mill Canyon as a result of a temporary road for construction access. All transmission structures would be accessed for operation and maintenance via tracked vehicle or helicopter, so no permanent or temporary impacts on wetlands or waters of the U.S. would occur under Alternative 1.

3.4.3.3 Fisheries

No water bodies are within the proposed substation site. There would be no impact to fisheries.

Construction would pose the same risks of sediment loading and temperature in the Blackfoot River and its tributaries as the Proposed Action. With mitigation strategies in place, no to low impacts to aquatic resources are expected to occur.

No permanent impacts to fish are expected because all construction work associated with pole placement would take place outside of the riparian areas, floodplains, and wetlands.

3.4.4 Environmental Impacts—Alternative 2

3.4.4.1 Water Resources

Alternative 2 would cross the Blackfoot River at two locations, in addition to crossing 14 minor tributaries to the Blackfoot River (Figure 11). No permanent impacts are anticipated because all proposed transmission lines are designed to span these resources, so no in-stream work is expected.

3.4.4.2 Wetlands

Five wetlands (2.21 acres) were identified within the Alternative 2 ROW. In addition to delineated wetlands, less than 0.01 acres of potential wetland and 1.67 acres of open water were identified. The wetland areas identified within Alternative 2 are considered high quality (Category II, Berglund 1999) and are typically palustrine emergent and scrub-shrub wetlands associated with the Blackfoot River or smaller drainages.

Vegetation commonly identified within wetland areas are similar to those described for the Proposed Action and commonly include reed canarygrass, several sedge species, cattail creeping spikerush, currant, red osier dogwood, and willow. Wetland soils within Alternative 2 are typically dark silty loams with gravel, but also include profiles with a surface layer of organic material.

The majority of the wetlands identified within Alternative 2 are likely jurisdictional as they either abut a traditional navigable waterway (TNW) or abut a non-navigable, relatively permanent water (RPW) that flows to a TNW. Table 8 summarizes wetland acreages and classifications identified within Alternative 2. Similar to the Proposed Action, Alternative 2 would result in about 0.01 acre of temporary impact to an unnamed tributary to Mill Canyon Creek as a result of a temporary road for construction access. All transmission structures would be accessed for operation and maintenance via tracked vehicle or helicopter, so no permanent or temporary impacts on wetlands or waters of the U.S. would occur under Alternative 2.

3.4.4.3 Fisheries

No water bodies are within the proposed substation site. There would be no impact to fisheries. Construction would pose the same risks of sediment loading and temperature in water bodies as the Proposed Action. With mitigation strategies in place, no to low impacts to aquatic resources are expected to occur.

No permanent impacts to fish are expected because all proposed transmission lines are designed to span water resources and all construction work associated with pole placement would take place outside of the riparian areas, floodplains, and wetlands.

3.4.5 Environmental Impacts—Alternative 3

3.4.5.1 Water Resources

No permanent impacts to water resources or floodplains are anticipated with Alternative 3. Alternative 3 would cross the Blackfoot River twice as well as 11 tributaries to the Blackfoot River. No permanent impacts are anticipated because all proposed transmission lines are designed to span these resources, so no in-stream work is expected.

3.4.5.2 Wetlands

One wetland (0.27 acre) was identified within the Alternative 3 ROW. In addition to the field delineated wetland, 2.21 acres of Potential Wetland and 0.14 acres of Open Water were identified. No permanent impacts to wetlands are anticipated with Alternative 3 because all proposed transmission lines are designed to span these resources, so no in-stream work is expected.

Potential wetland acreage was identified and mapped based on vegetation, topography, hydrology, and aerial photographs. A subset of 2.21 acres of wetland habitat was identified within the ROW while field verifying and delineating wetlands associated with Alternative 2. Table 8 summarizes wetland acreages and classifications identified within the Alternative 3 ROW.

The wetlands identified within Alternative 3 are likely jurisdictional as they either abut a TNW or abut a non-navigable RPW that flows to a TNW.

3.4.5.3 Fisheries

No water bodies are within the proposed substation site. There would be no impact to fisheries.

No permanent impacts to fish are expected because all proposed transmission lines are designed to span water resources and all construction work associated with pole placement would take place outside of the riparian areas, floodplains, and wetlands.

3.4.6 Environmental Impacts—Alternative 4

3.4.6.1 Water Resources

Unlike the Proposed Action and Alternatives 1, 2, and 3, permanent impacts to water resources would likely be unavoidable from Alternative 4 due to the crossing of the large wetland complex and open water bodies associated with Woodall Springs. The Woodall Springs wetland complex and open water bodies have been disturbed by various activities and (IDFG 1997). There are many upland inclusions in the proposed ROW of Alternative 4 that could be used for transmission line structures. However, there are no existing access roads within the wetland complex, so temporary access roads and construction pads would likely be necessary to provide stable footing for large construction equipment.

3.4.6.2 Wetlands

Five wetlands (2.6 acres) were identified within the Alternative 4 ROW. Formally delineated wetland areas within the ROW study area include 2.60 acres of Category II PEM/PSS wetland. Nearly 13 acres of Potential Wetland area (12.76 acres) and 2.33 acres of Open Water were identified using vegetation, topography, hydrology, and aerial maps within the Alternative 4 ROW study corridor. The wetlands and open water bodies are associated with Woodall Springs. These calcareous fen wetlands are unique to Southeastern Idaho (IDFG 1997).

Vegetation commonly identified within wetland areas are similar to those described for the Proposed Action and commonly include reed canarygrass, several sedge species, cattail creeping spikerush, currant, red osier dogwood, and willow. Wetland soils within Alternative 4 are typically dark silty loams with gravel, but also include profiles with a surface layer of organic material. Table 8 summarizes wetland acreages and classifications identified within the Alternative 4 alignment.

The wetlands identified within Alternative 4 are likely jurisdictional as they either abut a TNW or abut a non-navigable RPW that flows to a TNW.

Unlike the Proposed Action and Alternatives 1, 2, and 3, permanent impacts to wetlands would likely be unavoidable due to the crossing of the large wetland complex associated with Woodall Springs.

3.4.6.3 Fisheries

No water bodies are within the proposed substation site. There would be no impact to fisheries.

Permanent impacts to resident fish within the open water bodies of the Woodall Springs complex are anticipated within the Alternative 4 ROW, because construction would occur within wetland and water resource areas.

3.4.7 Environmental Impacts—No Action Alternative

There would be no potential for impacts to water resources (including wetlands and floodplains) or fisheries under this alternative because no construction would take place.

3.4.8 Mitigation Measures

The following mitigation measures have been identified to avoid or reduce potential adverse impacts to water resources and fish habitat and species from the proposed project:

- Install sediment barriers and other suitable erosion and runoff control devices prior to ground-disturbing activities at construction sites to minimize off-site sediment movement.
- Maintain erosion control structures on access roads where needed to prevent erosion and rutting.
- Minimize grading, clearing or other construction work in wetlands or riparian corridors. Do not permit use of these areas for construction staging, equipment or materials storage, fueling of vehicles, or related activities.

- 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.
- Keep vehicles and equipment in good working order to prevent oil and fuel leaks.

3.4.9 Unavoidable Impacts Remaining After Mitigation

Unavoidable impacts would remain after mitigation because any groundbreaking activity, no matter how benign, would, by its very nature, increase the risk of erosion and sediment loading in surface water processes. Due to extensive mitigation of potential effects from the Proposed Action, the Blackfoot River and its tributaries in the area would remain at a no to low risk of sediment loading.

3.4.10 Cumulative Impacts

Although suspended sediment in the Blackfoot River near the proposed project area is low, the removal of vegetation from previously undisturbed hill slopes, alteration of the riparian corridor, and other land use alterations that have affected the abiotic or biotic components associated with the Blackfoot River watershed have all contributed to cumulative impacts to fish and aquatic resources. Erosion transported from upland soils into creeks, rivers and other waterways is occurring in the area from naturally erodible geologic formations, as well as various land uses (intensive livestock and recreation use, timber harvest, vegetation management and road building). New roads and trails also have the potential to produce continued cumulative impacts on water quality through erosion and sedimentation. Of particular concern is the potential for mass erosion occurring along any roads constructed through soils having mass instability concerns (especially on those where side slopes are greater than 40 percent). Only temporary spur roads are proposed for this project.

Past activities that have adversely impacted soils in the project area include mining, logging, grazing, transmission line construction, development, and off-road recreational vehicle use. Many of these activities continue in the project area, and coupled with future land uses, sediment and pollutant transport are likely to occur. Future impacts on soils such as reduced productivity and compaction could even increase as the area develops. Most of the area where development would likely occur (outside of USFS lands), is relatively flat so erosion is not a primary concern, but any development could cause erosion if precautions are not taken. These actions would adversely affect water quality, and aquatic flora and fauna.

The Proposed Action has the potential to contribute to this cumulative impact through grading and excavation. With mitigation measures, impacts would be temporary and low, so any contribution by the project to cumulative impacts would be expected to be minor.

3.5 Land Use and Transportation

3.5.1 Affected Environment

3.5.1.1 Existing Land Ownership

The proposed ROW is located in central Caribou County. Caribou County encompasses 1,766 square miles, and is a rural county with a density of about four people per square mile (city-data.com, 2008). Of the 22-mile-long proposed ROW, approximately 15 miles would be located on private land; 1 mile would be on state land; 3.4 miles would be on USFS land; and 2.7 miles would be on BLM land (see Figure 12).

3.5.1.2 Agriculture Uses

There are 426,973 acres of farmland in Caribou County. The proposed substation site and most of the proposed ROW is located on private lands zoned for agricultural uses (Hopkins, 2008). Farmland in the proposed ROW includes cultivated fields and seeded grasslands that could be used for grazing or hay production. Primary cultivated crops are small grains, mostly without irrigation. There are about 33.2 acres of seeded grasslands within the proposed ROW and substation site and approximately 41.6 acres of cultivated ground. According to the NRCS, there is no soils survey for Caribou County (Hoover, 2008). There is no designated prime farmland in or proximate to the proposed ROW.

3.5.1.3 Mining On Non-Federal Land

The proposed ROW traverses highly disturbed, privately-owned industrial mining lands near the Agrium Phosphate Mine and at various other locations along the transmission line route. The land affected by mining has had heavy and repeated ground disturbance and earthworks such as slag and tailings piles, and have been scoured and contoured for construction and mining purposes.

3.5.1.4 Forest Service Land Uses

The proposed ROW would be located within the Caribou Administrative Unit of the C-TNF, which is located in southeastern Idaho, overlapping into Wyoming and Utah. In spring 2000, the Caribou National Forest (CNF) and the Targhee National Forest (TNF) were officially combined; however, the CNF is managed pursuant to the 2003 RFP, and the TNF is managed pursuant to the 1997 RFP.

The proposed ROW would cross approximately 3.5 miles of the Soda Springs Ranger District in the C-TNF. Phosphate mining occurs within the Soda Springs Ranger District. Other activities that occur on USFS lands include logging, road building, recreation activities, and grazing.

North Maybe Phosphate Mine is located primarily on USFS land on the C-TNF. Most of the mine area is under a USFS special use permit to Nu-West Mining, Inc., and BLM phosphate leases I-04 and I-8289 to Nu-West Mining, Inc (Figure 12). Predecessors of Nu-West Mining, Inc. have conducted extensive mine-related operations at North Maybe Mine on private lands, on C-TNF lands covered by the federal phosphate leases identified above, and on

USFS land not included in the leases, under a special use permit issued and administered by the USFS (USDA, 2004).

Full-scale production at the North Maybe Phosphate Mine began in 1965 using an open pit method of extraction. Active mining activities ceased in 1993. Open pit mining operations included removing overburden, which was either placed in piles or in a previously mined portion of the pit. The shale portion of the overburden contains selenium, as well as other contaminants that are designated hazardous substances. Selenium and other hazardous and deleterious substances are being leached from waste rock at the site into the environment, and may be impacting vegetation and surface water (USDA, 2004).

The North Maybe Canyon phosphate mine entered the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) program in 2004 with the signing of an Administrative Order on Consent by the affected agencies and mine owner. Nu-West is gathering data for the Site Investigation pursuant to CERCLA under USFS oversight. Background and pollution data is being collected for surface water, ground water, plants, and animals.

3.5.1.5 Bureau of Land Management Land Uses

The BLM issues Land Use Authorizations for a variety of purposes, both short-term and long-term. Short-term uses include agricultural leases, military training areas, and other uses involving minimal land improvements or disturbances. Long-term uses include ROWs for power lines, highways, roads, pipelines, fiber optics, communication sites, electric power generation sites, and irrigation.

There are approximately 391 authorized ROWs within the Pocatello Field Office area for such uses as roads, water pipelines, natural gas pipelines, power lines, telephone lines, fiber optic cables, railroads, canals, ditches, and communications sites. There are several major ROW corridors within the Pocatello Field Office area. The proposed ROW is not aligned within one of the identified corridors in the Plan.

Land uses on BLM lands include livestock grazing, wildlife habitat, recreational uses (such as OHV, camping, hunting, fishing, hiking, biking, and skiing), mining operations, access roads, and utility ROWs).

3.5.1.6 Transportation

The principal road in the area is Highway 34 (a rural arterial state highway). Other main roads in the area are Conda Road, Haul Road, and the Blackfoot River Road (a main corridor for entry in C-TNF). Highway 34 is a two-lane arterial roadway with an approximate 60 foot ROW. In addition to crossing and paralleling Highway 34, the proposed ROW also crosses Haul Road and the Blackfoot River Road as it travels northeast from Soda Springs. The proposed route crosses the Union Pacific Railway just east of the Conda plant and from that point on parallels the railway (crossing it roughly seven times) as it travels to the northeast and then east until just prior to entering C-TNF lands.

Average daily traffic use from Soda Springs to Conda on Highway 34 is 350 commercial vehicles and 2,600 total vehicle trips (Idaho Department of Transportation, 2007). Traffic

north of Conda decreases to 30 commercial vehicles and 350 total average daily vehicle trips (IDOT, 2007).

3.5.2 Environmental Impacts—Proposed Action

3.5.2.1 Land Ownership

BPA would purchase the proposed Hooper Springs Substation site from the private landowner in fee for construction and operation of this proposed substation. Land ownership therefore would change to BPA. Because BPA would pay a fair and negotiated price for the site, this would be a low impact of the Proposed Action.

Construction of LVE's proposed transmission line would not affect existing ownership of the lands crossed by the ROW. On non-federal lands, transmission line ROW would be purchased as an easement, which merely gives an easement holder (i.e., LVE) certain rights for use and does not change ownership of the land. On federal lands, LVE would receive a permit to use the proposed ROW for the transmission line, so would also not receive land ownership for these lands. This would be considered a low impact of the Proposed Action.

3.5.2.2 Farm and Range Land Uses

Construction of the Hooper Springs Substation would remove 5.4 acres of farmland and change it to a utility use. No prime farmlands occur in the area so no impacts to prime farmland would occur. Removing the small acreage needed for the substation from production would be a low impact to the agricultural productivity of the county because there are over 400,000 acres of farmland in the county.

