3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

This chapter presents the baseline information considered for the Project area by resource, and discloses the predicted effects of the Revised Proposed Routes, FEIS Proposed 9, Routes 8G, 8H, and 9K, and the Toana Road Variations as described in Chapter 2. In addition, the impacts associated with the seven action alternatives the BLM has identified are disclosed. Generally, only new information beyond what was disclosed in the 2013 FEIS is presented in each resource section. With the exception of the FEIS Proposed 9, the routes considered in the 2013 FEIS are not reanalyzed in this document. The analysis of the Revised Proposed Action is based on the Project description (see Appendix B) and includes the MEP (see Appendix C) and EPMs (design features) proposed by the Proponents as part of the Project, found in Table 2.7-1 in the FEIS. Each resource discussion describes the effects of the Revised Proposed Action, other routes, and route variations considered in the SEIS. Section 1.10 lists the issues developed through scoping for the SEIS. The cumulative effects for each resource analyzed can be found in Chapter 4.

As discussed in Chapter 2, the principal siting issue for Segments 8 and 9 involves a requirement in the enabling statute that the SRBOP be managed for the following values (i.e., SRBOP values):

1. conservation, protection, and enhancement of raptor populations;
2. raptor habitats;
3. natural and environmental resources; and
4. scientific, cultural, and educational resources.

Prior to authorizing uses within the SRBOP, the BLM determines the compatibility of those uses with the purposes for which the SRBOP was established. Public activities and uses that existed when the SRBOP statute was enacted are allowed to continue to the extent that they are compatible with the values for which the SRBOP was established, as defined in Chapter 1, Table 1.5-1. The resources analyzed in this SEIS that have been determined to be important to the SRBOP values are indicated in Table 3-1; the effects discussion for each of these resource sections break out the effects specific to the SRBOP.

Although the BLM has no authority to either permit or prohibit construction of the Project on non-federal land, NEPA requires an analysis of the effects of federal actions on all lands. Therefore, the EIS makes assumptions on where Segments 8 and 9 of the Gateway West Project would be sited on non-federal lands and on how it would be designed and constructed. This is not meant to imply that the BLM is authorizing the Project on non-federal lands. Decisions on siting and construction requirements on non-federal lands are under the authority of state and local governments. In Idaho, the IPUC regulates the siting of major transmission lines through a Certificate of Public Convenience and Necessity. Individual counties and local governments are responsible for authorizing the Project on private land. The IDL is responsible for authorizing the Project on State lands. Table 1.5-1 provides a summary of the major permits that would

be required and Section 3.17.1.3 provides a description of the regulatory requirements that pertain to land use.

In some cases resources are discussed in more than one section (e.g., plants are discussed under Vegetation Communities, Special Status Plants, and Invasive Plant Species). Generally, only new information is presented in this SEIS. For example, new manual direction requires a different method for analyzing effects to historic trails. A new section (3.1) has been added that analyzes the effects on NHTs. For most resources, the methods used in the FEIS were also the methods were used for this analysis, and the description in the FEIS is not repeated.

Table 3-1. Resource Sections

Resource	Location in SEIS	Associated with SRBOP Values
National Historic Trails	Section 3.1	Yes
Visuals Resources/Scenery	Section 3.2 (and Appendix G)	Yes
Cultural Resources	Section 3.3	Yes
Socioeconomics	Section 3.4	No
Environmental Justice	Section 3.5	No
Vegetation Communities	Section 3.6	Yes
Special Status Plants	Section 3.7	Yes
Invasive Plant Species	Section 3.8	Yes
Wetlands and Riparian Areas	Section 3.9	Yes
General Wildlife and Fisheries	Section 3.10	Yes
Special Status Wildlife and Fish Species	Section 3.11	Yes
Minerals	Section 3.12	No
Paleontological Resources	Section 3.13	No
Geologic Hazards	Section 3.14	No
Soil Resources	Section 3.15	Yes
Water Resources	Section 3.16	No
Land Use and Recreation	Section 3.17 (and Appendix F)	Yes
Agriculture	Section 3.18	No
Transportation	Section 3.19	No
Air Quality	Section 3.20	No
Electrical Environment	Section 3.21	No
Public Safety	Section 3.22	No
Noise	Section 3.23	No

Design Features and Mitigation Measures

Mitigation includes specific means, measures, or practices that would reduce or eliminate effects of the proposed action or alternatives. Mitigation measures can be applied to reduce or eliminate adverse effects to biological, physical, or socioeconomic resources. Mitigation may be used to reduce or avoid adverse impacts, whether or not they are significant in nature. Measures or practices should only be termed mitigation measures if they have not been incorporated into the proposed action or alternatives. If mitigation measures are incorporated into the proposed action or alternatives, they are called design features, not mitigation measures. Monitoring is required to ensure the implementation of these measures (40 CFR 1505.2(c)) (BLM 2008c).

Mitigation as described in this SEIS are those measures that could reduce or avoid adverse impacts, and are measures that have *not* been incorporated into the Proposed Action or an alternative. Mitigation can include (40 CFR 1508.20):

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impact by limiting the degree of magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitation, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

Based on the definitions from the BLM (2008c) NEPA Handbook H-1790-1 (above) and the BLM (2013c) Draft Regional Mitigation Manual, the Proponents' Proposed MEP is considered a design feature for this SEIS. Other design features proposed by the Proponents as part of the Supplemental POD (see Appendix B) include the Avoidance and Minimization Plans located in Appendix C, and EPMs as listed in Table 2.7-1 of the FEIS and Appendix Z of the POD.[1]

Remaining Impacts

For the analyses in this chapter, "remaining impacts" are those impacts that would remain once all avoidance and minimization are implemented to avoid, minimize, or mitigate for Project-related impacts (determining the extent of remaining impacts is critical in developing the adequacy of proposed mitigation and the need for any additional compensatory mitigation).

Additional BLM Mitigation

A compensatory mitigation framework developed by the BLM is included in the Draft SEIS; a more detailed analysis of the compensatory mitigation required for each resource will be presented in the Final SEIS. The strategy would address the primary types of compensatory mitigation that would apply to one or more resources or special management areas, as appropriate:

- SRBOP,
- Sage-grouse,
- Migratory birds,
- NHTs,
- Cultural resources, and
- Wetlands.

The sequence of mitigation actions described above would comply with direction from the CEQ (40 CFR 1508.20), DOI Manual 600 DM 6 (DOI 2015), and the BLM (2013c)

[11] For additional information, see DOI Manual 600 DM 6 (DOI 2015).

Regional Mitigation Manual and includes measures for the BLM to consider to compensate for an unavoidable or unmitigated impact by replacing or providing substitute resources or environments.

Morley Nelson Snake River Birds of Prey National Conservation Area

Section 1(5) (D) of the enabling act (P.L. 103-64, as amended) states that BLM will protect the conservation area as a home for raptors under a management plan that "*allows for diverse appropriate uses of lands in the area to the extent consistent with the maintenance and enhancement of raptor populations and habitats and protection and sound management of other resources and values of the area*." Section 3(a)(2) of the enabling act further states that "[t]*he purposes for which the conservation area is established, and shall be managed, are to provide for the conservation, protection, and enhancement of raptor populations and habitats and the natural and environmental resources and values associated therewith, and of the scientific, cultural, and educational resources and values of the public lands in the conservation area*." Section D.1 of the BLM Draft Mitigation and Handbook (H-1794-1) lists enhancement as one of four categories of compensatory mitigation measures.

The resource specific analyses found in following subsections of Chapter 3 contain an assessment of the Proponents MEP, and how the measures proposed in the MEP relate to the resources and values for which the SRBOP was established (i.e., raptor populations and habitats; natural and environmental resources and values; and scientific, cultural, and educational resources and values).

The requirement for mitigation for impacts to the SRBOP's resources, objects, and values, including compensatory mitigation for any remaining effects, would be consistent with the BLM's management responsibilities under FLPMA and P.L. 103-64. This management approach would also be consistent with the Presidential Memorandum on mitigation, the DOI (2015) manual 600 DM 6 on landscape-scale mitigation, and the BLM's interim mitigation policy (IM 2013-142 [BLM 2013c]), which direct the BLM to avoid, minimize, and compensate for impacts. The BLM's policy manual on the management of NCAs (Manual Section 6220) also requires mitigation for impacts from ROWs. This mitigation standard of net benefit would comply with P.L. 103-64's requirement to enhance the resources, objects, and values of the NCA and it would also comply with the direction provided in the Presidential Memorandum on mitigation and DOI's manual section on landscape-scale mitigation to achieve a net benefit, when appropriate or required.

After assessment of the Proponents' MEP and in response to recently released policies concerning the requirements of mitigation for large landscape-scale projects, the BLM has developed a model that would address compensatory mitigation actions concerning the SRBOP. Habitat restoration treatments would be the primary compensatory mitigation action to offset habitat loss due to the construction of the Project within the SRBOP, although other actions would be considered as well. The habitat restoration treatments would be conducted within Management Area 1. That area has been identified in the SRBOP RMP as the most resistant and resilient to disturbance with the highest probability of restoration success (BLM 2008a). The BLM's draft compensatory mitigation model is included in Appendix K.

3.1 NATIONAL HISTORIC TRAILS

This section addresses the potential impacts to National Historic Trails (NHTs) from the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; and the Toana Road Variations to the Segment 9 Revised Proposed Route. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). Effects associated with the various routes analyzed in the 2013 FEIS were disclosed in that document. With the exception of FEIS Proposed 9, those FEIS routes are not being re-analyzed here, as only new information is included in this resource-specific section."

