APPENDIX H

ENVIRONMENTAL REPORT
161-kV Transmission Line Project
Eagle Rock Enrichment Facility

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1.0 INTRODUCTION TO THE ENVIRONMENTAL REPORT

1.1 BACKGROUND

AREVA Enrichment Services, LLC (AES) has submitted an application to the Nuclear Regulatory Commission (NRC) for a license to construct and operate a gas centrifuge uranium enrichment facility. The proposed facility, the Eagle Rock Enrichment Facility (EREF), would be located near Idaho Falls, Idaho. Electrical services beyond those currently existing near the facility would be required to operate the EREF. From plant startup in 2014, maximum expected load would ramp up to 39 MVA, and an additional 39 MVA load may be required beginning in 2018 (thus, a total of 78 MW of electrical power may be required).

Rocky Mountain Power (RMP), a division of PacifiCorp, will own and be responsible for the construction, operation, and maintenance of the proposed 161-kilovolt (kV) transmission line and associated structures (e.g., substations) that would provide electric power to operate the EREF. This line would originate from an existing substation east of the EREF (Bonneville Substation) and extend to the new point of service (Twin Buttes Substation) for the EREF (Figure H-1, Sheets 1-7). Approximately 14.5-km (9-mi) of the proposed 22.1-km (13.75-mi) transmission line route runs along an existing 69-kV with 25-kV under build line right-of-way, and would replace the existing transmission line service with 161-kV/69-kV double circuit with 25-kV under build. To the extent possible, the new single pole structures would be placed in the existing structure locations. The proposed transmission line would traverse privately owned property within Bonneville County (Figure H-3, sheets 1-5). As such, a permit to construct and operate the 161-kV transmission line is required from Bonneville County. Easements from private landowners would be required for the proposed route on their lands. The transmission line including easements would not cross public, state, or federal lands. AES would construct, own, and operate a 161-kV substation immediately adjacent to the new RMP Twin Buttes Substation that would distribute power within the EREF.

The NRC is preparing an Environmental Impact Statement (EIS) to analyze the impacts of constructing and operating the EREF in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (Public Law 91-190, 42 USC 4321-4347; USC, 2009a). This environmental report (ER) has been prepared to analyze the impacts of constructing the proposed 161-kV transmission line and Twin Buttes Substation to provide electrical power to the EREF.

This ER evaluates the environmental impacts of the proposed transmission line and associated structures. Accordingly, this document discusses the Proposed Action, the need for and purpose of the Proposed Action, and applicable regulatory requirements, permits, and required consultations; describes the proposed transmission line and associated structures and the environment potentially affected by the Proposed Action; presents and compares the potential impacts resulting from the Proposed Action; and identifies mitigation measures that could eliminate or lessen the potential environmental impacts of the Proposed Action.

A separate ER has been prepared for the EREF. That ER was prepared specifically to discuss the environmental effects of constructing and operating the EREF, and as such includes environmental information relevant to that parcel of private land. This ER was prepared to provide additional information on the transmission facilities that would be needed to operate the EREF, including the transmission facilities within the EREF Area of Disturbance.

This ER supplements the EREF ER. Additional surveys and studies were conducted for all private properties along the proposed transmission route to characterize the environment of

areas not previously evaluated. Field surveys were conducted for a 91-m (300-ft) width along the proposed transmission line centerline (Figure H-1, Sheets 1-7); including within the EREF property up to the previously surveyed area of proposed disturbance for the EREF project area (EREF ER Section 3.8.1). All areas were inventoried using 15-m (50-ft) transect spacing by the personnel participating in the field survey.

1.2 PURPOSE AND NEED FOR PROPOSED ACTION

1.2.1 Applicant's Underlying Purpose and Need

Electrical services are needed to operate the EREF. AES will contract with RMP to provide the necessary electric transmission service. To address the power demand needs at the EREF, RMP is proposing to construct, operate, and maintain a new 161-kV transmission line to the EREF point of service (i.e., the new RMP Twin Buttes Substation).

The purpose of the proposed EREF transmission line project is to provide electrical power and related transmission services to operate the EREF. Current electrical services near the EREF are not adequate for this purpose; therefore, RMP would need to construct a new 161-kV transmission line to supply continuous power to the EREF. RMP is proposing to construct, operate, and maintain this transmission line across private lands to supply electrical power to the EREF. No public lands are affected by the proposed 161-kV transmission line. The proposed electrical service must be obtained at a reasonable cost and within acceptable engineering design standards while minimizing environmental impacts.

1.2.2 Need for Agency Action

The proposed transmission line would traverse privately owned property within Bonneville County. As such, a permit to construct and operate the 161-kV transmission line is required from Bonneville County. The 161-kV transmission line would not cross public lands.

1.3 LOCATION OF PROPOSED ACTION

The proposed EREF will be located on the north side of U.S. Highway 20, approximately 32-km (20-mi) west of Idaho Falls, Idaho, in Bonneville County. The proposed transmission line route spans private lands within Bonneville County. Much of the proposed transmission line route is composed of irrigated agricultural land and pasture land. A portion of the transmission line route is composed of native sagebrush steppe and crested wheatgrass plantings. Elevation in the project area ranges from approximately 1,510-m to 1,575-m (4,955-ft to 5,170-ft) above sea level.

The region's semi-arid climate is characterized by cold, dry winters; cool, wet springs; and hot, dry summers. Precipitation for the area averages 22.2 cm (8.73 in) per year (for the time period 1954-2005). The month of May typically experiences the highest precipitation and the months of July and August experience the lowest precipitation. Summer precipitation is often in the form of intense, localized afternoon thunderstorms. Average maximum temperature is 30.6°C (87°F) in July and average minimum temperature is 15°C (5°F) in January (WRCC, 2009). Refer to EREF ER Section 3.6 for additional information on climate for the region.

The proposed 161-kV transmission line route would extend west from the existing RMP Bonneville Substation along the county road (West 65 North Street) to the existing RMP Kettle Substation, a distance of approximately 14.5-km (9-mi), continuing west to the eastern portion of the EREF site, a distance of approximately 1.2-km (0.75-mi), then north within the EREF site to its northern end, then west and south to the new RMP Twin Buttes Substation, for a distance of

approximately 6.4-km (4-mi); a total distance of approximately 22.1-km (13.75-mi) (Figure H-1, Sheets 1-7).

A portion of the proposed transmission line route and the new RMP Twin Buttes Substation are located within the EREF property and within the EREF area of proposed disturbance. The EREF ER describes the environment and mitigation measures related to construction activities within the EREF site. Prior to RMP construction activities within the EREF site, initial construction activities such as ground clearing and grading of the previously undisturbed areas will be completed and environmental concerns that accompany RMP transmission line and substation construction within the boundaries of the EREF (i.e., cultural resources, ecological resources) will be mitigated. A portion of the RMP transmission line and the Twin Buttes Substation will be within this cleared and graded area. AES will ensure that cultural resources site MW004 (EREF ER Sections 4.8 and 5.2.8) and ecological resources related to critical plants and habitat (EREF ER Sections 4.5 and 5.2.5) are mitigated prior to RMP construction activities within the boundaries of the EREF. RMP will comply with the AES practices, procedures, and applicable mitigation measures for construction activities within the EREF property.

1.4 SCHEDULE OF MAJOR STEPS ASSOCIATED WITH THE PROPOSED ACTION

The following are key dates and milestones for the proposed 161-kV transmission line project:

Milestone	Estimated Date
Commence construction	September 2011
Testing and commissioning	September 2012
RMP permanent power available	December 2012

RMP anticipates future users of this electrical service and does not anticipate decommissioning of the transmission line upon termination of the EREF license and subsequent decommissioning of the EREF.

The replacement of the existing 69-kV transmission line with a double-circuit 161-kV/69-kV transmission line with 25-kV underbuild, approximately 14.5-km (9-mi) of the proposed 22.1-km (13.75-mi) transmission line, would remain intact beyond the lifetime of the EREF since it is part of the existing RMP distribution system and services existing users.

No users are currently planned by RMP for future use of the approximate 7.6-km (4.75-mi) segment of the proposed transmission line from the existing Kettle Substation to the proposed RMP-owned Twin Buttes substation. However, RMP anticipates future users of this segment of transmission line for agricultural and other farming uses.

1.5 APPLICABLE REGULATORY REQUIREMENTS, PERMITS AND REQUIRED CONSULTATIONS

This ER was prepared to analyze the impacts of constructing, operating, and maintaining a new transmission line and associated structures to service the EREF. The regulations pertinent to the transmission line project require permits from, consultations with, or approvals by other governing or regulatory agencies. Federal, state and local statutes and regulations have been reviewed to determine their applicability to the construction and operation phases of the proposed transmission line project. Construction and operational permit applications would be prepared and submitted, and regulatory approval and/or permits would be received prior to construction or operation of the proposed transmission line project, as appropriate. In addition

to the federal and state requirements described below, new land rights for the transmission line right-of-way would be required for private lands crossed by the transmission line.

1.5.1 Federal

U.S. Nuclear Regulatory Commission

The Atomic Energy Act of 1954, as amended (42 USC 2011; USC, 2009b), gives the NRC regulatory jurisdiction over the design, construction, operation, and decommissioning of uranium enrichment facilities, including assessing the potential environmental impacts of the proposed facility. Since the transmission line would be constructed in conjunction with the EREF, the NRC is the governing agency with jurisdiction over the transmission line ER.

Endangered Species Act of 1973

The Endangered Species Act (ESA) of 1973, as amended (Public Law 93-205, 16 USC 1531; USC, 2009c) provides for the listing and protection of endangered and threatened species and their critical habitat. The U.S. Fish and Wildlife Service (USFWS) is responsible for the protection and recovery of threatened and endangered species under the ESA. The Act requires consultation under Section 7 if any listed species may be adversely affected.

A rare, threatened and endangered species survey for both plants and animals was conducted along the proposed transmission line corridor to the EREF. The EREF was surveyed previously as described in the EREF ER Section 3.5 and supplemental surveys. No threatened or endangered species or designated critical habitat is present along the proposed transmission line corridor outside the EREF Area of Disturbance (see Sections 3.9 and 3.10).

Migratory Bird Treaty Act of 1918

The USFWS is responsible for the protection of migratory bird species under the Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 USC 703-712; USC, 2009d). Additional protective measures would be implemented by RMP during the design phase of the project to limit impact to nesting, breeding and migratory corridors where possible. These measures include those presented in the *Suggested Practices for Raptor Protection on Power Lines* (APLIC, 2006), the Bald Eagle Protection Act of 1940, as amended (16 USC 668-668d; USC, 2009e), and other applicable regulations and practices (PacifiCorp, 2006).

No raptor nests were observed along the proposed transmission line corridor. Although the transmission line will occupy land that is potential habitat for several migratory species protected under the MBTA, the mitigation measures (see Section 2.3.3) are expected to minimize potential impacts to raptors and other avian species.

National Historic Preservation Act of 1966

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Public Law 89-665, 16 USC 470; USC, 2009f) requires federal agencies to take into account the effects of their undertakings on cultural resources, either listed in or eligible to be listed in the National Register of Historic Places (NRHP), and afford the State Historic Preservation Office (SHPO), affiliated American Indian tribes, individuals with a demonstrated interest in the undertaking, and the general public, a reasonable opportunity to comment on such undertakings. Section 110 of the Act directs federal agencies to take responsibility for the preservation and management of

cultural resources that are owned or controlled by the agency. Section 304 of this Act prohibits the divulgence of cultural resource locations.

An archaeological survey was conducted along the proposed transmission line corridor leading up to the previously surveyed EREF Area of Disturbance. The results of this survey are summarized in Section 3.3. A total of four cultural resource projects have occurred in the vicinity of the proposed transmission line resulting in the recordation of 36 sites; all of these were located within the EREF site. One of the EREF cultural resources sites (Site MW004) has been determined eligible for nomination to the National Register. A Treatment Plan to mitigate impacts of the proposed EREF and transmission line project which will adversely affect Site MW004 will be prepared. Mitigation of Site MW004 will be performed prior to construction activities. For further discussion, refer to the EREF ER Section 4.8.

No new sites were recorded as a result of the survey carried out for this ER. An archaeological survey report for the proposed transmission line route has been prepared and will be submitted to the Idaho SHPO. Mitigation measures for unanticipated discoveries of archaeological resources during construction are included as part of the Proposed Action (see Section 2.3.3) and are expected to minimize potential impacts to archaeological resources.

U.S. Environmental Protection Agency

As authorized by the Clean Water Act (CWA) of 1972 (Public Law 92-500, 33 USC 1251; USC, 2009g), the U.S. Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. In Idaho, the NPDES permit program is administered by the EPA, Region 10. Construction of the proposed transmission line will be greater than 0.4-ha (1.0-ac). Thus, RMP will obtain a NPDES Construction General Permit from Region 10 of the EPA and a Stormwater Pollution Prevention Plan (SWPPP) will be developed, pursuant to Section 402 of the CWA.

1.5.2 State of Idaho

Several state agencies are responsible for the protection and management of the environment and public health in the state of Idaho. Requirements of the following state agencies regarding permit and consultation have been reviewed: Idaho Public Utilities Commission; Idaho Department of Environmental Quality (IDEQ); Idaho SHPO, Idaho Transportation Department, and Idaho Department of Lands. Applicable requirements are summarized below by the agency that has responsibility for consultations and permitting actions.

Idaho Public Utilities Commission

RMP will consult with the Idaho Public Utilities Commission to obtain a permit for construction of the proposed transmission line. Adherence to procedures for construction of transmission lines, Idaho Statute, Title 61, Public Utility Regulation, Chapter 17, Siting of Certain Electrical Transmission Facilities, will occur.

Idaho Department of Environmental Quality

RMP will consult with the IDEQ Air Quality Division to ensure the Rules for Control of Air Pollution in Idaho will be adhered to during construction. Construction BMPs for air quality will be included as part of the construction permit (see Section 2.3.3). Mitigation measures such as watering to minimize fugitive dust will be followed during construction. In addition, the IDEQ

Water Quality Division will certify that the NPDES-permitted project complies with state water quality standards, in accordance with Section 401 of the CWA.

Idaho State Historic Preservation Office

AES and RMP retained a subcontractor who obtained a permit to conduct an archaeological survey of the proposed transmission line route. A Cultural Resource Inventory was conducted on the site in October and November, 2009 and a report was subsequently prepared and will be submitted to the Idaho SHPO. The Idaho SHPO participates with federal agencies in the consultation process during the planning of federal actions which may affect historic properties. AES will continue consultation with the Idaho SHPO to ensure concurrence with the findings in the report and acceptance by federal and state agencies. Mitigation measures for archaeological resources are described in Section 2.3.3.

Idaho Transportation Department

The Idaho Transportation Department (ITD) is responsible for design, construction, and maintenance of the state transportation system. They are responsible for reviewing and permitting new access to state highways, including U.S. Highway 20. AES has initiated discussions with ITD on design and construction of access points on to U.S. Highway 20 for the EREF. Construction of the transmission line will utilize existing access points from U.S. Highway 20.

1.5.3 Local Agencies

AES has met regularly with Bonneville County officials including the Planning & Building office and the County Commissioners regarding the proposed transmission line. The zoning designation along the transmission line corridor including the proposed EREF property is zoned G-1 (Agriculture). The proposed transmission line from the existing Bonneville Substation to the new Twin Buttes Substation within the proposed EREF property including substations and ancillary facilities is permissible within the G-1 zoning. Final plans for construction and operation of the transmission line will be communicated to and coordinated with Bonneville County prior to commencement of construction.

2.0 PROPOSED ACTION AND ALTERNATIVES

This chapter describes the alternatives of not building the transmission line (No Action) and of constructing the new transmission line that would service the EREF (Proposed Action). A description of the construction, operation, and maintenance of the proposed 161-kV transmission line is also described as are mitigation measures that would be incorporated into the Proposed Action.

2.1 DESCRIPTION OF ALTERNATIVES

2.1.1 No Action – Do Not Build Transmission Line

Under the No Action alternative, the proposed 161-kV transmission line would not be constructed by RMP. Without the 161-kV electrical power supply to the EREF, the EREF would not be built and the uranium enrichment needs for the United States as described in the ER for the EREF would not be met.

2.1.2 Proposed Action – Construct Transmission Line

RMP would construct a new 161-kV transmission line and a new substation (designated Twin Buttes Substation) to serve a new substation being built by AES for the EREF. The new transmission line would connect into the existing electrical grid system at the Bonneville Substation. Refer to Section 2.5.1 for a detailed description of the transmission line route.

The proposed action would meet the need to provide electric power to AES for the EREF and provide an opportunity to serve additional future load increases in the area. The proposed action would require the purchase and clearing of new or existing transmission line rights-of-way and easements for a distance ranging approximately 15.7-km (9.75-mi) from the east (Bonneville Substation), and approximately 6.4-km (4-mi) within the proposed EREF site.

2.2 ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

A number of alternate transmission line routes were considered by RMP to bring electrical service to the EREF. These included constructing a line west from the proposed EREF Twin Buttes substation across BLM and DOE land to connect to the Antelope Substation at the Idaho National Lab; constructing a line east from the proposed EREF Twin Buttes Substation following U.S. Highway across private land, then north along an existing 161-kV transmission line corridor across private land and a small BLM parcel to the Bonneville Substation, and constructing a line south from the proposed EREF substation to a tap connection to the RMP-owned Goshen–Antelope Transmission Line. For various reasons these options were dismissed from further analysis and only the option of connecting the EREF substation to the Bonneville Substation was carried forward for detailed analysis.

Additionally, a loop between the Bonneville Substation and the Jefferson Substation was considered, but a system impact analysis conducted by RMP concluded that this transmission route would be unable to support the magnitude of projected load under normal conditions by start-up of the EREF, causing low voltage issues and line capacity overloads during contingencies. Without extensive investment in facility upgrades, this was determined not to be a viable option. This route is not discussed further within this ER.

2.3 DESCRIPTION OF CONSTRUCTION, OPERATION AND MAINTENANCE OF THE PROPOSED 161-KV TRANSMISSION LINE AND SUBSTATION

The design, construction, operation and maintenance of the 161-kV transmission line would meet or exceed the requirements of the National Electrical Safety Code (Marne, 2007), U.S. Department of Labor Occupational Safety and Health Administration (OSHA) regulations, and RMP's requirements for safety and protection of landowners and their property. Additional supplemental documents that provide specifications for the transmission line, including engineering drawings and construction guidelines, are currently being prepared and will be provided to Bonneville County for the permit to construct.

Much of the proposed transmission line route is composed of irrigated agricultural land and pasture land. A portion of the transmission line route is composed of native sagebrush steppe and crested wheatgrass plantings.

The proposed 161-kV transmission line route would extend west from the existing RMP Bonneville Substation along the county road (West 65 North Street) to the existing RMP Kettle Substation, a distance of approximately 14.5-km (9-mi), continuing west to the eastern portion of the EREF site, a distance of approximately 1.2-km (0.75-mi), then north within the EREF site to its northern end, then west and south to the new RMP Twin Buttes Substation, for a distance of approximately 6.4-km (4-mi); a total distance of approximately 22.1-km (13.75-mi) (Figure H-1,

Sheets 1-7). This power source would involve a 14.5-km (9-mi) rebuild of the existing 69-kV line between the Bonneville Substation and the Kettle Substation to include a double-circuit line with one side energized at 69-kV and the other side energized at 161-kV, with a 25-kV under build. The 161-kV point of service at the EREF, designated Twin Buttes Substation, would be constructed and modifications to the Bonneville Substation would be required.

Design conducted since the surveys placed some portions of the pulling/tensioning sites at Bonneville substation and the western extent of the line (structures 116 and 113) outside the surveyed area. A portion of the new two track access road from the existing dirt farm road on the EREF property (at structure 116) is also outside the surveyed area. Refer to Figure H-1, Sheets 2 and 3. The pulling/tensioning sites are temporary; work at these sites would only occur for a few weeks with temporary easements obtained from those private land-owners. If the final transmission line design confirms that the additional area outside the previously surveyed area is needed, then consistent with the approach in the EREF Environmental Report, surveys will be conducted prior to the activities in the area proceeding. The tensioning sites at structures 139 and 149, and the area for other use such as the construction lay down area on the EREF property, though shown outside the transmission line corridor, are within the EREF Area of Potential Effect (previously surveyed for the EREF). Access to existing farm roads on the EREF property are shown at structures 132 and 128. Refer to Figure H-1, Sheet 1. One new access road will be a two track access road (dirt road) from the existing dirt farm road on the EREF property to structure 116 on the EREF property. Refer to Figure H-1, Sheets 2 and 3.

Existing access roads to the transmission line corridor near Kettle Substation are shown at structures 112 and 109 (Figure H-1, Sheets 2 and 3). Existing access roads to the transmission line corridor east of the Kettle Substation are shown at structures 63, 36, and 18 (Figure H-1, Sheets 4 and 5). Continuing east, a tensioning and pulling site is shown as structures 2, 1, 118, 117, and 116 (Figure H-1, Sheet 5). Continuing east, existing access roads are shown at structure 82 (Figure H-1, Sheets 6 and 7). The tensioning and pulling sites at Bonneville Substation are shown on Figure H-1, Sheet 7.