Construction of the transmission line would result in the temporary disruption of existing farm and range land along the ROW during construction. This acreage includes a 120-foot-wide temporary construction easement for the proposed ROW. After project construction is complete, existing land uses are anticipated to remain the same. Exceptions would include precluding agricultural land use in locations where transmission line structures are installed. This would be a low impact.

3.5.2.3 Mining on Non-Federal Land

The proposed transmission line route is near some mining areas, but avoids active mining areas. Construction, operation and maintenance of the transmission line would have no impacts on existing mine operations.

3.5.2.4 Forest Service Land Uses

The proposed ROW would intersect approximately 0.7 mile of the North Maybe Phosphate Mine Investigation Area at Mill Canyon (Figure 12). Mill Canyon extends from the bottom of the East Mill dump approximately 2 miles to the Diamond Creek drainage. The canyon sides are relatively steep (20-45 percent slope), with the entire drainage being narrow. The upper first mile of the canyon faces north forming a bend about half way down exposing the remaining mile to the northeast. The Mill Canyon Creek originates from springs at the head of Mill Canyon, below the East Mill dump, and is fed by occasional springs throughout its

length. The surface water has been shown to contain levels of selenium concentrates exceeding existing water quality standards (HWS Consulting Group, 2005b).

Approximately seven structures would be constructed within the North Maybe Phosphate Mine Investigation Area. These will occur on the ridgeline about 2 miles north of the actual mine footprint and are not anticipated to disturb contaminated soils. The proposed structure height on the east side of Mill Canyon Creek is approximately 85 feet, and approximately 110 feet on the west side of Mill Canyon Creek. The transmission conductor associated with the Proposed Action would be approximately 112 feet above ground at the Mill Canyon Creek crossing.

In addition to the proposed ROW, approximately 0.1 mile of the total 3 miles of temporary spur roads crossing USFS lands would be located within the North Maybe Phosphate Mine Investigation Area. Of this 0.1 mile, a small portion (0.003 mile) would cross an unnamed tributary to Mill Canyon Creek approximately 2 miles north of the mine site. The crossing would impact approximately 0.01 acre of wetland and waters of the U.S. The headwaters of this unnamed tributary were not impacted by historic mining activity. The crossing and additional temporary access roads are not anticipated to disturb potentially contaminated soils associated with the North Maybe Phosphate Mine.

Because the proposed ROW consists of structures that would be spaced an average of 575 feet apart, the Proposed Action is not anticipated to result in long-term impacts to existing aboveground land uses (undeveloped open space, grazing, mining). In addition, inspection and maintenance activities are not anticipated to interfere with, nor would those activities result in an adverse impact on existing land uses along the proposed ROW. In locations where the ROW would be installed within road ROWs or within easements or ROW for other utilities, effects on existing land uses are expected to be low.

The Proposed Action would be consistent with the applicable USFS policies related to the siting of utility easements and ROWs and the management of public lands (see Chapter 4).

3.5.2.5 Bureau of Land Management Land Uses

Construction of the transmission line would result in the temporary disruption of grazing and open space use along the ROW during construction. The Proposed Action would be consistent with the identified applicable BLM policies related to the siting of utility easements and ROWs and the management of public lands (see Chapter 4).

3.5.2.6 Transportation

Impacts to residents near, but not immediately adjacent to the proposed ROW, and visitors to the area, would be limited to temporary inconveniences associated with traffic delays on Highway 34, equipment movement on nearby access roads, and dust and noise from construction activity, including tree removal. Construction activities would temporarily generate a small increase in vehicular movement during construction, and may alter circulation patterns and increase traffic hazards on local roads for a short period. General use of the existing roads along the proposed ROW would not be limited due to the Proposed Action and the presence of the transmission lines along these transportation

corridors would not prohibit access after the proposed project is completed. Impacts to transportation from the Proposed Action would be low.

3.5.3 Environmental Impacts—Alternatives

3.5.3.1 Alternatives 1, 2, 3, and 4

Impacts associated with construction and operation of these alternatives would be similar to the Proposed Action.

3.5.3.2 No Action Alternative

If the No Action Alternative is implemented, no project-related ground-disturbing activities would occur in the proposed transmission line area. The No Action Alternative would result in no project-related effect on land uses, land ownership, or transportation.

3.5.4 Mitigation Measures

The following mitigation measures have been identified to avoid or reduce potential adverse land use and transportation impacts from the proposed project:

- Coordinate with all of the affected land management jurisdictions to secure the required permits/approvals.
- Coordinate with all of the affected landowners along the proposed ROW to obtain approvals to enter their land, and negotiate the appropriate agreements with the landowners to obtain easements, ROWs, or purchase of the parcel.
- Apply water to actively used existing and temporary roads to control dust.
- Comply with all county, state and federal traffic management requirements.
- Repair all existing roads used for access, if necessary, after line construction.

3.5.5 Unavoidable Adverse Impacts

With the implementation of the recommended mitigation measures, unavoidable adverse impacts on land use or transportation would be reduced. Only minor amounts of agricultural and timber land would be taken out of production permanently.

3.5.6 Cumulative Impacts

Timber harvest, mineral extraction, and other development activities have changed and will continue to change land use in the project vicinity. The Caribou County Comprehensive Plan calls for growth and development to occur within their planning boundary. Such planned growth and development may cause changes to existing land use on private lands. The proposed substation and transmission line would remove a small amount of land from agricultural production and the transmission line would require taking some timber out of production. However, the majority of the transmission line ROW between transmission line structures could be used as the land is currently. The Proposed Action's contribution to cumulative land use change in the area would be minor.

The transportation network and traffic in the area are likely to increase with future development, though no large developments are planned. The Proposed Action, however, would result in only temporary impacts to transportation/traffic during construction and maintenance, and thus would not be expected to contribute to long-term cumulative increase in transportation/traffic.

3.6 Recreation

3.6.1 Affected Environment

Cross country skiing, camping, boating, fishing, and hiking are common activities on the public lands in Caribou County. Recreational opportunities within the C-TNF include dispersed camping, fishing, hunting, hiking, and trail motorbike riding (USFS, 2008). The Blackfoot River is a world class fishery. The proposed ROW crosses land managed by the USFS Soda Springs Ranger District within the Caribou Administrative Unit of the C-TNF and land managed by the BLM Pocatello Field Office.

3.6.1.1 Forest Service

Goals, Objectives, Standards, and Guidelines.

The proposed ROW crosses approximately 3.6 miles of the Soda Springs Ranger District in the C-TNF (BLM, 2005).

The 2003 Revised Forest Plan for the CNF includes forest-wide goals, objectives, and standards and guidelines for recreation. They relate to providing developed and dispersed recreation facilities, access, and programs; meeting federal, state, and local standards for health and safety; providing barrier-free facilities and services; providing recreation information in a variety of media and locations; and providing environmental education, and interpretation (USFS, 2003).

The USFS's management emphasis for the Webster Ridges and Valleys Subsection of the Forest, in which the proposed ROW would be located, includes restoration of areas and management of phosphate reserves and forested vegetation. There are no prescriptions related to recreation (USFS, 2003).

Recreation Opportunity Spectrum.

The USFS has used the Recreation Opportunity Spectrum (ROS) since the 1980s as a management tool to describe and allocate outdoor recreation settings. The area of the C-TNF that is in the vicinity of the proposed ROW has been classified into two ROS classes[2]. The proposed ROW is designated by the USFS as being *Roaded Modified* (1.33 miles) and *Semi-Primitive Motorized* (2.21 miles) (USFS, 2003).

3.6.1.2 Bureau of Land Management

The proposed ROW crosses 2.7 miles of BLM lands that are managed pursuant to the 2006 Pocatello RMP. Recreation Management is one of the six planning issues identified in the

[2] The ROS classes are: Primitive, Semi-Primitive Non-Motorized, Semi-Primitive Motorized, Roaded Modified, Roaded Natural, Rural, and Urban.

RMP. The issue is "how will the increase in recreational use and demand for quality recreational opportunities be balanced within the planning area?" The RMP indicates that there are two different preferences indicated by the public: (1) increased demand warrants more recreation facilities and (2) providing better quality recreation experiences by minimizing environmental impacts.

The BLM's preferred alternative for management balances resource conservation and ecosystem health with the production of commodities and with public use of the land. It emphasizes an intermediate level of protection, restoration, enhancement, and use of resources and services to meet ongoing programs and land uses. Management strategies are intended to continue to provide for recreational opportunities and access to and on public lands.

The RMP includes management goals and objectives for recreation related to managing lands for a variety of non-motorized, mechanized, and motorized opportunities; making sure that recreation facility development and activities are consistent with the other resource goals for the area; and recognizing recreation as the principal use on public land within Special Recreation Management Areas (SRMAs) (BLM, 2006).

The ROS is also used by the BLM to characterize lands in terms of the types of recreation experiences, activities, and settings that are provided. No formal ROS classifications have been recorded in previous planning documents (BLM, 2006), and no ROS maps indicating land classification are included in the Pocatello RMP.

3.6.2 Environmental Impacts—Proposed Action

3.6.2.1 Forest Service

Hooper Springs Substation would be built on private land and would have no effect on existing USFS recreation opportunities.

Construction of the proposed transmission line and ROW would result in a short-term disruption to recreation activities in the vicinity of the proposed ROW. These disruptions could be directly induced by project construction, or could be indirect effects of such activities.

Direct impacts on recreation activities from project construction would include temporarily eliminating access to nearby recreation areas and causing delays in traveling to the recreation areas. Areas within and near the proposed alignment may be closed to recreation use during the project construction period for safety and security reasons. In addition, the use of USFS roads by construction vehicles, equipment, and workers may result in traffic delays in accessing nearby areas of the USFS used for recreation activities.

Indirect impacts on recreation activities include the potential effects on the enjoyment of such recreation activities from the presence of the construction vehicles, equipment, activities, and workers; the noise that would be emitted during project construction from those activities, and the dust that would be generated from the construction activities. The severity of the impact would depend on the recreationists' expectations when engaging in the recreation activities. Recreationists expecting a solitary quiet experience while viewing wildlife or scenery may perceive project construction as undesirable or intolerable, while OHV users may notice the construction noise, dust, and activity to a lesser degree. In

addition, in the unlikely event of nighttime project construction, construction lights may affect the experience of recreationists camping within the Forest.

After project construction and revegetation activities are completed, land managers may prevent or limit access to areas (e.g., access roads) to avoid erosion and minimize weed invasion. Any impact to recreation associated with a short-term or long-term reduction in access to areas affected would depend on the duration of the closure. The effect to recreation associated with the Proposed Action would be low, because the Proposed Action would occupy a very small percentage of Forest land. Project implementation would not affect the Forest land's ability to be classified as Roaded Modified or Semi-Primitive Motorized.

Operation of the Proposed Action would have no effect on existing recreation opportunities near the proposed ROW because operation and maintenance activities require few personnel and vehicles/equipment and occur periodically. However, the Proposed Action would affect recreational experience for some Forest visitors by introducing a linear corridor developed with a transmission line in some portions of the Forest that were previously largely undeveloped. Because this impact would occur on a small portion of the C-TNF and only briefly for only those recreational visitors in the proximity of the proposed transmission line, this would be considered a low impact of the Proposed Action.

Operation of the Proposed Action would be consistent with the identified applicable USFS goals and policies.

3.6.2.2 Bureau of Land Management

Hooper Springs Substation would be built on private land and would have no effect on existing BLM recreation opportunities.

The effect to recreation associated with the Proposed Action would be low, because the Proposed Action would occupy a very small percentage of BLM land. Operation of the Proposed Action would be consistent with the identified applicable BLM goals and policies.

3.6.3 Environmental Impacts—Alternatives

3.6.3.1 Alternatives 1, 2, 3, and 4

Impacts associated with construction and operation of these alternatives would not differ from the Proposed Action.

3.6.3.2 No Action Alternative

If the No Action Alternative is implemented, no project-related ground-disturbing activities would occur in the proposed transmission line or substation areas. The No Action Alternative would result in no effects on recreation opportunities or facilities.

3.6.4 Mitigation Measures

The following mitigation measures have been identified to avoid or reduce potential adverse recreation impacts from the proposed project:

- Send an information letter to the project mail list regarding the upcoming construction activities and schedule.

- Request that the C-TNF post project information on their website.

3.6.5 Unavoidable Impacts After Mitigation

With the implementation of the recommended mitigation measures, no unavoidable adverse impacts on recreation are expected to occur.

3.6.6 Cumulative Impacts

Cumulative impacts to recreational opportunities in the area from past activities have been both adverse (removal of land from recreational use, increased human development and activities, etc.) and beneficial (development of recreational trails, campsites, etc.). It is likely that the future will bring similar adverse and beneficial cumulative impacts to recreational opportunities in the area. The Proposed Action would primarily create only temporary impacts to recreation during its construction phase. However, the presence of the transmission line would potentially affect recreational visitors to forest lands in the long term, which would contribute to cumulative adverse impacts to recreation, albeit minor.

3.7 Visual Quality

3.7.1 Affected Environment

The affected environment description for visual and aesthetic resources distinguishes among the portion of the route that would pass through USFS lands, BLM lands, and non-federal lands. The affected environment description for the portion of the route that would pass through the C-TNF uses the USFS's visual (or scenery) management and assessment system (USFS, 1974; USFS, 1995). Existing visual conditions for USFS lands, BLM lands, and non-federal lands are presented in the following sections.

3.7.1.1 The U.S. Forest Service Scenery Management System (SMS) and Visual Management System (VMS)

Approximately 3.5 miles of the proposed ROW passes through the C-TNF (Figure 13). The methodology used by the USFS to manage visual (scenic) and aesthetic resources is guided by the USFS's Visual Resource Management System (VMS) or the more recent Scenery Management System (SMS). Both systems provide an overall framework for the orderly inventory, analysis, and management of scenery (USFS, 1974; USFS, 1975). The systems apply to all National Forests and National Grasslands administered by the USFS, and to all USFS activities including, but not limited to, timber harvesting; road building; stream, range, and wildlife improvements; special use developments; utility line construction; recreation developments; and fuels management. The day-to-day management of scenic resources on the C-TNF is guided by the CNF RFP (USFS, 2003).

The proposed ROW enters the C-TNF from the west near the entrance to the area known as the Narrows (Figure 13). This is an area where the Blackfoot River Valley narrows considerably and becomes a twisting narrow canyon that sharply turns to the north for several miles before opening up again in the Rasmussen Valley. Blackfoot River Road (Forest Road 095) winds through the bottom of the canyon next to the Blackfoot River and is surrounded by canyon side-slopes that sharply rise up to several hundred feet above the road and river. The north-facing slopes are heavily forested with mixed stands of conifers

and aspen, as are some of the higher portions of most of the east-and west-facing slopes above the Narrows. South facing slopes contain vegetation such as sage and grasses. Views through the Narrows are restricted by the twisting terrain and vegetation. Mill Canyon Road (Forest Road 099) turns off of Blackfoot River Road and rises approximately 0.5 mile through hillsides to the Mill Canyon Campground, which is a non-fee campground with 10 camping units. The lands adjacent to the Mill Canyon Road become forested towards its upper end. The Narrows and Mill Canyon (Figures 14 and 15) areas have a natural-appearing landscape character that includes very few human-made elements other than Blackfoot River Road, the Mill Canyon Campground, and Mill Canyon Road.