This section presents the results of an interdisciplinary inventory and analysis of impacts for segments of the Oregon NHT located on BLM-administered lands in the Analysis Area. The NTSA (P.L. 90-543, as amended through P.L. 111-11) established a network of visual, historic, and recreational trails to provide for outdoor recreation needs; promote the enjoyment, appreciation, and preservation of open-air, outdoor areas, and historic resources; and encourage public access and citizen involvement. Consistent with the requirements of the NTSA, the BLM has developed guidance for managing trails that are part of the National Trails System. The inventory and impact assessment technical report (see Appendix J) was conducted in compliance with BLM Manual 6280, *Management of National Scenic and Historic Trails and Trails under Study or Recommended as Suitable for Congressional Designation (Manual 6280)* (BLM 2012a). The Project crosses private and public lands with segments of the Oregon NHT, the North Alternate Oregon Trail Study Trail (North Alternate Study Trail), Goodale's Cutoff Study Trail, and North Side Alternative Route Study Trail. The Oregon NHT and the North Alternate Study Trail are the only two trails subject to the requirements of Manual 6280. Goodale's Cutoff Study Trail and the North Side Alternative Route Study Trail are not on BLM-managed land in the Analysis Area, and no additional analysis of these trails is provided in this section. For a discussion of historic trails and roads not subject to BLM Manual 6280, such as Goodale's Cutoff Study Trail and North Side Alternative Route Study Trail, as well as sites of historic or cultural significance, please refer to Section 3.3 – Cultural Resources.

BLM Manual 6280 requires the BLM to evaluate and disclose potential impacts of agency undertakings on national scenic or historic trails on BLM-administered lands. This NHT section includes FEIS routes as well as those routes not originally studied in the FEIS in order to be consistent with the requirements of Manual 6280 to compare and consider all feasible Project alternatives. There are no National Scenic Trails, recreation (including water) trails, or connecting and side trails located in the Analysis Area.

3.1.1 Affected Environment

3.1.1.1 Analysis Area

For the purposes of this section, the Analysis Area is referred to as the Area of Potential Adverse Impact (APAI), as described in BLM Manual 6280. To date, no National Trail Management Corridor has been established for the Oregon NHT within Idaho. In lieu of having a designated Management Corridor, the BLM is required to identify the APAI for projects that may impact an NHT or Study Trail (BLM 2012a: 3-1). After considering the

scoping comments of agencies and the public, the BLM established the APAI to include all BLM-managed lands within a 10-mile corridor, or 5 miles on either side of the centerline for the Revised Proposed Routes, Route Segments, and FEIS routes that would have a view of the proposed Project. Five miles is generally the viewing threshold, beyond which point terrain and atmospheric conditions tend to absorb the transmission line. Due to the nature of lattice structures and color of the H-frame structures, these structures would generally not be visible in this landscape beyond 5 miles. Table 3.1-1 provides the respective lengths of the Oregon NHT and the applicable Study Trails that are located in the APAI. This corridor lies within the Foreground/Middleground Visual Resource Inventory (VRI) distance zone defined in BLM Handbook 8410-1, where adverse impacts to NHTs and Study Trails are most likely to occur (BLM 1986a).

Table 3.1-1. Length of Oregon NHT and Study Trails within the BLM Manual 6280 APAI by County, State, and BLM Field Office.

Trail Name and Designation	County, State	BLM Field Office	Total Length of Trail in Field Office (all ownership) (miles)	Length of Trails within BLM Manual 6280 APAI (BLM land only) (miles)
Oregon NHT Designated Route	Owyhee and Elmore Counties, ID	Four Rivers	96.4	95.4
	Twin Falls County, ID	Burley	2.4	0.4
	Owyhee, Elmore and Twin Falls Counties, ID	Jarbidge	48.6	21.9
	Elmore and Gooding Counties, ID	Shoshone	–	–
	Owyhee County ,ID	Owyhee	15.6	3.3
	Owyhee County, ID	Bruneau	14.6	0.5
Subtotal Length Oregon NHT			***177.5***	***121.4***
North Alternate Oregon Trail Study Trail	Elmore and Gooding Counties, ID	Shoshone	43.1	13.8
	Elmore County, ID	Four Rivers	21.6	17.0
	Twin Falls County, ID	Jarbidge	0.2	–
Total Length of Study Trails			***64.9***	***30.8***
Total Length of NHT and Study Trails			**242.4**	**152.2**

Designated National Historic Trails Affected by the Project

Within the APAI, one designated NHT, the Oregon NHT, would be affected by the Project. Congressionally designated in 1978 (P.L. 95-625 amendment to the NTSA, P.L. 90-543), the Oregon NHT formally recognizes the 2,200-mile emigrant trail that connected the Missouri River to the fertile Columbia River and Willamette Valleys in Oregon, a route used by approximately 400,000 people during its period of use. Within the Project Analysis Units (AU) and APAI, the designated Oregon NHT route splits into two routes (one heading north and one heading south of the Snake River) at the Three Island Crossing near present-day Glenns Ferry, Idaho. These two routes are typically referred to as the “Primary” or “North Trail” and the “South Alternate.” Each route is

considered a part of the designated Oregon NHT during its period of primary use from 1841 to 1848 (NPS 1998).

The North Trail extends along the north side of the Snake River Valley from the Twin Falls–Elmore County line to the outskirts of present-day Boise, Idaho. The South Alternate, meanwhile, traverses the comparably dry lands situated on the south side of Snake River. The two routes eventually converge to one route again near Boise, Idaho.

Trails Recommended as Suitable for National Trail Designation

In addition to trails formally designated by Congress, BLM Manual 6280 requires the BLM to also analyze Project impacts to "Trails Recommended as Suitable for National Trail Designation" that have been identified in a feasibility study. Within the APAI, alternative routes of the Oregon NHT followed the north side of the Snake River from a point north of American Falls to a junction just west of Mountain Home. These routes are currently not part of the designated Oregon NHT and are known as the North Alternate Oregon Trail, North Side Alternative Route, and Goodale's Cutoff Study Trails. The three trail routes are part of a feasibility study being conducted by the NPS under the congressionally approved Omnibus Public Land Management Act of 2009 (P.L. 111-11 Section 5302; NPS 2011). While portions of these three Study Trails pass through the APAI, only the North Alternate Oregon Trail is part of this study because the North Side Alternative Route and Goodale's Cutoff are not on land managed by the BLM and thus are beyond the scope of this report.

Morley Nelson Snake River Birds of Prey National Conservation Area

Portions of the Project would cross NHTs within the SRBOP. As a result, this section discusses potential impacts that would occur on the SRBOP. Cultural resources, which include NHTs, are one of the environmental resources and values for which the SRBOP was established to manage and protect.

3.1.1.2 Issues Related to National Historic Trails

The following NHT-related issues were raised by the public and agencies during the initial public scoping period for the Gateway West Transmission Line Project in 2009 (Tetra Tech 2009) and during the SEIS scoping (see Appendix I). Additional information was collected during a Manual 6280 consultation meeting held by the BLM on March 3, 2015. The meeting was attended by staff of the BLM, the NPS, Rocky Mountain Power, Idaho Power, Shoshone-Paiute Tribes, National Trust for Historic Preservation, and Idaho Chapter Oregon/California Trails Association. The following issues and concerns raised by federal and state agencies, tribes, and private organizations during scoping and agency discussions were considered in this report as stipulated by law or regulation:

- What are the impacts to NRHP-eligible historic resources?
- What would be the visual and recreational impacts on historic trails?
- Where the setting is an important aspect of the integrity of a property, would the setting be affected?
- How will the BLM avoid and/or minimize impacts to the Oregon NHT?

- How will the BLM work with the Proponents to locate the Project near areas already visually impaired and away from NHTs?
- How will the BLM actively coordinate with other organizations and agencies on effects to the Oregon NHT?
- How will the BLM protect visitor experiences associated with the Oregon NHT?
- How will the BLM develop any potential mitigation to be commensurate with the Project's impacts?
- How will the BLM address concerns with Project routing near the Hagerman Fossil Beds National Monument, Three Island Crossing State Park, and along Segment 9 between King Hill and the NCA?

The scoping comments received during the 2014-2015 scoping effort were similar to those received in 2009.

3.1.1.3 Methods

Inventory Methodology

BLM Manual 6280 provides policy guidance that directs the BLM to inventory the resources, qualities, values, associated setting, and primary uses that support the nature and purposes of segments of the Oregon NHT and North Alternate Study Trail and to assess impacts from proposed agency actions. The agency, however, has not developed a formal methodology for either the inventory or impact assessment. In the absence of agency direction, the following inventory and analysis of impacts was developed for the Project in coordination with the BLM, NPS, and Idaho Chapter Oregon/California Trails Association. Given the lack of a formal methodology, this analysis is considered reasonable and appropriate because it utilizes existing methods for collecting and analyzing data germane to the resources being studied. For the cultural resources component of this study, for instance, the analysis closely follows the identification, evaluation, and impact assessment thresholds common to cultural resource investigations prepared under the requirements of 36 CFR 800. Likewise, the visual resource components of the analysis follow the inventory methods developed by the BLM's VRM program (BLM 1986a). Section 3.2 of the 2013 FEIS discusses the inventory methods used to assess Project-related impacts to visual resources.

Following the interdisciplinary study requirements of Manual 6280, inventories were prepared for visual, recreation, cultural, and natural resources that characterize the affected environment and setting for the Oregon NHT and North Alternate Study Trail. An interdisciplinary field team collected data from individual Inventory Observation Points (IOPs) on the recreation, natural, visual, and cultural/historic resources, qualities, and values and associated settings of the Oregon NHT and North Alternate Study Trail. The methodology for inventorying and analyzing Project impacts included background research, viewshed application, field assessment of IOPs, visual simulations, and discipline-specific impact analysis at Key Observation Points (KOPs).