A portion of the proposed transmission line route and the new RMP Twin Buttes Substation are located within the EREF property and within the EREF area of proposed disturbance. The EREF ER describes the environment and mitigation measures related to construction activities within the EREF site. Prior to RMP construction activities within the EREF site, initial construction activities such as ground clearing and grading of the previously undisturbed areas will be completed and environmental concerns that accompany RMP transmission line and substation construction within the boundaries of the EREF (i.e., cultural resources, ecological resources) will have been mitigated. A portion of the RMP transmission line and the Twin Buttes Substation will be within this cleared and graded area. AES will ensure that cultural resources site MW004 (EREF ER Sections 4.8 and 5.2.8) and ecological resources related to critical plants and habitat (EREF ER Sections 4.5 and 5.2.5) are mitigated prior to RMP construction activities within the boundaries of the EREF. RMP will comply with the AES practices, procedures, and applicable mitigation measures for construction activities within the EREF property. RMP will obtain a NPDES Construction General Permit from Region 10 of the EPA and a Stormwater Pollution Prevention Plan will be developed, pursuant to Section 402 of the Clean Water Act.

2.3.1 Transmission Line Construction

Construction Workforce, Payroll, and In-Migration of Workers into the Region

Construction Workforce

RMP estimates the following over the one year period of construction:

- An approximate 4-month period using a 6-8 person crew to complete the transmission line construction.
- An approximate 6-month period using a 6-8 person crew to complete the substation upgrades. The substation upgrades include construction of the Twin Buttes Substation and expansion of the Bonneville Substation.

Based upon the above, it is estimated that approximately 60-80 FTE-months will be required to construct the proposed 161-kV transmission line and substation upgrades that would serve the EREF.

Payroll

A transmission line crew typically consists of a general foreman, foreman and linemen. Wages range from $38 - $47 per hour. A substation crew consists of a similar make up with similar wage ranges.

In-migration of workers and family members into the ROI that would occur for the Transmission Line and Substations during construction

RMP estimates an approximate 4-month period to construct the transmission line using a 6-8 person crew. RMP estimates an approximate 6-month period to construct the substation upgrades using a 6-8 person crew. Because of the small size of the construction crew and the short duration of the transmission line and substation construction, the crew would mobilize at an Idaho Falls, Idaho hotel for the duration of the construction activities. It is not anticipated that any workers would move into Idaho Falls as new residents. It is not anticipated that any family members would relocate with the spouse to Idaho Falls during this activity. The workers would transit to Idaho Falls, Idaho from various locations within the region. These workers would travel home during scheduled breaks to visit family members.

In-migration of workers and family members into the ROI that would occur for the Transmission Line and Substations during operation/maintenance

The local inspections for the transmission line and substations are conducted every 2 years. Maintenance is schedule based upon the results of the inspections. Inspection and maintenance crews would be dispatched out of RMP facilities located in Shelley, Idaho. Shelley, Idaho is located approximately 12.8-km (8-mi) southwest of Idaho Falls, Idaho, and approximately 45-km (28-mi) from the proposed EREF. These workers would be residents of Shelley or neighboring cities. Thus, there would be no in-migration of workers and family members into the region of influence for the transmission line and substations during operation/maintenance.

Commuting to Worksite

With the crew mobilized in a hotel in Idaho Falls, Idaho, it is anticipated that they would normally report to the location along the transmission line corridor or substation that was agreed to at the end of the previous day. This would not normally be to the construction yard. It is anticipated that the crew would mobilize at the construction yard at the beginning of each work week.

Noise

Cranes and trucks used during construction of the transmission line and substations will generate noise levels as high as 88 dBA at 15-m (50-ft). Bulldozers, front-end loaders, and graders, used primarily during construction of the substations, will generate noise levels as high as 85 dBA at 15-m (50-ft). Generators will generate noise levels as high as 81 dBA at 15-m (50-ft).

Activities responsible for these noise levels include hauling structures, conductors, and other materials to structure and substation locations; cut and fill grading at the Bonneville Substation expansion; augering at structure locations; and structure assembly and erection for transmission structures and substations. Primary excavation activities at the Twin Buttes substation will have been completed as part of the EREF site excavation and grading.

Construction noise in any specific location would typically be short-term over the course of the transmission line and substation construction. The duration of construction is an approximate 4-month period to construct the transmission line using a 6-8 person crew, and an approximate 6-month period to construct the substations using a 6-8 person crew.

Advanced notice of construction activities would be given to landowners and residents potentially affected by construction activities. Nighttime construction near noise-sensitive land uses (e.g., residences) would be avoided. Consistent with the EREF, construction activities with the potential for noise or vibration at residential areas that could have a negative impact on the quality of life will be performed during the day-time hours (7:00 a.m. - 7:00 pm). Given the localized, short-term and intermittent nature of construction activities, with implementation of this mitigation measure, noise impacts will be small.

Structures

The proposed 161-kV transmission line would primarily use a combination of double wood pole H-frame structures (Figure H-2a), wood single pole structures and steel single pole structures (Figure H-2b). For dead-end structures, both wood three-pole dead-end structures (Figure H-2c) and steel single pole dead-end structures (Figure H-2d) would be used. From the Bonneville Substation to the Kettle Substation along the county road North 65th, a single pole double-circuit with an under-build would be used. From the Kettle Substation to the RMP point of service (Twin Buttes Substation), double wood pole H-frame structures would be used. Most poles would be directly imbedded in holes augured into the ground to a depth generally equal to 10 percent of the pole's length plus an additional 0.6-m (2-ft); approximately 3-m (10-ft) imbedded below ground surface for the wood and steel single pole structures, and approximately 2.7-m (9-ft) imbedded below ground surface for the double wood H-frame structures. Steel dead-end poles would be imbedded to a depth of approximately 9.1-m (30-ft). There are no poured foundations required for the transmission line structures. The holes would normally be backfilled with the excavated material. In some cases, gravel or a cement and gravel mixture might be used. Most poles would be self-supporting (non-guyed), although poles at angles in the transmission line may require supporting guy wires. Steel single pole dead end structures will be required along the route from Bonneville Substation to Kettle Substation; they will be located at the Merrill Substation (structure 118), at the dead ends of the single pole line, and for the dead end ties to the Bonneville Substation. Three-pole dead-end structures will be required along the double wood pole H-frame structure route from the Kettle Substation to the Twin Buttes Substation. The structure locations are shown in Figure H-1, Sheets 1-7. It is estimated that there will be approximately 248 wood poles and 22 steel (wood equivalent) poles embedded up to 3-m (10-ft), and approximately 8 dead-end steel poles embedded up to 9.1-m (30-ft).

The wood pole H-frame structures would be spaced approximately 215-m (700-ft) apart with a pole height of approximately 20-m (65.5-ft) above ground. The wood single pole structures would be spaced approximately 91-m (300-ft) apart with a pole height of approximately 24-m (79-ft) above ground, with the exact spacing and height of each structure governed by topography and safety requirements for conductor clearances and resource (e.g., cultural, biological) impact avoidance measures. The steel dead end poles would have a pole height of approximately 24.4-m (80-ft) above ground. The wood single pole structures along the existing

69-kV transmission line corridor will, to the extent possible, use the locations of the existing 69-kV poles to be dismantled and removed. The structure locations near public land parcels will use new locations as the existing transmission line structures, which are on private land, are moved approximately 10.7-m (35-ft) further from the public land to accommodate the required right-of-way for the 161-kV line while avoiding public land. Refer to Figure H-1, Sheet 3 (structures 91-100) and sheet 4 (structures 72-77).

For the existing 69-kV transmission line that runs from the Bonneville Substation to the Kettle Substation near the EREF site, RMP will build a double-circuit transmission line (161-kV and 69-kV), with a 25-kV transmission line underbuild. The double-circuit build would consist of replacing the existing transmission line structures with new structures (as described above) that would support both the proposed 161-kV circuit and the existing 69-kV circuit on the opposite side of the 161-kV transmission line (Figure H-2b). The remainder of the transmission line route would accommodate the construction of the 161-kV line with no double-circuit or underbuild on the 161-kV structures.

Incoming Shipments

Materials shipped into the site will be transported on existing city, county, state and federal roads. Any permit requirements or special provisions will be met.

Wood Poles

Wood poles will be shipped from Ogden, Utah by either truck or rail. There will be approximately 30 truck shipments for wood poles. The wooden poles will be delivered directly to structure locations along the ROW by truck from either Ogden, Utah or Idaho Falls, Idaho depending upon the transport method from Ogden, Utah. If transported by truck, the average transport distance is approximately 313.8-km (195-mi) from Ogden, Utah. The truck transportation route is north using I-15 to U.S. Highway 20, then west on U.S. Highway 20 to the designated access roads to the transmission line ROW.

If transported by rail, the wooden poles will be delivered to Idaho Falls, Idaho. The rail transport distance to Idaho Falls, Idaho is approximately 286.5-km (178-mi). The wooden poles would then be delivered by truck directly to structure locations along the ROW. The average transport distance by truck is approximately 27.4-km (17-mi) from Idaho Falls, Idaho. The truck transportation route is west from Idaho Falls, Idaho using U.S. Highway 20 to the designated access roads to the transmission line ROW.

Steel Poles

Steel poles will be shipped from Fort Worth, Texas with approximately 8 truck shipments. Steel poles are manufactured as 2 or 3 segments to makeup a pole. The steel poles will be delivered directly to structure locations along the ROW and assembled at the structure location. The transport distance is approximately 2269-km (1410-mi).

Conductors, Insulators, and Associated Hardware

Three conductors (the cables that carry the electrical current) are required to make up a circuit in alternating current transmission lines. For 161-kV transmission lines, each conductor is made up of a single Aluminum Core Steel Reinforced (ACSR) cable. Conductors would be non-specular (non-reflective). Minimum conductor height above ground would exceed NESC standards (Marne, 2007). In general, the clearance for the 161-kV line will be 7.9-m (26-ft) above ground; the NESC standard is 6.5-m (21.3-ft). Because the 69-kV line would be built on the opposite side of the poles, it would also be constructed with the same clearances above ground as the 161-kV line. The 25-kV underbuild will have a minimum of 7-m (23-ft) clearance above ground; the NESC standard is 5.6-m (18.5-ft).

The conductors would be attached to fiberglass, ceramic, or epoxy insulators suspended from the structure cross arms or attached directly to the poles. Specific length of insulator strings would be determined in the final line design. The running angles and dead-end structures would have similar insulators; however, these conductors would be longer in length. A smaller overhead ground wire will be attached to the top of the structures and will contain fiber optic cables for communications including Supervisory Control and Data Acquisition (SCADA) system functions and digital metering. Avian-safe standards will be incorporated into the design of the structures and will include 150-cm (60-in) of horizontal separation and 100-cm (40-n) of vertical separation between energized and/or grounded parts (PacifiCorp, 2006).

Incoming Shipments

Conductors will be shipped from Kingman, Arizona with approximately 30 truck shipments. The transport distance is approximately 1207-km (750-mi). Insulators and associated hardware will be shipped from the RMP central warehouse in Shelley, Idaho with approximately 4-5 truck shipments. Shelley, Idaho is located approximately 12.8-km (8-mi) southwest of Idaho Falls, Idaho, and approximately 45-km (28-mi) from the proposed EREF.

Right-of-Way Acquisition

New rights-of-way or easements would be needed from private landowners for the proposed transmission line and Twin Buttes Substation (Figure H-3, sheets 1-5). Where two-pole H-frame structures would be used, right-of-way easements would need to be 38-m (125-ft) in width. Where single pole structures would be used, the needed right-of-way easement would be 24-m (80-ft) in width (the existing transmission line right-of-way along West 65 North Street is 15.2-m (50-ft) and would be expanded by 4.6-m (15-ft) on either side of the centerline). All lands within the area of the proposed transmission line route including easements are private. Easements will be obtained by RMP from landowners for the new right-of-way on private land. These easements would give RMP the right to construct, operate, and maintain the proposed transmission line as well as maintain vegetation in the right-of-way. Fee title for the land within the right-of-way would normally remain with the landowner, and a number of activities such as farming could be continued on the property by the landowner. The easement would prohibit certain activities such as the construction of buildings and any other activities within the right-of way that could interfere with the transmission line or create a hazardous situation.

Alignment Staking

RMP engineers would determine the centerline of the alignment within the right-of-way of the selected route and surveyors would stake out each pole location along the right-of-way.

Access Roads

Transmission line construction requires the movement of large vehicles along the right-of-way and from U.S. Highway 20 to the right-of-way. Except for one new access road, the entire transmission line route can be accessed from existing access roads from U.S. Highway 20 and West 65 North Street, or from AES property for structures at the EREF. The new access road will be a two track access road (dirt road) from the existing dirt farm road on the EREF property to structure 116 on the EREF property.

Vehicles would use existing roads including farm and field roads to gain access to the transmission line right-of-way and pole locations. Because of the relatively flat terrain and the presence of West 65 North Street, it is anticipated that grading will not be necessary. Access to existing farm roads on the EREF property are shown at structures 132 and 128. Refer to Figure H-1, Sheet 1. One new access road will be a two track access road (dirt road) from the existing

dirt farm road on the EREF property to structure 116 on the EREF property. Refer to Figure H-1, Sheets 2 and 3.

Existing access roads to the transmission line corridor near Kettle Substation are shown at structure 112 and 109 (Figure H-1, Sheets 2 and 3). Existing access roads to the transmission line corridor east of the Kettle Substation are shown at structures 63, 36, and 18 (Figure H-1, Sheets 4 and 5). Continuing east, a tensioning and pulling site is shown as structures 2, 1, 118, 117, and 116 (Figure H-1, Sheet 5). Continuing east, existing access roads are shown at structure 82 (Figure H-1, Sheets 6 and 7). The tensioning and pulling sites at Bonneville Substation are shown on Figure H-1, Sheet 7.

If clearing and grading are required to allow heavy equipment down the right-of-way or to create a level work area, the top 15-cm (6-in) of soil will be removed and stockpiled. This material will be replaced upon completion of construction activities as close to preconstruction contours as possible and the areas would be reseeded as necessary. All existing roads would be left in a condition equal to or better than their condition prior to the construction of the transmission line. Because of the need to provide access for construction equipment, larger shrubs would be lowered by mechanical means to a height that could be driven over (smaller shrubs would be driven over).

Construction Yards

All of the staging would occur along the transmission line corridor or on AES property. Poles would be transported to the structure locations along the right-of-way upon delivery. Other materials such as conductors, insulators, and associated hardware would be staged at a laydown area within the EREF disturbed area adjacent to the location of the proposed Twin Buttes Substation (Figure H-1, Sheet 1). This staging area would be accessed from the EREF construction road to be built by AES. The staging area adjacent to the Twin Buttes Substation will be approximately 0.8-ha (2-ac) in size. This staging area will have been previously excavated by AES construction activities. Refer to Figure H-1, Sheet 1. As needed, the areas would be graveled and fenced, and trailers used for material storage and office space would be parked on the areas.

Construction materials will be transported to the construction yards from suppliers in the region. Interstate 15 and U.S. Highway 20 would be the roadways most used. Semi-trucks with trailers will transport the poles, transformers, conductors, and other required material to the designated construction yard, or will be transported directly to the location that the material (i.e., poles) will be used along the transmission line right-of-way. Approximately 30 to 40 truck loads will be required and delivery will be spread out across the one year construction phase of the project. Any long loads over 26-m (85-ft) in length will require the appropriate transportation permit and pilot cars.

Following the completion of construction activities, all vehicles, unused materials, and construction debris will be removed from the site. Unused materials or materials that may be reused or recycled, such as the poles, conductors, and insulators, will be transported by semi-truck to an existing RMP equipment yard or recycled. All non re-useable metals (wire, hardware, etc) will be transported to a salvage yard for scrap metal. Poles or wood products that cannot be reused may be given to landowners along the route or will be transported by semi-truck to a licensed construction debris landfill along with other construction debris and non-hazardous materials. All materials will be transported in compliance with federal and state regulations, as described in Section 1.5.2.

Structure Sites

At structure sites, relatively level areas would be needed to facilitate the safe operation of equipment, such as construction cranes. These areas would be approximately 38-m (125-ft) in-line and 38-m (125-ft) wide. Grading would be avoided when possible and would only be needed on excessively undulating or steep terrain. Because the terrain is relatively flat, grading is not expected. Vegetation in work areas would only be cut to the extent necessary to allow vehicle passage (drive-over) and construction assembly. After line construction, disturbed areas would be graded to blend as near as possible with the natural contours and the areas would be reseeded as necessary. Structure sites are shown in Figure H-1, Sheets 1-7.

Pulling and Tensioning Sites

Pulling and tensioning sites would be located at either dead end structures or route angle change structures at approximately 3.2-km to 4.8-km (2-mi to 3-mi) increments along the centerline of the project. At pulling and tensioning sites, the work area would be approximately 122-m (400-ft) in-line by 61-m (200-ft) wide for H-poles and 122-m (400-ft) in-line by 49-m (160-ft) wide for single poles. At angles greater than 45 degrees, surface disturbance from pulling and tensioning may occur within a 150-m (500-ft) radius of the outside of the angle structure. As with structure sites vegetation in the work areas would be cut only to the extent necessary to allow vehicle passage (drive-over). After line construction, disturbed areas would be graded to blend as near as possible with the natural contours and the disturbed areas would be reseeded as necessary. Pulling and tensioning sites are shown in Figure H-1, Sheets 1-7.

Pole and Conductor Installation

The poles, cross arms, and other required material would be transported through the right-of-way to each pole location. In sequence the appropriate materials would be connected to the pole, the hole would be augured, and the poles would be lifted up by a crane and set into the hole. Once the poles are in place, the conductor (wire) would be strung and ample tension would be applied to meet or exceed NESC standards (Marne, 2007). Reels of conductor and ground wire would be delivered to various staging areas along the right-of-way, as described above.

Ground based methods of conductor installation would be used. With this method, ropes would be hung from the stringing sheaves and a pilot line would then be strung along the ground and attached to each rope at the structure location. The pilot line would then be pulled up to the sheave and pulled through until all sheaves within a pull section have the pilot line installed. At that time, the pilot line would be attached to the pulling line which would be pulled back through before attaching to the conductor for the final pull through. The conductors and ground wire would be strung using powered pulling equipment at one end and powered braking or tensioning equipment at the other end. Once the proper tension was achieved in a pull section, crews would clamp the wires to the insulators and remove the pulleys. Upon completion of this task, any graded areas would be restored to original contours and reseeded. Because the terrain is relatively flat, grading is not expected. The number of workers and types of equipment required to construct the proposed transmission line are shown in Table H-1.

Substation Installation and Modifications

The design, construction, operation, and maintenance of the new Twin Buttes Substation will meet or exceed the requirements of the NESC, OSHA regulations, and RMP's requirements for safety and protection of landowners and their property. The proposed substation will sit within a 6-ha (15-ac) site on AES property located adjacent to the EREF.

Initial design plans show the proposed Twin Buttes substation contained within an approximate 2.1-ha (5.2-ac) fenced area and secured by a 2.1-m (7-ft) high chain link fence topped with 0.3-m (1-ft) of barbed wire. The fenced area is approximately 174-m by 122-m (570-ft by 400-ft)

and will have a gravel surface. The Twin Buttes Substation will have been previously excavated and grading as part of the AES activities within the EREF disturbed area. The substation will consist of the following typical substation components within the fenced area of the substation:

- Control building; approximately 8.5-m × 12.2-m (28-ft × 40-ft)
- Generator (propane or diesel)
- 161-kV power circuit breakers
- 161-kV air break switches
- 161-kV metering units
- 161-kV surge arresters
- 161-kV capacitive coupled voltage transformers (CCVTs)
- 161-kV station service voltage transformers (SSVTs)
- Steel dead end structures; 15.2-m (50-ft) pull-off, 18.3-m (60-ft) height, and possibly a 6.1-m (20-ft) lightning rod in addition to the 18.3-m (60-ft) height)
- Miscellaneous steel support structures, and
- Miscellaneous buswork.

The control building will contain protective relaying and control equipment associated with the transmission portion of the substation. Within the switchgear and control enclosures, equipment for full SCADA system functions and digital metering will be installed to allow control and monitoring of the substation from a remote location.

The substation would be constructed in phases: 1) site preparation (construction of the access drive, clearing and grading); 2) construction of the substation yard; 3) installation of the substation equipment including transformers; 4) tie-ins to the overhead transmission line; 5) energizing of the substation; and 6) site restoration and stabilization.

The general sequence of events that takes place during the construction of a substation includes:

- Placement of erosion and sedimentation control barriers
- Removal of vegetation from the proposed fenced area and access drive
- Construction of the access drive
- Preparation of the substation site (cut, fill, grading)
- Installing fence, substation foundations, buried conduits and the ground grid
- Spreading trap rock (gravel)
- Installing electrical components and hardware
- Installing tie-ins to transmission lines
- Energizing substation
- Completing site stabilization, landscaping and site restoration, and
- Removing erosion control barriers upon completion of site stabilization.

The number of workers and types of equipment required to construct the proposed substation are shown in Table H-2. Concrete foundations that are steel reinforced will be installed below grade for structural steel supports, dead end towers, and bus supports within the substations. The size and depths will be determined during detailed design.

In addition to construction of the new Twin Buttes Substation, some modifications to the Bonneville Substation will be required to accommodate connections to the existing 161-kV distribution system for the new transmission line. The Bonneville Substation will be expanded by 19.8-m (65-ft) to the east to support this project. The expanded fenced area, approximately 165-m × 110-m (540-ft × 360-ft), will remain within the RMP-owned property. There will be cut and fill requirements at the Bonneville Substation sites. RMP will identify the volume of topsoil and subsoil to be removed once a design is completed. The existing Bonneville Substation fenced area is approximately 52-m × 101-m (170-ft × 360-ft). It is anticipated that up to approximately 0.46-m (1.5-ft) of surface soil may be excavated at the Bonneville substation. No changes are identified at the Kettle Substation at this time. A new 161-kV ring bus (configured as a breaker-and-a-half) will be installed and tied back into the existing substation bus. The following equipment is proposed to be installed within the Bonneville Substation:

- Control building; approximately 8.5-m × 12.2-m (28-ft × 40-ft)
- Generator (propane or diesel)
- 161-kV power circuit breakers
- 161-kV air break switches
- 161-kV CCVTs
- 161-kV SSVTs
- 161-kV surge arresters
- 69-kV capacitor banks
- Steel dead end structures (as described above)
- Miscellaneous steel support structures, and
- Miscellaneous buswork.