Figure 14
View east at the entrance to the Narrows from Blackfoot Road.

Figure 15
View southeast across the Narrows from Mill Canyon River Road.

Shortly after the proposed ROW enters the C-TNF and crosses over the Blackfoot River Road, it heads east up and over Dry Ridge. This portion of the proposed ROW is rugged, mostly heavily forested, and does not pass over publicly accessible roads, trails, or developed recreation facilities; therefore, it would be seen by few people. Although the character of much of the land adjacent to this part of the proposed ROW is natural appearing, areas several miles south have been heavily altered through phosphate mining activities.

The eastern end of the proposed ROW descends down the heavily forested, east-facing slopes and canyons of Dry Ridge into Upper Valley. The proposed ROW terminates at the base of the ridge where it would tie into the existing LVE line located next to Diamond Creek Road. Views throughout Upper Valley are expansive and include the valley floor and adjacent mountains. However, the numbers of viewers is low and includes residents of several scattered ranches and people driving on Diamond Creek Road. The valley floor and slopes of Dry Ridge near the proposed ROW have a generally natural-appearing landscape character, although some areas on slopes in the area have been altered by timber harvest operations. Figures 16 and 17 show areas on and near the C-TNF at the east end of the proposed ROW.

Figure 16
View looking southeast from Lanes Creek Road into Upper Canyon towards the area where the Proposed ROW would tie into the LVE line.

Figure 17
View looking south along Diamond Creek Road near the location where the Proposed ROW would tie into the LVE line (pictured in photograph).

Scenic attractiveness is the primary indicator of the intrinsic scenic beauty of a landscape and of the positive responses it evokes in people. It helps determine landscapes that are important for scenic beauty based on commonly held perceptions of the beauty of landform, vegetation pattern, composition, surface water characteristics, and land use patterns and cultural features. Most of the proposed ROW in the C-TNF is classified as Indistinctive. Distinctive areas are found along the Blackfoot River as it flows through the Narrows, some of the adjacent riparian areas, and on some adjacent slopes.

Landscape visibility is a function of interconnected considerations. The degree to which a landscape is visible to viewers depends upon a number of considerations. Three primary considerations are travelways/use areas, distance zones, and viewer concern level.

Various elements related to landscape visibility are combined to create what are called Scenic Integrity Classes in the SMS and Visual Quality Classes in the VMS (see CH2M HILL Visual Tech Report, 2008). These classes become objectives (SIOs and VQOs) in a Forest Plan and help determine how a landscape is to be managed. They are used to manage land to either achieve the desired SIO or VQO in the future (if the area does not currently meet the SIO or VQO), or to provide direction in terms of how much a landscape may be altered and still meet the minimum standards of the SIO or VQO. There are five Scenic Integrity Classes that describe the landscape in varying degrees of naturalness: 1) Very High (Unaltered); 2) High (Appears Unaltered); 3) Moderate (Slightly Altered); 4) Low (Moderately Altered); 5) Very Low (Heavily Altered). The corresponding Visual Quality Classes are: 1) Preservation (Unaltered); 2) Retention (Appears Unaltered); 3) Partial Retention (Slightly Altered); 4) Modification (Slightly Altered); and 5) Maximum Modification (Heavily Altered).

The current RFP maps related to visual or scenic resources have not been updated to the SMS, so use VMS terminology. The proposed project would pass through areas with two different VQOs that are described below.

- Partial Retention (VMS)—Moderate (SMS): This refers to landscapes where the valued landscape character "appears slightly altered." Noticeable deviations must remain visually subordinate to the landscape character being viewed.

- Modification (VMS)—Low (SMS): Modification VQO (Low SIO) refers to landscapes where the valued landscape character "appears moderately altered." Deviations begin to dominate the valued landscape character being viewed, but they borrow valued attributes such as size; shape; edge effect and pattern of natural openings; vegetative type changes; or architectural styles outside the landscape being viewed. They should not only appear as a valued character outside the landscape being viewed, but compatible or complimentary to the character within.

The west part of Blackfoot River Road that passes through USFS lands passes through approximately 2.5 miles of area with a VQO of Partial Retention (Moderate SIO). The eastern-most portion of Blackfoot River Road that passes through the NFS passes through approximately 1.25 miles of land designated as Modification VQO (Low SIO).

Blackfoot River Road and Diamond Creek Road are the major travelways in the project area and are the viewing platforms from which the greatest number of viewers see the proposed ROW. Together, the two roads provide access between parts of southeastern Idaho and the Swan Valley of Wyoming. Both roads have oiled or gravel surfaces and have been classified as Secondary Travelways. The distance zones of the viewed landscape from these two roads range from foreground in the Narrows area, to background along the parts of Diamond Creek Road that pass through Upper Valley near the eastern terminus of the route. Viewers include some recreationists (campers and fall hunters), but are composed primarily of local people engaged in mining and ranching/farming who pass through the area via the area's road system. These viewers have moderate-to-low concern levels to changes in the surrounding landscape (USFS, 2006). The Trail Guard Station is located just off of Blackfoot River Road and is used as a rental cabin. Concern by cabin users regarding scenic quality is also moderate to low (USFS, 2006).

Mill Canyon Road (Forest Road 099) is a gravel surface that branches off Blackfoot River Road in the Narrows. It is less than 0.5 mile long and provides access to the Mill Canyon Campground. It is in an area that has a VQO of Partial Retention (Moderate SIO). Views to the south from the campground are very restricted by the side slopes of Mill Creek Canyon and nearby trees. Only the upper slopes of the ridges are visible in the middle ground from parts of the campground. Views from the middle and lower part of Mill Canyon Road include middle distance views of forested ridgetops south of the Blackfoot River. The concern level of people using the campground or road is moderate to low (USFS, 2006).

There are other Forest Roads in the project area, but they are closed year-long to motorized use. These roads include Forest Roads 309, 878, 1256, and 1257 in the Mill Creek area, and Forest Road 346 near Rasmussen Valley. Distance zones for views from these roads range from immediate foreground to background, but few people see the views because the roads are closed to motorized use. Viewers primarily consist of fall hunters and other forest users who would be considered to have low concern levels.

Most of these roads have a VQO of Partial Retention (Moderate SIO).

3.7.1.2 Bureau of Land Management

The proposed ROW crosses BLM lands for approximately 1.5 miles on the western portion of the proposed corridor near the Agrium facility. This section of the proposed ROW is characterized by steep slopes, undulating hills, and rocky terrain. Much of the area the

proposed ROW passes through are lands covered with dense, tall sage, while the north-facing slopes of the canyons are covered in thick stands of aspen and other vegetation. Views to the east along much of this section of the proposed ROW are constrained by the adjacent hillsides and are oriented to the west. This area is highly altered by mining activities and contains close up views of all the features described in the previous paragraph, along with other features such roads and large vehicles. Although the general public can drive along part of Conda Road, this portion of the proposed ROW would not be viewed in proximity (foreground distance zone) by many people other than employees of the Agrium Plant. Most views by the general public are from Highway 34 or along Conda Road over a mile to the west. Viewer sensitivity to changes to the viewed landscape of this portion of the proposed ROW is considered low.

The eastern portion of the proposed ROW also crosses a small area of BLM lands just prior to crossing the Blackfoot River at the Narrows and entering USFS lands. BLM lands on the eastern portion of the proposed ROW are predominately characterized by range land. Across the range land, the terrain varies from open flat areas to hillsides. East-facing slopes near this portion of the proposed ROW are generally covered in stands of thick aspens and deadfall. Most other areas are covered with sage and bunch grasses. Views near this section of the proposed ROW are open to Lower Valley, to more constricted in areas adjacent to hills. Viewer sensitivity to changes to the viewed landscape of this portion of the proposed ROW is considered low.

3.7.1.3 Non-Federal Lands

Approximately 16 miles of the proposed ROW pass through non-federal lands, most of which is privately owned. The western end of the proposed ROW is the route's lowest elevation (at approximately 6,000 feet). From the Hooper Springs Substation to the Haul Road, the proposed ROW heads across mostly agricultural land. This section of the proposed ROW is relatively level and views along the proposed ROW are expansive. In addition to the nearby agricultural landscape that can be seen along the proposed ROW, other visible, substantial, human-made features that can be seen in the foreground to middle ground viewing distance include the embankments of the Agrium Phosphate Mine settling ponds; slag and tailing piles, equipment associated with the Agrium Plant; electrical transmission lines (with metal towers); electrical distribution lines (with single wood structures); Highway 34; and miscellaneous buildings. There are no residences along this part of the proposed ROW. Most of the human-made objects that are seen are in the foreground to middle ground viewing distance. The portion of this part of the route west of Highway 34 has an agricultural character. The closer the proposed ROW gets to the Agrium facility, the more the nearby landscape character changes to mining and industrial.

This western most part of the proposed ROW is accessible to the general public via several unpaved roads, but does not receive many viewers other than farmers with lands in the area or people driving the roads to access other areas. Viewer sensitivity to changes in the viewed environment is considered low. Highway 34 passes from north to south through the east part of this portion of the route. Relatively large numbers of people pass by the route along Highway 34 and include a variety of viewers (local motorists, non-local motorists passing through, etc). Viewers have short duration views of the area.

After passing over the Haul Road, the proposed ROW traverses highly disturbed, privately-owned industrial mining lands near the Agrium Plant. The terrain within this area varies from almost level to hilly and includes areas of vast, heavy, and repeated ground disturbance and earthworks such as slag and tailings piles, and areas that have been scoured and contoured for construction and mining purposes. From Shield Canyon, the proposed ROW turns north along the lower slopes of a hillside east of (and above) the Agrium facility. The proposed ROW leaves the Agrium mining area, enters BLM lands for approximately 1.5 miles, and then crosses into private industrial mining and agricultural lands further to the north. This section of the proposed ROW is characterized by steep slopes, undulating hills, and rocky terrain. Much of the area the proposed ROW passes through are lands covered with dense, tall sage, while the north-facing slopes of the canyons are covered in thick stands of aspen and other vegetation. Views to the east along much of this section of the proposed ROW are constrained by the adjacent hillsides and are oriented to the west. This area is highly altered by mining activities and contains close up views of all the features described in the previous paragraph, along with other features such as roads and large vehicles. Although the general public can drive along part of Conda Road, this portion of the proposed ROW is not viewed in proximity (foreground distance zone) by many people other than employees of the Agrium Plant. Most views by the general public are from Highway 34 or along Conda Road over a mile to the west. Viewer sensitivity to changes to the viewed landscape of this portion of the proposed ROW is considered low.

As the proposed ROW begins to curve northeastward, it leaves extreme terrain and crosses through the mouth area of the Blackfoot River canyon. It roughly follows the route of Haul Road to its intersection with Blackfoot River Road through private industrial (mining) and private agricultural land. Vegetation varies from forested and riparian areas, to areas of bunch grass and sage, and to agricultural crops. The proposed ROW crosses the Blackfoot River on private land and turns east and southeast from its northern most point. The proposed ROW trends eastward for the remainder of its length, and stays mainly on private agricultural and range land (with a small section of BLM land) until it reaches the C-TNF boundary.

Across the range land, the terrain varies from open flat areas to hillsides. Sloped areas (particularly east-facing slopes) are generally covered in stands of thick aspens and deadfall. Most other areas are covered with sage and bunch grasses that have been heavily grazed. This section of the proposed ROW is north of the Blackfoot River Road and the Blackfoot River. Views near parts of this section of the proposed ROW vary from wide open in areas where the valley is open, to more constricted in areas adjacent to hills. The character of most of the flatter lands adjacent to this portion of the proposed ROW is agricultural. Sloped areas tend to be undeveloped (including grazing) and generally have a range land or natural character. North-facing slopes tend to be forested, while south and west facing slopes tend to contain sage and grasses. Some mining activity on hillsides north of Blackfoot River Road can be seen along this part of the proposed ROW. The Blackfoot River Road offers the general public the best opportunity for viewing this part of the landscape through which the proposed ROW would pass. Local residents use Blackfoot River Road to access the C-TNF and communities farther to the east. The concern level of most road users is moderate to low (USFS, 1986). Figures 18 to 19 display photographs of the non-NFS lands through which the proposed ROW would pass.

Figure 18
View north along 3-Mile Knoll Road near location where the substation would be built (to left of photograph) and transmission line would head east.

Figure 19
View looking south from Blackfoot River Road across Blackfoot River and adjacent agricultural areas towards Haul Road.

3.7.2 Environmental Impacts—Proposed Action

3.7.2.1 Forest Service

Construction activities for the Proposed Action that would be seen by Forest visitors would be temporary, and would have minimal effects on visual or aesthetic resources. Activities that would be most visible would include clearing the 120-foot-wide ROW; assembling and erecting the structures (which each require a 120 feet by 120 feet cleared area); clearing and using material and equipment staging areas; and construction-related traffic using the project area. Workers and large equipment would be visible along the proposed ROW during construction. Construction would create some dust. Access to structures would occur via adjacent roads and motorists would be exposed to construction activity that could include intermittent lane closures while construction takes place. Construction activities and temporary lane closures represent a low impact to motorists, because views would be brief and the effect short-term.

The most visible components of the Proposed Action would be the 120-foot-wide cleared ROW, the 100-foot tall transmission structures, and the transmission lines. The proposed ROW would pass through two areas observable to Forest visitors. The first area is in the western part of the Proposed Action from portions of Blackfoot River Road.

Where the Proposed Action within the C-TNF would first be visible (west of the entrance to the C-TNF), the proposed ROW would be slightly visible as an unvegetated area on the side slope, and several of its structures would be seen above adjacent trees silhouetted against the background sky (see Figure 20). Although these changes might be visible to most Forest visitors, the proposed ROW and structures would be visually subordinate to the landscape character and would meet the Partial Retention VQO and Moderate SIO designation.

Where Blackfoot Road enters the C-TNF, the proposed ROW would be closer and more visible to viewers. East of the entrance sign to the C-TNF, the proposed ROW would make a sharp turn to the south, and cross over Blackfoot River Road and the Blackfoot River. The proposed ROW would trend easterly up a forested and open side slope approximately 500 to 600 feet to the top of Dry Ridge (see Figure 21). The Proposed Action would be visible to people driving on the Blackfoot River Road and by people along the shores of (or in) the

Blackfoot River. The Proposed Action is not expected to be objectionable to most viewers (who would most likely have low to moderate viewer concerns). The Proposed Action would be most noticeable right near the crossing (see Figure 21)—although views this close to the crossing would be brief for most viewers (people driving on Blackfoot River Road). The proposed ROW (in an area that is already partially open) and transmission structures and conductors would be visually subordinate to the viewed landscape. It would meet the VQO of Partial Retention and the SIO of Moderate and thus be consistent with the RFP. Therefore the impacts to visual and aesthetic resources are expected to be low to moderate.