Background Research

Research pertaining to the visual, recreation, cultural, and natural resources values, and qualities associated with the Oregon NHT and North Alternate Study Trail within the

AUs and APAI was collected from a variety of sources to determine the breadth of existing information and to identify potential data gaps that would need to be addressed through a field investigation. Technical documents consulted during the background research effort included the following:

- Scoping Report: Oregon, California, Mormon Pioneer, and Pony Express National Historic Trails Feasibility Study Update and Revision/Environmental Assessment (NPS 2011);
- Management and Use Plan Update Final Environmental Impact Statement: Oregon National Historic Trail Mormon Pioneer National Historic Trail (NPS 1998);
- Owyhee Resource Management Plan (BLM 1999);
- National Historic Trails Auto Tour Route Interpretive Guide: Along the Snake River Plain through Idaho (NPS 2008);
- Main Oregon Trail Backcountry Byway from Three Island Crossing to Bonneville Point (BLM and IOCTA 2009);
- Idaho Recreation Guide: Campgrounds, Sites and Destinations (BLM n.d.);
- Bruneau Management Framework Plan (BLM 1983b);
- Jarbidge Resource Management Plan and Record of Decision (BLM 1987);
- Jarbidge Approved Resource Management Plan and Record of Decision (BLM 2015a);
- Morley Nelson Snake River Birds of Prey National Conservation Area Resource Management Plan and Record of Decision (BLM 2008a);
- Pieces to the Puzzle: Rediscovering Idaho's North Alternate Oregon Trail (Eichhorst 2011);
- Trails of the West: A Review and Evaluation of Historic Trails in Wyoming and Idaho Along the Proposed Gateway West Transmission Line Project (Tetra Tech and URS 2011); and
- Gateway West FEIS and ROD (BLM 2013a and 2013b).

Additional sources included emigrant diaries consulted during archival research, cultural resource reports prepared for the Project, and other primary and secondary sources such as manuscripts and books on the history of the Oregon Trail, historic maps such as General Land Office (GLO) plats, modern trail guides, and BLM pamphlets for Oregon NHT interpretive sites.

Viewshed Analysis

Consistent with the requirements of Manual 6280, two separate viewshed analyses were conducted for this Project. The viewsheds were used to:

- Complete a VRI centered on the Oregon NHT and North Alternate Study Trail; and
- Determine whether BLM-managed trail segments or associated sites could have a view of the proposed Project.

Both viewsheds were created using a Geographic Information System- (GIS-) based "bare earth" application based upon a digital elevation model that reveals the visible areas of a landscape based on existing landforms without consideration of vegetation and/or the built environment regardless of property ownership. This analysis, therefore, conveys the greatest possible extent of the views from the two respective trails (for the purposes of the VRI) in addition to the greatest possible extent of potential Project visibility (for the APAI). The validity and extent of the viewshed model was confirmed during fieldwork and in the development of the Project simulations (see Appendix J).

Analysis Units

Consistent with Manual 6280, inventory AUs were developed around segments of the Oregon NHT. An AU is a polygon encompassing discrete trail segments as well as the resources, qualities, values, associated settings, and primary uses that support the nature and purposes of the Oregon NHT and the North Alternate Study Trail. Five inventory AUs were developed based on the presence of distinct Oregon NHT high potential historic sites (HPHS) and high potential route segments (HPRSEGs) in addition to the North Alternate Study Trail. The development of the AUs also took into consideration the presence of significant landforms or changes in land use that represented significant obstacles to the visual environment of the respective trails. The built environment and intensive agricultural land use around Grand View, Idaho, for instance, interrupts the visual setting of the Oregon NHT as it heads north and west, thus prompting the split of AU1 into AU1a and AU1b.

Due to the lack of available VRI data for the trails, the AU viewshed was established to a distance of 15 miles from the respective trails to facilitate the VRI centered on the Oregon NHT and North Alternate Study Trail. This distance was consistent with that required under BLM's VRI process to understand the contribution of background views to the characteristics of the foreground/middleground (0-5 miles) area (BLM 1986a). The seldom seen distance zone (beyond 15 miles) was not included because it was not considered to substantially contribute to the trails' setting. The VRI process is described in the *Visual Resource Inventory* subsection below. The inventory areas for recreation, cultural, and natural resource analyses were limited to 5 miles from the trails because Project features, most notably the lattice or H-frame transmission structures, would not be visible in this landscape beyond that distance (see Section 3.2 – Visual Resources).

Inventory Observation Points

Utilizing background research and the viewshed analyses, IOPs were developed consistent with BLM Manual 6280. Within the AUs, IOPs were selected based upon the following characteristics:

- Existing trail recreation and interpretive developments;
- Overlook points, access points, trailheads, pullouts, major landforms, and natural topographic breaks;
- Areas with sensitive resources, qualities, values, and associated settings;
- Regularly spaced intervals along the Oregon NHT and North Alternate Study Trail tread, trace, and/or management corridor;

- Trail-related NRHP-eligible and listed properties;
- Significant historic trail–related features such as river crossings, graves, and inscription sites;
- HPHSs;
- HPRSEGs;
- Designated auto tour routes (ATR); and
- Trails that facilitate public access and opportunities for vicarious experiences.

IOPs identified for inventory and analysis are mapped in Appendix J, along with digital photographic overviews of the individual IOPs.

Visual Resource Inventory

Consistent with the requirements of BLM Manual 6280, the VRI and visual resource impacts analysis uses the concepts of the BLM's VRM system as outlined in BLM VRM Manual 8400 (BLM 1984).

The VRI data within the six BLM Field Offices covered by the AUs are currently in various stages of being updated through various RMP updates and could not provide comprehensive coverage of all the AUs. To identify the scenic values within the five AUs, a VRI centered on the Oregon NHT and North Alternate Study Trail was prepared. Consistent with BLM Manual 6280 guidance, VRI data, including scenic quality, viewer sensitivity, and distance zones, were inventoried by the field team. When taken together, the components of the VRI characterize the affected environment for the trails.

On the basis of these three inventory factors, all BLM-administered lands were placed into one of four visual inventory classes (Class I, II, III, or IV). VRI classes for each of the IOPs are presented in the inventory.

Cultural and Historic Resource and Settings Inventory

Consistent with BLM Manual 6280 and the Gateway West PA (see Section 3.3.1.1), the cultural and historic resource inventory utilized the numerous literature reviews, 15 percent sample surveys (Class II), intensive pedestrian surveys (Class III), trails study (Tetra Tech and URS 2011), emigrant diaries, and public comments from interested groups and individuals. Previously recorded cultural and historic resources associated with the Oregon NHT and North Alternate Study Trail were identified as IOPs and visited by the field team to confirm location and condition and whether they would serve as contributing segments or sites to the NRHP-eligible Oregon NHT. In addition to assessing the locations of these previously recorded resources, field teams also collected data about the physical characteristics, setting, historic integrity, and NRHP contributing status of other segments of the designated Oregon NHT, associated heritage resources (routes and/or sites), and North Alternate Study Trail at each IOP (as applicable).

Recreation and Travel Management Opportunities Inventory

Utilizing background literature such as BLM recreation-related Web sites, EISs associated with BLM RMPs, and publicly available recreational travel maps within the AUs, the inventory of recreation and travel resources included a three-tiered identification effort. The first tier included NHT-related resources and experiences

consisting of, but not limited to, trail interpretation or vicarious trail-based recreational opportunities. The second tier consisted of identifying recreational opportunities (potentially dispersed) that may or may not be related to the NHT such as hiking, trail use, hunting, fishing, wildlife viewing, camping, or other activities. The final tier consisted of identifying campgrounds, day-use areas, or other developed or dispersed recreational sites that could be near but not necessarily related to the NHT.

Natural Resources and Settings Inventory

Some natural resource qualities, values, and settings serve to influence trail experiences and may support the primary use or uses of the Oregon NHT although much of the natural condition within the AUs has been altered since the Oregon NHT was used. An inventory of natural resources and settings was performed during fieldwork at each IOP inventory to assess extant geologic features, water sources, native vegetative settings, and invasive vegetative species. Additional information was collected using aerial photography to gauge the extent of man-made alterations to the natural setting.

Other Landscape Elements

Other landscape elements are composed of additional components that support or detract from the trail, including existing transmission lines, wind farms, communication towers, transportation routes, adjacent land uses, land ownership, and the extent of these cultural modifications. Additional variables within the viewshed, including noise, sights, smells, and other existing conditions, are also considered for their role within and modification to the Oregon NHT landscape.

Impacts Assessment Methodology

Visual Resource Impact Methodology

Generally, impacts to visual resources refer to the change in aesthetic values resulting from modifications to the landscape. The changes in the visual resources, values, qualities, and settings associated with the Oregon NHT and North Alternate Study Trail were analyzed by using the VRI and the general concepts of the BLM's VRM system. The VRM's use of KOPs and visual contrast rating forms (BLM Handbook 8431-11986 [BLM 1986b]) provided the principal means of analyzing Project impacts to aesthetic components of the trails. KOPs are viewing locations chosen to be generally representative of visually sensitive areas where it can be assumed that viewers may be affected by a change in the landscape setting as a result of the Project.

For this analysis, the IOPs visited during field data collection were also utilized as KOPs to provide a well-distributed assessment of impacts across the project area and to include both stationary platforms (e.g., scenic overlooks, trailheads) and linear platforms (e.g., trails, scenic roads, floatable rivers). To maintain continuity and to reflect the identical locations used for the inventory and impact assessment components of this study, the KOP numbers are identical to the IOP numbers. The contrast rating forms prepared for each KOP, therefore, provided a determination of the level of contrast expected for each KOP. The levels of Project contrast are discussed in Table 3.1-2, which presents thresholds for impacts that would be classified as high, moderate, and low. Project simulations were prepared to provide examples, at key locations, to verify the validity of the contrast ratings taken in the field and to provide evaluators with

examples of Project impacts to visual, cultural, recreational, and natural resources, qualities, values, and settings (see Appendix J, Attachment D).