Incoming Shipments

High-voltage circuit breakers will be shipped from Medford, Oregon with approximately 1-2 truck shipments. The transport distance is approximately 1287-km (800-mi).

2.3.2 Operation and Maintenance

Operation

RMP will own, operate and maintain the 161-kV transmission line and Twin Buttes Substation. The nominal voltage for the project is 161-kV. There could be minor variations of up to 5 percent above the nominal level depending upon load flow. When the transmission and distribution lines have been energized, land uses that are compatible with safety regulations may be permitted in and adjacent to the right-of-way. In previous projects, existing land uses such as agriculture and grazing generally have been permitted within the right-of-way. Incompatible land uses within electrical rights-of-way include construction and maintenance of

inhabited dwellings and any use requiring changes in surface elevation that would compromise required conductor clearances of existing or planned facilities.

Safety is a primary concern in the design of transmission systems. The transmission line would be protected with power circuit breakers and related line relay protection equipment. If conductor failure were to occur, power would be automatically removed from the affected transmission line. An overhead ground wire along the transmission line provides lightning protection.

The nominal voltage for the Twin Buttes Substation will be 161-kV alternating current (AC). There could be minor variations of up to five percent above the nominal level depending upon load flow. The entire proposed substation site will be fenced to prevent encroachment from wildlife and unauthorized human entry. The substation will be protected with power circuit breakers and related protection and control equipment. If a failure were to occur in the system, power would be automatically removed from the affected lines.

Inspection

RMP will own, operate and maintain the 161-kV transmission line and Twin Buttes Substation. The local inspections for the transmission line and substations are conducted every 2 years and would be performed from the ground. Maintenance is schedule based upon the results of the inspections. For non-emergency inspection, maintenance, and repairs, the field crews will travel within the right-of-way and access the right-of-way from access roads used during construction. There are no historic or cultural resources sites along the proposed transmission line corridor, thus, no precautions are needed during inspection and maintenance activities regarding these resources. Inspection and maintenance crews would be dispatched out of RMP facilities located in Shelley, Idaho. Shelley, Idaho is located approximately 12.8-km (8-mi) southwest of Idaho Falls, Idaho, and approximately 45-km (28-mi) from the proposed EREF. The inspection crew would normally consist of several workers in a single pickup truck driving the length of the transmission line (22.1-km (13.75-mi)). These inspections would be conducted to locate damaged conductors, insulators, structures, transformers, and other equipment and to report any abnormal conditions that might hamper the normal operation of the line and substations. During these inspections, the condition of vegetation within the right-of-way, as well as immediately adjoining the right-of-way, will be noted. These observations will then be used to plan corrective maintenance or routine vegetation management.

Maintenance

RMP will own, operate and maintain the 161-kV transmission line and Twin Buttes Substation. The local inspections for the transmission line and substations are conducted every 2 years and would be performed from the ground. Maintenance is schedule based upon the results of the inspections. Structures used in transmission line construction typically last 40 years or more before needing to be replaced. Detailed pole inspections, testing and treatments generally occur once every 10 years. In the event that a structure must be replaced, the structure would normally be lifted out of the ground by truck-mounted crane-like equipment and the replacement structure inserted into the same hole or an immediately adjacent hole. Access to the structures would be on existing roads and travel within the right-of-way.

Emergency maintenance would involve prompt movement of repair crews to repair or replace any damage to the lines or substation components. Maintenance crews would be instructed to protect crop, plant, and wildlife resources. There are no biological, and no cultural and historic resources, or other resources of significance within the transmission line corridor. Maintenance

activities would be performed in a similar manner to the original construction, as described above. When maintenance or access causes damage to existing resources or roads, restoration procedures following completion of repair work will be similar to those prescribed for normal construction.

The comfort and safety of local residents will be a primary concern during maintenance activities. Noise, dust and the danger presented by maintenance vehicle traffic will be limited to the extent possible (see Section 2.3.3). Equipment required for maintenance activities on the transmission line is dependent upon the type of maintenance required. Equipment that can be expected for maintenance activities will likely not differ from equipment needed for general construction of the line.

Vegetation Management

Some management of vegetation along the right-of-way would be necessary to ensure access to structures and to maintain an adequate distance between transmission line conductors and vegetation. For the 161-kV or 69-kV transmission lines, minimum clearance would be 7.9-m (26-ft) above ground. The 25-kV underbuild would have a minimum of 7-m (23-ft) clearance above ground. Given the land use in the area of this project, right-of-way maintenance is expected to be minimal. There are no trees in the proposed right-of-way corridor. The principal management technique would be mechanical mowing and would be based on the results of the periodic inspections described above. Other than vegetation management, little other maintenance work would normally be required.

2.3.3 Mitigation Measures

A number of BMPs and other mitigation measures would be implemented as part of this project to reduce or eliminate the potential for adverse impacts to the human and natural environment. Although no substantial impacts are anticipated with implementation of the Proposed Action, the following measures have been identified to enhance protection of certain resources that could potentially be affected by construction, operation and maintenance of the proposed transmission line. These mitigation measures have been developed to reduce or eliminate adverse impacts from project activities, have been employed and proved effective in similar circumstances and conditions, and are incorporated as an integrated part of the Proposed Transmission Line Action.

Noise

Construction noise in any specific location would typically be short-term over the course of the transmission line and substation construction. Advanced notice of construction activities would be given to landowners and residents potentially affected by construction activities. Nighttime construction near noise-sensitive land uses (e.g., residences) would be avoided. Consistent with the EREF, construction activities with the potential for noise or vibration at residential areas that could have a negative impact on the quality of life will be performed during the day-time hours (7:00 a.m. - 7:00 pm). Given the localized, short-term and intermittent nature of construction activities, with implementation of this mitigation measure, noise impacts will be small.

Reclamation

As applicable, all graded areas will be restored to original contours to the extent possible and reseeded with an appropriate seed mix. RMP's construction contractor will restore all lands disturbed by that contractor including, but not limited to: access roads, rights-of-way, tensioning

and pulling sites, structure sites, and other construction sites or storage areas. The upper 15-cm (6-in) of soil may be removed during the clearing process and stockpiled separately from other grading stockpiles. This material will be replaced upon completion of construction activities.

Timing Restrictions

The project transmission line route contains suitable habitat for the greater sage-grouse. Thus, sage-grouse may be present in the proposed project area. No sage-grouse leks occur within the 91-m (300-ft) corridor surrounding the centerline of the proposed transmission line centerline. No raptor nests have been identified along the project corridor.

Noxious Weed Control

Equipment and supplies necessary for the construction and reclamation of roads and transmission lines are possible causes of the spread of noxious weeds. Therefore, the following guidelines will be employed during construction and the reclamation stages of the transmission line project to control the spread of noxious weeds:

- Construction equipment, materials and vehicles will be stored at the sites where construction will occur or at specified construction yards. All personal vehicles, sanitary facilities and staging areas will be confined to a limited number of specified locations to decrease chances of incidental disturbance and spread of weeds.
- To help limit the spread and establishment of a noxious weed community within the disturbed areas, prompt establishment of the desired vegetation will be required. Seeding will occur at the appropriate season following the completion of construction activities. Certified “noxious weed-free” seed will be used on all areas to be seeded. Other construction material, such as fill, will also be free of noxious weed seed.

Soil Preservation

The anticipated effects on the soil during construction activities are limited to a potential short-term increase in soil erosion. However, this will be mitigated by proper construction BMPs which include minimizing the construction footprint to the extent possible, limiting site slopes to a horizontal to vertical ratio of four to one or less, protection of undisturbed areas with silt fencing and straw bales as appropriate, and site stabilization practices such as placing crushed stone on top of disturbed soil in areas of concentrated runoff. RMP will develop a Storm Water Pollution and Prevention (SWPP) Plan for both the substations and transmission line construction.

RMP will obtain a National Pollutant Discharge Elimination System (NPDES) General Permit from Region 10 of the EPA to establish the provisions for meeting stormwater regulations during construction. A storm water pollution prevention plan (SWPPP) will be developed by RMP to prevent impacts to land and groundwater during construction. Construction details of stormwater pollution prevention plans are required to be provided to EPA as part of the Notice of Intent to obtain the NPDES permit.

The BMPs will be designed to reduce the probability of hazardous material spills and stormwater runoff from contacting potential contaminant sources related to construction activities, and will be consistent with those for the EREF. The BMPs will also be used for dust control associated with excavation operations during construction. The following controls will also be implemented:

- Construction equipment will be in good repair without visible leaks of oil, greases, or hydraulic fluids.

- The control and mitigation of spills during construction will be in conformance with the Spill Prevention Control and Countermeasure (SPCC) Plan.
- BMPs will be used to control stormwater runoff to prevent releases to nearby areas to the extent possible.
- Silt fences will be used near drainage ditches or other areas requiring protection. No culverts would be required. Where necessary, incised washes may be contoured and restored.
- Any hazardous materials will be handled by approved methods and shipped off site to approved disposal sites.
- Sanitary wastes generated during site construction will be handled by portable systems. An adequate number of these portable systems will be provided. The sanitary waste will be transported offsite.
- Control of surface water runoff will be required for activities covered by the NPDES Construction General Permit.

Prior to RMP construction activities within the EREF disturbed area, initial construction activities such as ground clearing and grading of the previously undisturbed areas will be complete and environmental concerns that accompany the RMP construction within the EREF disturbed area will have been mitigated. For construction activities within the EREF property, which includes transmission line and the Twin Buttes Substation construction, RMP will comply with the AES practices, procedures, and applicable mitigation measures for construction activities.

Groundwater

RMP will obtain a NPDES Construction General Permit from Region 10 of the EPA and a SWPPP will be developed to prevent impacts to land and groundwater during construction (see Section 1.5.1).

Hazardous Materials

A Spill Prevention, Control, and Countermeasure (SPCC) plan will be implemented by RMP to minimize the possibility of spills of hazardous substances, minimize the environmental impact of any spills, and promptly initiate appropriate remediation. The SPCC plan will identify sources, locations and quantities of potential spills related to transmission line and substation construction, maintenance, and inspection and the response measures. The plan will also identify individuals and their responsibilities for implementation of the plan and provide for prompt notifications of state and local authorities as needed.

During the transmission line construction phase, sanitary wastes will be handled by adequately maintained temporary sanitary facilities. Sanitary waste generated during this time will be temporarily stored at these sanitary facilities and will be shipped off-site for processing.

Air Quality

Potential impacts to air quality will be from fugitive dust caused by construction activities and vehicle exhausts. Mitigation measures such as watering to minimize fugitive dust will be used as necessary to minimize potential impacts on air quality. Detailed analysis of emission factors and air quality dispersion models related to construction of the much more substantive EREF showed that air concentrations of the criteria pollutants resulting from vehicle emissions and fugitive dust during construction will be maintained below National Ambient Air Quality Standards (NAAQS). Because activities with the potential to impact air quality are much less with the transmission line construction than with the EREF, impacts to air quality are expected

to be negligible. Refer to the EREF ER Section 4.2 for additional discussion regarding air quality impacts.

Historical and Cultural Resources

A field survey of a 91-m (300-ft) width along the transmission line centerline (up to the previously surveyed area for the EREF) was conducted to identify archaeological resources that may occur in the transmission line corridor. There are no historical and cultural sites along the transmission line corridor.

On the EREF site, Site MW004 (identified in the EREF Cultural Resources Studies) is in the location of the Twin Buttes Substation. AES will develop a treatment plan for Site MW004 in conjunction with the Idaho SHPO, and mitigation measures for Site MW004 will be stipulated. The treatment of Site MW004 will occur prior to any transmission line construction activities in that location. Refer to the EREF ER Section 4.8 for additional information regarding Site MW004.

In the event that any inadvertent discovery of human remains or other items of archeological significance is made during construction, construction activities will immediately cease in the area around the discovery and the Idaho SHPO will be notified to make the determination of appropriate measures to identify, evaluate, and treat these discoveries. RMP will provide an Unanticipated Discoveries Plan and will communicate these requirements to construction workers, including contractors, prior to commencement of construction, and for any new personnel that join the construction team prior to their involvement in construction activities.

Fire Prevention

During construction, operation, and maintenance of the transmission line, all construction vehicles, gas-powered equipment, and flues would be equipped with spark arrestors to prevent accidental fire starts. Equipment would not be parked on tall grass or other vegetation.

Once operational, the potential for fire is virtually non-existent where steel poles are used. Where wood is used there is the potential for leaked current to find its way to the pole. This can happen when contamination is built up on the insulators causing leaked current to transfer to the structure. Another potential issue with wood is the ground wire; if it becomes contaminated or severed it does not perform and causes resistance in the line. This, in turn, causes build up of heat because of leaked current and the pole can catch fire. As with any transmission line, the possibility of mechanical failure of structures, insulators, clamps, or other equipment exists. When this occurs, the structures no longer support the energized conductor which can cause the line to fall to the ground and start a fire.

Vegetation Management

Rocky Mountain Power uses best management practices in addressing vegetation management around its substations and transmission lines. The substations have a copper ground grid that extends approximately 4 feet outside the substation fenced area. Within this area, all vegetation is removed to keep the substation area clear of vegetation. The local inspections for the transmission line and substations are conducted every 2 years. Maintenance is schedule based upon the results of the inspections.

The transmission line corridor is on private property. The proposed transmission line route is composed of irrigated agricultural land, pasture land, crested wheat grass plantings, and sagebrush steppe. Given the land use along the transmission line corridor, right-of-way vegetation maintenance along the transmission line corridor is anticipated to be minimal along the agricultural, pasture, and crested wheat grass lands. There are no trees in the proposed transmission line corridor. Brush within the right-of-way would be lowered, as needed, to allow

overland travel. The principal management technique would be lowering by mechanical means, and would be based on the results of local inspections conducted every two years.

Consistent with vegetation management along the existing 69-kV transmission line which is approximately 14.5-km (9-mi) of the proposed 22.1-km (13.75-mi) transmission line, vegetation management other than lowering brush by mechanical means is not anticipated. Given the land use along the transmission line corridor, it is not anticipated that vegetation management would be necessary to maintain the minimum clearance for the transmission line conductors.

3.0 AFFECTED ENVIRONMENT

A number or resources were considered in the analysis for this ER. Many of these were determined to be absent from the transmission line project area and, as a result, are not discussed further in this document. These include Areas of Critical Environmental Concern; Floodplains; Fisheries; Forest Resources; Wetland and Riparian Zones; Wild and Scenic Rivers; Wild Horse and Burro Herd Management Areas; and Wilderness.

Other resources were determined to be present in the area but will not be impacted by the proposed activities. These include Economic and Social Values; Mineral Resources; Native American Religious Concerns; Paleontological Resources; and Recreation Use. The Proposed Action is consistent with the prevalent economic and social values of the area. Although minor short-term beneficial impacts on the local economy may occur because of construction activities, the magnitude of these effects would not be significant. The Proposed Action will affect surface soils along the access points and rights-of-way, but there are no mineral resources present in the project area that will be affected by the construction, operation, or maintenance activities associated with the proposed transmission line. There are no known Native American ceremonial sites or religious resources present in the project area that will be affected by the Proposed Action. Consultation with the Shoshone-Bannock Tribes has occurred. There are no known paleontological resources located in the project area. Paleontological resources in this region are generally limited to caves associated with lava flows. No caves were located along the proposed transmission line routes. The nearest known paleontological resources are associated with the Wasden Cave Complex, located approximately 1.0-km (0.6-mi) from the northeast boundary of the EREF site. The Proposed Action will not affect recreational uses that occur in the area, since the primary recreational uses in the area include hiking trails that are on the south side of U.S. Highway 20. These resources also will not be discussed further in this document.

Resources that may be present in the project area are described below and potential impacts that may result from implementation of the Proposed Action are described in Chapter 4. These include Access; Air Quality; Cultural Resources; Environmental Justice; Existing and Potential Land Uses; Invasive, Non-native Plant Species; Migratory Birds; Soil Resources; Threatened, Endangered, and Sensitive Plants; Threatened, Endangered, and Sensitive Animals; Tribal Treaty Rights; General Vegetation; Visual Resources; Wastes, Hazardous and Solid; Water Quality, Surface and Ground; and General Wildlife.

3.1 ACCESS

Except for one new access road, the proposed transmission line route will be accessed primarily by U.S. Highway 20 and West 65 North Street, or from the proposed EREF property using the EREF construction access road and existing access roads within the proposed EREF property. as described in Section 2.3.1. For the most part, vehicles would use existing roads to gain access to the transmission line right-of-way. Where roads do not exist, overland travel would

occur along the proposed centerline for construction and maintenance of the transmission line. Lands along the proposed transmission line route are private lands. There are no public or state lands affected by the transmission line route.

Access Road

There is one new access road. The new access road will be a two track access road (dirt road) from the existing dirt farm road on the EREF property to structure 116 on the EREF property (refer to Figure H-1, sheets 2 and 3). This new two track access (dirt) road will be approximately 152.4-m (500-ft) from the existing farm road to the transmission line centerline near structure 116. This new two track access (dirt) road will be constructed by driving a tracked backhoe or tracked caterpillar (dozer) along the location of the new road to establish the two track access road. With the short distance, approximately 152.4-m (500-ft), no drainage areas will be crossed by the new access road. Thus, mitigation measures to reduce erosion at locations of drainage along the new access road are not required.

Design conducted since the field surveys placed a portion of the new two track access road outside the surveyed area. Approximately 106.7-m (350-ft) of the new two track access road is outside the surveyed area. Refer to Figure H-1, sheets 2 and 3. If the final transmission line design confirms that the additional area outside the previously surveyed area is needed, then consistent with the approach in the EREF Environmental Report, surveys will be conducted prior to the activities in the area proceeding. The transmission line corridor will have a two track dirt road within the ROW. This two track road will follow the terrain of the land. Because of the terrain, it is not expected that any grading will be required to allow overland travel. Much of the existing County Road West 65th North Street, which extends from the Bonneville Substation west, will continue to be used to travel along the transmission line ROW. In locations where additional two track road along the ROW is needed, the two track road will be constructed by driving a tracked backhoe or tracked caterpillar (dozer) along that location to establish the two track dirt road.

Construction equipment used for the transmission line construction will be used to create the two track access (dirt) road. No additional equipment is required. Upgrades to existing access roads are not anticipated because these roads are all in working order. Because there are no new access roads along U.S. Highway 20, traffic on U.S. Highway 20 will not be impacted.

Substation Access

The substation access points will have a gravel road base surface designed for heavy loading. The substations would be designed and constructed in a manner to prevent and control accidental spills from affecting adjacent land uses. The ground level of the substation yard would be graded to direct the flow of water runoff away from equipment and the control building.

The substation yard would be covered with a layer of crushed rock (four or more inches thick) that would help inhibit flow of water or other liquids, and would serve as an absorbent in the event of an accidental spill. Berms, or other barriers, would be used around the perimeter of the substation yard (along the fence line) to control runoff. Also, containment pits would be constructed at the base of equipment to contain spills.

Installation of the power source – from the Bonneville Substation to the Twin Buttes Substation – would require the following rights-of-way or easements: 22.1-km (13.75-mi) on private lands - including 6.4-km (4.0-mi) on AES property. Most of this length would be accessed from the existing county road (West 65 North Street) or from the AES property. Access to West 65 North Street or to any of the private lands north or south of the proposed route would not be impaired.

3.2 AIR QUALITY

The Clean Air Act of 1970 (USC, 2009h) established NAAQS for the control of criteria air pollutants to protect human health and the environment, and to prevent adverse effects to national air resources. The major pollutants of concern or "criteria pollutants" are carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), suspended particulate matter less than 10 microns (PM_{10}), and lead. Areas that do not meet the standards set for these pollutants are called "non-attainment" areas. IDEQ monitors air quality using the Air Quality Index (AQI) for five of these air pollutants (all but lead) (IDEQ, 2009a). The nearest air quality monitoring location to the proposed transmission line corridor is located in Idaho Falls. The AQI category at this monitoring site is typically "good" (IDEQ, 2009a), with seasonal fluctuations caused by increases in dust associated with agricultural activities and increases in particulate matter associated with wildfires and seasonal use of wood burning stoves at residential properties in the area.

In addition to requirements under Section 176(c), General Conformity, of the Clean Air Act, the EPA's prevention of significant deterioration (PSD) program is designed to keep an attainment area in continued compliance with NAAQS. For actions in attainment areas, PSD Program approval would be required if the action includes a new major stationary source (generating more than 250 tons per year) or major modification to an existing major source (40 CFR 52.21). Mobile emission sources, such as vehicular and construction equipment emissions, and blowing dust are the primary contributors to air pollutant emissions along the proposed transmission line routes.

3.3 CULTURAL RESOURCES

The Snake River Plain has been an area of human occupation by hunter and gathering populations for at least the past 12,000 to 15,000 years. Within southeastern Idaho, the prehistoric cultural chronology is organized into three major periods: Early Prehistoric (15,000-7,500 Before Present (B.P.)), Middle Prehistoric (7,500-1,300 B.P.), and Late Prehistoric (1,300-300 B.P.). The Protohistoric Period (300-150 B.P.) began with the presence of European trade goods in archaeological assemblages. The Euro-American presence in the area dates from the early 1800s.