The second area on the C-TNF where the Proposed Action would be visible by the general public and Forest visitors would be at the east end where it traverses down east-facing slopes of Dry Ridge and ties into the existing LVE line next to Diamond Creek Road. The Proposed Action would be most noticeable (mainly the cleared ROW) from Diamond Creek Road at the location immediately adjacent to where the proposed ROW would tie into the existing LVE line. The Proposed Action would be visible by people traveling on the part of Diamond Creek Road adjacent to the tie-in location. With the implementation of the mitigation measures and because of the generally low visual concern of people driving the road, the line would have low to moderate impacts to visual or scenic quality. The portion of the C-TNF at the east end of the proposed ROW has a VQO of Modification and an SIO of low. The Proposed Action would have less of a visual impact than that allowed with modification and thus would be consistent with the RFP.

Figure 20
Simulation of Proposed Action looking west near the CNF boundary

Figure 21
Simulation of Proposed Action looking east along Blackfoot River Road towards the Narrows and entry to the CNF.

The Proposed Action would not be visible from the Mill Canyon Campground or Mill Canyon Road because of screening by topography and trees.

In addition to meeting the VQO directives for the C-TNF lands, the Proposed Action would also be consistent with the following RFP's visual or scenic resource-oriented guidelines:

- "Utility corridors should have irregular clearing widths and follow patterns of existing natural openings. "
- "Utility structures should be made to blend with the existing landscape to the extent feasible."
- "New and reconstructed structures and facilities should be built to blend with the surrounding landscape, using the concepts outlined in the Built Environment Image Guide or current direction."
- "Until the Scenery Management System is fully implemented, projects should be planned and implemented to meet the VQOs as displayed on the Forest VQO map."

3.7.2.2 Bureau of Land Management

The most visible components of the Proposed Action would be the 120-foot-wide cleared ROW, the 100-foot tall transmission structures, and the transmission lines. Most of the transmission line would pass over areas with few trees and would not require clearing the proposed ROW, and would therefore have minimal or no effect on visual or aesthetic resources. With mitigation measures, the proposed ROW would have low impacts to visual and aesthetic resources.

3.7.2.3 Non-Federal Lands

The most visible components of the Proposed Action would be the 120-foot-wide cleared ROW, the 100-foot tall transmission structures, the transmission lines, and the new substation. Hooper Springs Substation would be constructed next to the new PacifiCorp Threemile Knoll Substation. Impacts from construction would be temporary. Since the Hooper Springs Substation would be constructed in a previously altered area and the visual context is consistent with PacifiCorp's existing Threemile Knoll Substation, the effect to visual resources in the area would be low.

Construction access to transmission line structure sites would occur via adjacent roads and motorists would be exposed to construction activity that could include intermittent lane closures while construction takes place at the highway crossings. Construction activities and temporary lane closures represent a low impact to motorists, because views would be brief and the effect short-term.

Along the transmission line route, structures would be placed in open areas and add another human-made element (along with other electrical transmission and distribution lines in the project area) to the landscape. The structures would be wood or Corten™ steel (that intentionally rusts brown) that would help reduce their visibility along parts of the route. Transmission lines spanning the structures would also be seen, but would be less visible than the structures when viewed beyond the foreground viewing distance.

3.7.3 Environmental Impacts—Alternatives

3.7.3.1 Alternative 1

Forest Service

Alternative 1 would have similar impacts to the visual resources of the area on C-TNF lands as the Proposed Action. Alternative 1 would meet RFP visual resource objectives. This is primarily because although this alternative would cross Blackfoot River Road and the Blackfoot River at essentially the same location, it would be at a diagonal that would minimize the amount of transmission line that would be seen. This alternative would also avoid some forested areas on the hillside south of the river that would need to be cleared within the Proposed Action. Overall impacts would be low.

Bureau of Land Management and Non-Federal Lands

Alternative 1 would have similar impacts to the visual resources of the area as the Proposed Action. Overall impacts would be low.

3.7.3.2 Alternative 2

Forest Service

Alternative 2 would have similar overall impacts to the visual resources of the area on C-TNF lands as Alternative 1. Like Alternative 1, Alternative 2 would meet RFP visual resource objectives. Because this alternative would cross the Blackfoot River at a slightly different section of the Narrows than the Proposed Action, and because of its orientation, it

would be somewhat more visible to visitors and motorists driving east along Blackfoot River Road than the Proposed Action. This alternative (like Alternative 1) would also avoid some forested areas on the side slope south of the river. Overall impacts would be low.

Bureau of Land Management and Non-Federal Lands

Alternative 2 would have similar impacts to the visual resources of the area as the Proposed Action. Overall impacts would be low.

3.7.3.3 Alternative 3

Forest Service

Alternative 3 would have greater visual impacts to the visual resources of the area than that of the Proposed Action. Similar to Alternative 2, it would cross the Blackfoot River at a more visible section of the area known as the Narrows. Impacts would be low to moderate.

Bureau of Land Management and Non-Federal Lands

Alternative 3 would have greater visual impacts to the visual resources of the area than that of the Proposed Action. It would take a northern route more adjacent to utility transportation corridors (Highway 34) and cross agriculture lands in the area that do not currently have utility corridors viewable on the landscape. Impacts would be low to moderate.

3.7.3.4 Alternative 4

Forest Service

Alternative 4 would have greater visual impacts to the visual resources of the area than that of the Proposed Action. Similar to Alternative 1, it would cross the Blackfoot River at a more visible section of the area known as the Narrows. Impacts would be low to moderate.

Bureau of Land Management and Non-Federal Lands

Alternative 4 would have greater visual impacts to the visual resources of the area than that of the Proposed Action. It would take a northern route more adjacent to utility transportation corridors (Highway 34) and cross agriculture lands in the area that do not currently have utility corridors viewable on the landscape. Impacts would be low to moderate.

3.7.3.5 No Action Alternative

Since no construction activity would take place and no substation and transmission line would be developed, there would be no impacts.

3.7.4 Mitigation Measures

The following mitigation measures have been identified to avoid or reduce potential adverse visual impacts from the proposed project:

- Use non-lustrous insulators (i.e. non-ceramic insulators) and non-reflective conductors.
- Maintain proposed ROW free of construction debris.
- Use wood or Corten™ steel (which intentionally rusts brown) to reduce visibility of the proposed transmission line structures.
- Leave as many non-danger trees as possible to screen the proposed ROW from view.

3.7.5 Unavoidable Impacts Remaining After Mitigation

The Proposed Action would be routed away from (and west of) the entrance to the Narrows on USFS lands, and would perpendicularly cross over Blackfoot River Road and the Blackfoot River. This route would result in minimizing the crossing length and reducing the visibility of the transmission line for Forest visitors within the western part of the narrows. The proposed ROW would also be sited within some open areas south of forested areas on Dry Ridge, which would serve to screen much of the view of the transmission line from the Narrows area. If the Proposed Action is implemented, the mitigation measures identified in Section 3.7.4 would help the transmission lines blend more effectively with the surrounding environment and would reduce visual impacts to low. Construction activities would be visible, resulting in temporary impacts. The new transmission structures and conductors would become part of the visual setting and the highway crossings would be visible to motorists, workers and residents. Permanent impacts to visual resources would occur through development of any of the action alternatives identified above.

3.7.6 Cumulative Impacts

Past and present activities in the project vicinity have cumulatively affected the visual landscape by introducing manmade forms and shapes into the natural landscape. Activities include mining, large-scale industry, agriculture, transportation infrastructure, and existing electrical transmission and distribution lines. As the area becomes more developed, the existing visual resources are likely to be affected. The Proposed Action would ensure that there is a reliable source of electrical power in the area, and this could encourage some additional development in the project vicinity in the future. Additionally, the new structures along Blackfoot River Road would be visible to motorists and would change the area's character from open shrub steppe and forest land to transmission line ROW. The Proposed Action thus would contribute to cumulative visual impacts in the project area, albeit in a minor way.

3.8 Cultural Resources

3.8.1 Affected Environment

Cultural resource is a general term used to refer to a wide range of man-made or man-modified resources. Cultural resources include: prehistoric and historic archeological sites, historic structures, and traditional cultural places. For cultural resources, the area of

potential effect, or APE, is the geographic area where the character or use of historic properties (significant cultural resources) may directly or indirectly be altered because of a project undertaking (36 CRF 800.16). A cultural resource is "significant" if it is found to meet criteria for eligibility to local, state and national registers, and if it possesses integrity of its original historical features and characteristics. The APE for the Proposed Action was developed in accordance with state and federal guidelines. The APE includes proposed areas of ground disturbance and subsurface construction, as well as construction staging areas.

In addition to literature reviews and background research, archeologists conducted a field survey to identify cultural resources in the APE. The field survey identified historic cultural resources related to local mining and agricultural/range management and historic settlement. No prehistoric cultural resources were observed. None of the cultural resources encountered during the survey retain sufficient integrity or appear to meet the National Register of Historic Places (NRHP).

3.8.2 Environmental Impacts – Proposed Action

Cultural resources identified in the project area were evaluated in terms of their significance and also in terms of project impacts. BPA has determined that no historic properties or cultural resources would be affected by the Proposed Action. Pursuant to Section 106 of the Historic Preservation Act (NHPA), BPA is consulting with Idaho State Historical Preservation Office (SHPO), Northwestern Band of Shoshoni Nation, Shoshone-Bannock Tribes of Fort Hall, and the Shoshone Paiute Tribes of the Duck Valley Reservation. BPA has sent the cultural resources report with BPA's determination to the SHPO and Tribes and has asked for their comments on BPA's determination.

3.8.3 Environmental Impacts—Alternatives

3.8.3.1 Alternatives 1, 2, 3, and 4

There are no NRHP eligible properties or any areas of concern for cultural resources within Alternatives 1, 2, 3, and 4. No areas of concern for cultural resources were identified during the cultural resource evaluation. No historic properties or cultural resources would be affected by Alternatives 1, 2, 3, or 4.

3.8.3.2 No Action Alternative

No historic properties or cultural resources would be affected by the No Action Alternative.

3.8.4 Mitigation Measures

Mitigation for cultural resources involves avoiding, reducing, or minimizing the impacts to historic properties, should they exist, and making up for the loss associated with historic properties. Although the probability for subsurface archaeological deposits is generally low in the Proposed Action, it is possible that archaeological sites or other cultural resources may be inadvertently discovered during the course of project implementation and completion. Sites discovered during project construction would be considered eligible for the NRHP under Section 106 of the NHPA unless research and documentation prove otherwise. Any such discoveries would be documented and addressed through scientific

data recovery or other appropriate measures that would be determined through consultation with the SHPO and affected tribes.

The protocol for inadvertent discovery of cultural resources during project implementation is as follows:

- If cultural materials are encountered during project construction, immediately stop all construction activities in the vicinity until the resource can be evaluated by a qualified archaeologist. 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, ashy or charcoal lenses, compact use surfaces, 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, metal, and structural remains.
- If artifacts or other cultural materials are identified during project construction, immediately contact representatives of the affected tribes and the Idaho SHPO.
- Immediately stop all construction activities in the vicinity should human remains or burials be encountered. Secure the area, placing it off limits for anyone but authorized personnel and immediately notify—in this order—County Sheriff or Medical Examiner, BPA archaeologists, the SHPO, and appropriate tribes.

3.8.5 Unavoidable Impacts Remaining After Mitigation

There are no unavoidable impacts to cultural resources for the Proposed Action. If the Proposed Action is implemented, and there is an inadvertent discovery of cultural resources that Idaho SHPO determines to be eligible for the NRHP, the mitigation measures outlined in the Cultural Resource Section of Chapter 3 would be used to prevent and reduce impacts to historic properties.

3.8.6 Cumulative Impacts

Cultural resources in the project area have been and are being cumulatively affected because of past and current development activities such as mining, agricultural and rural development. Potential adverse effects on cultural resources include disturbance of cultural sites, increased likelihood of vandalism, reduction of the cultural integrity of certain sites, and increased encroachment on cultural sites. Future development could cumulatively impact cultural resources if developments are not designed to avoid the resources. Resource surveys and coordination with affected Tribes would help avoid these potential impacts.

Development of the Proposed Action is not expected to contribute incrementally to these cumulative effects in the area because no known archaeological or historic resources would be affected by the Proposed Action.

3.9 Socioeconomics

3.9.1 Affected Environment

3.9.1.1 Demographics of Caribou County

The Proposed Action would be constructed in Caribou County, in eastern Idaho. Table 9 lists demographic data for the county.

Table 9 Demographic Data for Caribou County

Total Population	Per Capita Income	2000 Race[a] (Percentage of Total Population)
Caribou County		
6,996 in 2006	$25,257 in 2005	Caucasian (96.0)
		African American (0.1)
		American Indian (0.2)
		Asian (0.1)
		Native Hawaiian (0.1)
		Other race (2.2)
		Two or more races (1.2)
		Hispanic or Latino origin (4.0)
		Caucasian not Hispanic (2005 data) (95.5)
	Poverty Rate	
	Caribou County: 9.6% in 2000; 10.1% in 2004	

[a]Data in this column is from 2000, except as noted.

Notes:

"American Indian" includes Alaska Native.
"Asian" includes Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, and Other Asian.
"Native Hawaiian" includes Native Hawaiian, Guamanian or Chamorro, Samoan, and Other Pacific Islander.
"Other Race" does not indicate the specific race.

Sources:

Bureau of Economic Analysis, 2004, 2005, and 2006.
U.S. Census Bureau. 2000.

3.9.1.2 Employment

The civilian labor force for Caribou County in 2006 was 3,443. Private non-farm employment made up 58 percent of employment in Caribou County in 2005. Employment in government made up 21 percent of employment in Caribou County. The unemployment rate in Caribou County in 2006 was 4.0 percent (Bureau of Economic Analysis, 2005 and 2006).

3.9.1.3 Housing

In 2000, Caribou County had 79.5 percent owner-occupied housing units, with 19.7 percent of the housing units being vacant (U.S. Census Bureau, 2000).

3.9.2 Environmental Impacts—Proposed Action

The local pool of construction workers is expected to be adequate to provide personnel to construct the Proposed Action. Non-local workers (except for specialized trades) are not expected to be needed and are not expected to relocate to the area, so the existing housing supply is expected to be sufficient for local workers. In addition, impacts to public services and utilities (police protection, fire protection, medical services, schools, and utilities) would be low because no increase in the local population is expected to occur as a result of implementation of the Proposed Action.

The percentage of minority or low-income populations in Caribou County is very low, and because the majority of the area in the vicinity of the Proposed Action is undeveloped open space, no impacts on socioeconomics or minority or low-income populations (environmental justice impacts) are expected (see Section 4.8, Environmental Justice).

3.9.3 Environmental Impacts—Alternatives

3.9.3.1 Alternatives 1, 2, 3, and 4

Impacts associated with construction and operation of Alternatives 1, 2, 3, and 4 would not differ from the Proposed Action and would be low.

3.9.3.2 No Action Alternative

Project construction would be avoided if this alternative is implemented, resulting in no effects on population, employment, or housing. If transmission line outages cause the area to lose electrical service, especially during winter, residents and businesses could lose heat, lights and revenue. Impacts would be moderate.

3.9.4 Mitigation Measures

No impacts were identified, therefore no mitigation is proposed.