Table 3.1-2. Project Impact Thresholds/Measures

Threshold Level	Resource Types
High (Adverse Impact for Cultural/ Historic)	Scenic/Visual Resources • Contrast produced by the Project would demand attention and dominate views from the trail centerline where form, line, color, and texture of Project components would be incongruent with existing landscape or historic features. • High-quality, diverse, and rare or unique scenery (Class A or B) would be modified where the setting is a defining factor for the "high potential route segments" or as seen from historic properties and/or interpretive areas, or scenic trail centerlines. Historic and Cultural Resources • Characteristics of historic properties located in the trail corridor and seen from the trail centerline would be modified to the extent that the NRHP eligibility of the trail segments and related historic properties affected would be compromised. The effect would be considered an "adverse impact." Recreation, including Travel Management • Intact resource values, including recreation and National Trail-related travel management opportunities and values would be substantially compromised by the Project. These values would no longer contribute to the character of the trail. Natural Resources • Natural values, including any key contributing values and characteristics would be substantially compromised by the Project (i.e., a riparian area adjacent to a route segment follows what would be cleared for access roads). These values would no longer contribute to the character of the trail. Other Landscape Elements • Presence of developments; facilities; landscape modifications; existing land uses; valid existing rights; surface, sub-surface, or other interests in land ownership; and other variables such as sights, smells, and other experiences that may impact the trail experience. Areas where Project facilities would be located in proximity to, or parallel with (but not immediately adjacent to), landscape modifications that exhibit similar form, line, color, and texture.
Moderate	Scenic/Visual Resources • Contrast produced by the Project would attract attention from viewers using the trail centerline, and Project components would be co-dominant with existing landscape features. • The inherent quality of interesting, but not outstanding, landscapes (Class B or C) would be modified as seen from historic properties and/or interpretive areas, or scenic trail centerlines. Historic and Cultural Resources • No Moderate measure. Impacts are assessed as either High (adverse pursuant to the NHPA) or low (not adverse pursuant to the NHPA) Recreation, including Travel Management • Intact resource values, including recreation and National Trail-related travel management opportunities and values, would be modified by the Project but would remain suitably intact and continue to contribute to the character of the trail. Natural Resources • Natural values, including any key contributing values and characteristics, would be modified by the Project but would remain suitably intact and continue to contribute to the character of the trail. Other Landscape Elements • Presence of developments; facilities; landscape modifications; existing land uses; valid existing rights; surface, sub-surface, or other interests in land ownership; and other variables such as sights, smells, and other experiences that may impact the trail experience. • Areas where Project facilities would be located in proximity to, or parallel with (but not immediately adjacent to), landscape modifications that exhibit similar form, line, color, and texture.

Table 3.1-2. Project Impact Thresholds/Measures (continued)

Threshold Level	Resource Types
Low (No Adverse Impact/ No Effect for Cultural/ Historic)	Scenic/Visual Resources • Contrast produced by the Project would not be readily apparent from trail centerlines and would be subordinate in the context of existing conditions. • Minimal change would occur to the existing character of interesting and common landscapes (Class B or C) as seen from historic properties/interpretive areas, or scenic trail centerlines. Historic and Cultural Resources • Characteristics of historic properties located in the trail corridor and seen from the trail centerline and the trail segments affected would be modified, but their eligibility for listing on the NRHP would likely not be affected. This would be classified as "no adverse impact" or "no impact" depending upon the presence of historic properties. Recreation, including Travel Management • Intact resource values, including recreation and National Trail-related travel management opportunities and values, would be modified negligibly by the Project. Contributing values would continue to define the character of the trail. Natural Resources • Natural values, including any key contributing values and characteristics would be modified negligibly by the Project. Contributing values would continue to define the character of trail. Other Landscape Elements • Presence of developments; facilities; landscape modifications; existing land uses; valid existing rights; surface, sub-surface, or other interests in land ownership; and other variables such as sights, smells, and other experiences that may impact the trail experience. • Areas where the Project would be located in proximity or parallel to an existing transmission line facility with similar landscape modifications and structural elements in regard to form, line, color, and texture, or screened from viewing locations associated with the trail such that the landscape is perceived to be unaltered.

Cultural and Historic Resource Impact Methodology

Impacts to cultural and historic resources, values, qualities, and settings associated with the Oregon NHT and North Alternate Study Trail were assessed during the field study at each individual IOP/KOP. For those trail segments that are intact and contribute to the NRHP significance of the trail, impacts were assessed by evaluating how character-defining features and historic integrity of the NRHP-eligible segment of the trail were altered. In general, an "adverse impact" occurred when the NRHP integrity of the trail (i.e., location, design, setting, materials, workmanship, feeling, and association) was diminished by Project features. This would occur, for instance, if a Project element is constructed on the trail or is located close to or would obstruct views from the trail, thus diminishing the trail's integrity of setting, feeling, and association. If the Project affected the trail, such as if the Project were visible from the trail but its visual impact was lessened by vegetation, intervening topography, lack of skylining, and/or sufficient distance so that it did not diminish the trail's integrity of setting, then a recommendation of "no adverse impact" was made. A "no impact" recommendation was made when the Project was not visible or when an eligible trail segment was not present. These findings would be consistent with the thresholds for Project effects to historic properties established in 36 CFR 800.5. For the purposes of the cultural resources analysis, the terms "effect" and "impact" are interchangeable.

Recreation and Travel Opportunities Impact Methodology

Project impacts to recreation and travel opportunities were assessed to determine whether the intact values, qualities, resources, and settings would be substantially

compromised, modified, or left intact at each IOP/KOP. The impact assessment accounted for a wide variety of potential users including those who may hike the Oregon NHT or North Alternate Study Trail, follow the trails via the BLM's Backcountry Byway, or NPS's ATR, or utilize recreation and travel opportunities in the area that may or may not be trail oriented. Thresholds of high, moderate, and low were assigned based on the degree to which the recreational experience, vicarious experience, or travel opportunity was compromised.

Natural Resource Impact Methodology

Natural values that contributed to the salient characteristics of the respective trails were analyzed during the impacts analysis. This analysis included an assessment of impacts to landscape-defining trail-related characteristics immediately surrounding and within the viewshed of HPHSs and HPRSEGs or landscape features identified by original trail users. The degrees to which these natural characteristics would be substantially compromised, modified, or modified negligibly by the proposed Project were assessed at each IOP/KOP. Impacts assessed could include whether the Project could remove or alter vegetation, natural and geological features composition, or soils that characterize the respective trail's landscape.

Other Landscape Elements

The presence of other landscape elements in the Project area and how these elements will interact with the Project plays an integral role in the impact assessment. Existing energy developments such as wind farms and transmission line corridors, cellular facilities situated on promontories, and the mosaic of property ownership and varying land uses, for instance, all affect how landscape changes caused by the Project within the APAI are assessed. In some instances, the Project's visually inferior placement in relationship to existing transmission lines reduces the Project's level of impact, but in other instances its prominent position in front of an existing wind farm may accentuate the Project's level of impact. The impact analysis for visual, cultural/historic, recreation, and natural resources considered how these other landscape elements accentuated or diminished their respective qualities, values, and settings and how these elements increased or decreased potential Project impacts.

3.1.1.4 Existing Conditions

<u>Nature and Purposes of the Oregon NHT</u>

Overview

The Oregon NHT is a network of trail segments, river crossings, and sites stretching across 2,282 miles of the western United States that provided a vital transportation link to the western frontier from the settled lands of the east. The Oregon NHT represented the principal route of westerly migration from Missouri to southern Idaho, Oregon, and northern California. The trail was originally formed by Native Americans, and used by European-American explorers and fur trappers in the early nineteenth century.

While the Oregon Trail facilitated settlement of the Oregon Territory in the mid-nineteenth century, particularly in the Willamette and Columbia River valleys, the trail also had significant impacts upon Native Americans. With the increase in settlers, water sources were soon diverted to agricultural enterprises that converted formerly fertile

grasslands into agricultural production and ranges for livestock. This conversion quickly destroyed the grasses and root crops that represented staples in the subsistence lifestyles of Native Americans in the region.

By the mid-1840s, the Oregon Trail had become a major, nationally recognized thoroughfare for emigrants making their way west. Many emigrant diaries contained information about the route, watering places, areas to feed cattle and oxen, and the quality of grasses along the way (Schlissel 2004). The Snake River crossing, particularly Three Island Crossing, figures prominently in the diaries as one of the more difficult obstacles that emigrants faced. These diaries are a primary source in illustrating the trail's historic setting and outstanding landscape features noted by the emigrants on this significant journey.

Portions of the Oregon Trail continued to be used into the late 1870s, though many became wagon roads during the mining booms. Wider use of railroads and automobiles after the 1890s caused many segments of the trail to be abandoned as road alignments were altered and road surfaces improved. Beginning in the early twentieth century, a number of organizations erected commemorative markers at burial sites, springs, emigrant camps, and inscription sites along prominent trail segments (Hutchison and Jones 1993).

With the passage of the NTSA (P.L. 90-543) in 1968, the National Trails System was established to provide a means for managing significant national trails and to ensure that agencies consider effects of proposed projects to these resources. The Oregon NHT was established in 1978. Since that time, federal agencies have considered and integrated the Oregon NHT into their resource planning documents and have developed key partnerships to enhance the agency's ability to manage the Oregon NHT's resources.

Management of the NHT and its associated resources is dictated through a NPS Oregon Trail Comprehensive Management and Use Plan (CMUP), which provides for coordinated action between federal, state, and private entities to enable opportunities for use and interpretation along the various identified segments of the water, land, and associated motor routes.

Primary Purpose

The nature and purposes of a national historic trail are defined as the character, characteristics, and congressional intent for a designated National Trail, including the resources, qualities, values, and associated settings of the areas through which such trails may pass; the primary use or uses of a National Trail; and activities promoting the preservation of, public access to, travel within, and enjoyment and appreciation of such trails. In 1998, the NPS developed a CMUP for the Oregon NHT. The CMUP described the trail's purpose "to identify, preserve, and interpret the sites, route, and history of the Oregon Trail for all people to experience and understand," and to "commemorate the westward movement of emigrants to the Oregon country as an important chapter of our national heritage" (NPS 1998).