A file search was conducted by the Idaho SHPO for previous projects that have occurred within 1.6-km (1-mi) of the proposed transmission centerline. Four (4) previous cultural resource projects have occurred in the vicinity of the proposed transmission route. These projects have recorded a total of 36 sites within 1.6-km (1-mi) of the project area. All of these are located within the EREF and were discovered during the field surveys described in the EREF ER. No new sites were recorded as a result of the survey carried out for this ER. An archaeological survey report has been prepared and will be submitted to the Idaho SHPO. Mitigation measures for unanticipated discoveries of archaeological resources during construction are included as part of the Proposed Action (see Section 2.3.3) and are expected to minimize potential impacts to archaeological resources.

Additional details concerning the archaeological survey, including methods are contained in the report that has been prepared and will be submitted to the Idaho SHPO. A separate archaeological survey was performed for the EREF Area of Disturbance. The results of that study and mitigation measures that will be implemented for sites on the EREF, are identified in the EREF ER Sections 3.8 and 4.8, and the EREF Class III Cultural Resource Inventory Report of the Proposed Eagle Rock Enrichment Facility.

3.4 ENVIRONMENTAL JUSTICE

NEPA (42 USC Section 4321–4347) requires that all actions sponsored, funded, permitted, or approved by federal agencies undergo planning to ensure that considerations such as environmental justice are given due weight in project decision-making. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, signed by the President on February 11, 1994, directs federal agencies to take appropriate and necessary steps to identify and address disproportionately high and adverse effects of Federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law.

The Council on Environmental Quality (CEQ) and EPA have provided suggestions and guidance for addressing environmental justice issues under NEPA (CEQ, 1997; EPA, 1998). The guidelines provided by the CEQ and EPA indicated that a minority community may be defined as either: (1) where the minority population comprises more than 50 percent of the total population, or (2) where the minority population of the affected area is meaningfully greater than the minority population in the general population of an appropriate benchmark region used for comparison. Minority communities may consist of a group of individuals living in geographic proximity to one another, or a geographically dispersed set of individuals who experience common conditions of environmental effect. Communities sensitive to unjustly high health and environmental impacts are primarily areas in which over 50 percent of the population are minorities and low-income populations.

The population of Bonneville, County is predominantly non-Hispanic white, comprising approximately 87 percent of the total population in 2008. Hispanic or Latinos are the largest minority group comprising 10 percent of the total population in Bonneville County (USCB, 2009). Bonneville County does not have minority populations that exceed 50 percent of the total population. As a result, it does not meet the definition of a “minority community” based on the criteria that the minority population comprises more than 50 percent of the total population.

The percent of the population below the poverty level in Bonneville County in 2007 was 10.8 percent. The percent of the population below the poverty level in Idaho in 2007 was lower than the national average (12.1 percent versus 13.0 percent) (USCB, 2009). The percent of the population below the poverty level was well below 50 percent in all cases. As a result, this area does not meet the definition of a “low-income community” based on the criteria that 50 percent of the population be below the poverty level.

3.5 EXISTING AND POTENTIAL LAND USES

The general geographic area consists primarily of private agricultural lands and rangelands. Topography within the project area consists of flat plains and agricultural lands with some rolling hills and lava outcrops. Portions of the proposed transmission line route are being used as agricultural crop fields to raise small grains, potatoes, and alfalfa. Small parcels of land located primarily on the eastern end of the proposed transmission line route are used for agricultural related facilities (i.e., potato cellars, shops, grain silos, and other related outbuildings) and for single family residential homes. There are two residences along the proposed route, one is used for migrant farm labor and the other is a permanent residence with a shop and other farm-related outbuildings. Both of these properties are currently transected by the existing transmission line that parallels West 65 North Street. In these locations there would be pole for pole replacement for the new transmission line.

The rangeland allotments in the area of the EREF are shown on Figures H-7a and H-7b. The Twin Buttes allotment is west and north of the proposed EREF property. The Kettle Butte allotment is east of the proposed EREF property. The proposed 161-kV transmission line

crosses the Kettle Butte allotment along private lands, replacing the existing 69-kV transmission line that crosses the Kettle Butte allotment. There is cattle grazing within the allotment and this cattle grazing will be continued during the construction and operation of the proposed 161-kV transmission. The North Kettle allotment is a small allotment north of the Kettle Butte allotment. The small parcel of public land within the southern portion of the proposed EREF property is the Twenty Mile allotment. The proposed 161-kV transmission line does not cross the allotment.

The Croft allotment shown on Figure H-7b is located south of the Bonneville Substation. Its northern border is located approximately 1.2-km (0.75-mi) south of the Bonneville Substation with the allotment extending south to U.S. Highway 20. The existing 161-kV transmission line corridor that supplies the Bonneville Substation from the south crosses the Croft allotment. The proposed 161-kV transmission line does not cross the allotment.

3.6 INVASIVE, NON-NATIVE SPECIES

Non-native species, also referred to as exotic or invasive, are not a natural component of the ecosystem. Executive Order 13122, Invasive Species, states that federal agencies are to prevent the introduction of invasive species, provide for their control, provide for restoration of native species and habitat conditions in ecosystems that have been invaded, and minimize the economic, ecological, and human health impacts that invasive species cause. Plants are considered invasive if they have been introduced into an environment where they did not evolve. As a result, these introduced species usually have no natural enemies to limit their reproduction and spread. Some invasive plants can produce significant changes to vegetation, composition, structure, or ecosystem function (BLM, 2009a).

Some invasive weeds have been designated “noxious” by law. Noxious weed is a legal term, meaning any plant officially designated by a federal, state, or local agency as injurious to public health, agriculture, recreation, wildlife, or property (Shelley and Petroff, 1999). Of the hundreds of weed species in Idaho, 57 have been designated noxious by Idaho law (IASCD, 2009).

Disturbed areas along the proposed transmission line corridor contain common invasive weed species; however their presence is limited overall. These species include Russian thistle (*Salsola kali*), kochia (*Kochia scoparia*), cheatgrass (*Bromus tectorum*), and peppergrass (*Lepidium* sp.). These species are found along roadsides, in the corners of agricultural fields that do not receive water from center pivot irrigation systems, and in other areas where disturbance has occurred. State-listed noxious weeds such as Canada thistle (*Cirsium arvense*) and musk thistle (*Cirsium vulgare*) are also present within disturbed sites. These species are found in areas that tend to have more moisture such as depressions and roadside areas with existing culverts.

3.7 MIGRATORY BIRDS

There are more than 800 species of birds that occur regularly in North America, of which approximately 270 can be found in Idaho at one time or another throughout the year. Most of these birds regularly breed in Idaho (243 species), whereas a handful occur in the state only in the winter or during migration (IDFG, 2009a). Approximately half of Idaho’s breeding bird species are considered migrants (i.e. they come to Idaho only to nest and raise their young). These species may spend their winters in states to the south (e.g., California, Arizona, or Texas) or may travel considerable distances to countries in Central and South America during annual migrations. Species traveling south of the U.S./Mexico border are called Neotropical migratory birds and are of particular interest to ornithologists because so many of them are experiencing significant population declines. Due to these declines, a number of Idaho’s birds have been classified as priority species and are ranked as Species of Greatest Conservation

Need by the IDFG's new Comprehensive Wildlife Conservation Strategy (IDFG, 2009a). These species are also protected by the Migratory Bird Treaty Act of 1918, as amended.

Sagebrush steppe habitats that are present within the transmission line corridor provide suitable breeding, nesting, roosting, and foraging/hunting habitat for migratory bird species that are managed under the State of Idaho Comprehensive Wildlife Conservation Strategy and protected under the Migratory Bird Treaty Act. Some of the migratory bird species that are anticipated to seasonally use sagebrush habitat within the transmission line corridor include: sage thrasher (*Oreoscoptes montanus*), sage sparrow (*Amphispiza belli*), Brewer's sparrow (*Spizella breweri*), and Swainson's hawk (*Buteo swainsoni*).

3.8 SOIL RESOURCES

The proposed transmission line corridor lies within the Snake River Plain volcanic field. Most of the Eastern Snake River Plain, which encompasses the project area, is covered with basaltic materials; sedimentary deposits are interspersed throughout the basalt flows. The U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS, 2009) was reviewed to identify soil associations found within the proposed transmission line corridor. Pancheri silt loams cover most of the proposed transmission line corridor with smaller inclusions of rock outcrops and lava flow (Table H-5).

Characteristics of the soil types present in the project area were reviewed to determine the potential for effects from construction of the proposed transmission line. These soils have a slight to moderate risk of erosion caused by wind. The majority of the soils within the transmission line corridor have a moderate to severe hazard of erosion when used as roads or trails. None of the soils are identified as having hydric characteristics. Parent material varies for the soil units present in the project area and include loess, loess over bedrock derived from basalt, mixed alluvium, mixed alluvium over bedrock derived from volcanic rock, and mixed alluvium over bedrock derived from volcanic basalt (NRCS, 2009).

The Pancheri soils are found extensively in the loess covered lava plains of southeastern Idaho. The Pancheri series consists of deep and very deep well drained soils with medium or slow runoff and moderate permeability. The other soils found in the project area are moderately extensive throughout southeast Idaho.

The Pancheri soils are appropriate for cultivation under irrigation for hay, pasture, potatoes, sugar beets, and small grain. The principal native plants found on the Pancheri soils are big sagebrush (*Artemisia tridentata*), bluebunch wheatgrass (*Pseudoroegneria spicata*), Sandberg bluegrass (*Poa secunda*), rabbitbrush (*Chrysothamnus* spp.), Indian ricegrass (*Achnatherum hymenoides*), and a variety of forbs. The other soil types found in the project area are appropriate for use primarily as rangeland and for wildlife habitat. Vegetation on these other soils is mainly Wyoming big sagebrush (*Artemisia tridentata* ssp.w*yomingensis*) and bluebunch wheatgrass with basin big sagebrush (*Artemisia tridentata* ssp. *tridentata*) and basin wildrye (*Leymus cinereus*) found to a lesser degree. Crested wheatgrass (*Agropyron cristatum*) is common throughout the project area where it has been planted following wildfires (see Section 3.12).

Prime and unique farmlands are a special classification of soils identified by the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). The NRCS is responsible for the preservation of prime or unique farmlands as outlined in the Farmland Protection Policy Act. The Act assures that, to the extent possible, federal programs are administered to be compatible with states, local units of government, and private programs and policies to protect farmland. This Act is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. Prime

farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor and without intolerable soil erosion. Prime farmland has the soil quality, growing season, and moisture supply needed to produce economically sustained high yields of crops when treated and managed according to acceptable farming methods, including water management. In general, the characteristics of prime farmlands include having an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no rocks.

The NRCS Web Soil Survey (NRCS, 2009) was reviewed to identify soil types within the proposed transmission line corridor that are classified as prime and unique farmlands. The NRCS has designated three soil types that occur within the proposed transmission line corridor as prime farmland if irrigated (NRCS, 2009). The eastern portion of the project area contains agricultural croplands comprised of these soil types that are currently irrigated using center-pivot irrigation systems. These soil types are Pancheri silt loam, 0 to 2 percent slopes; Pancheri silt loam, 2 to 4 percent slopes; and Menan silt loam, 0 to 2 percent slopes. Existing transmission lines, which parallel West 65 North Street, are present in the portion of the project area that contains these soils. The soils within the rest of the project area are not irrigated and therefore do not meet the criteria for designation as prime farmland.

3.9 THREATENED, ENDANGERED, AND SENSITIVE PLANTS

One of the sensitive plant species (Ute ladies'-tresses (*Spiranthes diluvialis*)) is an ESA-listed species and has been identified as occurring within Bonneville County (USFWS, 2009). Populations of the Ute ladies'-tresses have been identified within riparian corridors and wetland habitat along the banks of the South Fork Snake River in central and eastern Bonneville County. The proposed transmission line corridor does not contain any riparian or wetland habitat which would provide suitable habitat for the Ute ladies'-tresses. A list of sensitive species (plants, insects, amphibians, birds, mammals) that potentially occur within the project area is provided in the EREF ER Table 3.5-4.

Seven (7) other State-listed plant species occur in Bonneville County (Table H-6). No suitable habitat exists for any of these species in or near the proposed transmission line corridor.

3.10 THREATENED, ENDANGERED, AND SENSITIVE ANIMALS

This section assesses potential impacts to terrestrial animal species that may occur from the installation of the proposed transmission line and substation. Due to the lack of water within the transmission line corridor, fisheries species were not assessed. The terrestrial species analyzed include ESA-listed species; Species of Greatest Conservation Need, identified by the State of Idaho Department of Fish and Game (State-listed species); and BLM special status species.

A list of sensitive species (plants, insects, amphibians, birds, mammals) that potentially occur within the project area is provided in the EREF ER Table 3.5-4. ESA-listed species include those that have been designated as threatened, endangered, or candidate species by the USFWS or the National Oceanic and Atmospheric Administration (NOAA) Fisheries. These species are afforded protection under the ESA of 1973, as amended, to prevent these species from being further impacted by actions that would potentially result in the loss of habitat or direct loss of individuals (i.e., take). Classification of these species include: endangered, threatened, experimental non-essential populations, proposed, and candidate. Definitions of these ranking are as follows (IDFG, 2005):

- Endangered: Species in danger of extinction throughout all or a significant portion of its range.
- Threatened: Species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
- Experimental Population, Non–essential: A population (including its offspring) of a listed species designated by rule (published in the Federal Register) that is wholly separate geographically from other populations of the same species. An experimental population may be subject to less stringent prohibitions than are applied to the remainder of the species to which it belongs. An experimental "non–essential" population is a population whose loss would not appreciably reduce the prospect of survival of the species in the wild.
- Proposed: Species proposed in the Federal Register to be listed as endangered or threatened under Section 4 of the ESA.
- Candidate: Species for which USFWS or NOAA Fisheries has on file sufficient information on biological vulnerability and threats to support a proposal to list as endangered or threatened.

The State of Idaho has developed a Comprehensive Wildlife Conservation Strategy that presents a list of 229 wildlife species that have been designated as Species of Greatest Conservation Need (IDFG, 2005). These species are those that have been ranked by the state as S1 through S4, or other state rankings. Definitions of these rankings are as follows:

- S1: Critically Imperiled: At high risk because of extreme rarity (often five or fewer occurrences), rapidly declining numbers, or other factors that make it particularly vulnerable to rangewide extinction or extirpation.
- S2: Imperiled: At risk because of restricted range, few populations (often 20 or fewer), rapidly declining numbers, or other factors that make it vulnerable to rangewide extinction or extirpation.
- S3: Vulnerable: At moderate risk because of restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors that make it vulnerable to rangewide extinction or extirpation.
- S4: Apparently Secure: Uncommon but not rare; some cause for long-term concern due to declines or other factors.

The list of Species of Greatest Conservation Need was analyzed and narrowed down to reflect the species that occur within the general geographic area and occur in habitat types present within or adjacent to the project corridor. Those species that receive protection under the ESA are addressed under the federally-listed species, and not addressed as State-listed species. The species that have the potential to occur within or adjacent to the project area which have been identified by the state as having conservation needs include: four mammals, ten birds, and one insect.

To assess potential impacts to wildlife species, species lists were acquired from federal and state agencies to determine which species have the potential to occur within the proposed transmission line corridor. A list of ESA-listed species was obtained from the USFWS, which identified those listed species that potentially occur within Bonneville County. A list of 229 wildlife species identified by the State of Idaho, which have been designated as Species of Greatest Conservation Need, was presented in the *Comprehensive Wildlife Conservation Strategy* (IDFG, 2005). This list was obtained and compared to the list of species known or suspected to occur within the BLM Idaho Falls Field Office of the Upper Snake River District,

presented in the *Idaho BLM Special Status Animal Species for Districts and Field Offices* (BLM, 2003). This comparison was completed because the list of BLM special status species identifies the species that occur within a given geographic area, whereas the state list of species only identifies the species that occur in the state and does not consolidate the species in a geographic area. The comparison of the two lists narrowed the list of species to those that potentially occur or have suitable habitat within the project area.

Information presented within the Idaho Fish and Game Conservation Data Center (IDFG CDC) was reviewed to identify known occurrences of State of Idaho and federal-listed (ESA-listed) wildlife, fisheries, and plant species within or adjacent to the project area.

Field surveys of the proposed transmission line corridor were performed in October and November 2009, to identify habitat types present within the project area; sign of use by different species; and direct observation of species within the project area. All of this data was compiled to assess potential impacts to ESA-listed species, State-listed species, and BLM special status species associated with the installation of the transmission line.

3.10.1 ESA-Listed Species

Canada lynx (*Lynx canadensis*)

Canada lynx, which is listed as endangered under the ESA, occur primarily within coniferous forest habitats. These habitat types provide dense cover used for breeding and rearing. Habitats that occur within the proposed transmission line are comprised of agricultural lands and open sagebrush/grassland habitat which does not act as suitable habitat for the Canada lynx.

Utah valvata snail (*Valvata utahensis*)

The Utah valvata snail, which is listed as endangered under the ESA, is identified as potentially occurring in Bonneville County. This species is only known to occur within the Snake River and its tributaries. This type of habitat is not located within or adjacent to the project area.

Yellow-billed cuckoo (*Coccyzus americanus*)

Habitat for the yellow-billed cuckoo, a candidate species under the ESA, occurs along dense riparian areas made up of a cottonwood overstory with a dense willow understory. The IDFG CDC has identified occurrences of yellow-billed cuckoo within the Mud Lake Wildlife Management Area, approximately 37-km (23-mi) north of the proposed transmission line project area (IDFG, 2009b). There are no riparian corridors which would provide suitable habitat for the yellow-billed cuckoo within or adjacent to the project area.

3.10.2 State-Listed and BLM Special Status Species

Seven State-listed or BLM special status bird species have been identified as potentially occurring within or adjacent to habitats associated with the transmission line corridor. Each of these is discussed below. Conservation status for all of these species, except for the greater sage-grouse (*Centrocercus urophasianus*), refers to the breeding population of the species (IDFG, 2005).

Despite management and research efforts that date to the 1930s, breeding populations of greater sage-grouse have declined 17 to 47 percent throughout much of its range (Connelly et al., 2000). Greater sage-grouse are dependent on large areas of sagebrush/grassland habitats

with 15 to 25 percent sagebrush canopy cover for breeding habitat and 10 to 30 percent canopy cover for winter habitat. A healthy perennial grass and forb understory is also an important component of nesting and brood-rearing habitat. The availability of a diversity of forbs rich in calcium, phosphorus, and protein are also important to pre-laying hens (Connelly et al., 2000). There are documented active and inactive greater sage-grouse lekking grounds west of the EREF; the nearest one is more than 16-km (10-mi) west of the EREF (IDFG, 2009a). Greater sage-grouse are known to primarily make use of sagebrush steppe habitat; however, they commonly are found in shrub/grassland habits while foraging, with the majority of breeding and rearing taking place amongst sagebrush habitats. These characteristics define the sage-grouse as a sagebrush obligate species.

Sage-grouse lek surveys were performed for the proposed EREF in May 2008 and April 2010; during these surveys no leks were identified within the bounds of the survey area (MWH, 2009; North Wind 2010). During the October, November 2009, and April 2010 surveys, no sign of sage-grouse use (scat) was observed within the proposed transmission line corridor. The low volume of use of habitat within the survey corridor was not unexpected due to the limited amount of suitable sagebrush habitat within the corridor.

Separate surveys for sagebrush habitat, sage-grouse, and other sensitive species were performed for the EREF Area of Potential Effect (refer to the EREF ER Sections 3.5 and 4.5 and the Sage Grouse Survey Reports prepared for the EREF ER). During May 2008, although no sage-grouse or sage-grouse sign was observed on the EREF property, one sage-grouse was observed on BLM-administered lands north of the EREF property and a second sage-grouse was heard and feathers were found at a different location north of the EREF property. During the April 2010 field surveys, old sage grouse pellets were found at three search point locations along or near the northern border of the property. However, no birds were heard or observed, and no other indications of sage grouse were found on the site during this spring survey. In October 2010, one sage grouse was observed at the north end of the EREF property.

The sagebrush habitat present within the transmission line corridor (see Section 3.12 below) also provides suitable habitat for three raptor species, which are designated as BLM special status species. These species are the prairie falcon (*Falco mexicanus*), northern goshawk (*Accipiter gentilis*), and ferruginous hawk (*Buteo regalis*) (also a state-listed species). Ferruginous hawks and prairie falcons inhabit semi-arid to arid habitats on the western plains and intermountain regions. They are typically found in open country with scattered trees, primarily prairies, plains, and badlands. These species prey on small mammals, reptiles, and occasionally other small birds. Both species hunt their prey from perched locations and while in flight. Northern goshawks primarily occur in forested habitat, but are also known to use sagebrush steppe habitat periodically during migration. There are multiple documented occurrences of ferruginous hawks flying/hunting within 1.6-km (1-mi) of the transmission line corridor (IDFG, 2009a).

The project corridor provides suitable habitat for two sagebrush obligate bird species: Brewer's sparrow (*Spizella breweri*) and sage sparrow (*Amphispiza belli*). These sagebrush obligate species rely on the sagebrush shrub communities as part of their migratory habitats. The loggerhead shrike (*Lanius ludovicianus*) also may occur in sagebrush habitat and seasonally may occur within the general geographic area. These three species are known to use sagebrush steppe habitat as breeding, nesting, and foraging habitat.

There is potential habitat for three of the four State-listed mammals within the transmission line corridor. These species are the Townsend's big-eared bat (*Corynorhinus townsendii*), pygmy rabbit (*Brachylagus idahoensis*), and Piute ground squirrel (*Spermophilus mollis*). Townsend's big-eared bat is a species generally associated with caves and mines. There is limited roosting

habitat and no known hibernating habitat present within the transmission line corridor for Townsend's big-eared bats. The roosting habitat occurs within fissures in the basalt rock found associated with lava outcrops. If they are found on-site, individuals would be expected to be foraging or traveling between roosting and foraging areas, around dusk or twilight hours.