3.9.5 Unavoidable Adverse Impacts

No unavoidable adverse impacts on socioeconomics or minority or low-income populations (environmental justice impacts) are expected to occur. Implementation of the Proposed Action would result in no irreversible or irretrievable commitment of socioeconomic resources, and would have no irreversible or irretrievable impact on minority or low-income populations. Construction of the Proposed Action would result in the creation of temporary construction jobs, but would likely not stimulate the local economy to the point that additional local services jobs would be created (jobs to provide services where the construction workers would spend their earned income, such as restaurants or stores). Long-term productivity related to the Proposed Action includes responding to the population growth and demand for electricity for the benefit of customers in the Soda Springs and Lower Valley area.

3.9.6 Cumulative Impacts

Caribou County's population has declined between 2000 and 2006. The Caribou Comprehensive Plan calls for growth and development to occur within its planning boundary. If growth does occur in the future, a change to the population and employment levels of the County may result. It is unknown if the local pool of construction workers would be adequate to provide personnel for multiple development projects if they are being constructed simultaneously in the County. The housing vacancy rate is considered to be high (19.7 percent) (U.S. Census Bureau, 2000), indicating that there is sufficient existing housing for non-local workers if they relocated to the area to accommodate a development boom should one occur. Public services and utilities (police protection, fire protection, medical services, schools, and utilities) for those existing housing units are not expected to be adversely affected because those systems are likely already in place to serve the past residents of those housing units.

Most impacts from the Proposed Action would be temporary and would not contribute to cumulative impacts in Caribou County. If the No Action Alternative is selected, and the local area's electrical service becomes unreliable, the area may lose more population and opportunities for development.

3.10 Noise

3.10.1 Affected Environment

Noise is commonly defined as unwanted sound that disrupts normal human activities or diminishes the quality of the human environment. Sources of noise associated with electrical transmission systems include construction and maintenance equipment, transmission line corona, and electrical transformer "hum." Corona-generated noise, characterized as a hissing, crackling sound, is generally only of concern for transmission lines with voltages of 230 kV or greater.

Both ambient noise levels and users vary along the length of the proposed ROW. The existing noise levels in the area are influenced by traffic on Highway 34, which is minimal. Other noise sources include mining and trains, which are both intermittent.

Environmental noise, including transmission line noise, is usually measured in decibels on the A-weighted scale (dBA). This scale models sound as it corresponds to human perception. Table 10 shows typical noise levels for common sources expressed in dBA.

Table 10 Noise Levels

Sound Level, dBA*	Noise Source or Effect
110	Rock-and-roll band
89	Combined equipment at 50 feet
85	Road grader, bulldozers, crane, pneumatic tools, and implosive fittings at 50 feet
80	Truck at 50 feet
70	Gas lawnmower at 100 feet
60	Normal conversation indoors
50	Moderate rainfall on foliage
40	Refrigerator
25	Bedroom at night

* Decibels (A-weighted)
Sources: Adapted from Bonneville 1986, 1996.

3.10.2 Environmental Impacts—Proposed Action

Noise impacts could be created by the following:

- construction and maintenance activities
- corona from the lines
- radio or television interference

Short-term noise impacts would occur during construction of the Proposed Action with the use of conventional construction equipment. Table 10 shows levels produced by typical construction equipment that likely would be used for the proposed project. These short-term impacts would be low to moderate.

Periodic noise impacts would occur during maintenance activities. Helicopters used in determining repair needs and vegetation management activities would generate noise. Tree clearing and transmission line repairs would also create construction-like noise.

Audible noise from transmission lines occurs as a result of conductor corona activity (the electrical breakdown of air molecules in the vicinity of high voltage conductors). This corona activity produces a hissing, crackling, popping sound, particularly during wet conditions such as rain or fog. Generally, audible noise from 115-kV lines is so low as to be not noticeable (due to the low amount of corona activity generated at this voltage level) and is usually well below other ambient noise levels in the area. Historically, public complaints/inquiries of transmission line audible noise at these voltage levels are extremely rare. BPA has calculated audible noise levels (for wet conditions) for the proposed 115-kV double circuit line. The maximum level on the ROW is 20.3 decibels, A-weighted (dBA). The edge of right-of-way values (50-60 ft from the center of the ROW) are in the 16-17 dBA range. These levels confirm that the audible noise contributions from the proposed line are

very low and should not negatively impact the overall noise environment along the line route. The line is designed to meet all applicable state and federal noise regulations. There are no residences along the Proposed Action that would be affected. Impacts would be low.

At Hooper Springs Substation, disconnect switches and circuit breakers in the substation would create noise when they are operated. They would create a brief, loud burst of noise, similar to the type of noise caused by a gunshot. This noise would occur infrequently. The disconnect switches would automatically operate when there is a problem with a transmission line to prevent equipment from being damaged and as part of the maintenance of the line, such as when there is a need to repair or replace insulators damaged by vandals or hunters. There are no residences near the substation. The location of the substation in an agricultural field would result in little effect to the public, except for the occasional motorist or landowner traveling nearby. Impacts would be low.

Radio and television interference (RI/TVI) from high voltage power lines can be produced from two general sources: conductor corona activity and spark-discharge activity on connecting hardware. Spark-discharge activity on connecting hardware is usually associated with the aging condition of hardware (e.g., over time, hardware connections can become loose and corroded causing small spark-gaps). Historically, public complaints of corona generated RI/TVI from 115-kV transmission lines are rare (due to the minor amount of conductor corona generated at these voltages). Additionally, this project would use new, properly installed connecting hardware that will reduce any risk associated with aging hardware spark-discharge activity. As a result, the Proposed Action is not expected to result in RI/TVI performance problems for any residences. Federal Communications Commission regulations require utilities to investigate legitimate customer RI/TVI complaints and take necessary corrective action if the transmission facilities are found to be the cause of the interference. Impacts would be low.

3.10.3 Environmental Impacts—Alternatives

3.10.3.1 Alternatives 1, 2, 3, and 4

Alternatives 1, 2, 3, and 4 would create similar impacts as the Proposed Action.

3.10.3.2 No Action Alternative

Under the No-Action Alternative, existing background noise levels in the project vicinity would continue. No new impacts would be created.

3.10.4 Mitigation Measures

The following mitigation measures have been identified to avoid or reduce potential adverse noise impacts from the proposed project:

- Use mufflers on all equipment.
- Conduct noise-generating construction activities within 1,000 feet of residential structures only during normal day time hours, i.e., between 7:00 a.m. and 7:00 p.m.

- Restore radio or television reception to a quality as good as or better than before the project, if the Proposed Action were found to be the source of interference.

3.10.5 Unavoidable Impacts Remaining after Mitigation

Mitigation measures associated with the Proposed Action would reduce identified potential noise impacts to short-term low, and long-term low. Unavoidable noise impacts would include noise that would be experienced by residents during construction activities, and the permanent corona-generated noise of the transmission lines, and operation noise from the substation.

3.10.6 Cumulative Impacts

Ambient noise in the area is minimal, with noise created by traffic using Highway 34, as well as other local traffic, corona noise from existing transmission lines, and from mining, trains, and human activities all contributing cumulatively to noise levels in the area. Cumulative noise could increase if traffic volumes increase, as well as with increased mining, other resource extractive industries, and/or other human activities. Construction activities would also increase noise levels in the short-term although it is unlikely that these increases would be cumulatively additive because of the temporal and spatial distribution. The development of the Proposed Action would contribute to cumulative long-term increases in noise levels through an increase in corona noise levels, and intermittent operational noise at the substation.

3.11 Public Health and Safety

3.11.1 Affected Environment

3.11.1.1 Vehicle Travel and Aircraft

The existing environment considered for public health and safety concerns include travelers on Highway 34, Conda Road, Haul Road and Blackfoot River Road; residents; tribal members; and visitors to the area. Traffic levels on project area roads are generally low with higher traffic volumes during summer months associated with recreational and other visitors to C-TNF.

Transmission facilities can potentially harm humans. Contact with transmission lines can injure people and damage aircraft. The Federal Aviation Administration establishes requirements for structures and other tall structures that would potentially interfere with aircraft safety.

3.11.1.2 Electric and Magnetic Fields

The existing environment considered for effect of electric and magnetic fields (EMF) is the public living close to or traveling along the route of the transmission line. There are no homes close to the transmission line route.

Transmission lines, like all electric devices and equipment, produce electric and magnetic fields. Current (the flow of electric charge in a conductor) produces the magnetic field. Voltage (the force that drives the current) is the source of the electric field. The strength of

electric and magnetic fields depends on the design of the line and on the distance from the line. Field strength decreases rapidly with distance.

Electric fields from high-voltage transmission lines can cause nuisance shocks when a grounded person touches an ungrounded object under a line or when an ungrounded person touches a grounded object. Transmission lines are designed so that the electric field will be below levels where primary shocks could occur from even the largest (ungrounded) vehicles expected under the line.

Electric and magnetic fields are found around any electrical wiring, including household wiring and electrical appliances and equipment. Throughout a home, the electric field strength from wiring and appliances is typically less than 0.01 kVs per meter (kV/m). However, fields of 0.1 kV/m and higher can be found very close to electrical appliances.

There are no national guidelines or standards for electric fields from transmission lines except for the 5-milliampere criterion for maximum permissible shock current from vehicles. Idaho does not have any specific guidelines for electric field strength. For its own transmission lines, BPA has an electric-field guideline of 9-kV/m maximum on the ROW and 5-kV/m maximum at the edge of the ROW.

Average magnetic field strength in most homes (away from electrical appliances and home wiring, etc.) is typically less than 2 milligauss (mG). Very close to appliances carrying high current, fields of tens or hundreds of milligauss are present. Typical magnetic field strengths for some common electrical appliances found in the home are given in Table 11. Unlike electric fields, magnetic fields from outside power lines are not reduced in strength by trees and building materials. Transmission lines and distribution lines (the lines feeding a neighborhood or home) can be a major source of magnetic field exposure throughout a home located close to the line.

There are no national guidelines or standards for magnetic fields. The state of Idaho does not have magnetic field limits. BPA does not have a guideline for magnetic field exposures.

Table 11 Typical Magnetic Field Strengths (1 foot from common appliances)

Appliance	Magnetic Fields (mG)[1]
Coffee maker	1-1.5
Electric range	4-40
Hair dryer	0.1-70
Television	0.4-20
Vacuum cleaner	20-200
Electric blanket[2]	15-100

mG = milligauss
[1] The magnetic field from appliances usually decreases to less than 1 mG at 3 to 5 feet from appliances.
[2] Values are for distance from blanket in normal use (less than 1 foot away).
Source: Miler 1974; Gauger 1985

3.11.2 Environmental Impacts—Proposed Action

3.11.2.1 Vehicle Travel and Aircraft

Potential health and safety impacts of the Proposed Action would include the following:

- Construction activity hazards
- Heavy equipment safety
- Potential fuel spills
- Traffic entering and traveling along local roads and highways.
- Potential aircraft hazards

The risk of fire and injury is associated with the use of heavy equipment, working near high-voltage lines, and hazardous materials such as fuels during access road construction, and placement of structures and conductors. Fuel spills may occur where vehicles that are not highway authorized are fueled.

Although traffic is higher during the summer months (due to visitors to the C-TNF) use of the roads in and around the Proposed Action area remains low. There would be potential safety issues with more traffic on the Highway 34 and local roads in the general vicinity of the ROW during construction. Construction trucks and vehicles turning off local roads and highways could cause substantial safety hazards for vehicles and travelers using the road.

The presence of the new transmission line could pose a hazard to any low-flying aircraft. However, given the relatively low height of the proposed structures, the risk associated with this potential hazard would be considered extremely low.

3.11.2.2 Electric and Magnetic Fields

BPA calculated ground-level electric and magnetic field levels for the proposed 115-kV double-circuit line using engineering data provided by LVE. Electric field levels reduce quickly as a function of distance from the transmission line. The maximum calculated electric field levels produced by the proposed transmission line on the right-of-way would be 2.2 kilovolts per meter (kV/m). Edge of right-of-way values (50-60 ft from the center of the ROW) would be 0.08-0.13 kV/m. Although BPA's electric field guidelines would not apply because the proposed transmission line would be owned and operated by LVE, these levels are well below BPA's guidelines (9 kV/m maximum on ROW; 5 kV/m at the edge of ROW). For higher voltage transmission lines (with higher levels of electric field), people can often experience nuisance shocks on the ROW when touching ungrounded metallic objects (e.g., vehicles, fences, etc.). However, for the proposed 115-kV line, the electric fields are relatively low and nuisance shocks would be rare. Complaints of nuisance shocks outside the ROW are not expected. The State of Idaho has no regulations regarding transmission line electric fields. There are no residences along the edge of the proposed ROW. Accordingly, the potential for impacts associated with the elevated electric fields is low.

After decades of research, the issue of whether there are long-term health effects associated with transmission-line electric and magnetic fields remains controversial. Magnetic fields are most in question as possible sources of long-term effects, although studies sometimes lump

the two (electric and magnetic) fields together. For the latest information, BPA looks to the determinations of the National Institute of Environmental Health Science (NIEHS) and to the related web site denoted by EMFRAPID (http://www.niehs.nih.gov/emfrapid/home.htm). Scientific reviews of the research on EMF health effects have found that there is insufficient evidence to conclude that EMF exposures lead to long-term health effects. However, some uncertainties remain for childhood exposures at levels above 4 mG.

The magnetic field levels calculated for the project area are based on anticipated future system normal annual peak operating line current loading. Line loadings can vary over time depending electricity usage by the line's customers and magnetic field levels produced by the line would vary accordingly. Typically for transmission lines, annual average magnetic field values would be slightly less than half than the annual peak values. The maximum annual peak levels on the right-of-way were calculated at 31.5 milligauss (mG). The transmission line would create an increase in magnetic field exposure. However, the levels reduce quickly as a function of distance from the line. For example, levels at the ROW edge (50-60 feet from the center of the ROW) would be 8-10 mG, whereas levels 200 feet from center of the ROW would be 0.9 mG. Given these low levels, the lack of residence near the proposed ROW, and the very short-term nature of expected visitor presence near the proposed ROW, the potential for impacts associated with elevated magnetic fields would be low.

3.11.3 Environmental Impacts—Alternatives

3.11.3.1 Alternatives 1, 2, 3, and 4

Alternatives 1, 2, 3, and 4 would have similar types of health and safety potential impacts as the Proposed Action.

3.11.3.2 No Action Alternative

Under the No Action Alternative, the proposed substation and transmission line would not be built and any potential health and safety risks associated with the project would not occur. Electric and magnetic field levels would remain the same. There would be no impacts to health and safety, unless transmission line outages occur during winter and the area loses power for heating, lighting, and business and recreational needs. Impacts would be moderate.

3.11.4 Mitigation Measures

The following mitigation measures have been identified to avoid or reduce potential adverse public health and safety impacts from the proposed project:

- Prior to starting construction, the contractor would prepare and maintain a safety plan in compliance with State of Idaho, BLM and USFS requirements. This plan would detail how to manage hazardous materials such as fuel, and how to respond to emergency situations. It would be kept onsite at all times.
- During construction, the contractors would hold crew safety meetings at the start of each workday to go over potential safety issues and concerns.