Primary Use

The Oregon NHT CMUP (1998) identifies a variety of trail uses, which include interpretation, heritage tourism, media interest (manifested by production of movies and documentaries), walking, biking, horseback riding, historic reenactments of the trails experience, and commemorative activities such as trail visitation, driving along auto-tour routes and BLM back country byways, reading interpretive brochures and publications, and visiting associated museums and educational facilities. The NPS has also established ATRs for the Oregon NHT within the Project area. Idaho State Highway 78 and I-84 are a part of that system (NPS 1998; NPS 2008). While not mentioned in the CMUP, the BLM has also established the Main Oregon Trail Backcountry Byway along the "North Trail" of the Oregon NHT (BLM and IOCTA 2009).

The primary use or uses of the Oregon NHT are not specifically defined under existing BLM land management documents such as the Bruneau MFP (BLM 1983b) or the Owyhee District RMP (BLM 1999), but both documents refer readers back to the applicable CMUP prepared by NPS as including the management principles that the respective districts will follow to protect the visual and historic values of the NHT. The Bruneau MFP designates a 0.5-mile corridor as a Special Recreation Management Area (SRMA) which includes an interpretive site near Cove Recreation Site, to be guided by the NPS management plan.

The recently approved (September 14, 2015) Jarbidge RMP notes that the 16,384-acre Oregon Trail SRMA includes such recreational opportunities as hiking, wildlife viewing, and natural scenery and educational activities. It also notes that there are "some opportunities for isolation from man-made sights and sounds in a predominantly unmodified environment. Concentration of visitors is low, but evidence of other area users is present" (BLM 2015a). The SRBOP RMP (BLM 2008a) acknowledged the intact visual characteristics of the Oregon NHT when it established a visual protection corridor within the Birds of Prey Avoidance Area that included the Oregon NHT (in addition to other sensitive resources). Neither of these RMPs, however, established a National Management Corridor for the Oregon NHT.

Federal Protection Components, Heritage Resources, and Auto Tour Routes

The NTSA and Manual 6280 mandate assessment of impacts to Federal Protection Components, Heritage Resources, and ATRs associated with NHTs. For the Oregon NHT, Federal Protection Components include HPHSs and HPRSEGs and other land- and water-based components of a designated NHT located on federally owned land that meet the NHT criteria listed in the NTSA and that are identified in trail-wide CMUPs, RMPs, and implementation plans. ATRs are defined as those roads that parallel the NHT and provide opportunities to commemorate and/or interpret the historic route as an alternate experience. Table 3.1-3 provides a list of Federal Protection Components and ATRs listed in the Oregon Trail CMUP that are situated in the APAI (NPS 1998). Only Canyon Creek Stage Station (HPHS No. 92), C.J. Strike Ruts (HPHS No. 100), North Trail (HPRSEG No. 8), Sinker Creek (HPRSEG No. 9), and the Three Island Crossing HPHS are situated on lands administered by the BLM. The Utter Creek Massacre (HPHS No. 101) likely occurred on private lands, but an interpretive panel that describes the incident is situated on BLM-managed land. BLM Manual 6280 also

requires an inventory and impacts assessment of "Heritage Resources" which are those trail segments and/or sites that are likely associated with the Oregon NHT but are not officially designated. Table 3.1-3 provides a summary of trail mileage by AU that includes the designated Oregon NHT route, represented as "NHT[1]," Heritage Resources represented as"NHT[2]," and the ATRs as "NHT[3]." Table 3.1-4 provides the respective mileage of the Oregon NHT resources situated on BLM-managed land.

Table 3.1-3. Federal Protection Components and Auto Tour Routes within the APAI

Federal Protection Components Name	Site/ Segment #	Location	Description	AU	NRHP Status	Ownership
Thousand Springs Complex State Park	HPHS No. 87	Gooding/Twin Falls County, ID	Emigrant Stopping Point and Natural Feature	AU1	N/A	State
Upper Salmon Falls	HPHS No. 88	Gooding/Twin Falls County, ID	Rapids, Natural Feature	AU1	N/A	State
Three Island Crossing State Park	HPHS No. 89	Elmore County, ID	Oregon Trail Crossing of Snake River	AU2	NRHP Listed	BLM/State
Teapot Dome Hot Springs	HPHS No. 90	Elmore County, ID	Hot Springs, Natural Feature	AU2	N/A	Private/State
Rattlesnake Stage Station	HPHS No. 91	Elmore County, ID	Stage Station	AU2	N/A	Private
Canyon Creek Stage Station	HPHS No. 92	Elmore County, ID	Stage Station	AU2	N/A	BLM
Inscription Rock	HPHS No. 93	Elmore County, ID	Emigrant Inscription Point	AU2	N/A	Private
Ditto Station	HPHS No. 94	Elmore County, ID	Stage Station	AU2	N/A	Private
Indian Creek Station	HPHS No. 95	Elmore County, ID	Stage Station	AU2	NRHP Listed	Private
C.J. Strike Ruts	HPHS No. 100	Owyhee County, ID	Intact Oregon Trail Ruts	AU3	N/A	BLM
Utter Massacre Site	HPHS No. 101	Owyhee County, ID	Historic Massacre Site	AU4	N/A	Private (interpretative panel on BLM-managed land)
Givens Hot Springs	HPHS No. 102	Owyhee County, ID	Hot Springs, Emigrant Stopping Point	AU4	N/A	Private
Hagerman Fossil Beds	HPRSEG 7	Elmore and Twin Falls Counties, ID	High Potential Route Segments	AU1a and AU1b	N/A	NPS
North Trail High Potential Route Segment	HPRSEG 8	Ada and Elmore Counties, ID	High Potential Route Segment	AU2	N/A	BLM/Private/ State
Idaho State Highway 78	ATR	Gooding, Twin Falls, Elmore, Owyhee, ID	Auto Tour Route	AU1-AU5	N/A	State
Interstate 84	ATR	Gooding, Twin Falls, Elmore, Owyhee, ID	Auto Tour Route	AU1-AU5	N/A	State

Table 3.1-4. Miles of Oregon Trail Resources on BLM-Managed Land within Analysis Units

Analysis Unit	BLM Field Office(s)	Length of Oregon Trail Resources on BLM-managed Land (in miles)		
		Congressionally Designated Trail (NHT[1])	Oregon Trail Segments (NHT[2])	Oregon Trail ATR/Interstate 84/Idaho Route 78 (NHT[3])
1	Four Rivers, Jarbidge, Shoshone, and Burley	17.3	65.1	1.8
2	Four Rivers, Jarbidge, and Shoshone	24.6	55.6	27.3
3	Four Rivers, Bruneau, Jarbidge, and Shoshone	14.3	56.6	28.4
4	Four Rivers, Owyhee, and Bruneau	16.2	16.4	21
5	Four Rivers, Jarbidge, Shoshone, and Burley	30.8 (North Alternate Study Trail)	69.8	22.1

Note: Several of the Analysis Units (AU) overlap and are tailored to discrete Oregon NHT high potential route segments and high potential historic sites so the total number of miles of the Oregon NHT crossing all AUs is not consistent with the total length of Oregon NHT miles. Each AU contains a 15-mile buffer on either side of the designated Oregon NHT route (NHT[1]). The AUs also depict the locations of Heritage Resources (NHT[2]) and the auto tour routes (ATR) (NHT[3]).

Inventory Results

The inventory results section begins with a summary of the nature and purposes of the Oregon NHT, as established in the Oregon NHT CMUP and as articulated in the RMPs that govern BLM-managed land in the inventory area. The discussion is organized within the five AUs defined for the inventory area (numbered 1 through 5). One of the AUs includes all of the North Alternate Study Trail. Each of the AUs is characterized in terms of visual, historic and cultural, recreational, and natural resource qualities and values. Each corresponding IOP is described within its respective AU. Representative photographs taken from each IOP are illustrated in Appendix J (Attachment B).

Following fieldwork associated with the visual resource inventory, each AU received a Scenic Quality Rating based upon information collected from each IOP and a review of aerial mapping data. AU3 and AU4b received a Scenic Quality Rating of “A.” AU1b and 4a received rating of “B” and AU1a, 2, and 5 received a rating of “C.”

Inventory Results: Analysis Unit 1

Visual Resources

AU 1 includes the North Trail HPRSEG of the Oregon NHT between the east end of the Study Area and Three Island Crossing where the trail diverges into two routes north and south of the Snake River.

For the purposes of the VRI, the AU is composed of two sub-units, delineated by developed agricultural land and the relative lack of BLM-managed land (1a) and rural land that features larger undeveloped BLM parcels (1b). Table 3.1-5 lists the field and remote IOPs analyzed for the VRI within this AU. It should be noted that, due to the relative lack of BLM-managed land in AU1a, there are no IOPs in AU1a.

Table 3.1-5. Analysis Unit 1 – Inventory Observation Points

IOP	AU Sub-Unit (for VRI)	IOP Description
C61	1b	Oregon NHT (SE of Three Island Crossing)
C95	1b	Oregon NHT (West Deer Creek Gulch)
C96	1b	Oregon NHT (a portion coincides with Kelton Rd)
C97	1b	Oregon NHT (Rosevear Gulch area)
C106	1b	Oregon NHT Trail Marker, near Bell Rapids Road
C107	1b	Kelton Road Marker
C108	1b	Oregon NHT Marker off of Bennett Mountain Road
C1504	1b	380-1 associated trail – Oregon NHT
C1509	1b	Oregon NHT Crossing – Route 8A
C1515	1b	Oregon NHT Crossing – Route 8G
C1529	1b	Three Island Crossing and Two Island Crossing Viewpoint [1/]

1/ Inventory Observation Point (IOP) C1529 is on state lands. Due to its location on state lands, this IOP was not analyzed for impacts consistent with BLM Manual 6280. This IOP was chosen as an inventory point to assess scenic quality in this AU.