On January 8, 2008, the USFWS announced a 90-day finding on a petition to list the pygmy rabbit, and published a notice of petition finding and initiated a 12-month status review on the species (73 FR 5, 1312). In September 2010, the USFWS announced that it had completed a status review of the pygmy rabbit and concluded that it does not warrant protection under the Endangered Species Act in Idaho and other western states (USFWS, 2010). Pygmy rabbits require dense stands of big sagebrush for both food and cover. In southeastern Idaho, pygmy rabbit diets consist of big sagebrush throughout the year and a mixture of grasses and forms during the summer (Tesky, 1994).

Studies have indicated that pygmy rabbits prefer areas of tall, dense stands of sagebrush with deep, sandy soils (Tesky, 1994). Deep, sandy soils are important to facilitate the burrowing of the pygmy rabbit. Burrow systems are typically constructed under clumps of big sagebrush, reinforcing the vital role of sagebrush to pygmy rabbit survival (Heady et al., 2001). The sagebrush component within the transmission line corridor contains marginally suitable habitat for the pygmy rabbits. However, during the October and November 2009 field surveys, no burrows or other sign of pygmy rabbits were observed. The nearest known populations are over 24-km (15-mi) west of the EREF on the INL.

The Piute ground squirrel also occurs mainly in the high desert (sagebrush, shadscale, and greasewood). They generally occur in well-drained soils, especially embankments, often around desert springs and irrigated agricultural lands (Nature Serve, 2009). The Piute ground squirrels make extensive burrow systems. During the project field surveys, no burrows or ground squirrel activity were observed within the transmission line corridor. The nearest known populations are over 32-km (20-mi) west of the EREF on the INL.

3.11 TRIBAL TREATY RIGHTS

The 1868 Fort Bridger Treaty, between the United States and the Shoshone and Bannock Tribes, reserves the Tribes' right to hunt, fish, gather, and exercise other traditional uses and practices on unoccupied federal lands. In addition to these rights, the Shoshone Bannock have the right to graze tribal livestock and cut timber for tribal use on those lands of the original Fort Hall reservation that were ceded to the Federal government under the Agreement of February 5, 1898, ratified by the Act of June 6, 1900. The project area is located entirely on private lands and would not impact tribal treaty rights.

3.12 GENERAL VEGETATION

The general vegetation within the transmission line corridor is made up of fragmented sagebrush steppe communities, agricultural croplands, and crested wheatgrass plantings.

The sagebrush steppe community, which comprises approximately 5.2-km (3.25-mi) of the 22.1-km (13.75-mi) length of the 91-m (300-ft) wide corridor surveyed along the proposed transmission line centerline, encompasses approximately 48-ha (118-ac). Irrigated agricultural croplands and crested wheatgrass for the 91-m (300-ft) wide corridor surveyed along the proposed transmission line centerline encompass approximately 155-ha (382-ac); of which with the irrigated croplands encompassing approximately 122-ha (300-ac) are irrigated croplands and approximately 33-ha (82-ac) are crested wheatgrass. Vegetation communities along the proposed transmission line route are shown in Figure H-1, Sheets 1-7.

Sagebrush steppe habitat within the transmission line corridor is dominated by Wyoming big sagebrush, basin big sagebrush, black sagebrush (*Artemisia nova*), and shadscale saltbrush, with an understory of perennial and annual grasses with scattered forb species. Dominant grass species which are common within the sagebrush steppe community in the project area include: crested wheatgrass, cheatgrass, Indian ricegrass, Sandberg's bluegrass, bluebunch wheatgrass, Idaho fescue (*Festuca idahoensis*), needle-and-thread grass (*Stipa comata*), bottlebrush squirreltail (*Elymus elymoides*), and thick-spiked wheatgrass (*Elymus lanceolatus*). Additional shrub species which commonly occur within sagebrush steppe communities include green rabbitbrush (*Chrysothamnus viscidiflorus*), gray rabbitbrush (*Chrysothamnus nauseosus*), winterfat (*Krascheninnikovia lanata*), three-tipped sagebrush (*Artemisia tripartita* ssp. *tripartite*) and spiny hopsage (*Grayia spinosa*). A wide variety of forb species occur within sagebrush steppe habitat. Species such as tapertip hawksbeard (*Crepis acuminate*), common yarrow (*Achillea millefolium*), desert paintbrush (*Castilleja angustifolia*), prickly phlox (*Leptodactylon pungens*) and Hood's phlox (*Phlox hoodii*) are known to occur within the transmission line corridor.

The sagebrush steppe communities have been described by NRCS as ecological site type R011BY001ID — Loamy 8-12 ARTRW8/PSSPS: State 1 (NRCS, 2009). This ecological site type has a plant community description of: Wyoming big sagebrush in the overstory with bluebunch wheatgrass dominating the understory. Thurber's needlegrass is the subdominant grass. Other significant species include Sandberg bluegrass, tapertip hawksbeard and arrowleaf balsamroot. There can be a variety of other grasses, forbs and shrubs in minor amounts.

Conservatively assuming that a 6.1-m (20-ft) wide swath of vegetation associated with the sagebrush communities will be permanently removed for access to the transmission line route and structures, construction within the sagebrush steppe habitat communities will result in the removal of approximately 3.2-ha (7.9-ac) of sagebrush habitat along the transmission line route. However, vegetation would only be cut to a height that can be driven-over and sagebrush removal would occur only at structure sites.

However, vegetation would only be cut to a height that can be driven-over and sagebrush removal would occur only at structure sites.

Irrigated agricultural croplands for the 91-m (300-ft) wide corridor surveyed along the proposed transmission line centerline encompass approximately 122-ha (300-ac).These lands are used for a variety of crop production including small grains, potatoes, and alfalfa hay. The crops that are raised within these communities vary year-to-year. Many of the crop fields are irrigated using center pivot irrigation systems which often times leave the corner areas of the fields in native vegetation or weedy areas. Some of the areas between the agricultural fields and the road have been seeded to crested wheatgrass. Based on the soil types present within the irrigated agricultural croplands the NRCS has defined the ecological site type for these areas as R011BY001ID — Loamy 8-12 ARTRW8/PSSPS: State 1, Plant community 1.1 (NRCS, 2009).

3.13 VISUAL RESOURCES

The presence of a new transmission line has the potential to impact the scenic quality of the existing rural landscape. There are no formal guidelines for managing visual resources on private lands within the proposed transmission line corridor; therefore, a visual inventory was conducted using principles derived for the BLM Visual Resource Management (VRM) system 8400 series manuals (BLM, 1984) to assess potential impacts. The VRM methodology was employed to provide a consistent inventory process across the study area. The proposed transmission line is located within an area that has been designated as VRM Class III (BLM, 1985). A Class III rating is reserved for areas where development is evident, but does not

dominate the viewshed (i.e., generally highway corridors and rural areas where the scenery is not a major resource concern). The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Contrasts may attract attention but should not dominate the view of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape (BLM, 1984). The Idaho Falls District BLM, Upper Snake Field Office is in the process of developing a new Resource Management Plan that may result in the classification of this area a Class II; however, the timing of this management decision is unknown at this time. Under Class II contrasts may be seen but should not attract the attention of the casual viewer.

Field surveys were conducted in October and November 2009, to assess the visual quality of the proposed transmission line. Prior to and during the field surveys, maps of the site and surrounding area were reviewed to identify unique features in the area, viewsheds, and likely users. Most of the surrounding lands are undeveloped lands used for farming, grazing, or wildlife habitat. Some of the dominant landscape characteristics surrounding the proposed transmission line include Kettle Butte about 3.6-km (2.25-mi) north of the proposed transmission line, Butterfly Butte approximately 0.6-km (0.4-mi) north of the transmission line, and East and Middle Buttes about 21-km (13-mi) west of the EREF. In addition, the lava flow known as Hell's Half Acre is immediately south of the proposed EREF site on the southern side of U.S. Highway 20.

During a field assessment of the project area, a Scenic Quality Inventory and Evaluation protocol was used to rate the visual characteristics of the project area. The proposed transmission line would be visible from traffic on U.S. Highway 20 and from adjacent properties. The greatest majority of people viewing the corridor from these areas would be workers and suppliers traveling between Idaho Falls and the INL. The project area would also be partially visible to the approximately 6,000 people that annually use the Hell's Half Acre Loop Hiking Trail.

Based on guidance in the BLM VRM Manual 8431, key observation points were chosen as vantage points to perform the assessments. The first observation point was located along U.S. Highway 20 near a radio communication tower on the eastern boundary of the INL, looking northwest and west (Figure H-4a). This location was selected because it was at slightly higher elevation and thus provided an overlook of a portion of the project area. The second site was located at the Hell's Half Acre Lava Trail trailhead, looking northwest (Figure H-4b).

Photographs were taken from the key observation locations as described above. During the field assessment, rating scores were assigned to seven key factors: landform, vegetation, water, color, influence of adjacent scenery, scarcity, and cultural modifications. Characteristics such as scale, space, form, line, color, and texture were considered in assigning value ratings. Scenic quality was calculated by summing the values given to each key factor where the assessment area is assigned a scenic quality of A (19 or more), B (12-18), or C (11 or less). Both assessment locations received a scenic quality rating of C.

The visual sensitivity of the area was characterized by considering the type of area from which the views would occur, the duration of the exposure to the view, and the dominance of the exposure. The visual sensitivity of the project area was determined to be low to moderate. Low visual sensitivity is used to describe views from agricultural areas where the duration of the view is short and the view may be partially obscured by topography or landscaping. Moderate visual sensitivity is used to describe views from highways and local views where the duration of the view is short to moderate. If many of the viewers are frequent users of the travel route, and

visual sensitivity could be constrained because orientation of the viewer is focused elsewhere for much of the time.

3.14 WASTES, HAZARDOUS AND SOLID

A survey for hazardous and solid wastes was performed for the proposed transmission line corridor as part of the field survey activities conducted in October and November 2009. No hazardous materials are present on the proposed route and no properties that would affect the construction or operation of the proposed transmission line were identified during the survey. There is no evidence of hazardous substances, petroleum products, or recognized environmental conditions within the project corridor that would be detrimental to human health (IDEQ, 2009b). There is an existing operating transmission line in the project area along the proposed transmission route (from Bonneville Substation to Kettle Substation); this would be replaced with a new double-circuit 161-kV/69-kV line with 25-kV underbuild, as described in Section 2.4.1.

The proposed transmission line route crosses privately owned farm land. The current and past operators of the cultivated parcels have applied chemicals for agricultural purposes. It is generally accepted that the chemicals were applied according to federally approved application rates. Several of the farmsteads also use aboveground storage tanks for fuel and chemicals. IDEQ records do not provide any evidence that spills or contamination has occurred in these locations (IDEQ, 2009b).

The Resource Conservation and Recovery Act (RCRA) regulates management and remediation of underground storage tanks (USTs). Owners of USTs that contain regulated substances such as gasoline, used oil, solvents, and pesticides are required to notify IDEQ of their existence. EPA is responsible for UST inspection and enforcement. IDEQ records show no USTs within the project corridor (IDEQ, 2009b).

RCRA also requires permits for any facility that receives hazardous wastes for treatment, storage, or disposal (TSDs). IDEQ manages the RCRA program in Idaho. The facilities are also regulated by the EPA under Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) regulations. None of the permitted facilities in the region are close enough to the project area to affect human health (IDEQ, 2009b). The nearest facilities occur on the INL west of the project area.

The existing and proposed substations along the transmission route contain some hazardous materials typical of high voltage substations. These include oil used in the voltage transformers, batteries, fuel for diesel generators, and sulfur hexafluoride (SF_6) circuit breakers.

The hazardous materials used at the substations are SF_6 gas for high-voltage circuit breakers and a diluted sulfuric acid electrolyte for batteries.

The circuit breakers are shipped to the substations without SF_6 gas. The circuit breakers are gassed following their installation at the substations. It is estimated that approximately 8 bottles of SF_6 gas will be needed. Each bottle contains approximately 52.1-kg (115-lb) of liquid SF_6. It is anticipated that there will be one truck shipment of SF_6 gas (bottles). The origin of the shipment will be Salt Lake City, Utah, approximately 370-km (230-mi). Shipping will be conducted by a licensed vendor/carrier.

The lead-acid battery bank at substations will be approximately 15-ft long x 3.5-ft wide x 3.5-ft high. The batteries (shipped dry) and electrolyte (diluted sulfuric acid) will be shipped from a RMP warehouse in Salt lake City, Utah to the RMP distribution point in Shelley, Idaho, an approximate 325-km (202-mi) trip. They will be shipped to the substations when needed, an approximate 29-km (18-mi) to 45-km (28-mi) trip. The batteries will be filled following their

installation at the substation. It is anticipated that there will be one truck shipment of batteries and electrolyte to the distribution point, and to the substations. Shipping will be conducted by a licensed vendor/carrier.

There will be cut and fill requirements at the Bonneville Substation sites. RMP will identify the volume of topsoil and subsoil to be removed once a design is completed. The existing Bonneville Substation site will be tested for any hazardous waste which, if present, will be identified for appropriate removal and shipping to a licensed waste facility. Non-hazardous materials and excess soils will be hauled away and disposed of through a qualified contractor.

3.15 WATER QUALITY, SURFACE AND GROUND

The project corridor contains a few natural, ephemeral drainages along the alignment. The route has no riparian habitat associated with these drainage sites. Most of the ephemeral drainages appear to carry water in association with a rain-on-snow event, or during a significant rainstorm. These drainages are small in size and do not reach waters of the United States. Since there is no live water within the area of potential effect there are no water features to be avoided.

The project lies within the Eastern Snake River Plain Sole Source Aquifer. The Sole Source Aquifer (SSA) Protection Program is authorized by Section 1424(e) of the Safe Drinking Water Act of 1974, as amended (USC, 2009i). The project will not affect the water quality of the Eastern Snake River Plain SSA to the extent of creating a significant hazard to public health, since potential contaminants used in the construction and operation of the transmission line and substations (e.g., oil, fuel, SF_6) will be small and appropriately contained. In addition, the project design and construction BMPs will prevent the introduction of contaminants into the aquifer.

3.16 GENERAL WILDLIFE

Listings of mammals, birds and amphibians/reptiles potentially using the project area are provided in EREF ER Tables 3.5-1, 3.5-2 and 3.5-3, respectively. Based on initial field surveys for general wildlife species, information on regional and local distribution of wildlife species, and species-specific habitat preferences, the general wildlife species likely to occur along the proposed transmission line route were identified. General wildlife species are those common species that occur throughout their designated ranges in abundance. These species are usually not provided special protection or designations, with the exception of migratory species. However, these species are analyzed to identify possible mitigations that would lessen impacts to individuals or populations to maintain population viability within an impact area.

Within the transmission line corridor, there are two main vegetation communities which define the habitat types available for wildlife species. These vegetation communities include sagebrush steppe and agricultural croplands. The two-track roadways and extensive agricultural and grazing lands in the area have resulted in a fragmentation of sagebrush habitats. For many of the wildlife species in the general geographic area, this habitat type provides areas of good forage, but there is limited cover which is provided by shrub species in other habitat types. The agricultural croplands do not provide high quality habitat for any of the general wildlife that may occur in the area. This is due to the increased rate of human presence, and routine ground disturbance associated with crop planting and harvesting. However, many different species tend to live on the fringes of agricultural lands and forage in fields, and moving back to adjacent habitats for protection.

Non-game mammal species that are suspected to occur within the project area based on habitat types which are present include predators such as coyotes (*Canis latrans*), skunk (*Mephitis mephitis*), red fox (*Vulpes vulpes*), and badgers (*Taxidea taxus*). Common rodents include

Townsend's ground squirrel (*Spermophilus townsendii*), least chipmunk (*Eutamias minimus*), Ord's kangaroo rat (*Dipodomys ordii*), Great Basin pocket mouse (*Perognathus parvus*), western harvest mouse (*Reithrodontomys megalotis*), and deer mouse (*Peromyscus maniculatus*). Other mammals which potentially occur within the transmission line corridor include black-tailed jackrabbit (*Lepus californicus*), mountain cottontail (*Sylvilagus nuttallii*), pronghorn (*Antilocapra americana*), and elk (*Cervus elaphus*). Many of these species are sparsely dispersed along the transmission line corridor. Two cottontail rabbits, one coyote, and several small rodents were observed within the proposed transmission line corridor during the field surveys in October and November 2009.

The larger ungulate species (pronghorn antelope and elk) are seasonally present within the transmission line corridor during migration between summer and winter habitats. There is a population of year round pronghorn which live within the INL, west of the EREF, and are commonly observed along U.S. Highway 20. U.S. Highway 20 as well as other county and private roads within the project area, cause habitat fragmentation which degrades wildlife habitat and also pose a potential hazard for wildlife species.

The area associated with the transmission line corridor contains habitat for a variety of bird species. Common bird species observed, or known to occur, within the project area include the American robin (*Turdus migratorius*), European starling (*Sturnus vulgaris*), western meadow lark (*Sturnella neglecta*), mourning dove (*Zenaida macroura*), brown-headed cowbird (*Molothrus ater*), horned lark (*Eremophila alpestris*), killdeer (*Charadrius vociferous*), sage thrasher (*Oreoscoptes montanus*), as well numerous other sparrows and small passerines. In addition to the raptors discussed as State-listed and BLM special status species in Section 3.10.2 above, the project area contains habitat for species such as red-tailed hawk (*Buteo jamaicensis*), rough-legged hawk (*Buteo regalis*), northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*), common crow (*Corvus brachyrhynchos*), and an occasional golden eagle (*Aquila chrysaetos*). During the October and November 2009 field surveys, several crows and one rough-legged hawk were observed within the project corridor. There is no suitable habitat within the transmission line corridor for any waterfowl and water birds; however, seasonal migratory flocks of geese and ducks can be seen flying over the project area.

Reptile species that may be present along the project area include the western rattlesnake (*Crotalus viridis*), gopher snake (*Pituophis catenifer*), short-horned lizard (*Phrynosoma douglassi*), and sagebrush lizard (*Sceloporus graciosus*) (INL ESER, 2009). Because the occurrence of amphibian species is closely related to water and the proposed transmission line corridor contains no permanent water, no amphibian species are anticipated to occur within the corridor.

4.0 ENVIRONMENTAL IMPACTS

4.1 ACCESS

4.1.1 No Action

Under the No Action alternative, the transmission line would not be constructed and no additional rights-of-way or easements would need to be acquired across private lands. The current level of access available for the general public would be maintained and access to private lands would not be altered or impacted because the transmission line would not be constructed.

4.1.2 Proposed Action

Construction Impacts

Prior to the installation of the proposed transmission line, legal access in the form of rights-of-way or easements would need to be obtained from private landowners as described in Section 2.4.1. Existing access points will be maintained in the same or better condition. Referring to Table H-1 and H-2, considering the limited number of vehicles that will be utilized, traffic on U.S. Highway 20 will not be disrupted by access requirements for the transmission line. Similarly, current land uses, including agricultural operations, will not be disrupted by access requirements.

The majority of the work will be performed from the shoulder of the existing county road (West 65 North Street) and access needs during construction will primarily be limited to agricultural lands near the road. Access will generally be through existing farm gates which are used to access the current 69-kV transmission line that parallels the north side of the road. The structures supporting this line will be replaced with a double-circuit 161-kV/69-kV line with 25-kV underbuild, as described in Section 2.4.1. As much as possible, the existing poles will be replaced pole for pole with the new structures. The new structures will require the existing 15.2-m (50-ft) transmission line right-of-way along West 65 North Street to be expanded by 4.6-m (15 ft) to accommodate the 161-kV single pole double-circuit with underbuild structures, but this will not require additional access points than currently exist.

Operation and Maintenance Impacts

Access will not be affected during operation and maintenance of the transmission line. Private land owners will not be hindered by the presence of the transmission line.

4.2 AIR QUALITY

4.2.1 No Action

Under the No Action alternative, air quality within the proposed transmission line corridor would be maintained at current levels. Seasonal fluctuations in AQI would continue to occur in association with agricultural activities and wildfires in the general geographic area. There would be no additional soil disturbing activities which would cause an increase in fugitive dust because the transmission line would not be constructed.

4.2.2 Proposed Action

Construction Impacts

The project area is in attainment for all federally regulated air pollutants and thus a general conformity applicability analysis is not required. The proposed transmission line routes are not located within or near any non-attainment areas, maintenance areas, PSD Program Class I areas, or areas of concern (see Figure 3.6-7 in the EREF ER).

During the construction of the transmission line, the driving of vehicles off-road, especially on any cleared areas, poses the risk of increasing fugitive dust in the project area. These impacts are anticipated to be short term and temporary (limited to the length of the construction activity) and isolated to the right-of-way areas where work is occurring. Because mitigation measures such as watering to control fugitive dust will occur as needed during construction, any increases

in fugitive dust would not result in a degradation of air quality to a level that will reduce the AQI to a level which would impact human health. For further discussion, refer to Section 2.3.3. Mitigation measures are also listed in Table H-3.

Operation and Maintenance Impacts

The operation of the transmission line will not have any impacts on air quality within the proposed transmission line corridor. The high electric field strength of the transmission line causes a breakdown of air at the surface of conductors called corona. Corona occurs on all types of transmission lines, but it becomes more noticeable at higher voltages (345-kV and higher). When corona occurs, small amounts of ozone and oxides of nitrogen are released. These substances are released in such small quantities that they are generally too small to be measured or to have any significant impact on air quality or result in an impact on plants, animals, or human health (EPRI, 2008).