- At the end of each workday, the contractor and subcontractors would secure the site to protect equipment and the general public.
- Employees would be trained, as necessary, in structure climbing, cardiopulmonary resuscitation, first aid, rescue techniques, and safety equipment inspection.
- 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 would be done in accordance with regulated construction practices and state and local laws.
- The contractor would comply with all forest fire laws, rules and regulations of the State of Idaho, BLM and the USFS.
- The contractor would provide notice to the public of construction activities, and use traffic safety signs and flaggers to inform motorists and manage traffic during construction activities.
- If implosion bolts are used to connect the conductors, install them in such a way as to minimize potential health and safety risks.
- Stay on established access roads during construction activities.
- Keep vegetation cleared to avoid contact with transmission lines.
- During construction, ground fences and other objects on and near the proposed ROW.

3.11.5 Unavoidable Impacts Remaining after Mitigation

Mitigation measures would help minimize the potential health and safety risks to workers and the public. Potential unavoidable public health and safety risks include accidental release of fuels or oils, and accidental injury to construction workers. Nuisance shocks may occur infrequently under the proposed line.

3.11.6 Cumulative Impacts

Health and safety in the area (specifically relative to the proposed project) is affected by the mining, agricultural activities, existing transmission lines, existing traffic, and new construction that takes place periodically. Health and safety in the area may also be impacted by future growth that could contribute to additional traffic, a more extensive power grid, and development. The proposed project could incrementally impact the health and safety of residents and visitors in the area for a short time during construction, but would not be impacted over the long term. These impacts would not be expected to strain the existing health and safety infrastructure nor greatly increase risks to local residents and visitors.

3.12 Air Quality

3.12.1 Affected Environment

The Idaho Department of Environmental Quality (IDEQ) routinely assesses outdoor (ambient) air quality to satisfy federal regulatory requirements and scientifically determine the quality of Idaho's airsheds.

IDEQ's monitoring network measures the levels of five of the six ambient air criteria pollutants identified by the Federal Clean Air Act. The criteria pollutants are:

- Particulate matter (PM10 = particulate matter less than or equal to 10 microns in diameter; PM2.5 = particulate matter less than or equal to 2.5 microns in diameter)
- Carbon monoxide
- Nitrogen dioxide
- Sulfur dioxide
- Ozone

To provide a quantifiable means to measure air quality, EPA's Office of Air Planning and Standards has established standards for "criteria pollutants." For each criteria pollutant, the standard includes a maximum concentration above which adverse effects on human health may occur. These threshold concentrations are called National Ambient Air Quality Standards (NAAQS) and are listed in Table 12.

There are two types of standards: primary and secondary. Primary standards set limits to protect public health, including the health of "sensitive" populations, such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, vegetation, and buildings. Idaho has adopted the federal air quality standards in the Rules for the Control of Air Pollution in Idaho (IDAPA 58.01.01.575-587).

Based upon levels of air pollutants, geographic areas are classified by EPA as attainment or non-attainment areas. A geographic area that meets or has pollutant levels below the NAAQS is called an attainment area. An area with persistent air quality problems is designated a non-attainment area. This means that the area has violated federal health-based standards for outdoor air pollution. Each non-attainment area is declared for a specific pollutant. Non-attainment areas for different pollutants may overlap each other or share common boundaries. Caribou County, where the Proposed Action is located, is classified as an attainment area.

Table 12 National Ambient Air Quality Standards

Pollutant	Primary Standards	Averaging Times	Secondary Standards
Carbon Monoxide	9 ppm (10 mg/m^3)	8-hour[a]	None
	35 ppm (40 mg/m^3)	1-hour[a]	None
Lead	1.5 µg/m^3	Quarterly Average	Same as Primary
Nitrogen Dioxide	0.053 ppm (100 µg/m^3)	Annual (Arithmetic Mean)	Same as Primary
Particulate Matter (PM_{10})	Revoked[b]	Annual[b] (Arith. Mean)	Revoked[b]
	150 µg/m^3	24-hour[c]	Same as Primary
Particulate Matter ($PM_{2.5}$)	15.0 µg/m^3	Annual[d] (Arith. Mean)	Same as Primary
	35 µg/m^3	24-hour[e]	Same as Primary
Ozone	0.08 ppm	8-hour[f]	Same as Primary
	0.12 ppm	1-hour[g] (Applies only in limited areas)	Same as Primary
Sulfur Dioxide	0.03 ppm	Annual (Arith. Mean)	[see below]
	0.14 ppm	24-hour[a]	[see below]
	[see above]	3-hour[a]	0.5 ppm (1300 µg/m^3)

Source: http://www.epa.gov/air/criteria.html

[a] Not to be exceeded more than once per year.

[b] Due to a lack of evidence linking health problems to long-term exposure to coarse particle pollution, the agency revoked the annual PM_{10} standard in 2006 (effective December 17, 2006).

[c] Not to be exceeded more than once per year on average over 3 years.

[d] To attain this standard, the 3-year average of the weighted annual mean $PM_{2.5}$ concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m^3.

[e] To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m^3 (effective December 17, 2006).

[f] To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.

[g] (a) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is < 1, as determined by Appendix H.
(b) As of June 15, 2005 EPA revoked the 1-hour ozone standard in all areas except the fourteen 8-hour ozone nonattainment Early Action Compact (EAC) Areas.

3.12.2 Environmental Impacts—Proposed Action

Impacts to air quality from the Proposed Action would be primarily during the construction phase, and slightly during operation and maintenance. Overall, the air quality impacts from construction and operation and maintenance of the Proposed Action would be low.

Of the six "criteria" air pollutants, particulate matter in the form of dust is the main concern during construction. Fugitive dust could be created during project site preparation including road building and improvement, and on-site travel on unpaved roads and surfaces. Wind erosion of disturbed areas would contribute to fugitive dust until revegetation efforts are successful.

The amount of dust generated by vehicles driving on unpaved roads is related to the amount of small particle silt and moisture found in the roads' soil. Generally, the coarser the surface road material and the higher the moisture content, the lower the amount of surface dust that would enter the air. Soils in the Proposed Action area are mostly gravel/cobble outwash and loess, both of which are quite erosive when exposed.

The removal of trees and brush for the proposed ROW would cause fugitive dust. However, tree removal and site preparation would likely occur during the spring or early summer when soils are naturally moist from precipitation and when the risk of fugitive dust is very low. Soils may dry out later during this period, depending on the extent of snow cover the previous winter and amount of rain during the spring.

Woody debris would be lopped and spread over the proposed ROW and not burned.

Construction of the proposed 210 structures would involve construction vehicles traveling over existing and restored graveled access roads, and minimal short-term soil digging and disturbance. Revegetation immediately following construction is expected. Relatively small amounts of dust would be generated during construction at each of the proposed structure sites. The largest amount of dust would be generated by construction-related vehicles traveling to, from, and between work sites over existing county and USFS roads.

Heavy equipment and vehicles used during initial construction, including those with diesel internal combustion engines, would emit pollutants such as carbon monoxide, carbon dioxide, sulfur oxides, particulate matter less than 2.5 microns in diameter (PM 2.5), oxides of nitrogen, volatile organic hydrocarbons, aldehydes, and polycyclic aromatic hydrocarbons. Vehicle and equipment emissions would be relatively small and comparable to current conditions in agricultural and roaded USFS lands. Low emissions, if any, would occur on BLM lands. Routine maintenance would occur as needed and timing would be dependant on weather conditions.

Transmission lines cause limited air emissions. The electric field strength of transmission lines causes a breakdown of air at the surface of the conductors called corona. When corona occurs, small amounts of ozone and nitrogen oxides are released. These substances are released in such small quantities that they are generally too small to be measured or to have any effect on humans, plants, or animals. In the long term, emissions would be low, limited to vehicle emissions traveling on the access roads and maintenance activities.

3.12.3 Environmental Impacts—Alternatives

3.12.3.1 Alternatives 1, 2, 3, and 4

Alternatives 1, 2, 3, and 4 would have similar types of impacts to air quality as the Proposed Action (construction activities causing dust, vehicle emissions, and limited corona emission). Impacts would be low.

3.12.3.2 No Action Alternative

The No Action Alternative would involve no construction work and have no effect on air quality in the area.

3.12.4 Mitigation Measures

The following mitigation measures have been identified to avoid or reduce potential adverse air quality impacts from the proposed project:

- Use water trucks on an as-needed basis to minimize dust, especially on C-TNF and county roads.
- Gravel or rock access roads before line reconstruction to minimize dust.
- Drive all construction vehicles at low speeds (5 mph) on access roads to minimize dust.
- Keep off-road vehicles in good running condition to minimize emissions.
- To minimize dust, reseed and revegetate the disturbed areas (USFS, BLM, and private) to minimize exposed soil prone to erosion.

3.12.5 Unavoidable Impacts Remaining After Mitigation

Some particulate matter in the form of dust and exhaust emissions would still be emitted during construction and during routine maintenance of the line. However, no violations of air quality standards would be expected, and the anticipated impacts would be low.

3.12.6 Cumulative Impacts

Agriculture activities, vehicle traffic, industrial emissions, logging activities, and residential wood burning cumulatively affect air quality year-round in the region. Occasional wildfires on forest lands also result in emissions that can contribute to cumulative air quality impacts in the region.

If the area becomes more residential in the future and the population grows, local forest roads and access roads for the Proposed Action could see greater use. This increased use could increase dust and vehicle emissions in summer months.

The Proposed Action would cause particulate matter emissions during construction as well as vehicle emissions from construction equipment and cars and other vehicles used by construction, operation and maintenance staff. These emissions would incrementally contribute, on a short-term basis, to cumulative impacts on air quality in the local area. When added to the existing agricultural and mining activities in the area, expected particulate matter and vehicle emissions would not add a noticeable impact to the air quality.

3.13 Intentional Destructive Acts

Intentional destructive acts, such as acts of sabotage, terrorism, vandalism, or theft sometimes occur at power utility facilities. Acts of sabotage or terrorism on electrical facilities in the Pacific Northwest are rare, though some have occurred. These acts generally

focused on attempts to destroy large transmission line steel towers. For example, in 1999, a large transmission line steel tower in Bend, Oregon, was toppled.

Depending on the size and voltage of the line, destroying towers or other equipment could cause electrical service to be disrupted to utility customers and end users. The effects of these acts would be as varied as those from the occasional sudden storm, accident, or blackout, and would depend on the particular configuration of the transmission system in the area. While in some situations these acts would have no noticeable effect on electrical service, in other situations, service could be disrupted in the local area, or if the damaged equipment was part of the main transmission system, a much larger area could be left without power.

When a loss of electricity occurs, all services provided by electrical energy cease. Illumination is lost. Lighting used by residential, commercial, industrial and municipal customers for safe locomotion and security is affected. Residential consumers lose heat. Electricity for cooking and refrigeration is also lost, so residential, commercial, and industrial customers cannot prepare or preserve food and perishables. Residential, commercial, and industrial customers experience comfort/safety and temperature impacts, and changes in humidity, due to loss of ventilation. Mechanical drives stop, causing impacts as elevators, food preparation machines, and appliances for cleaning, hygiene, and grooming are unavailable to residential customers. Commercial and industrial customers also lose service for elevators, food preparation, cleaning, office equipment, heavy equipment, and fuel pumps.

In addition, roadways experience gridlock where traffic signals fail to operate. In large urban areas, mass transit that depends on electricity, such as light rail systems, can be impacted. Sewage transportation and treatment can be disrupted.

A special problem is the loss of industrial continuous process heat. Electricity loss also affects alarm systems, communication systems, cash registers, and equipment for fire and police departments. Loss of power to hospitals and people on life-support systems can create a life or death situation.

Vandalism and theft at electrical facilities are the most common acts, and recent increases in the prices of metal and other materials have accelerated thefts and destruction of Federal, state, and local utility property. BPA has seen a significant increase in metal theft from its facilities in recent years due in large part to the high price of metals on the salvage market. There were more than 50 burglaries at BPA substations in 2006. The conservative estimate of damages for these crimes is $150,000, but the actual amount is likely much higher because this number does not factor in all the labor-related costs associated with repairing the damage.

The impacts from vandalism and theft, though expensive, do not generally cause a disruption of service to the area. Stealing equipment from electrical substations, however, can be extremely dangerous. In fact, nationwide, many would-be thieves have been electrocuted while attempting to steal equipment from energized facilities.

Federal and other utilities use physical deterrents such as fencing, cameras, warning signs, rewards, etc., to help prevent theft, vandalism, and unauthorized access to facilities. In addition, through its Crime Witness Program, BPA offers up to $25,000 for information that leads to the arrest and conviction of individuals committing crimes against BPA facilities.

Anyone having such information can call BPA's Crime Witness Hotline at (800) 437-2744. The line is confidential, and rewards are issued in such a way that the caller's identity remains confidential.

BPA's proposed Hooper Springs Substation would be fenced to restrict access to authorized workers. Security cameras and other specialized equipment also would be in place to safeguard the area. The proposed transmission line with its associated infrastructure (that is, conductors, poles, etc.) would be mostly on unfenced utility ROWs. The conductors use the air as insulation. The structures and tension between conductors make sure they are high enough above ground to meet safety standards. Structures are directly embedded into the ground or are constructed on footings in the ground and are difficult to dislodge.

While the likelihood for sabotage or terrorist acts is difficult to predict given the characteristics of the project, it is unlikely that such acts would occur. Even if such an act did occur, any impacts from sabotage or terrorist acts likely could be quickly isolated. In addition, the U. S. Department of Energy, public and private utilities, and energy resource developers include the security measures mentioned above and others to help prevent such acts and to respond quickly if human or natural disasters occur.

Chapter 4
Consultation, Review, and Permit Requirements

This chapter addresses federal statutes, implementation of regulations, and Executive Orders potentially applicable to the proposed project. This EA is being sent to Tribes, federal agencies, state and local governments, and interested and affected individuals as part of the environmental review process for this project.

4.1 National Environmental Policy Act

This EA has been prepared by BPA in accordance with regulations implementing the National Environmental Policy Act (NEPA) (42 U.S.C. 4321 et seq.), which requires federal agencies to assess the impacts that their actions may have on the environment. NEPA requires preparation of an environmental impact statement (EIS) for major federal actions significantly affecting the quality of the human environment. BPA prepared this Preliminary EA to determine whether the Proposed Action would create any significant environmental impacts that would warrant preparing an EIS, or if a Finding of No Significant Impact (FONSI) is justified.

4.2 Vegetation and Wildlife

The **Endangered Species Act of 1973** (16 U.S.C. 1536) as amended in 1988, establishes a national program for the conservation of threatened and endangered species of fish, wildlife, and plants, and the preservation of the ecosystems upon which they depend.

The Act is administered by the USFWS and the National Oceanic and Atmospheric Administration (NOAA Fisheries). Section (7a) requires federal agencies to ensure that the actions they authorize, fund, and carry out do not jeopardize endangered or threatened species or their critical habitats.

BPA requested and received from the USFWS a list of endangered, threatened, experimental, proposed, and candidate species known to occur, or that may occur, within the area influenced by the proposed Hooper Springs Substation and Hooper Springs-Lower Valley Transmission Line project dated September 26, 2007 and December 2, 2008. BPA determined that the Proposed Action would have no effect on Canada lynx *(Lynx Canadensis)*, yellow-billed cuckoo *(Occyzus americanus)*, and Gray wolf *(Canis lupus)* (see Section 3.2.2.6). Potential impacts to threatened and endangered plant, animal, and fish species are discussed in Chapter 3 in the Vegetation and Wildlife sections. No fish or aquatic species listed on the endangered species act (ESA) would be affected by the Proposed Action.