Scenic Quality Rating Units

This segment of the trail largely passes through Class B (AU1b) and C (AU1a) scenic areas. The landscape is characterized by rolling hills with no dominant landform features and a limited variety of sagebrush and grassland vegetation. The trail lacks a major visual interaction with the Snake River in this area, except for AU1's west end at Three Island Crossing. Within this AU, the trail follows a series of gulches and small seasonal creek beds that are not dominant landscape features. Color variations are subtle, with little contrast in most areas aside from Three Island Crossing. The area is distinct within the region due to the unique concentration of gulches (1b), although the agricultural landscape (1a) is fairly typical. Several transmission lines cross the trail and general setting within the AU. Coupled with the surrounding wind farm development, these cultural modifications introduce discordant forms and lines in the landscape and detract from the AU's visual harmony.

Sensitivity Level Rating Units

The entirety of AU1 is rated as highly sensitive, due to the congressional designation and associated protection measures for this segment of the Oregon NHT, which includes the Hagerman Fossil Beds HPRSEG, North Trail HPRSEG, Upper Salmon Falls HPHS, and Three Island Crossing HPHS—all Federal Protection Components of the Oregon NHT.

Distance Zones

AU1 includes viewsheds from the trail within the foreground-middleground (up to 5 miles), and background (5-15 miles) distance zones, as well as seldom seen areas. Travel route viewers along I-84/US 26 and US 30, which serve as the NPS ATR through AU1, will pass through the background in AU1a and the foreground/middleground in AU1b. Seldom seen areas are generally limited to small segments of the Snake River Canyon and valleys within and south of the Bruneau Desert.

Cultural/Historical Resources

Within AU1, the trail passes between the Snake River to the north and the Bruneau Desert to the south. Several braided, non-Oregon NHT segments follow along the main

route, and the trail connects with Castleford Road and Kelton Road. The historic setting is characterized by elevated plateaus and gentle sloping hills met with gulches, including Tuana Gulch, Cassia Gulch, Little Pilgrim Gulch, Big Pilgrim Gulch, Deer Gulch, and Rosevear Gulch. The Snake River is a prominent linear feature in the historic setting.

AU1 includes two HPRSEGs of the Oregon NHT, separated by a large grouping of wind farms and agricultural land at Black Mesa. The Hagerman Fossil Beds HPRSEG includes a 4-mile trail segment within the Hagerman Fossil Beds National Monument. The segment begins at the mouth of Yahoo Gulch, where, according to the NPS CMUP, emigrants camped and grazed their stock. The segment climbs a ridge adjacent to the Snake River, which features a narrow spot that Jesse Applegate called the "Devil's Backbone" (NPS 1998). Several trail artifacts are in the museum at the National Monument.

Additionally, a portion of the North Trail HPRSEG extends from the Twin Falls – Elmore County line through AU1 to the crossing at Glenns Ferry. According to the NPS CMUP, this HPRSEG contains the best overall stretch of the Oregon Trail left in Idaho and features scenery of the Snake River Valley. The segment heads northwest across rangeland, following trail remnants and passing near Pilgrim Stage Station and the camping area at Little Pilgrim Gulch. The route crosses Black Mesa and meets AU2 and AU3 just south of Glenns Ferry. The setting of the North Trail HPRSEG has been diminished since the 1998 NPS CMUP for the Oregon Trail with the construction of several wind farms on private lands within the HPRSEG's viewshed.

Table 3.1-6. Previously Recorded Historic Sites Associated with the Oregon Trail in AU1

Site No.	Site Class	Site Type	Description	NRHP Recommendation
10EL1372	Historic	Historic Road	Oregon Trail, Kelton Road	Unevaluated
375-1	Historic	Historic Road	Segment of the Oregon Trail primary route (North Trail) southeast of Glenns Ferry	Eligible/Contributing
378-1	Historic	Historic Road	Segment of the Oregon Trail primary route (North Trail) southeast of Glenns Ferry	Eligible/Contributing
380-1	Historic	Historic Road	Segment of the Oregon Trail primary route (North Trail) southeast of Glenns Ferry	Eligible/Contributing

The Pilgrim Gulch Area and the area approaching Two Island Crossing and Three Island Crossing are highlighted in emigrant diaries. The Little Pilgrim Gulch area hosted a significant emigrant campground and access point to the Snake River (Hutchison and Jones 1993). The Oregon Trail Primary Route (North Trail) and South Alternate intersected at Three Island Crossing. Pioneers forded the Snake River there until 1869, when Gustavus Glenn established a commercial ferry about 2 miles upstream. Crossing the Snake River was always dangerous, but when the water was low enough, everyone able to cross did so to access the more favorable northern route to Fort Boise (NPS 1998). Emigrants chose to either continue on the preferred North Route by fording the Snake River at Three Island Crossing (AU2) or, if conditions were

unfavorable, remain on the south side of the river along the South Alternate (AU3). On the undulating hills leading down to Three Island Crossing, many emigrants lightened their wagon loads by, among other things, sawing apart the wagon to shorten their loads. The remains (now archaeological sites) would have been left between Salmon Falls Creek and Three Island Crossing (La Salle 2011).

Table 3.1-7 describes the resources, qualities, and values of the Oregon NHT observed from selective IOPs in AU1.

Table 3.1-7. IOP Descriptions of Oregon NHT Resources, Qualities, and Values in AU1

IOP	Character Defining Features
C61	Two-track road still in use–not marked. Nine feet wide and runs northeast-southwest.
C95	Barely visible portion of Oregon NHT; a flat road surface.
C96	Two deep swales, each measure about 12 feet across and up to 3 feet deep. The swales descend an east-facing slope. No artifacts noted.
C97	None visible. Trail could not be seen. Only a Carsonite marker is present.
C106	Two deep swales 12–13 feet wide and 12–16 inches deep. The trails converge at a Carsonite marker. The main swale runs generally north-south. The other, narrower trail turns east and goes downhill. A rusted sanitary can with interior friction lid (coffee can) noted.
C107	Deep rut or swale present is up to 12 feet wide and several feet deep. Runs generally southeast-northwest.
C1504	An 8-foot wide, two-track road runs north-south and parallel to a fence. This appears to be a modern two-track road.
C1509	Deep swale, 12–15 feet wide and up to 4 feet deep. Carsonite markers present. Tin can scatters and perforated sheet metal noted along the swale.
C1515	About a 10-foot wide swale up to 12 inches deep. One or two parallel, shallow swales also noted.

Recreation and Travel Opportunities

Recreation opportunities managed by the BLM within AU1 largely consist of Carsonite trail markers situated along the North Trail HPRSEG. The northeastern edge of this AU connects with the BLM Backcountry Byway. No trailheads or other improved access points, however, were identified during fieldwork on BLM-managed land. Road circulation generally facilitates access to the North Trail HPRSEG in this AU, but the roads vary in condition. The wide, well-graded gravel Bell Rapids Road provides easy direct access to the North Trail HPRSEG from well-traveled two-track dirt roads. Other roads, such as Black Mesa Road, are in poor condition, with single- and double-track dirt paths that make driving difficult or require foot travel to reach the Oregon NHT.

Two IOPs associated with the eastern terminus of the Backcountry Byway (C1529 and C61) are examples of opportunities for vicarious experiences along the trail near the Three Island Crossing area. Additional IOPs in AU1, such as C106, C107, C61, C96, C1509, and C1515, allow opportunities to experience trail segments with high physical integrity and high interpretive potential. While these IOPs lack interpretive panels, Carsonite markers identify the location of the trail. Little to no evidence of other recreational activities in these areas was recorded during fieldwork.

Trail-related interpretive opportunities are largely limited to non-BLM properties such as the Hagerman Fossil Beds National Monument area (managed by the NPS), which

contains an intact segment of the North Trail HPRSEG. Three Island Crossing State Park contains an interpretive overlook on the south side of the Snake River with a view of BLM-owned parcels that contain an intact segment of the North Trail HPRSEG. Other recreational opportunities in the area consist of camping, recreational vehicle (RV) parks, informal all-terrain vehicle (ATV) use, and dispersed recreation including hunting and fishing along the Snake River. All of these opportunities, however, are not on BLM-managed lands and may or may not be associated with Oregon NHT-related recreational opportunities. Trail-related camping is available at Three Island Crossing State Park and Hagerman Fossil Beds National Monument.

Natural Resources

Most of the ground surface in AU1 is covered with vegetation, including a combination of open shrub-steppe and grassland that has been invaded by cheatgrass. Large sagebrush and rabbitbrush primarily comprise the overstory, while cheatgrass is the most common understory. Other species include bunch grass, crested wheat grass, tower mustard, and lupine. Soil types are primarily silty sand and sandy silt, with some areas of scattered gravel.

The natural setting of AU1 is defined by the Mt. Bennett hills north of the Snake River with the snow-covered peaks of the Soldier Mountains beyond these hills. Black Mesa and Flint Mesa are centrally located within the AU. Several gulches carve out the eastern half of the AU, including Cassia Gulch, Little Pilgrim Gulch, Big Pilgrim Gulch, and Deer Gulch. The Snake River Canyon and its drainages are more prominent in the western portion of the AU. The combination of these prominent geological landforms characterizes the AU's overall natural setting.

Other Landscape Elements

Landscape elements that support the trail in AU1 are discussed as part of the scenic, historic, recreation and natural settings. The towns of Hagerman and Glenns Ferry are within 5 miles of the Oregon NHT but have minimal impact on the trail's resources, qualities, values, and settings. The primary transportation corridor is I-84, which passes within 5 miles of the trail to the north, but also serves as the NPS ATR. Other transportation elements, which include Bell Rapids Road, Bennett Mountain Road, secondary two-track roads, and localized OHV trails, moderately detract from the Oregon NHT's scenic and historic settings in limited areas. Multiple transmission lines pass through AU1, including 500-kV lattice towers to the northeast, north, and northwest; and H-frame towers to the northeast and southwest. A large concentration of wind farms is located east of the trail near Buhl, and the multiple windmills are highly visible from most IOPs within AU1. Additional elements include wireless communications towers and microwave antennae to the south, north, and northeast.