Routine and periodic maintenance will have similar impact to those discussed under the construction impacts, with maintenance activities likely resulting in a temporary and isolated increase in fugitive dust within the proposed transmission line corridor. As discussed under the construction impacts, these increases will not degrade air quality to a level that would reduce the AQI or result in a hazard to human health.

4.3 CULTURAL RESOURCES

4.3.1 No Action

Under the No Action alternative, the proposed transmission line would not be constructed; therefore no component or site would be affected and no mitigations are necessary.

4.3.2 Proposed Action

Construction Impacts

No new archaeological resources were discovered along the proposed transmission line route during the field surveys performed for this ER. Thirty-six (36) sites were previously discovered within the ERER and are described in the EREF ER. Mitigation measures for eligible sites on the EREF are described in the EREF ER. RMP will have available an Unanticipated Discoveries and Monitoring Plan during construction activities.

Operation and Maintenance Impacts

Periodic inspections of the transmission line and substations will be performed from the ground. No eligible cultural resources are located along the transmission line route. Therefore no direct or indirect effects to cultural resources are expected from operation and maintenance activities.

4.4 ENVIRONMENTAL JUSTICE

4.4.1 No Action

There would be no potential for impacts to minority or low-income populations under the No Action alternative because the proposed transmission line would not be built in the project area. No environmental justice impacts would be experienced under this alternative.

4.4.2 Proposed Action

Construction Impacts

There are no populations that meet the definition of “minority” or “low-income” in Bonneville County. Therefore construction of the new transmission line will not generate disproportionate and/or adverse effects on minority or low-income populations and will have no impact on environmental justice issues.

Operation and Maintenance Impacts

No minority or low-income populations have been identified that will be disproportionately or adversely impacted by the proposed project so there will be no impacts from any operation or maintenance procedures.

4.5 EXISTING AND POTENTIAL LAND USES

4.5.1 No Action

Under the No Action alternative, RMP would not build the proposed transmission line and the associated facilities. Therefore, there would be no potential impact to existing land uses.

4.5.2 Proposed Action

Construction Impacts

During the construction of the proposed transmission lines, there may be minimal, short-term impacts to existing land uses. To the degree possible, measures will be taken to prevent disturbance to areas used as residential properties or for agriculture. Small areas of cropland associated with pole placement may be disturbed during installation; however, crop production is not anticipated to be reduced in the area as a result of the installation of the transmission line because a pole for pole replacement of the existing transmission line would occur in the areas used for agriculture. The existing center pivot irrigation systems would not be affected.

The construction of the transmission lines may result in short-term impacts on private range resources and grazing operations. The areas within the transmission line rights-of-way that support grazing may temporarily be unavailable for grazing during the construction phase of the project. These impacts may be mitigated by landowners moving livestock to pastures that are not being affected by construction activities, if livestock owners are agreeable to such action, or as feasible, RMP will limit construction to periods when livestock are not in the vicinity of the transmission line corridor.

Operation and Maintenance Impacts

Once the transmission lines are operational, there will be no additional anticipated impacts to existing and potential land uses. Routine and emergency maintenance activities are not anticipated to result in further impacts to this resource.

The operation and maintenance of the transmission lines will not result in a reduction of lands open to grazing within private grazing areas within the transmission line corridor.

4.6 INVASIVE, NON-NATIVE SPECIES

4.6.1 No Action

Construction of the proposed transmission line would not occur under the No Action alternative. Therefore, the establishment and risk of spread of noxious weeds and invasive species would not increase beyond those that currently exist within the project area.

4.6.2 Proposed Action

Construction Impacts

All temporary surface disturbance activities associated with construction of the transmission line could lead to new invasions or increased rates of spread of invasive, non-native weed species. In areas where ground disturbance is substantial or where recontouring is required, such as access roads and structure foundations, aggressive non-native species could become established. Due to the small amount of disturbance that will occur at each structure site and the mitigation measures that will be employed to the revegetation of disturbed areas (see Section 2.3.3 and Table H-3), the risk of exotic species invasion is expected to be small.

Roadside weed species, such as cheatgrass, kochia, Russian thistle, and peppergrass that are already present within the transmission line corridor are the species most likely to become established within the newly disturbed sites. However, construction activities could also result in an introduction of new species to the area. These potential impacts will be reduced by cleaning vehicles prior to them entering the project areas and reseeding disturbed areas with a native seed mix to reduce the risk of spread of invasive or noxious species (see Section 2.3.3 and Table H-3). Implementation of these mitigation measures will minimize the potential for establishment and spread of invasive species.

Operation and Maintenance Impacts

Routine operation of the transmission line will have no effects on invasive, non-native species while maintenance activities will pose risks of spread, similar to those occurring from construction. Routine maintenance will involve use of access roads and/or ground disturbance activities that will increase the risk of transport of weedy species. Accessing the transmission line corridor in vehicles that have not been properly cleaned poses the risk of spreading undesirable invasive and non-native species to the project area. Mitigation measures for maintenance activities will be the same as those for construction activities (see Section 2.3.3 and Table H-3), and these actions will minimize the potential for spread of invasive species.

4.7 MIGRATORY BIRDS

4.7.1 No Action

No vegetation communities would be disturbed under the No Action alternative and no migratory bird species or their habitat would be impacted along the proposed transmission line corridor.

4.7.2 Proposed Action

Construction Impacts

Migratory bird species, including raptors, may use the project area for hunting. Suitable habitat for nesting is present in the project area but no raptor nests were identified along the project corridor during the field survey. Construction activities will temporarily increase the presence of human activity in the area which could result in temporary impacts to migratory bird species. Individuals will be able to fly away from the project area during construction and return to the area following completion of the construction activities. Thus, no long term impacts to migratory bird species are anticipated. If a new or previously unknown raptor nest is discovered in the project corridor prior to or during construction, seasonal stipulations may be necessary to prevent disturbance to nesting migratory species. Construction activity in areas containing active nests will be avoided during the nesting and fledging period (March 1 – July 15). Care will be taken during construction to limit the amount of vegetation that would be removed, especially sagebrush shrub habitat that could be used for nesting of sagebrush obligate bird species.

Operation and Maintenance Impacts

The presence of vehicles along the transmission line corridor during routine inspection and maintenance activities could temporarily displace birds from the project area. However, the proposed transmission line route is near U.S. Highway 20 and the presence of a few additional vehicles for inspection and maintenance activities will not increase the level of disturbance to migratory birds that may be using the area. The mitigation measures included as part of the Proposed Action (see Section 2.4 and Table H-3) are expected to minimize potential impacts to raptors and other avian species.

4.8 SOIL RESOURCES

4.8.1 No Action

Under the No Action alternative, RMP would not build the proposed transmission line and the associated facilities. There would be no impacts to the land within the proposed transmission line corridor and therefore, soil resources including prime farmland, would not be affected.

4.8.2 Proposed Action

Construction Impacts

Effects to the soil resource from the proposed project include increased potential for erosion and compaction by construction activities. The soils of the project area will be impacted by construction activities associated with the installation of the transmission line in areas of proposed access roads, support structure sites, construction areas, and project staging areas, as described in section 2.4.1. An increased potential for erosion and soil compaction will occur as large equipment, including trucks and cranes listed in Tables H-1 and H-2, are used to install the transmission line and substation components. Clearing of the rights-of-way, where necessary, will decrease vegetation cover and may increase erosion, and continued use of the right-of-way by large equipment will compact soils in these areas. Information regarding site-specific conditions where access roads are planned will be used during design and construction to calculate and minimize erosion. On proposed access roads, soils will be compacted from vehicles and erosion potential could increase over the non-developed condition. In areas where slopes are mild, soil erosion impacts are expected to be small.

Standard construction BMPs will be developed by RMP for minimizing impacts on soil resources. These will include practices such as minimizing the construction footprint to the

extent possible, limiting site slopes to a horizontal to vertical ratio of four to one or less, protection of undisturbed areas with silt fencing and straw bales as appropriate, and site stabilization practices such as placing crushed stone on top of disturbed soil in areas of concentrated runoff. Additional project specific BMPs may be identified before implementation of the project if conditions beyond those normally experienced are anticipated. Many of the soils within the transmission line corridor are described as being moderately to severely susceptible to erosion when used as roads or trails (NRCS, 2009). Erosion control measures included in the BMPs will also address areas where slopes are such that soil erosion is a potential concern, and areas where wind related erosion is a concern. To mitigate the risk of erosion, removal of vegetation would be limited as much as possible to reduce the amount of soils disturbed during the installation of the transmission line. Staging and work areas will be reseeded after work is completed to lessen the risk of soil erosion by wind and water. In areas where larger ground disturbing activities will occur, fugitive dust abatement measures will be implemented. Mitigation measures for soils are described in more detail in Section 2.3.3 and Table H-3.

The proposed transmission line route will cross soil considered to be prime farmland within the eastern sections of the project area. The existing transmission line crosses these agricultural lands. It will be replaced by the new transmission line and much of the prime farmland soils will be spanned by the structures, and poles replaced in existing structure locations. Therefore, construction of the transmission line in the soils designated as prime farmland along this route will not affect existing irrigation systems on agricultural land and will not cause impacts beyond those that currently exist.

Operation and Maintenance Impacts

Impacts to soils during routine or emergency maintenance will be similar to but of less frequency as those that will occur during installation of the transmission line. These impacts will be limited to smaller areas where maintenance activities are occurring rather than the entire length of the transmission line. The mitigation measures presented in Section 2.3.3 and Table H-3, and those described above for construction, will also apply for operation and maintenance of the transmission line. Effects from operation and maintenance will be similar for either route selected.

Operation of the proposed transmission line is not expected to result in additional impact to prime farmland beyond those already occurring related to operation of the existing transmission line, or where there are no existing lines, impacts are anticipated to be small. Routine maintenance activity may result in some soil disturbance, but the area will remain as irrigated farmlands preserving the prime farmland classification for the area.

4.9 THREATENED, ENDANGERED, AND SENSITIVE PLANTS

4.9.1 No Action

No ground disturbing activities would occur under the No Action alternative and no impacts to soils or vegetation communities within the proposed transmission line corridor would occur. Therefore, there would be no impact to sensitive plants within the project area.

4.9.2 Proposed Action

Construction Impacts

Due to the lack of suitable habitat in the project area, no ESA-listed or State-listed plant species are anticipated to occur within the transmission line corridor and the installation and operation of the line will have no effect on them.

Spreading gilia is the only State plant species of concern suspected to occur near the transmission line corridor. The closest known populations of spreading gilia are over 32-km (20-mi) west/northwest of the proposed transmission line corridor. During the October and November 2009 field surveys, no habitat containing rocky slopes of volcanic or limestone origin, the known habitat for the spreading gilia, was observed within the transmission line corridor, and no individuals or remnants of individuals were observed. Therefore, installation of the proposed transmission line will not impact spreading gilia individuals or populations. No further surveys for sensitive plants are anticipated to be necessary within the transmission line corridor prior to installation activities beginning.

Operation and Maintenance Impacts

The transmission line corridor does not contain suitable habitat for ESA-listed or State-listed plant species, thus operation and maintenance of the transmission line will have no impact on them.

4.10 THREATENED, ENDANGERED, AND SENSITIVE ANIMALS

4.10.1 No Action

Under the No Action alternative, the proposed transmission line and Twin Buttes Substation would not be installed. There would be no impacts to the sagebrush habitat found within the proposed transmission line corridor. Suitable habitat would continue to be available to the seven BLM and State-listed bird species and three mammals that have the potential to occur within the proposed area. The proposed transmission line corridor does not provide suitable habitat for any of the ESA-listed species identified as potentially occurring within Bonneville County.

4.10.2 Proposed Action

Construction Impacts

The installation of the proposed transmission line and new substation will result in the disruption of small patches of vegetation associated with the placement of the power poles and other structures (see Section 2.4.1). Disturbance in these areas will generally be limited to trampling of vegetation by equipment and personnel, although in some areas vegetation removal may be required. The vegetation around each structure is anticipated to reestablish once construction activities are complete and reclamation has occurred (see Section 2.3.3 and Table H-3). The proposed transmission line corridor does not contain any suitable habitat for ESA-listed species. Therefore, the proposed installation of the transmission line is anticipated to have no effect on Canada lynx, Utah valvata snail, and yellow-billed cuckoo.

Of the seven BLM and State-listed bird species suspected to occur within the transmission line corridor, the greater sage-grouse is most likely to be affected by installation activities.

Destruction of sagebrush is one of the most important measures of potential impact on sage-grouse. A total of 48-ha (118-ac) of sagebrush steppe habitat exists within the transmission line corridor. Considerably less sagebrush steppe habitat will be impacted since only a fraction of the vegetation within the 91-m (300-ft) wide corridor will be permanently removed for structure placement. Furthermore, much of the existing sage-grouse habitat along the proposed route is marginal and fragmented because of roads and agricultural operations that have permanently changed the native vegetation communities in the area.

In addition to habitat destruction, structures such as powerlines and fences pose hazards to sage-grouse because they provide additional perch sites for raptors and because sage-grouse may be injured or killed when they fly into these structures (Connelly et al., 2000). RMP will include avian-safe construction standards and follow bird management guidelines to decrease potential impacts to avian species (PacifiCorp, 2006). Increased human activity associated with construction activities and routine maintenance also can disrupt individuals during mating, nesting, and brood rearing seasons. To mitigate these impacts, installation activities will be scheduled to occur outside of seasonal lekking periods in areas known to contain active lekking sites. The breeding and nesting season for sage grouse in Idaho extends from March 1 to July 15 (Connelly et al., 2004).

The presence of a new transmission line in the area poses a risk to raptor species such as prairie falcon, northern goshawk, and ferruginous hawk. These species tend to roost and perch on power poles increasing the risk of electrocution. RMP utilizes a variety of mitigation methods and practices, such as industry guidelines included in *Suggested Practices for Raptor Protection on Power Lines* (APLIC, 2006), to ensure that the design of new and existing transmission line prevents significant hazards to large perching birds. Avian-safe construction standards will be followed. The objectives of avian-safe construction standards are to:

- Provide separation between energized conductors and/or energized conductors and grounded hardware; and
- Cover hardware or conductors if adequate separation is not possible; (PacifiCorp, 2006).

Smaller bird species such as Brewer's sparrow, sage sparrow, and loggerhead shrike will experience minimal disturbance associated with the installation of the transmission line. These species are seasonal migrants who typically use sagebrush habitat for nesting during June and July. To lessen the impacts to these species, surveys will be performed prior to construction during the nesting season to determine the presence of nests in sagebrush that may be disturbed. These surveys will occur in areas that are used as access routes, pole placements, and any other area where disturbance may occur. Due to the mobile nature of these species, adults and fledged young could avoid equipment and avoid construction areas while construction activities are taking place. The amount of sagebrush habitat that will be impacted will be limited to the location of pole placement and access routes, limiting overall impacts to habitat for these species.

The installation of the transmission line will have little to no impact on the Townsend's big-eared bat. The Townsend's big-eared bat, along with other bat and myotis species, is primarily a nocturnal animal using dusk to dawn hours to hunt prey and forage. There will not be any construction activities occurring during these hours, lessening the potential for human interaction. There are no caves or other areas which would likely be used as roost sites during daylight hours which will be disturbed by the construction activities.

The transmission line corridor contains small patches of suitable habitat for the pygmy rabbit; however, there have been no documented occurrences of pygmy rabbits within the study corridor. During the field surveys in October and November 2009, no individuals or signs of

recent use (i.e., pellet pads and active burrows) were observed within the study corridor. Similarly, studies conducted in 2008 for the EREF ER documented small patches of sagebrush habitat on the western portions of the site, but did not document sign or sightings of pygmy rabbits (see EREF ER Section 3.5 for additional information).

There are two documented sightings of Piute ground squirrel within the 1.6-km (1-mi) buffer of the transmission line. The transmission line location will avoid impacts to these populations. Signs of many burrowing rodents were observed along the transmission line corridor during the 2009 field surveys. Care will be taken during construction and maintenance activities to avoid areas with extensive burrow systems to lessen impacts to populations of the Piute ground squirrel.

Operation and Maintenance Impacts

The operation and maintenance of the transmission line would have no direct impact on threatened, endangered, or sensitive animals. Bird collisions with lines would be minimized during operation of the lines by incorporating the following avian-safe operation objectives as determined necessary through the PacifiCorp Bird Management Program (PacifiCorp, 2006):

- Discourage birds from nesting in unsafe locations;
- Provide safe alternative locations for perching or nesting; and
- Increase the visibility of conductors or static wires to prevent avian collisions (PacifiCorp, 2006).

Small mammals and rodents may be preyed upon more heavily by raptors as increased perch sites become available.

4.11 TRIBAL TREATY RIGHTS

4.11.1 No Action

Under the No Action alternative, RMP would not build the proposed transmission line and the associated facilities. Therefore, there would be no potential impact to tribal treaty rights.

4.11.2 Proposed Action

Construction Impacts

The land within the proposed transmission line corridor is private land and thus the Shoshone-Bannock Tribes' right to access federal lands to exercise treaty rights and traditional uses will be unaffected.

Operation and Maintenance Impacts

Tribal treaty rights will not be affected by operation and/or maintenance of the proposed transmission line since the line would not traverse federal land.

4.12 GENERAL VEGETATION

4.12.1 No Action

Under the No Action alternative, the transmission line and Twin Buttes Substation would not be constructed and there would be no impacts to vegetation within the project area.

4.12.2 Proposed Action

Construction Impacts

The impact to any vegetation at the planned expansion of the Bonneville substation and the transmission line route is minimal. Little or no vegetation is present since the area impacted is either under agricultural use or in a sagebrush area. In most areas sagebrush will not be removed, but may be driven over. However, sagebrush will be removed where pole locations occur.

The transmission line corridor is on private property. The proposed transmission line route is composed of irrigated agricultural land, pasture land, crested wheat grass plantings, and sagebrush steppe. Given the land use along the transmission line corridor, right-of-way vegetation maintenance along the transmission line corridor is anticipated to be minimal along the agricultural, pasture, and crested wheat grass lands. There are no trees in the proposed transmission line corridor. Brush within the right-of-way would be lowered, as needed, to allow overland travel. The principal management technique would be lowering by mechanical means, and would be based on the results of local inspections conducted every two years.

Consistent with vegetation management along the existing 69-kV transmission line which is approximately 14.5-km (9-mi) of the proposed 22.1-km (13.75-mi) transmission line, vegetation management other than lowering brush by mechanical means is not anticipated. Given the land use along the transmission line corridor, it is not anticipated that vegetation management would be necessary to maintain the minimum clearance for the transmission line conductors.

Vegetation Removal - Sagebrush

The sagebrush steppe community, which comprises approximately 5.2-km (3.25-miles) of the 22.1-km (13.75-mi) length of the 91-m (300-ft) wide corridor surveyed along the proposed transmission line centerline, encompasses approximately 48-ha (118-ac).

Conservatively assuming that a 6.1-m (20-ft) wide swath of vegetation associated with the sagebrush communities will be permanently removed for access to the transmission line route and structures, construction within the sagebrush steppe habitat communities will result in the removal of approximately 3.2-ha (7.9-ac) of sagebrush habitat along the transmission line route. This loss will represent less than 0.01% of the sagebrush steppe habitat within 8-km (5-mi) of the proposed corridor. However, vegetation would only be cut to a height that can be driven-over and sagebrush removal would occur only at structure sites.

Vegetation Removal - Irrigated agricultural croplands and crested wheatgrass

Irrigated agricultural croplands and crested wheatgrass for the 91-m (300-ft) wide corridor surveyed along the proposed transmission line centerline encompass approximately 155-ha (382-ac); of which with the irrigated croplands encompassing approximately 122-ha (300-ac) are irrigated croplands and approximately 33-ha (82-ac) are crested wheatgrass.

With approximately 11.3-km (7-mi) of the estimated 13.3-km (8.25-mi) of irrigated agricultural croplands located along the existing 69-kV transmission line and replacing existing structures in

the same structure location, only about 2-km (1.25-mi) of croplands within the 91-m (300-ft) wide transmission line corridor will be affected by new structure sites (locations of poles). Conservatively assuming that the area disturbed at each structure location is an approximate 3-m x 3-m (10-ft x 10-ft) area, new structure sites account for approximately 0.02-ha (0.05-ac) of the agricultural cropland.

The approximate 3.6-km (2.25-mi) of crested wheatgrass within the 91-m (300-ft) wide transmission line corridor will be affected by new structure sites (locations of poles). Conservatively assuming that the area disturbed at each structure location is an approximate 3-m x 3-m (10-ft x 10-ft) area, new structure sites account for approximately 0.05-ha (0.08-ac) of the crested wheatgrass land.

Dependent upon the time of year that the transmission line is installed, damage to agricultural crops could occur within the pole installation areas in farmlands. The impacts to agricultural croplands are anticipated to be small due to the close proximity of access points to the road and the centerline, limiting the need to drive vehicles into the fields.

To mitigate vegetation impacts, cleared or disturbed areas will be reseeded using a native seed mix.

Operation and Maintenance Impacts

Once construction is complete and access routes are established, only minimal sporadic impact to vegetation is expected from inspection and maintenance activities. These activities will result in potential vegetation damage or removal and soil compaction in the right-of-way locations. The disturbed areas are at risk of infestation by invasive or non-native vegetation species such as cheatgrass which often out-compete native grasses and shrub species. Therefore, disturbed areas will be reseeded using a native seed mix, as described in Section 2.3.3 and Table H-3.

4.13 VISUAL RESOURCES

4.13.1 No Action

Under the No Action alternative, RMP would not build the proposed transmission line or associated facilities. No construction activities would occur and no permanent structures would be built that would alter the existing visual conditions. Implementation of the No Action alternative would be in compliance with the VRM Class III rating of the project area.