The **Fish and Wildlife Conservation Act of 1980** (16 U.S.C. 2901 et seq.) encourages federal agencies to conserve and promote the conservation of non-game fish and wildlife species

and their habitats. Mitigation measures designed to conserve wildlife and their habitat are listed in Chapter 3 in the Vegetation and Wildlife sections.

The **Migratory Bird Treaty Act** (MBTA) implements various treaties and conventions between the United States and other countries, including Canada, Japan, Mexico, and the former Soviet Union, for the protection of migratory birds (16 U.S.C. 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986, and 1989). Under the Act, taking, killing, or possessing migratory birds or their eggs or nests is unlawful. Most species of birds are classified as migratory under the Act, except for upland and nonnative birds.

The proposed project could potentially impact birds through collisions with power lines and habitat removal. Potential impacts to migratory birds are discussed in the Wildlife Section in Chapter 3.

NOAA Fisheries is responsible for ensuring compliance with the **Magnuson-Stevens Fishery Conservation and Management Act of 1976** (Magnuson-Stevens Act). In the exclusive economic zone (EEZ), except as provided in Section 102, the United States claims, and will exercise, sovereign rights and exclusive fishery management authority over all fish and all continental shelf fishery resources. Beyond the EEZ, the United States claims and will exercise exclusive fishery management authority over all anadromous species throughout the migratory range of each such species, except when in a foreign nation's waters, and all continental shelf fishery resources.

Public Law 104-297, the Sustainable Fisheries Act of 1996, amended the Magnuson-Stevens Act to establish requirements for Essential Fish Habitat (EFH) descriptions in federal fishery management plans, and to require federal agencies to consult with NOAA Fisheries on activities that may adversely affect EFH. EFH can include all streams, lakes, ponds, wetlands, and other viable water bodies and most of the habitat historically accessible to salmon. Activities above impassible barriers are subject to consultation provisions of the Magnuson-Stevens Act. No species administered under the amended Magnuson-Stevens Act occur in the vicinity of the proposed project.

Executive Order 13186 was issued on January 17, 2001. It directs each federal agency that is taking actions that may negatively impact migratory bird populations to work with the USFWS to develop an agreement to conserve those birds. The protocols developed by this consultation are intended to guide future agency regulatory actions and policy decisions; renewal of permits, contracts, or other agreements; and the creation of or revisions to land management plans. This order also requires that the environmental analysis process include effects of federal actions on migratory birds. On August 3, 2006, the USFWS and the U.S. Department of Energy signed a Memorandum of Understanding (MOU) to complement the Executive Order. BPA, as part of the Department of Energy, will work cooperatively in accordance with the protocols of the MOU.

The **Federal Noxious Weed Act of 1974** provides for the control and management of non-indigenous weeds that injure or have the potential to injure the interests of agriculture and commerce, wildlife resources, or the public health. The Act requires that each federal agency develop a management program to control undesirable plants on federal lands under the agency's jurisdiction; establish and adequately fund the program; implement cooperative agreements with state agencies to coordinate management of undesirable plants on federal

lands; and establish integrated management systems to control undesirable plants targeted under cooperative agreements. Weed management is discussed in Chapters 2 and 3.

4.3 Water Resources

The **Clean Water Act** (33 U.S.C. 1251 et seq.) regulates discharges into waters of the U.S. Although the proposed project transmission lines would span the Blackfoot River, no in-stream water work or new road development in riparian corridors is proposed.

Section 401 of the **Clean Water Act** (33 USC 1341 et. esq.) certification is required for any permit or license issued by a federal agency for any activity that may result in a discharge into waters of the state to ensure that the proposed project will not violate state water quality standards. Pursuant to the provisions of Section 401(a)(1) of the Clean Water Act, as amended, 33 USC 1341(a)(1), and Idaho Code 39-101 et. esq., and 39-3601 et. esq., the Idaho Department of Environmental Quality (IDEQ) has authority to review Section 404 permits and issue water quality certification. Any Section 401 certification in Idaho also ensures that the project will comply with water quality improvement plans developed for affected water bodies and that the project will not adversely impact water quality impaired streams (streams that already do not meet water quality standards).

Section 402 of the **Clean Water Act** (33 USC 1342 et. esq.) authorizes stormwater discharges associated with industrial activities under the National Pollutant Discharge Elimination System (NPDES). For Idaho, EPA has a Construction General Permit (CGP) authorizing federal facilities to discharge storm water from construction activities disturbing land of 1 acre or more into Waters of the U.S., in accordance with various set conditions. BPA would not discharge storm water into a water of the U.S. for the proposed construction of the Hooper Springs Substation, but would prepare and implement a Storm Water Pollution Prevention (SWPP) plan.

Section 404 of the **Clean Water Act** establishes a program to regulate the discharge of dredged and fill material into Waters of the U.S. The basic premise of Section 404 is that dredged or fill material cannot be discharged into water if the nation's waters would be significantly degraded or if a feasible alternative exists that is less damaging to the aquatic environment.

Dredge and fill activities are controlled by a permit process administered by the U.S. Army Corps of Engineers. Activities that are regulated under this program include fills for development, water resource projects (such as, dams), infrastructure development (such as, highways), and other water related construction activities. LVE would apply for a Section 404 permit for one culvert for a temporary crossing of an unnamed tributary of Mill Canyon Creek. LVE would be responsible for complying with the terms and conditions of the permit.

4.4 Floodplain and Wetland Protection

The U. S. Department of Energy mandates that impacts to floodplains and wetlands be assessed and alternatives for protection of these resources be evaluated in compliance with Floodplain/Wetlands Environmental Review Requirements and Federal Executive Orders

11988 (Floodplain Management: May 24, 1977; 42 F.R. 26951) and 11990 (Protection of Wetlands: May 24, 1977; 42 FR 26961). In accordance with these regulations, BPA has prepared an assessment of impacts of the Proposed Action on floodplains and wetlands.

Wetland management, regulation, and protection is addressed in several sections of the Clean Water Act, including Sections 401, 402, and 404, as well as a combination of other state and federal laws. Other laws include the Coastal Zone Management Act, the critical areas ordinances of local governments, the Endangered Species Act, Historic Preservation Act, Rivers and Harbors Act, and the Wild and Scenic Rivers Act.

Evaluation of project impacts on wetlands and floodplains are discussed briefly below and in more detail in Sections 3.1, Vegetation, and 3.4, Water Resources, Wetlands, and Fisheries.

4.4.1 Wetlands

There are no wetlands present at the proposed Hooper Springs Substation site.

Wetlands within the proposed ROW are associated with the Blackfoot River, smaller drainages, and to a lesser extent topographic depressions. The palustrine emergent and palustrine scrub-shrub wetlands are generally comprised of reed canarygrass, sedges (e.g., beaked sedge and lenticular sedge) and willows (e.g booth's willow, narrowleaf willow geyers willow, coyote willow, and bebb's willow), and red-osier dogwood. No forested wetlands are present along the proposed ROW. The Proposed Action has been sited to avoid wetlands to the maximum extent practicable. LVE also would implement appropriate mitigation to avoid, minimize, and compensate for any wetland impacts. Construction, operation, and maintenance of the project are not expected to significantly affect the long-term existence, quality, or natural functioning of wetlands.

4.4.2 Floodplains

The proposed Hooper Springs Substation would not be located on or near a floodplain. The proposed transmission line would span the floodplains of the Blackfoot River and its tributaries. No construction would occur in the floodplains. The Proposed Action is not expected to increase the risk of flooding or flood damage because only temporary roads are proposed, and new structures would not cause floodplain capacity to be decreased significantly.

4.5 Cultural Resources

Regulations established for the management of cultural resources include the following:

- Antiquities Act of 1906 (16 U.S.C. 431-433)
- Historic Sites Act of 1935 (16 U.S.C. 461-467)
- Section 106 of the National Historic Preservation Act (NHPA) of 1966 (16 U.S.C. 470 et seq.), as amended
- Archaeological Data Preservation Act (ADPA) of 1974 (16 U.S.C. 469 a-c)
- Archaeological Resources Protection Act (ARPA) of 1979 (16 U.S.C. 470 et seq.), as amended

- Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. 3001 et seq.)
- Executive Order 13007 Indian Sacred Sites

For this project, a field survey identified historic cultural resources related to local mining and agricultural/range management and historic settlement. No prehistoric cultural resources were observed. None of the cultural resources encountered during the survey retain sufficient integrity or appear to meet National Register of Historic Places (NRHP).

BPA determined hat no historic properties or cultural resources would be affected by the Proposed Action. BPA implemented the Section 106 consultation process with the State Historic Preservation Officer for Idaho, the Advisory Council on Historic Preservation, and the Shoshone-Bannock Tribes of the Fort Hall Reservation, the Northwest Band of the Shoshone Nation, and the Shoshone Paiute Tribe. BPA has sent the cultural resources report with BPA's determination to the SHPO and Tribes and has asked for their comments on BPA's determination.

4.6 USFS and BLM Planning and Program Consistency

4.6.1 USFS

Portions of the proposed transmission line are located on the C-NTF. On USFS lands, Desired Future Conditions Goals described in the Revised Forest Plan (USFS, 2003) that are applicable to the proposed ROW include:

- A well-planned system of reliable and technically feasible energy corridors is provided to serve existing and future regional and local energy needs, compatible with other resource needs and goals. These corridors may be either designated by specific land use prescription or non-designated through other land use prescriptions.
- Uses and occupancy of National Forest System lands, such as hydroelectric development, communication sites, water developments, and utility corridors that meet public needs, and cannot be accommodated off the National Forest, are consistent with direction for other National Forest resources.

The following standards and guidelines are applicable to the proposed ROW:

1. Existing and proposed ROW of the following types shall be designated as corridors. This does not prevent the inclusion of lower-rated transmission lines or smaller pipelines within the corridors.
    - Communication lines and zones for interstate use
    - Railroads
    - Federal, state, interstate, and forest highways
    - Electric transmission lines of 66 kV and greater, including fiber optics
    - Oil, gas, slurry, or other pipelines 10 inches or larger in diameter
2. Proponents of new facilities within existing corridors, and new corridor routes, shall demonstrate that the proposal is in the public interest, and that no other reasonable alternative exists to public land routing.

3. Utility corridors should have irregular clearing widths and follow patterns of existing natural openings.
4. Utility structures should be made to blend with the existing landscape to the extent feasible.
5. Where feasible, new facilities should be limited to existing ROWs having widening potential.
6. Before new corridors or widening of existing corridors are approved, consideration should be given to wheeling, uprating, or multiple circuiting of transmission lines or increasing pipeline capacity by addition of compressors or looping.
7. Avoid parallel corridors. Consolidate facilities within existing energy corridors where feasible.
8. Pipelines and other related utilities should share utility corridors except as needed to meet other resource goals.
9. Avoid locating facilities and utility corridors in Aquatic Influence Zones.

The Proposed Action would generally be consistent with these standards and guidelines. Given the location of the C-NTF between the proposed Hooper Springs Substation site and LVE's existing transmission system, there are no other reasonable alternatives to crossing public lands. In addition, construction methods and mitigation measures would be implemented to minimize the impact of the new transmission line and its ROW on public lands. As owner and operator of the new line, LVE would be responsible for ensuring consistency with applicable USFS standards and guidelines.

4.6.2 BLM

Portions of the proposed transmission line are located on land managed by BLM. The Pocatello Draft Resource Management Plan (RMP) provides direction for managing public lands under the jurisdiction of the Idaho Falls District, Pocatello Field Office of the BLM. The purpose of the Pocatello RMP is to provide a single comprehensive land use plan that would guide multiple use management of the public lands and interests administered by the Pocatello Field Office. The RMP provides objectives, land use allocations, and management direction to maintain, improve, or restore resource conditions and provide for the economic needs of local communities over the long-term.

The Lands and Realty Goal and associated actions that are applicable to the Proposed Action include:

- **Goal LR-6:** Balance development of public land, such as ROW, utility corridors, and alternative energy development (for example, wind, solar, biomass) with the protection of natural resources and public enjoyment and recreation, consistent with natural resource values and uses.
- **Action B-LR-6.1.6:** To the extent possible, linear ROWs would be routed where impacts would be least disturbing, considering the point of origin, point of destination, resource values present, and purpose and need for the project.

- **Action B-LR-6.1.8:** ROW applicants would be encouraged to the extent possible, to use the existing corridors. The Pocatello RMP/EIS would adopt designated corridors upon completion of the West-wide Energy Corridor PEIS (BLM, 2006 and 2008).

By minimizing impacts on natural resources and public enjoyment and recreation, the Proposed Action would generally be consistent with applicable BLM policies. As owner and operator of the proposed transmission line, LVE would be responsible for ensuring consistency with these policies.

4.7 State, Area-wide, and Local Plan and Program Consistency

The proposed Hooper Springs Substation would be constructed and owned by BPA. As a federal agency, BPA is not required to comply with state and local land-use approvals or permits for its facilities. However, BPA strives to meet or exceed the substantive standards and policies of state and local plans and programs to the maximum extent practical.

The proposed transmission line would be constructed and owned by LVE, which is required to comply with state and local land-use plans and programs. The only potentially applicable state or local land-use plan or program is the Caribou County 2006 Comprehensive Plan. Although the Land Use Element of this Plan does not contain any applicable goals or policies, the Plan's Public Services, Facilities, and Utilities Element includes the following policy that is relevant to the Proposed Action:

> *7.1.4 Policy: Coordinate the use and placement of utility easements and ROWs and encourage multiple and coordinated use of these (Caribou County, 2006).*

The Proposed Action would be consistent with this policy because LVE has coordinated ROW placement with all affected landowners and land managers and adjusted the proposed route based on their concerns. Landowners would be able to continue to use their land after construction. In addition, BPA has coordinated placement of the proposed Hooper Springs Substation with affected landowners and other utilities in the area.

4.8 Environmental Justice

In February 1994, **Executive Order 12898**, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, was released to federal agencies. This order states that federal agencies shall identify and address as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income population. Minority populations are members of the following groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. Low-income populations are populations that are at or below the poverty line (as established by the U. S. Department of Health and Human Services poverty guidelines).

The percentage of minority or low-income populations in Caribou County is low, and no impacts to minority or low-income populations are expected. (See the Socioeconomics Section in Chapter 3.)

4.9 Noise

The Noise Control Act of 1972, as amended (42 U.S.C. 4901 et seq.), declares that it is the policy of the United States to promote an environment for all Americans free from noise that jeopardizes their health or welfare. The Act further states that federal agencies are authorized and directed, to the fullest extent consistent with their authority under federal laws administered by them, to carry out the programs within their control in such a manner as to further this policy. As described in Section 3.10, Noise, the noise levels created by the project would be below BPA's 50 dBA criterion and would meet state standards.

4.10 Health and Safety Laws

Federal Communications Commission regulations require that transmission lines be operated so that radio and televisions reception would not be seriously degraded or repeatedly interrupted and that interference is mitigated. Since the proposed alternatives are expected to increase electromagnetic interference above existing levels, complaints about electromagnetic interference would be investigated.