Land near the trail in AU1 is primarily administered by BLM, with one large wind farm and agricultural development at Black Mesa separating two trail segments. Agricultural fields, fencing, and some farm buildings are visible from, and in some instances, obscure the trail. In localized areas, cattle grazing diminishes the trail's immediate historic and natural setting.

Inventory Results: Analysis Unit 2

Visual Resources

AU2 includes the Primary Route (North Trail) of the Oregon NHT, North Alternate Study Trail, and Goodale's Cutoff Study Trail and almost entirely encompasses the Main Oregon Trail Backcountry Byway. Table 3.1-8 lists the field IOPs analyzed for the VRI within this AU. The Goodale's Cutoff Study Trail is not located on BLM-managed land in AU2 or within the APAI.

Table 3.1-8. Analysis Unit 2 – Inventory Observation Points

IOP	IOP Description
C120	Oregon NHT (South Alternate)
C1516	Alkali Springs Historic-Period Camping Area
C1517	Kelton Rd Recreation Site-Hot Springs Creek
C1518	Kelton Rd Recreation Site-Parallels OT Segment
C1519	Rocky Road Hiking Area and Trail Ruts
C1520	Interpretive Sign and Visible Ruts
C1521	Byway Road Parallels Oregon NHT Route
C1522	Interpretive Sign at Inscription Rock (Bowns Creek)
C1529	Three Island Crossing and Two Island Crossing Viewpoint[1/]

1/ Inventory Observation Point (IOP) C1529 is on state lands. Due to its location on state lands, this IOP was not analyzed for impacts consistent with BLM Manual 6280. This IOP was chosen as an inventory point to assess scenic quality in this AU.

Scenic Quality Rating Units

This segment of the trail largely passes through Class C scenic areas. The landscape is relatively flat to the south and west, but bordered on the north and east by the Danskin Mountains, a dramatic mountain range that parallels the Oregon NHT through this AU and creates a distinct landscape element for trail users in the region. Some variety of vegetation is present, though sagebrush and grassland are the major types. Water features within the landscape include the Snake River, which is only prominent at Three Island Crossing and Two Island Crossing, as well as Morrow Reservoir and the hot springs located near Teapot Dome. The Danskin Mountains provide some variety and contrast in color, but overall, color is not a dominant part of the landscape. Multiple intersecting transmission lines and a concentration of wind farms detract from the scenic elements and are discordant cultural modifications within AU2.

Sensitivity Level Rating Units

The entirety of AU2 is rated as highly sensitive, due to the congressional designation and associated protection measures for this segment of the Oregon NNT, as well as its inclusion of the Main Oregon Trail Backcountry Byway. AU2 contains the North Trail HPRSEG, Three Island Crossing HPHS, Teapot Dome Hot Springs HPHS, Rattlesnake Station HPSH, Canyon Creek Station HPHS, and Inscription Rock HPHS—all Federal Protection Components of the Oregon NHT. The North Alternate Oregon Trail Study Trail and Goodale's Cutoff Study Trail are also situated in AU2. The Rattlesnake Station HPHS and Goodale's Cutoff Study Trail are not located on BLM-managed land.

Distance Zones

The Danskin Mountains limit the viewshed in AU2 to the foreground/middleground to the north and east of the trail, while the flat lands south and west of the trail provide a full

viewshed beyond 15 miles in several areas. Travel route viewers along the Main Oregon Trail Backcountry Byway will pass through the trail foreground/middleground. Seldom seen areas are limited to the north side of the Danskin Mountains, as well as the Sailor Creek Basin south of Hammett and Glenns Ferry.

Cultural/Historical Resources

In AU2, the trail extends from Glenns Ferry and the Three Island Crossing area northwest through the AU towards Bonneville Point and Fort Boise. The route follows along the southwestern edge of the Danskin Mountains and the Bennett Hills and generally parallels US 26/I-84, approximately 6 miles to the southeast. Within this AU, the entire main route is part of the North Trail HPRSEG. Several braided, non-Oregon NHT segments of trail follow along the HPRSEG, many of which connect to the North Alternate Study Trail to the southeast.

AU2 begins at Three Island Crossing, noted in the NPS CMUP as “the most important and difficult river crossing in Idaho.” Following Three Island Crossing, the trail passes through a series of flats, draws, creeks, and hollows. Starting in the southeast and moving northwest, the Oregon NHT passes over Cold Springs Creek, Hot Springs Creek, the Teapot Basin, Rattlesnake Creek, Canyon Creek, Ditto Creek, Sand Hollow, Smith Draw, Caldwell Draw, McLintyre Draw, and Indian Creek and then ends within Slaters Flat. The historic setting is characterized by this sequence of low flat valleys divided by occasional crevasses and dips within the landscape. Other significant features in the setting include Alkali Hot Springs, located along Hot Springs Creek and Lockman Butte, visible to the south where the trail crosses Canyon Creek.

AU2 includes seven HPHSs, all of which are located in Elmore County on private or state lands. Three Island Crossing State Park, located on the north side of the Snake River within the city of Glenns Ferry, is located entirely on state lands, but does contribute to the significance and setting of the North Alternate Study Trail. Both Three Island Crossing and Indian Creek Station—a historic stage station located on private lands—are listed on the NRHP. Two privately held stage stations are also located within this AU, neither of which is listed on the NRHP. These include Rattlesnake Stage Station and Ditto Station. The Canyon Creek Stage Station, recently acquired by the federal government and placed under BLM management (October 2015), is also located within AU2. Teapot Dome Hot Springs, a natural hot springs is a feature on private and state lands, and Inscription Rock, an emigrant stopping point with historic inscriptions, is located on private lands. In addition, all of the stage stations are within lowland areas surrounding creeks and have limited views of the trail.

One previously recorded historic site associated with the Oregon NHT in AU2 was identified in the Cultural Resources study. Site 10EL1372 is an unevaluated portion of the combined Oregon Trail/Kelton Road (Table 3.1-6).

Emigrant diaries that document the Oregon NHT in AU2 focus primarily on Three Island Crossing, one of the Oregon Trail’s most famous and perilous river crossings. The swift currents were notorious for overturning wagons, and drowning pioneers and livestock. The diaries also describe Cold Springs Creek, Bennett Mountain, Rattlesnake Creek and Hot Springs, Canyon Creek, Bliss, and Teapot Dome and Hot Springs, distinctive natural features within AU2 that the pioneers noted along their route west.

Agriculture and grazing have created minor impacts on the historic setting, including erosion of the trail and some minor visual impacts related to agricultural properties. The greatest cultural modifications to the historic landscape in this area include extensive transmission lines to the southeast and south and large-scale wind farms located within the same vicinity. These cultural modifications are present in the viewshed and alter the historic setting.

Table 3.1-9 describes the resources, qualities, and values of the Oregon NHT observed from selective IOPs in AU2.

Table 3.1-9. IOP Descriptions of Oregon NHT Resources, Qualities, and Values in AU2

IOP	Character-Defining Features
C108	Two parallel ruts, up to 12 inches deep, and white Carsonite markers. No period artifacts noted.
C1516	Faint two-track passing through tall sagebrush, marked with concrete BLM post markers. No period artifacts noted.
C1517	Two-track road with concrete post markers. Road is still in use.
C1518	Gentle slope below Teapot Dome. Shallow swale or trail visible. Runs northwest/southeast and is 15 feet wide. No artifacts. Some rocks have been pushed to the south edge of trail. White opalite gravel is noted.
C1519	Trail swale is readily visible. One rut noted. This is a Class 1 with excellent integrity. Carsonite markers have been found broken off on ground. There are basalt cobbles in the trail.
C1520	Ridgetop in rolling foothills north of Snake River Valley. Multiple ruts pass over the ridgetop, running east-west. Ditto Creek is about 300 meters north. Scattered sagebrush is on ridgetop. No period artifacts noted.
C1521	Narrow road bed visible uphill north of Mayfield Road. A deep rut or swale is visible below the modern road.
C1522	No visible evidence of the trail. Likely followed the route of the current gravel road (Mayfield Road). No period artifacts noted. The “Inscription Rock” has painted and carved inscriptions—black letters produced with axle grease or charcoal. A Backcountry Byways marker is located on the north side of Mayfield Road at this location.

Recreation and Travel Opportunities

The only BLM-managed recreation site within AU2 is the Morrow Reservoir Dispersed Recreation Site. This recreation area is seldom used and no visible signs of the Oregon Trail were seen during fieldwork. There are no BLM markers and no visible ruts. The Oregon Trail is located 1.2 miles southwest of the reservoir and recreation may or may not be related to the trail at this location.

The Backcountry Byway is a recreational tour route located primarily within AU2. The byway passes many historic and natural sites associated with the Oregon Trail. These include the Alkali Springs Historic Camping Area (IOP C1516); the Kelton Road Recreation Site-Hot Springs Creek Area (IOP C1517); a Kelton Road Recreation Site that Parallels the Oregon Trail (IOP C1518); the Rocky Road Hiking Area, a dispersed hiking area along a rocky portion of the North Alternate Study Trail with BLM Carsonite markers and clear ruts (IOP C1519); an interpretive sign with visible ruts (IOP C1520); an interpretive site where the byway parallels the trail that exhibits ruts with high

integrity (IOP C1521); and an interpretive sign at Inscription Rock near Bowns Creek (IOP C1522).