4.13.2 Proposed Action

Construction Impacts

During construction, short-term visual impacts will result from the presence of equipment, materials, and work crews. Construction equipment will be out of character with the current uses and features of the area and surrounding properties. Construction of the transmission line near the Kettle Substation and at the south end of the EREF site will be most visible to the public, including traffic along U.S. Highway 20 and visitors to the Hell's Half Acre trailhead. Although these impacts are short term, they will be noticeable to passing motorists traveling along U.S. Highway 20 and from people accessing or visiting the Hell's Half Acre. The impact to views from this view point will be small due to the size of the proposed transmission line in comparison to the entire viewshed, and particularly with the distance from the trailhead. BMPs will be used to minimize dust generated during construction and disturbed areas will be

stabilized as soon as practicable after construction. Therefore, the visual impacts due to the construction of the transmission line will be small.

Operation and Maintenance Impacts

VRM Class III parcels have the objective to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Impact levels were classified as high, moderate, or low based on the degree of contrast of the project compared to the acceptable level of contrast for that VRM Class.

- High: Contrast from the project is substantially greater than acceptable.
- Medium: Contrast is somewhat greater than acceptable for the VRM Class.
- Low: Contrast is acceptable for the VRM Class.
- No Impact: Visual contrast is not perceptible.

The installation and operation of the transmission line will slightly alter the existing landscape. The alteration is limited and is not an introduced form or line not already present throughout much of the proposed transmission line corridor. Currently there is an existing 69-kV transmission line which parallels West 65 North Street along the route (Figure H-5a) between the Bonneville Substation (Figure H-5b) and the Kettle Substation (Figure H-5c), extending along the county road which becomes two-track in the crested wheatgrass land near Kettle Substation (Figure H-5d). A smaller utility line (originating at Kettle Substation) is also present which parallels U.S. Highway 20 from the eastern end of the project area to a radio tower approximately 12.9-km (8-mi) west of the EREF project area (Figure H-5e). Utility lines which occurred along this segment of the project area were consumed by fire over the last 10 years and were not replaced. There are also two larger transmission lines at the east end of the proposed transmission line route leading to the Bonneville Substation (Figure H-5f). Therefore, the presence of the proposed transmission line is not anticipated to attract the attention of the casual observer following installation and the level of contrast would be low. The casual observer's attention may be drawn to the transmission line during periods of routine maintenance due to the increased human activity in the area, but these effects will be temporary lasting only for the duration of the activity.

Contrast ratings were assigned to each view point based on the following definitions:

- Strong: The contrast demands attention, would not be overlooked by the average observer, and is dominant in the landscape.
- Moderate: T he contrast begins to attract attention and begins to dominate the characteristic landscape.
- Weak: The contrast can be seen but does not attract attention.
- None: The contrast is not visible or not perceived.

The degree of contrast was rated as weak from each of the key observation points analyzed. The degree of contrast was compared to the acceptable level of contrast for the VRM Class of the project area (the four levels of contrast roughly corresponding to the VRM Classes). The weak contrast rating given to the view points in the project area would be acceptable in VRM Class III and may be acceptable in Class II. The proposed transmission line will not dominate the landscape and will meet the VRM objectives.

Visual impacts to archaeological sites eligible for the NRHP have also been considered. These include the Wasden Cave Complex, a proposed National Historic Landmark, located approximately 1.0-km (0.6-mi) from the northeast boundary of the EREF site. Visual impacts analyses were performed for the EREF and concluded that the tops of parts of the EREF buildings will be visible from the Wasden Cave Complex. Because the transmission structures are as high as the EREF buildings, and as close to the Wasden Cave Complex as the EREF, the tops of the transmission line structures on the east side of the EREF will be visible from the Wasden Cave Complex once they are constructed and in operation. However, these impacts will be small and unobtrusive given their distance from the site, and considering that there are existing transmission lines currently visible from the Wasden Cave Complex.

4.14 WASTES, HAZARDOUS AND SOLID

4.14.1 No Action

Under the No Action alternative, RMP would not build the proposed transmission line and the associated facilities. Therefore, there would be no potential impact to hazardous or solid wastes.

4.14.2 Proposed Action

Construction Impacts

The presence of hazardous materials or hazardous wastes will become an issue within the proposed transmission line corridor if these substances are stored or handled improperly, or if they are encountered during construction, resulting in inadvertent releases to the environment. Aside from petroleum products used in the construction vehicles, the only hazardous materials that will be present are those typical of high voltage substations: used in the voltage transformers, batteries, fuel for diesel generators, and sulfur hexafluoride (SF_6) circuit breakers.

All construction, operation and maintenance activities will comply with all applicable federal, state and local laws and regulations regarding the use of hazardous substances. Construction sites, material storage yards, and access roads will be kept in an orderly condition throughout the construction period. Oils and fuels will not be dumped along the line and oils and chemicals for disposal will be hauled to an approved site. All materials will be transported in compliance with applicable state and federal regulations. Operators will have on site, and will implement the procedures contained in, an Emergency Response Plan, a Field Safety Plan, and a SPCC Plan, and will follow other BMPs for the control of waste, and will otherwise provide for the safety of workers and the public.

BMPs will be implemented to prevent pollution of surface and ground water, soil, and the atmosphere with any contaminant including hazardous or toxic materials. Any release of hazardous or toxic materials into the environment during construction will require immediate corrective action by the RMP contractor in accordance with applicable state and federal regulations.

Containment dikes will be used for all fueling tanks and for any other hazardous materials that are required for construction. Leak and spill containment will follow both the OSHA regulations and local safety codes and standards. The RMP contractor will be required to comply with all federal, state, and local laws and regulation controlling pollution and contamination of the environment.

The dismantlement of the existing 69-kV line dismantling will result in outgoing shipments for disposal, reuse, or recycling. It is estimated that approximately 170 structures will be replaced by the new 161-kV structures. Wooden poles will be shipped to the RMP central warehouse in Shelley, Idaho with approximately 17 truck shipments. Shelley, Idaho is located approximately 12.8-km (8-mi) southwest of Idaho Falls, Idaho, and approximately 45-km (28-mi) from the proposed EREF.

Conductors will be shipped to a metal recycling facility in Idaho Falls, Idaho with approximately 6 truck shipments. The transport distance is approximately 32.2-km (20-mi).

Construction wastes including wooden cross-arms and insulators will be shipped to the Hatch Pit (landfill) with approximately 5-6 truck shipments. The two landfills operated by Bonneville County are the Hatch Pit and the Peterson Hill Landfill. The Hatch Pit is only permitted to accept construction and demolition solid wastes. The Peterson Hill Landfill is the County's primary solid waste disposal facility; it is not used for the disposal of construction and demolition wastes.

There will be cut and fill requirements at the Bonneville Substation sites. The existing Bonneville Substation site will be tested for any hazardous waste which, if present, will be identified for appropriate removal and shipping to a licensed waste facility.

During the transmission line construction phase, sanitary wastes will be handled by adequately maintained temporary sanitary facilities. Sanitary waste generated during this time will be temporarily stored at these sanitary facilities and will be shipped off-site for processing.

Operation and Maintenance Impacts

No hazardous or solid waste impacts are anticipated from operation and/or maintenance of the proposed transmission line. The same practices described for construction activities will apply during maintenance activities.

4.15 WATER QUALITY, SURFACE AND GROUND

4.15.1 No Action

Under the No Action alternative, RMP would not build the proposed transmission line and the associated facilities. Therefore, there would be no potential impact to surface or ground water quality.

4.15.2 Proposed Action

Construction Impacts

Temporary impacts to ephemeral drainages will occur during site access. Drainages with steep banks will require the removal of material from the top of the bank to provide a gradual slope that will allow access by large equipment and trucks utilized in the construction process. The material removed from the banks of each of the drainages will be side-cast outside the channel and stockpiled in these locations until completion of the project. The top 15-cm (6-in) of material will be stockpiled separately from other material. Upon completion of the project, the material will be replaced, the banks will be graded as close to preconstruction contours as possible, the top 15-cm (6-in) of soil will be replaced, and the disturbed areas will be seeded where necessary.

There will be no impacts to ground water during construction. The installation of the poles for the transmission line will not create a conduit into the aquifer.

BMPs will be designed to prohibit any discharges from the project site on to adjacent property and will be used to prevent pollution of surface and groundwater with any contaminate including hazardous or toxic materials. Any release of hazardous or toxic materials into the environment will require immediate corrective action by the RMP contractor in accordance with applicable state and federal regulations. Containment dikes will be used for all fueling tanks and for any other hazardous materials that are required for construction. Leak and spill containment will follow both the OSHA regulations and local safety codes and standards. The RMP contractor will be required to comply with all federal, state, and local laws and regulations controlling pollution and contamination of the environment.

Operation and Maintenance Impacts

Any impacts that may affect water quality during operation and maintenance of the transmission line will be small. Access roads will have been stabilized during the construction phase of the project, so no impacts during inspection or maintenance activities are anticipated.

4.16 GENERAL WILDLIFE

4.16.1 No Action

Under the No Action alternative, the transmission line and associated facilities would not be constructed and there would be no disturbance or alteration of the two habitat types (sagebrush and agricultural croplands) that are present within the proposed transmission line corridor. Thus habitat for wildlife would be maintained and there would be no additional habitat fragmentation associated with this alternative.

4.16.2 Proposed Action

Construction Impacts

Many general wildlife species are known or suspected to occur within the habitats associated with the proposed transmission line corridor. Due to the close proximity to the heavily traveled U.S. Highway 20 and to agricultural croplands, these species are routinely disturbed by human activities. The installation of the transmission line will result in a short-term increase in human presence during the construction phase of the project and the activity will be spread out over the length of the proposed corridor. It is anticipated that individual animals will avoid areas where work is occurring. The development of additional access corridors used for installation and routine inspection and maintenance of the transmission lines may result in the permanent alteration of vegetation communities in areas where the access routes are installed. The clearing or alteration of vegetation will further result in habitat fragmentation in the general area. Currently, much of this habitat is already in a degraded state due to the fragmentation caused by its proximity of U.S. Highway 20, other county and private roadways, and agricultural activities. The construction of the transmission line is not anticipated to result in the alteration of big game migratory routes or use of these lands.

Operation and Maintenance Impacts

The presence of the transmission line will not impact wildlife which occur within the project area. Accessing the transmission line route for routine or emergency maintenance may impact

individuals. These impacts will include disruption of burrows and disturbance of vegetation used for cover or forage. These impacts are anticipated to be isolated to areas associated with maintenance activities (along the rights-of-way), which will limit impact to individuals and not have an impact on the overall population of any species within the project area. Bird species will be able to avoid impacts by flying away from the project area during maintenance activities, returning after activities are complete. Installation of a two-track access road along the transmission line, where one does not currently exist, will result in an increase of habitat fragmentation, although much of the proposed routes is already fragmented from conversion to agriculture or the existing county road and two-track along the existing transmission line..

5.0 CUMULATIVE IMPACTS

Cumulative impacts result "from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). The methodology used to analyze the potential cumulative impacts included identification of the affected environment and environmental consequences associated with the proposed transmission line, Twin Buttes Substation, and associated structures (presented in Chapters 3 and 4 of this ER), and the cumulative effects associated with past, present and future conditions relevant to this project when considered collectively.

The past, present, and future actions in the project area are fairly limited since much of the proposed transmission line route is composed of agricultural cropland and native rangelands and grasslands. Agricultural practices have occurred and will continue to be practiced on the proposed route. The proposed EREF facility will be built along the proposed route. The research and testing activities of the INL, which is adjacent to the west proposed route, will be on-going and varied according to its mission. U.S. Highway 20 runs to the south of the project area and represents a major transportation corridor between Idaho Falls to the east and INL (and other destinations) to the west. A number of existing and planned high voltage transmission lines cross the region, including several across INL and others to the east and south of the project boundaries. Cumulative impacts will generally result where these past, present, and future activities overlap on the landscape. Cumulative impacts would generally be additive and would be proportional to the amount and duration of disturbance within the specific project areas.

Cumulative impacts to air quality associated with the construction, operation, and maintenance of the transmission line, substation, and associated facilities are anticipated to be small as air-related impacts are primarily short-term in duration resulting from the construction of the proposed facilities and limited operation and maintenance activities. Cumulative impacts to air quality could occur if other projects were constructed at the same time as this project. However, at this time there are no other known projects other than the EREF construction project. If multiple projects were constructed during the same time period, adherence to air permit requirements, and mitigation measures including dust suppression as outlined in respective project plans would effectively reduce these cumulative effects (see also Section 2.3.3 of this ER). Exceedance of regulatory standards is not anticipated.

Projects and activities in the vicinity of the proposed transmission line corridor may contribute cumulatively to cultural resource impacts. Because these resources were not observed along the transmission line corridor, cumulative impacts to cultural resources will be small.

Cumulative effects to biological resources are generally additive and would be proportional to the amount of ground disturbance and native vegetation removal within specific project areas. Increasing numbers of transmission lines, roads and development in areas of wildlife habitat are an important consideration. Such impacts can be minimized through the concentration of linear projects (transmission lines) into designated corridors with the goal of reducing habitat fragmentation. Of primary consideration for biological resources are actions that could reduce native sagebrush habitat and result in a concomitant decrease in habitat for sagebrush obligate wildlife species. Continued land use, primarily agriculture and grazing, will continue to have similar impacts on wildlife and habitat. Wildfire threats will remain which could reduce sagebrush habitat (Figure H-6). In the larger region, reduction of sagebrush steppe habitat has occurred and will likely continue from conversion of sagebrush steppe for development. Conservatively assuming that a 6.1-m (20-ft) wide swath of vegetation associated with the sagebrush communities will be permanently removed for access to the transmission line route and structures, construction and operation of the proposed transmission line and associated facilities will contribute to the direct loss of up to 3.2-ha (7.9-ac) of sagebrush habitat in the region. This loss will represent less than 0.01% of the sagebrush steppe habitat within 8-km (5-mi) of the proposed corridor. Therefore, cumulative impacts will be small.

The cumulative impacts to soils of the proposed construction, operation, and maintenance of the transmission line, substation, and associated facilities will be similar to the direct and indirect impacts of the project and those associated with the current land use. No federal, state, or private development plans are known within the proposed corridor other than the EREF. Current land use, primarily agriculture and grazing, will continue to have similar impacts on soils and habitat on surrounding properties. Construction of the proposed transmission line will result in limited soil erosion, which will be minimized using BMPs. Therefore, cumulative impacts to soils will be small.

Increased visual modifications to the landscape would be expected due to the addition of transmission poles (resulting in more contrast of form, line color, and texture). Usually, the first transmission line or substation located within a corridor will cause the greatest incremental change, and then each additional line will add cumulatively, but often increasingly less, to the visual impact. A number of existing transmission lines and the resulting visual impacts are present within the region and in the immediate vicinity of the proposed transmission line corridor. The proposed transmission line would not dominate the landscape and would meet the VRM objectives. Therefore, cumulative impacts to visual resources will be small.

6.0 REFERENCES

APLIC, 2006. Avian Power Line Interaction Committee (APLIC). 2006. Suggested Practices for Raptor Protection on Power Lines. The State of the Art in 2006. Edison Electric Institute, APLIC, and the California Energy Commission, Washington D.C. and Sacramento CA.

BLM, 1984. Bureau of Land Management. 1984. Visual Resource Management, BLM Manual 8400, U.S. Department of Interior. Available online at: http://www.blm.gov:80/nstc/VRM/8400.html

BLM, 1985. Bureau of Land Management. 1985. Medicine Lodge Resource Management Plan. U.S. Department of the Interior. Bureau of Land Management. Idaho Falls District, Idaho Falls, ID.

BLM, 2003. Bureau of Land Management. 2003. Idaho BLM Special Status Animal Species for Districts and Field Offices. Instruction Memorandum No. ID-2003-057, May 20, 2003.

BLM, 2009a. Bureau of Land Management. 2009. Invasive and Noxious Weeds. Date accessed: November 19, 2009. http://www.blm.gov/wo/st/en/prog/more/weeds.html

Connelly et al., 2000. Connelly, J. W., M. A. Schroeder, A. R. Sands, and C. E. Braun. 2000. Guidelines to manage sage-grouse populations and their habitats. Wildlife Society Bulletin 28(4): 967-985. http://sagemap.wr.usgs.gov/Docs/Sage_Grouse_Guidelines.pdf

Connelly et al., 2004. Connelly, J. W., S. T. Knick, M. A. Schroeder, and S. J. Stiver. 2004. Conservation Assessment of Greater Sage-grouse and Sagebrush Habitats. Western Association of Fish and Wildlife Agencies. Unpublished Report. Cheyenne, Wyoming.

CEQ, 1997. Council on Environmental Quality. 1997. Environmental Justice Guidance under the National Environmental Policy Act. Council on Environmental Quality, Executive Office of the President, Old Executive Office Building, Room 360, Washington, DC. Available online at: http://www.epa.gov/compliance/resources/policies/ej/index.html

EPA, 1998. Environmental Protection Agency. 1998. Environmental Protection Agency Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses. April. Available online at: http://www.epa.gov/compliance/resources/policies/ej/index.html

EPRI, 2008. Electric Power Research Institute. 2008. EPRI Transmission Line Reference Book: 115–345-kV Compact Line Design: The "Blue Book." Palo Alto, CA.

Heady et al., 2001. Heady, L. T., K. I. Gabler and J. W. Laundre. 2001. *Habitat selection by pygmy rabbits in southeast Idaho*. BLM Technical Bulletin. No. 01-7.

IASCD, 2009. Idaho Association of Soil Conservation Districts. 2009. Idaho's Noxious Weeds. Date accessed: November 19, 2009. http://www.oneplan.org/Crop/noxWeeds/index.asp

IDEQ, 2009a. Idaho Department of Environmental Quality. 2009a. Idaho Department of Environmental Quality, Air Quality Index website. Date accessed: November 17, 2009. http://www.deq.idaho.gov/air/data_reports/monitoring/aqi.cfm

IDEQ, 2009b. Idaho Department of Environmental Quality. 2009b. Waste Management and Remediation: Data, Reports, and Guidance website. Date accessed: October 29, 2009. http://www.deq.idaho.gov/waste/data_reports.cfm

IDFG, 2005. Idaho Department of Fish and Game. 2005. Idaho Comprehensive Wildlife Conservation Strategy. Idaho Conservation Data Center, Idaho Department of Fish and Game, Boise, ID. http://fishandgame.idaho.gov/cms/tech/CDC/cwcs.cfm

IDFG, 2009a. Idaho Department of Fish and Game. 2009a. GIS data provided by IDF&G Conservation Data Center. Located in the project file.

IDFG, 2009b. Idaho Department of Fish and Game. 2009b. Conservation Data Center, yellow-billed cuckoo fact sheet. Date accessed: November 12, 2009. http://fishandgame.idaho.gov/cms/tech/CDC/cwcs_appf//Yellow-billed%20Cuckoo.pdf

INL ESER, 2009. Idaho National Laboratory, Environmental Surveillance, Education and Research Program. 2009. INL Species List. Date accessed: October 28, 2009. http://www.stoller-eser.com/species_index.htm

Marne, 2007. Marne, D. J. 2007. National Electrical Safety Code (NESC) 2007 Handbook. McGraw-Hill, New York. 752 pp.

MWH, 2009. Sage Grouse Survey Report. Prepared for the Proposed Site of the Eagle Rock Enrichment Facility, Bonneville County, Idaho. http://www.nrc.gov/materials/fuel-cycle-fac/eagle-rock.html

North Wind, 2010. Sage Grouse Survey Report, Eagle Rock Enrichment Facility, North Wind, Inc., May 13, 2010.

NRCS, 2009. U.S. Department of Agriculture Natural Resources Conservation Service. 2009. Web soil survey. Date accessed: November 15, 2009. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

PacifiCorp, 2006. Bird Management Program Guidelines. June 2006. 29 pp.

Shelley and Petroff, 1999. Shelley, R. and J. Petroff. 1999. Introduction to Biology and Management of Noxious Rangeland Weeds. Oregon State University Press, Corvallis, OR.

Tesky, 1994. Tesky, J.L. 1994. *Brachylagus idahoensis*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Date accessed: November 18, 2009. http://www.fs.fed.us/database/feis/

USC, 2009a. United States Code. 2009a. The National Environmental Policy Act of 1969, as amended through 1982, 42 USC 4321-4347, Public Law 91-190, 2009.

USC, 2009b. United States Code. 2009b. The Atomic Energy Act of 1954, as amended. Public Law 94-579, 42 USC 2011, October 21, 1976.

USC, 2009c. United States Code. 2009c. The Endangered Species Act of 1973, as amended. Public Law 93-205, 16 USC 1531, December 28, 1973.

USC, 2009d. United States Code. 2009d. The Migratory Bird Treaty Act of 1918, as amended. 16 USC 703-712. July 3, 1918.

USC, 2009e. United States Code. 2009e. The Bald Eagle Protection Act of 1940, as amended. 16 USC 668-668d. June 8, 1940.

USC, 2009f. United States Code. 2009f. The National Historic Preservation Act of 1966, as amended. Public Law 89-665, 16 USC 470. October 15, 1966.

USC, 2009g. United States Code. 2009g. The Clean Water Act of 1972. Public Law 92-500, 33 USC 1251. October 18, 1972.

USC, 2009h. United States Code. 2009h. The Clean Air Act of 1970, as amended. 42 USC 7401.

USC, 2009i. United States Code. 2009i. The Safe Drinking Water Act of 1974, as amended. Public Law 93-523, 42 USC 300 et seq. December 16, 1974.