The **Spill Prevention, Control, and Countermeasures Act**, Title III of the Superfund Amendments and Reauthorization Act, and the Resource Conservation and Recovery Program, potentially apply to the proposed project, depending on the exact quantities and types of hazardous materials stored onsite. Small amounts of hazardous wastes may be generated (paint products, motor and lubricating oils, herbicides, solvents, etc.) during construction or operation and maintenance**.** These materials would be disposed of according to state and federal requirements.

The **Safe Drinking Water Act** (42 U.S.C. Section 200f et seq.) protects the quality of public drinking water and its source. The proposed project would not affect any sole source aquifers or other critical aquifers, or adversely affect any surface water supplies.

Current project designs do not propose any structures taller than 200 feet. If in the final design any structures are taller than 200 feet, the final locations of structures, structure types, and structure heights would be submitted to the **Federal Aviation Administration**. The information would include identifying structures taller than 200 feet above ground and listing all structures within prescribed distances of airports listed in the Federal Aviation Administration airport directory.

4.11 Air Quality

The **Clean Air Act** as revised in 1990 (PL 101-542, 42 U.S.C. 7401) requires EPA and states to carry out programs intended to ensure attainment of National Ambient Air Quality Standards. Air quality impacts of the proposed project would be low (see the Air Quality Section in Chapter 3).

4.12 Global Warming

Global warming is an increase in the average temperature of the Earth's surface. Since the late 1800s, data shows that the global average temperature has increased about 0.7 to 1.4 degrees F (0.4 to 0.8 degrees C), and some projections estimate that the average temperature will rise an additional 2.5 to 10.4 degrees F (1.4 to 5.8 degrees C) by 2100 (NASA 2009). A majority of scientists who study climate have concluded that human activities are responsible for most of this warming primarily through emission of certain gases that enhance Earth's natural greenhouse effect. Gases that absorb infrared radiation and prevent heat loss to space are called greenhouse gases. These gases include water vapor, carbon dioxide, methane, nitrous oxide, nitrogen oxides, non-methane volatile organic compounds, and stratospheric ozone-depleting substances such as chlorofluorocarbons.

The clearing of large areas of vegetation from the Earth's surface is also believed to contribute to global warming because trees and other plants remove carbon dioxide from the air during photosynthesis, the process they use to produce food. Removal of vegetation contributes to the buildup of carbon dioxide by reducing the rate at which the gas is removed from the atmosphere and by the decomposition of dead vegetation.

The proposed project would not generate emissions of gases (such as carbon dioxide) that contribute to global warming. About 230 acres of vegetation would be cleared for the Proposed Action. The removal of this vegetation would result in a net reduction in the collectors of carbon in the project area. However, because the amount of clearing would be extremely small, and because low-growing vegetation would regrow in cleared areas, the proposed project's contribution to global warming would be negligible.

4.13 Farmland Protection

The Farmland Protection Policy Act (Public Law 97-98) (FPPA) is authorized by the NRCS. The purpose of the FPPA is to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. The FPPA attempts to ensure that federal programs are administered in a manner that, to the best extent practicable, will be compatible with state, unit of local government, and private programs and policies to protect farmland.

The FPPA designates farmland as prime, unique, of statewide importance, and of local importance. None of these types of farmland would be affected by the Proposed Action (see Geology and Soil Section in Chapter 3).

4.14 Pollution Control Acts

Several pollution control acts potentially apply to the proposed project, depending upon the exact quantities and types of hazardous materials that may be stored on-site. Regulations would be enforced by Idaho DEQ, and development of a Hazardous Materials Management Plan in accordance with the Uniform Fire Code may be required by local fire districts.

The **Resource Conservation and Recovery Act (**RCRA), as amended, is designed to provide a program for managing and controlling hazardous waste by imposing requirements on generators and transporters of this waste, and on owners and operators of treatment, storage, and disposal (TSD) facilities. Each TSD facility owner or operator is required to have a permit issued by EPA or the state. Typical construction and maintenance activities in BPA's experience have generated small amounts of these hazardous wastes: solvents, pesticides, paint products, motor and lubricating oils, and cleaners. Small amounts of hazardous wastes may be generated by the project. These materials would be disposed of according to state law and RCRA.

The **Toxic Substances Control Act** is intended to protect human health and the environment from toxic chemicals. Section 6 of the Act regulates the use, storage, and disposal of PCBs. BPA adopted guidelines to ensure that PCBs are not introduced into the environment. Equipment used for this project will not contain PCBs. Any equipment removed that may have PCBs will be handled according to the disposal provisions of this Act.

The **Spill Prevention Control and Countermeasures Act** is intended to prevent discharge of oil into navigable waters of the US or adjoining shorelines as opposed to response and cleanup after a spill occurs. Facilities subject to the Act must prepare and implement a plan to prevent any discharge of oil into or upon navigable waters or adjoining shorelines. The plan is called a Spill Prevention, Control, and Countermeasure (SPCC) Plan.

The **Federal Insecticide, Fungicide and Rodenticide Act** (FIFRA) registers and regulates pesticides. BPA uses herbicides (a kind of pesticide) only in a limited fashion and under controlled circumstances. Herbicides are used on transmission line rights-of-way and in substation yards to control vegetation, including noxious weeds. When BPA uses herbicides, the date, dose, and chemical used are recorded and reported to state government officials. Herbicide containers are disposed of according to RCRA standards.

The **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**, was enacted by Congress on December 11, 1980 to establish prohibitions and requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified. The North Maybe Canyon phosphate mine entered the CERCLA (commonly known as Superfund) program in 2004 with the signing of an Administrative Order on Consent by the affected agencies and mine owner. According to a USFS Phosphate Newsletter published on May 10, 2007, Nu-West is gathering data for the Site Investigation pursuant to CERCLA under USFS oversight. Background and pollution data is being collected for surface water, ground water, plants, animals, etc.

If a hazardous material, toxic substance, or petroleum product is discovered, and may pose an immediate threat to human health or the environment, BPA requires that the contractor notify the Contracting Officer's Technical Representative (COTR) immediately. Other conditions such as large dump sites, drums of unknown substances, suspicious odors, stained soil, etc., must also be reported immediately to the COTR. The COTR will coordinate with the appropriate personnel within BPA. In addition, the contractor will not be allowed to disturb such conditions until the COTR has given the notice to proceed.

Chapter 5
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Chapter 6
Acronyms

AIZ	Aquatic Influence Zone
APE	Area of Potential Effect
APLIC	Avian Power Line Interaction Committeeasl above sea level
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMP	best management practices
BPA	Bonneville Power Administration
CDC	Idaho Fish and Game Conservation Data Center
CGP	Construction General Permit
C-TNF	Caribou-Targhee National Forest
CNF	Caribou National Forest
CWMA	Cooperative Weed Management Area
dBA	decibels on the A-weighted scale
dbh	diameter at breast height
EA	Environmental Assessment
EDRR	Early Detection and Rapid Response
EIS	environmental impact statement
EMF	electric and magnetic fields
E.O.	Executive Order
GIS	geographic information system
GPS	geographic positioning system
HRV	historical ranges of variability
IDEQ	Idaho Department of Environmental Quality
IDFG	Idaho Fish and Game
IFIM	Instream Flow Incremental Methodology
IPM	integrated pest management
kV	kilovolt
kV/m	kilovolts per meter

LAU	lynx analysis units
LVE	Lower Valley Energy
LWD	Large Wood Debris
MBTA	Migratory Bird Treaty Act
mG	milligauss
MIE	Mountain Island Energy LLC
MIS	Management Indicator Species
mph	miles per hour
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESC	National Electrical Safety Code
NFMA	National Forest Management Act
NHPA	National Historic Preservation Act
NIEHS	National Institute of Environmental Health Science
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
OBL	obligate
OHV	off-highway vehicle
PEM	Palustrine emergent
PFO	Pocatello Field Office
PHB	Pioneer Historic Byway
PI	point of inflection
PSS	palustrine scrub-shrub
RFP	Revised Forest Plan
RMP	Pocatello Draft Resource Management Plan
ROS	Recreation Opportunity Spectrum
ROW	right-of-way
RPW	Relatively Permanent Water
SHPO	State Historic Preservation Office
SIO	Scenic Integrity Objective
SMS	Scenery Management System

SRMA	Special Recreation Management Area
SWPP	Storm Water Pollution Prevention
TMDL	Total Maximum Daily Load
TNF	Targhee National Forest
TNW	Traditional Navigable Water
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
VMS	Visual Resource Management System
VQO	visual quality objectives
WMA	Wildlife Management Area
YCT	Yellowstone cutthroat trout

Appendix A

People and Agencies Consulted

Persons and Agencies Consulted

The project mailing list includes interested or affected landowners; tribes; local, state, and federal agencies; utilities; public officials; interest groups; businesses; special districts; libraries and the media. They have directly received or have been given instructions on how to receive all project information made available so far, and they will have an opportunity to review the EA.

Federal

US Senator – Mike Crapo
US Senator – James Risch
US Representative Walt Minnick
US Representative Mike Simpson
US Army Corps of Engineers
US Environmental Protection Agency – Washington, DC
US Environmental Protection Agency – Boise
US Environmental Protection Agency - Seattle
US Environmental Protection Agency – Denver
USDA Forest Service – Caribou-Targhee National Forest
USDA Forest Service – Idaho Falls
USDA National Resources Conservation Service – Idaho
USDOI Bureau of Land Management – Idaho
USDOI Fish & Wildlife Service Idaho

State

Caribou Soil Conservation District
Department of Agriculture
Department of Environmental Quality
Department of Fish and Game
Department of Fish and Game Region 5
Department of Lands Eastern Idaho Area Office
Department of Parks and Recreation
Department of Water Resources
Department of Water Resources Eastern Region
Division of Environmental Quality
Division of Environmental Quality Region 10
Representative George Eskridge, District 1
Representative Dell Raybould, District 34
Senator Steve Blair, District 28
Senator Curt McKenzie, District 12
Senator Gary Schroeder, District 6
Public Utilities Commission

Local Governments

City of Soda Springs – City Council
City of Seattle
County of Bonneville District 1
County of Bonneville District 2
County of Bonneville District 3
County of Caribou –Board of Commissioners
County of Caribou – District 2
County of Lincoln

Tribe

Shoshone-Bannock Tribe of the Fort Hall Reservation

Utilities

Lower Valley Energy
PacifiCorp

Libraries

Boise Public Library
Grace Public Library
Soda Springs Public Library

Depository Libraries

Albertson College of Idaho Library
Boise State University Library – Government Documents
Idaho State University Library
Lewis-Clark State College
University of Idaho Law Library
University of Idaho Library - Regional

Interest Groups

Aguim Conmda Phosphate Operations
Alliance for Wild Rockies
Aristeia Capital
American Wildlands
Association of Idaho Cities
Associated Logging Contractors
Astaris LLC
B & B Enterprises
Ball Brothers Sheep Company
Barthlome Family Trust
Blackfoot River Ranch
Caribou Cattle
Caribou Cattlemen's Association
Caribou County Sun
Columbia Helicopters Inc.
Corbridge Brothers, LTD
D & R Corporation
Dry Creek Lumber
Earth Justice Legal Defense Fund
Earth Sciences Inc.
Ecology Center, Inc
Etcheverry Sheep Company
Ecology Center, Inc.
Etcheverry Sheep Company
FMC Production LLC
Forest Services Employees for
Environmental Ethics
Gentle Valley Land & Cattle Company
Gleno Draney & Sons
Greater Yellowstone Coalition
Grizzly Mountain Aviation
Hartman Ranch LLC
Holmgren Clair LLC
Hulme Ranch LLc
Hunsacker Ranching, Inc.
Hunzeker & Sons
Idaho Association of Counties
Idaho Cattle Association
Idaho Conservation League
Idaho Farm Bureau Federation
Idaho Rivers United
Idaho Woolgrowers Association
JR Ream Ranch, Inc
J.R. Simplot Company
JBR Environmental Consultants
Jackknife Cattleman's Association
Jasperson Ranch
Jensen Lumber Company, Inc.
Jouglard Sheep Company
Luthi Family Trust
Mays Land & Livestock, Inc.
Minaberri Family Trust
Monida Resources, Inc.
Monsanto Chemical Company
Monsanto Company
Newersaveat Farms
News Examiner
N-S Ranch
Nu-West Industries
O W Ranches
Oxarango Lamb & Wool
P4 Productions
Pacific Legal Foundation
Peavler's Mountain Star, Inc.
Phillips Brothers
Plowboy Farms
Portneuf Valley Audubon Society
Preston R. Allen & Sons
Resource Consultant
Resource Consultant Rhodia
Rich Livestock Company
Sagwich Land & Livestock
Salt River Cattle Association
Scenic Byways
Silver Star Communications
Simplot JR Company
Star Calley Cattlemen's Association
Star Valley Independent
Stiles Farms, Inc.
Stump Ranch Corporation
Torgesen Ranch, Inc.
Trading Post
West Logging & Construction
Western Watershed Project, Inc.
Western Watershed Project
Wildwest Institute

Landowners

Clyde Bagley
Keith Bitton
Thomas Blotter
Ed Boger
Fred Brog
Harry Bruce
Brent Burton
Mark Carter
Lennie Cellan
Brad and Shannon Christensen
Melvin S Clinger
Tami Cole
Jack and Stella Collins
Melca Cook
Craig and Dawn Corbett
Craig Criddle
Charles Danse
Jay Davis
Curtis Dehl
Gregg Draney
Alicia Dredge
Bruce Dredge
Ruth and Rod Drewien
Rick and Toni Earling
Robert Eliason
Bryce Erickson
David Farnsworth
Phillip and Judy Geddes
Ralph Haderlie
Richard Hamp
JT Harmon
Evan Hayes
Jim Head
Hal Heiner
Ladell Heiner
Kenneth Hokanson
Gerald Hoopes
Veldon Izatt
Leon Jarvis
Chad and Farrell Jenkins
Kendall Jenkins
Larry Jenkins
Matt and Mary Jensen
Lynn Johnson
Rowleen Keetch
Crane Keller
Ellma Krougue
Keith Krougue
Leonard Krougue
Mark Larsen
John Lehman
Bernard Lindstrom
Varden Lindstrom
Grant Lloyd
Ernest Lombard
Randall Luthi
Gary Miller
Carl Mitchell
Dave and Jean Morris
Jay and Virginia Muir
Lewis Munson
Wendall O'Keefe
Ray Ostler
Rose Oxarango
Mike Pabst
Lorin and Ruth Ann Rasmussen
Lynn Rasmussen
Pete Riede
Kent Riley
Jeff Roche
Max Sanderson
Frank Scarborough III
Craig Shalen
Ruth and Rod Shea
Don and Raylene Shuler
Kyle Shuler
Mary and Mike Sibbett
David and Aneta Smith
J. C. Smith
Rex Spackman
Lori Stone
John Stucki
Jack Sturm
Greg and Irene Torgesen
Robert Torgesen
Ken Wixom
Coby and Linda Tigert
Myrl Wells
Rex Weber
Ron Walters
Steve Wegner
FT Welling
Lin Whitwort