USCB, 2009. U.S. Census Bureau. 2009. Census Bureau Website Quick Facts. Date accessed: November 11, 2009.
Bonneville County http://quickfacts.census.gov/qfd/states/16/16019.html;
Bingham County http://quickfacts.census.gov/qfd/states/16/16011.html;
Butte County http://quickfacts.census.gov/qfd/states/16/16023.html

USFWS, 2009. United States Fish & Wildlife Service. 2009. Idaho's Endangered, Threatened, and Candidate Species listed by County. Date accessed: October 31, 2009. http://www.fws.gov/idaho/agencies/Countybycounty.htm

USFWS, 2010. United States Fish & Wildlife Service, September 2010. Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition to List the Pgymy Rabbit as Endangered or Threatened; Proposed Rule, Federal Register Volume 75, No. 189, Pages 60516-60561.

WRCC, 2009. Western Region Climate Center. 2009. Idaho Falls 46 W, Idaho (104460) reporting station data. Date accessed: November 18, 2009. http://www.wrcc.dri.edu/summary/climsmid.html

TABLES

Table H-1 Anticipated Transmission Line Construction Equipment and Personnel
(Page 1 of 1)

Activity/Crew	People*	Type of Equipment	Quantity
Survey	3	Pickup truck	1
Transporting equipment to pole locations along the right-of-way and assembling hardware on poles	6	Tracked backhoe or blade Semi-truck with flatbed trailer Pickup truck Water truck (for dust control near highways) Crane	1 1 1 1 1
Setting poles	6	Pickup truck Crane Truck mounted auger	2 1 1
Installing conductors, pulling and tensioning	6	Wire reel trailer Diesel tractor Crane Pickup truck Drum puller Double-wheeled tensioner Carry all Static trailer	1 1 1 2 1 1 1 1
Sagging, clipping and dead-ending	3	High ranger Pickup truck	1 1
Reclamation	2	Landscaping tractor with harrower/drill seeder ATV with broadcast seeder Pickup truck	1 1 1
Total Personnel Required	**26**		

*Electrical contractor utilizes the same personnel for multiple activities, but personnel are counted separately for each task

Table H-2 Anticipated Substation Construction Equipment and Personnel
(Page 1 of 1)

Activity/Crew	People*	Type of Equipment	Quantity
Survey	3	Pickup truck	1
Site preparation	2	Pickup truck Tracked backhoe Grader Water truck (for dust control)	1 1 1 1
Yard construction	5	Pickup truck Tracked backhoe Grader Dump truck	2 1 1 1
Equipment installation	6	Pickup truck Cement truck Crane Semi-truck with flatbed trailer Material truck	2 1 1 1 1
Tie-ins to overhead lines	3	Bucket truck Pickup truck	1 1
Energizing the equipment	4	Testing van and equipment Mineral oil trailer Pickup truck	1 1 1
Site Restoration	2	Landscaping tractor with harrower/drill seeder ATV with broadcast seeder Pickup truck	1 1 1
Total Personnel Required	**25**		

* Electrical contractor utilizes the same personnel for multiple activities, but personnel are counted separately for each task

Table H-3 Mitigation Measures for Resources Along the Transmission Line Corridor (Page 1 of 5)

Resource	Mitigation Measures
Access	Since access will not be affected during construction and/or during operations and maintenance of the transmission line, no mitigation measures are anticipated.
Air Quality	• Construction BMPs will be applied to minimize fugitive dust. • Water and/or an environmentally safe chemical soil stabilizer or a chemical dust suppressant will be applied on unpaved access roads, as needed. • Reduced speed limits on unpaved, access roads will be imposed.
Cultural Resources	• AES has developed a treatment plan for Site MW004 in conjunction with the Idaho SHPO. The treatment of Site MW004 will occur prior to transmission line construction activities in that location. • RMP will develop an Unanticipated Discoveries Plan to deal with unexpected discoveries of human remains or other items of archaeological significance encountered during construction activities.
Environmental Justice	Since no minority or low-income populations have been identified that will be disproportionately or adversely impacted by the proposed project, no environmental justice mitigation measures are anticipated.
Land Uses	• To the extent possible, steps will be implemented during the design phase of the project to minimize disturbance to croplands and impacts to existing irrigation systems. • As feasible, RMP will limit construction to periods when livestock are not present in the vicinity of the transmission line corridor or if livestock owners are agreeable, livestock may be moved to pastures not being affected by construction activities. • Water and/or an environmentally safe chemical soil stabilizer or a chemical dust suppressant will be applied on unpaved access roads, as needed to control fugitive dust emissions. • As needed, crushed stone will be placed on top of disturbed soil in areas of concentrated runoff to prevent disturbance to residences and agricultural fields. Straw bales and silt fencing will be used as appropriate. • Graded areas will be restored to original contours to the extent possible and reseeded with an appropriate seed mix. • RMP's construction contractor will restore disturbed lands (e.g., rights-of-way, tensioning and pulling sites, structure sites, and other construction sites or storage areas). If surface soil is removed during the clearing process, it will be stockpiled separately from other grading stockpiles and replaced upon completion of construction activities. • Eroded areas that may develop will be repaired and stabilized. • If the final transmission line design confirms that the additional area outside the previously surveyed area is needed, then surveys will be conducted prior to the activities in the area proceeding.
Invasive, Non-invasive Species	• Vehicles will be cleaned prior to entering the project areas during construction and operations and maintenance. • Disturbed areas will be re-seeded with a native seed mix to reduce the risk of spread of invasive or noxious species. • Construction equipment, materials and vehicles would be stored at the sites where construction would occur or at specified construction yards. All personal vehicles, sanitary facilities and staging areas would be confined to a limited number of specified locations to decrease chances of incidental disturbance and spread of weeds.

Table H-3 Mitigation Measures for Resources Along the Transmission Line Corridors

(Page 2 of 5)

Resource	Mitigation Measures
	• Fill, free of noxious weed seed, will be utilized. • No herbicides will be used during construction, but may be used during operations and maintenance in limited amounts. Herbicides would be used according to government regulations and manufacturer's instructions to control noxious vegetation.
Migratory Birds	• Clearing or removal of habitat (e.g., sagebrush), will be performed outside of the breeding and nesting season (March 1 to July 15) for migratory birds. • If a new or previously unknown raptor nest is discovered in the project corridor prior to or during construction, seasonal stipulations may be necessary to prevent disturbance to nesting migratory species. • RMP will consult with the USFWS to determine appropriate actions for taking of migratory birds, if needed.
Soil Resources	• Standard construction BMPs, (e.g., minimizing construction footprints to the extent possible, limiting site slopes to a horizontal-vertical ratio of four to one or less, protecting undisturbed areas with silt fencing and straw bales as appropriate, and placing crushed stone on top of disturbed soil in areas of concentrated runoff) will be developed. If conditions beyond those normally experienced are anticipated, additional project specific BMPs may be identified in coordination with the applicable agencies. • RMP will obtain a NPDES Construction General Permit and develop a SWPPP to prevent impacts to land during construction. • Construction equipment will be in good repair without visible leaks of oil, greases, or hydraulic fluids. • BMPs will be used to control stormwater runoff to prevent releases to nearby areas to the extent possible. • Silt fences will be used near drainage ditches or other areas requiring protection. • Any hazardous materials will be handled by approved methods and shipped off site to approved disposal sites. • Vehicles will be inspected for cleanliness from dirt and other matter that could be released onto the highway, prior to entering U.S. Highway 20. • Vegetation removal will be limited to the extent possible. • Work areas will be re-seeded after work is completed. • Water and/or an environmentally safe chemical soil stabilizer or a chemical dust suppressant will be applied on unpaved access roads and for large ground disturbing activities, to control fugitive dust emissions, as needed. • To the extent possible, pole placements will be designed to span prime farmland and minimize impacts to existing irrigation systems. • A SPCC Plan will be implemented and will identify sources, locations and quantities of potential spills and response measures. The plan would also identify individuals and their responsibilities for implementation of the plan and provide for prompt notifications to State and local authorities, as required.
Threatened, Endangered and Sensitive Plants	Since the transmission line corridor does not contain suitable habitat for threatened, endangered and sensitive plants, no mitigation measures are anticipated.
Threatened, Endangered and Sensitive Animals	• Clearing or removal of habitat (e.g., sagebrush) will be performed outside of the seasonal sage-grouse lekking period (March 1 to July 15). Surveys will also be performed to identify active sage grouse nests if additional areas are to be disturbed or impacted that have not been cleared outside of the seasonal

Table H-3 Mitigation Measures for Resources Along the Transmission Line Corridors

(Page 3 of 5)

Resource	Mitigation Measures
	lekking period. Activities in areas containing active nests will be avoided during the seasonal lekking period. • If a new or previously unknown raptor nest is discovered in the project corridor prior to or during construction, seasonal stipulations may be necessary to prevent disturbance to nesting migratory species. • To minimize impact to smaller bird species (i.e., Brewer's sparrow, sage sparrow, loggerhead shrike, and Lewis' woodpecker), surveys will be performed prior to construction during the nesting season (June to July) to determine the presence of nests in sagebrush. Sage brush removal will be limited to the location of pole placement, access routes and new substation location. • Industry guidelines for preventing injuries to large perching birds and avian-safe design, construction and operation standards will be followed. • Care will be taken during construction and maintenance activities to avoid areas with extensive burrow systems to lessen impacts to populations of the Piute ground squirrel. • Vehicle speeds along the transmission line corridor will be reduced. Since there is no suitable habitat for ESA-listed species, no occurrences of pygmy rabbits, and no caves or other areas used by the Townsend's big-eared bat, no mitigation measures for these animals are anticipated.
Tribal Treaty Rights	Since there will be no changes in land status or long term effects from disturbance to natural resources, no mitigation measures associated with tribal treaty rights to access federal land are anticipated.
General Vegetation	• Cleared or disturbed areas during construction and operations and maintenance will be reseeded using a native seed mix and access routes will be limited to the extent possible using existing roads and trails. • Sage brush within the right-of-way would be lowered, as needed, to allow overland travel. • Sage brush removal will be limited to the location of pole placement. • Impacts to agricultural croplands are anticipated to be small due to the close proximity of access points to the road and the centerline, limiting the need to drive vehicles into the field. Therefore, no mitigation measures for croplands are anticipated beyond designing pole placements to minimize disturbance to croplands, to the extent possible.
Visual Resources	• Construction BMPs will be applied to minimize fugitive dust. • Disturbed areas will be stabilized as soon as practicable after construction.
Wastes, Hazardous and Solid	• A Spill Prevention, Control, and Countermeasure (SPCC) plan will be implemented by RMP to minimize the possibility of spills of hazardous substances, minimize the environmental impact of any spills, and promptly initiate appropriate remediation. The SPCC plan will identify sources, locations and quantities of potential spills related to transmission line and substation construction, maintenance, and inspection and the response measures. The plan will also identify individuals and their responsibilities for implementation of the plan and provide for prompt notifications of state and local authorities as needed. • Construction, and operation and maintenance activities will comply with all applicable federal, state and local regulations regarding the use of hazardous substances and disposal of hazardous wastes. No oils or fuels will be disposed/dumped along the transmission line routes. An Emergency

Table H-3 Mitigation Measures for Resources Along the Transmission Line Corridors

(Page 4 of 5)

Resource	Mitigation Measures
	Response Plan and a Field Safety Plan will also be developed. Construction sites, material storage yards and access roads will be kept in an orderly condition. • Materials that can be reused (e.g., wood poles) will be transported back to a local RMP store room. Wood poles and products that cannot be reused may be given to land owners along the transmission line routes and/or disposed of at a nearby approved landfill or salvage yard. Non re-useable metals (e.g., wire, hardware) will be transported to a salvage yard for scrap metal. All materials will be transported in compliance with applicable regulations. • Sanitary wastes will be handled by adequately maintained temporary sanitary facilities. Sanitary waste generated during this time will be temporarily stored at these sanitary facilities and will be shipped off-site for processing. • Containment dikes will be used for fueling tanks and other hazardous materials required for construction. Leak and spill containment will follow applicable regulations. • Bonneville Substation site will be tested for any hazardous waste which, if present, will be identified for appropriate removal and shipping to a licensed waste facility. • Substations would be designed and constructed in a manner to prevent and control accidental spills from affecting adjacent land uses. The ground level of the substation yard would be graded to direct the flow of water runoff away from equipment and the control building. The substation yard would be covered with a layer of crushed rock (four or more inches thick) that would help inhibit flow of water or other liquids, and would serve as an absorbent in the event of an accidental spill. Berms, or other barriers, would be used around the perimeter of the substation yard (along the fence line) to control runoff. Containment pits would be constructed at the base of equipment to contain spills.
Water Quality, Surface and Groundwater	• RMP will obtain a NPDES Construction General Permit and develop a SWPPP to prevent impacts to groundwater during construction. • Material removed from banks of drainages will be stockpiled separately from other material and replaced upon completion of construction activities. The banks will be graded as close to preconstruction contours as possible, and re-seeded as necessary. • Construction, and operation and maintenance vehicles will be in good repair without visible leaks of oil, greases, or hydraulic fluids. • As needed, crushed stone will be placed on top of disturbed soil in areas of concentrated runoff to prevent disturbance to residences and agricultural fields. Straw bales and silt fencing will be used as appropriate. • BMPs, including a SPCC Plan, will prohibit any discharges from the transmission line corridor on to adjacent property and will be used to prevent pollution of surface and groundwater. Any release of hazardous or toxic materials into the environment will require immediate corrective action in accordance with applicable state and federal regulations. • Containment dikes will be used for fueling tanks and other hazardous materials required for construction. Leak and spill containment will follow applicable regulations.
General Wildlife	• Sage brush removal will be limited to the location of pole placement. • Care will be taken during construction and maintenance activities to avoid areas with extensive burrow systems.

Table H-3 Mitigation Measures for Resources Along the Transmission Line Corridors

(Page 5 of 5)

Resource	Mitigation Measures
	• Native seed mix will be used to revegetate disturbed areas. • Vehicle speeds along the transmission line corridor will be reduced. • Precautions will be taken to protect birds during nesting season. • Recommendations of appropriate state and federal agencies, including the USFWS, will be considered.
Noise	• Advanced notice of construction activities would be given to landowners and residents potentially affected by construction activities. • Nighttime construction near noise-sensitive land uses (e.g., residences) would be avoided. • Construction activities with the potential for noise or vibration at residential areas that could have a negative impact on the quality of life will be performed during the day-time hours (7:00 a.m. - 7:00 pm).

Table H-4 Previous Cultural Studies Within 1.6-km (1.0-mi) of the Transmission Line Project Area

(Page 1 of 1)

Report Title	Author	Date
Optic fiber line	Ross, J.	1985
Fiber Optic Line from ANL-W to Idaho Falls	Ross, J. and W. Reed	1986
Potato Cellars of Idaho	Scupholm, C.	1995
MWHI-TK4, Eagle Rock Enrichment Facility and Amendment	Sigler, J.	2008

Table H-5 Soil Map Units Within the Transmission Line Corridor
(Page 1 of 1)

Map Unit: 17—Lava flows
Map Unit: 22—Pancheri silt loam, 0 to 2 percent slopes
Map Unit: 23—Pancheri silt loam, 2 to 4 percent slopes
Map Unit: 24—Pancheri silt loam, 4 to 8 percent slopes
Map Unit: 25—Pancheri silt loam, 8 to 15 percent slopes
Map Unit: 26—Pancheri-Rock outcrop complex, 2 to 25 percent slopes
Map Unit: 33—Polatis-Rock outcrop complex, 2 to 25 percent slopes

Table H-6 State-Listed Plant Species Within Bonneville County
(Page 1 of 1)

Species	State Ranking[1]	Habitat Requirements
Green Spleenwort *Asplenium trichomanes-ramosum*	S1	North-facing cliffs in moist montane environments
Payson's Milkvetch *Astragalus paysonii*	S3	Open places in the timber belt, burned-over forests, on decomposed granites, or other open disturbed mountainous sites on silty and ashy soils
Payson's Bladderpod *Lesquerella paysonii*	S2	Limestone and gypsum soils on rocky slopes near upper tree line in the Teton Mountain Range
Gray Willow *Salix glauca*	S2	Open, alpine and subalpine habitats that commonly have rocky, well-drained soils
Saint Anthony evening-primrose *Oenothera psammophila*	S3	Trailing margins of migrating sand dunes in inter-dunal areas having sand-filled cracks over basalt outcrops and developing primary plant communities
Alkali primrose *Primula alcalina*	S2	Alkali primrose occurs in wet, spring-fed, alkaline, intermontane valley meadow systems
Rolland's bulrush *Scirpus rollandii (Trichophorum pumilum)*	S1	Rich fens; wet calcareous soils
Ute ladies'-tresses *(Spiranthes diluvialis)*	S1	Subirrigated, alluvial soils along streams and rivers and their floodplains, including abandoned river channels, wet meadows, and open seepy areas

[1]State rankings are as follows:

- S1: Critically Imperiled: At high risk because of extreme rarity (often five or fewer occurrences), rapidly declining numbers, or other factors that make it particularly vulnerable to rangewide extinction or extirpation.
- S2: Imperiled: at risk because of restricted range, few populations (often 20 or fewer), rapidly declining numbers, or other factors that make it vulnerable to rangewide extinction or extirpation.
- S3: Vulnerable: At moderate risk because of restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors that make it vulnerable to rangewide extinction or extirpation.

FIGURES

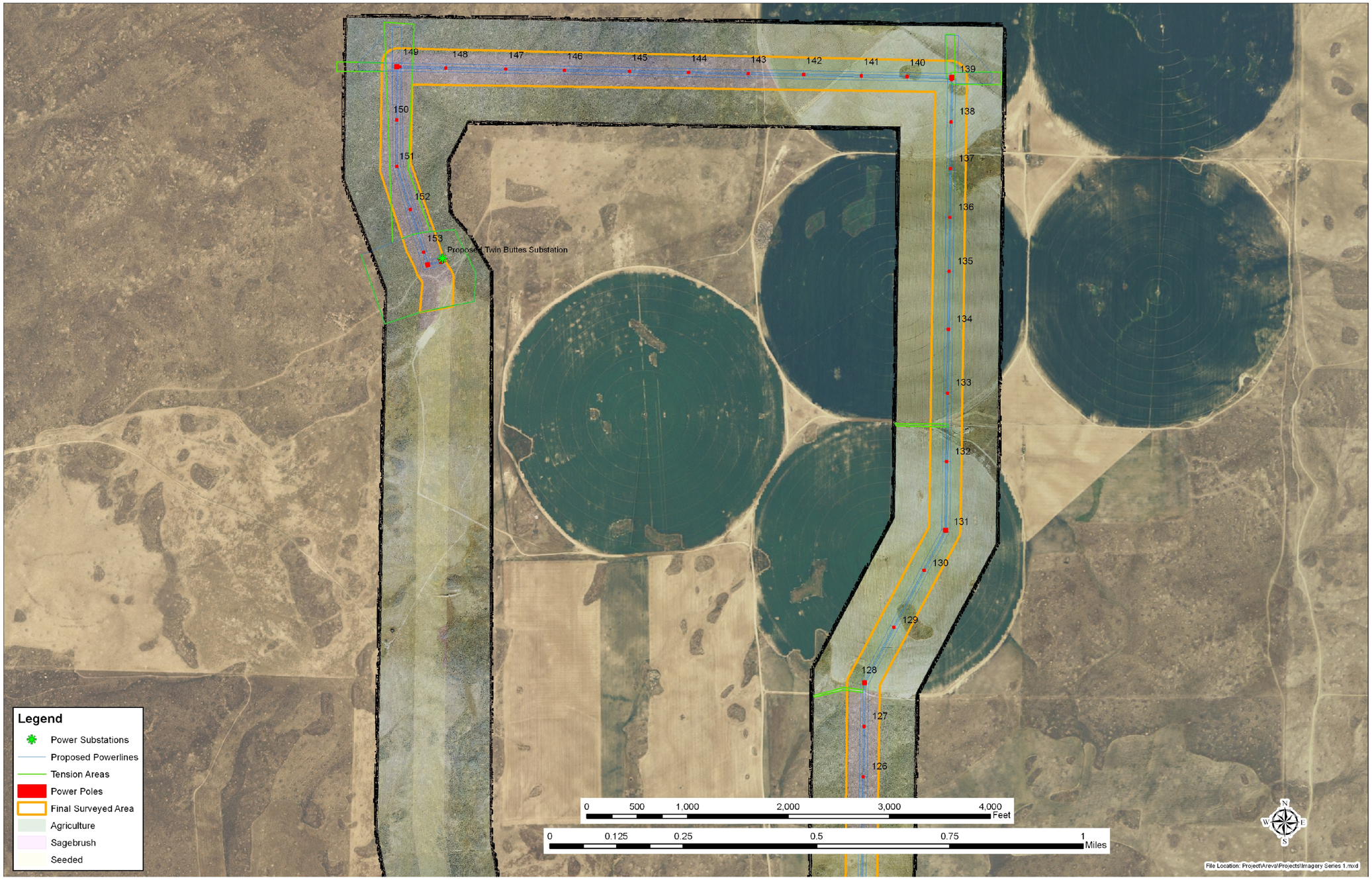

FIGURE H-1 **Rev. 2**

Land Ownership, Project Area, and Location of Existing and Proposed Substations and Proposed Transmission Route (Sheet 1 of 7)

EAGLE ROCK ENRICHMENT FACILITY ENVIRONMENTAL REPORT

FIGURE H-1 **Rev. 2**

Land Ownership, Project Area, and Location of Existing and Proposed Substations and Proposed Transmission Route (Sheet 2 of 7)

EAGLE ROCK ENRICHMENT FACILITY ENVIRONMENTAL REPORT