Within AU2, trail-related recreation is focused around the Backcountry Byway Route. Additional BLM recreation opportunities within this AU include sporadic OHV trails and Jeep trails and dispersed hunting. No camping was evident within this AU. The historic stage stations, such as the Rattlesnake Station and Canyon Creek Station, are considered recreational interpretive sites related to the Oregon NHT, but were associated more with the wagon roads that utilized the trail in later years. The Rattlesnake Station is on private lands but the Canyon Creek Station has recently been donated to the BLM (October 2015).

Natural Resources

The ground surface in AU2 is fully covered by fairly dense shrub-steppe vegetation, composed primarily of sagebrush and bitter brush. Cheatgrass is the dominant understory, interspersed with patches of peppergrass and crested wheatgrass. Wild mustard, needlegrass, thistle, and sunflower are present in select locations (C1519). There is a small patch of cottonwood near a small reservoir used as a stock pond and willow trees near C1522. Soils are generally silty sand with gravel in some areas.

The natural setting is dominated by the ridges and basalt outcrops of the Danskin Mountains, which border the north edge of the trail's viewshed in AU2. Several additional prominent geologic features are also within the area. Bennett Mountain is visible to the east and southeast. Inscription Rock (C1522), within the immediate setting, is a granitic outcrop likely related to the Idaho Batholith near Bowns Creek. Teapot Dome (near C1516) features a columnar basalt formation on its steep southwest-facing hillside. From C1519, Lockman Butte is visible to the southwest. Additional unnamed boulders and outcrops are present on the surrounding hills. The Owyhee Mountain Range is within the distant viewshed to the southwest, as is a possible former shield volcano (visible from C1519). Water features within the natural setting include Alkali Springs (C1516), Ditto Creek (C1520), and Hot Springs near Teapot Dome (C1517).

Other Landscape Elements

Most landscape elements that support the trail in AU2 are discussed as part of the scenic, historic, recreation, and natural settings. Three Island Crossing State Park and the associated viewpoint on the south bank of the Snake River offer camping, picnic areas, and an interpretive center that support the nature and purpose of the Oregon NHT. The town of Glenns Ferry and the community of Mayfield are the only population centers within 5 miles of the Oregon NHT, although Glenns Ferry was historically associated with the Oregon NHT route. The outskirts of Hammett, Mountain Home, and Kuna are located off I-84 just south of the trail's 5-mile distance zone and are visible in the distant viewshed but do not detract from the trail's resources qualities, values, and settings.

Many of the roads near the Oregon NHT in AU2, primarily county roads, are associated with the Main Oregon Trail Backcountry Byway and provide trail-related recreation opportunities for interpretation and vicarious experiences. In some areas, however,

these roads obscure the trail. Additional landscape elements associated with the byway include interpretive signs and hiking trails.

Multiple intersecting transmission lines, including steel lattice and wood H-frame towers, are within close proximity to the trail in all directions and greatly diminish the overall setting. Several wind farms are located within the southeast portion of AU2 and are visible from most IOPs within the AU. Additional landscape elements include a communications tower facility to the northwest and a dump near IOP C1522. Land ownership in this AU is scattered with short trail segments on BLM-managed land interspersed with private property. Agricultural activity is limited in this area, with some agricultural fields visible in the distant valley floor.

Inventory Results: Analysis Unit 3

Visual Resources

AU3 includes the Oregon NHT South Alternate, which contains the C.J. Strike HPHS. Table 3.1-10 lists the field and remote IOPs analyzed for the VRI within this AU.

Table 3.1-10. Analysis Unit 3 – Inventory Observation Points

IOP	IOP Description
C113	Oregon NHT (South Alternate)
C137	Simulation Point
C1133	Recreation View
C1155	Recreation View
C1501	C.J. Strike Ruts (HPHS)
C1502	Cove Recreation Site at C.J. Strike Reservoir
C1508	Oregon NHT Crossing – Route 9D
C1526	North Side of C.J. Strike Reservoir
C1529	Three Island Crossing and Two Island Crossing Viewpoint[1/]

1/ Inventory Observation Point (IOP) C1529 is on state lands. Due to its location on state lands, this IOP was not analyzed for impacts consistent with BLM Manual 6280. This IOP was chosen as an inventory point to assess scenic quality in this AU.

Scenic Quality Rating Units

This segment of the Oregon NHT South Alternate is within a Class A scenic area. AU3 is characterized by the bold landform created by the Snake River Canyon that includes a striking combination of high cliffs and rolling hills that lead to the river. The vivid color from the C.J. Strike Reservoir and Snake River contrasts with the dry monotone landscape of the adjacent Bruneau Dunes and surrounding area. Vegetation is limited to sagebrush and cheatgrass with some agricultural development throughout the area. The Danskin Mountains to the north moderately enhance the overall visual quality but do not dominate the scenery. In AU2, there are cultural modifications favorable to and discordant with the visual harmony. The C.J. Strike Hydroelectric Project has created the multi-armed reservoir, which provides multiple scenic and recreation opportunities within the region, while transmission lines that parallel the trail along the north side of the reservoir are discordant with the visual landscape.

Sensitivity Level Rating Units

The entirety of AU3 is rated as highly sensitive, due to the congressional designation for this segment of the Oregon NHT, as well as its inclusion of the Hagerman Fossil Beds HPRSEG and the C.J. Strike Ruts HPHS.

Distance Zones

The viewsheds along the Oregon NHT within AU3 have few visual obstructions within the foreground/middleground and background distance zones. Travel route viewers along I-84/US 26/US 30 and Idaho State Highway 78 will pass through the foreground/middleground and background. Seldom seen areas include portions of the Snake River north of the C.J. Strike Reservoir, the Sailor Creek Basin, and the north end of the Bruneau Canyon.

Cultural/Historical Resources

AU3 follows the Oregon NHT South Alternate Route. At Three Island Crossing, approximately half of the emigrants were unable to cross the river and were forced to use the 126-mile South Alternate Route or "Dry Route."

In AU3, the trail closely follows the Snake River's south bank between the towns of Glenns Ferry and Grand View. The trail is accompanied by braided sections of non-Oregon NHT trail, which are largely located north of the C.J. Strike Reservoir. The historic setting is characterized by striking views of the river and the C.J. Strike Reservoir, located next to the C.J. Strike Ruts HPHS. Beginning in the east, additional prominent geographic features include Deadman Canyon, the Bruneau Dunes—located 1 mile south of the trail—and the Waterhouse Gulch. The largely flat area within this AU is defined by these geographic features, with the C.J. Strike Reservoir being the most prominent visual element in the landscape.

The C.J. Strike Ruts are the only HPHS in AU3, and there are no HPRSEGs. One previously recorded historic site associated with the Oregon NHT in AU3 was identified in the Cultural Resources study. Site 10OE6025 includes a non-contributing segment of the South Alternate.

Emigrant diary entries describe the general setting of the South Alternate Route, as well as the approach to the Bruneau River. The South Alternate included several rocky inclines associated with the Snake River bluffs that, due to their steep and uneven terrain, frequently broke wagon axles or overturned wagons. One pioneer noted that, in addition to the climb up the bluffs, the approach to the Bruneau was "very dusty, and country a barren, deserted, burnt-to-death waste" (Rau 2001).

Several segments of the trail are visible; however, many have been obliterated by modern developments and agriculture. Agriculture and grazing have had minor impacts on the historic setting, such as trail erosion and minor visual impacts related to agricultural properties. The greatest cultural modification to the area's historic landscape is the damming of the Snake River for the C.J. Strike Reservoir. Transmission lines are also present within AU3, including a 138-kV line that crosses directly over the reservoir's main basin. These cultural modifications are present in the viewshed and modify the historic setting.

Though the reservoir itself would not have existed during the time that emigrants were using the Oregon NHT, there are clearly defined trail ruts located southeast of the reservoir that provide interpretation for the area. The Snake River would have been the dominant physical feature within the historic setting. Thus, the present emphasis on large water bodies as a cultural modification does not significantly detract from the

cultural setting, except where the damming of the reservoir has physically obscured sections of the trail. Table 3.1-11 describes the resources, qualities, and values of the Oregon NHT observed from selective IOPs in AU3.

Table 3.1-11. IOP Descriptions of Oregon NHT Resources, Qualities, and Values in AU3

IOP	Character-Defining Features
C113	Swale running east-west, measures 12–15 feet wide and 12–16 inches deep. Marked with Carsonite posts. No artifacts noted.
C120	Shallow swale 12–15 feet, runs east-west at base of hill. Numerous Carsonite markers. Two-track access road to C.J. Strike Reservoir cuts across trail and has removed about 40 m of the trail. No period artifacts noted.
C137	A deep swale 15–17 feet wide and up to 12 inches deep is present. A second, shallow swale is on the south side, running parallel to the deep swale. The shallow swale is 10 feet wide and about 9 inches deep at center. The trail is marked with Carsonite posts and runs east-west.
C1133	Bladed gravel road. No visible evidence of original trail. One Carsonite marker on gravel road. Gravel road is called "Oregon Trail Road."
C113	Swale running east-west, measures 12–15 feet wide and 12–16 inches deep. Marked with Carsonite posts. No artifacts noted.
C1501	At least five parallel swales, including two deep swales that converge. Three or more shallow swales occur on the northeast side of deep swales. Swales range from 10–15 feet wide. The deep swales are about 3 feet deep at center. The shallow swales measure up to 12 inches deep. Runs northwest-southeast at this point. Noted an aqua glass insulator fragment, suggesting telegraph line was once here.
C1502	Two parallel swales visible starting at barbed wire fence and transmission line on hilltop. Trails/swales go northwest and downhill toward reservoir. An active HOV trail meets the swales and goes down one of them.
C1508	A 60-meter segment of swale measures 12 feet wide and up to 12 inches deep at center. Modern debris from roadside dumping occurs along the access road and Oregon Trail. The trail runs generally east-west.
C1526	Trail appears as a shallow swale/two-track and ends at a Carsonite marker, where it was removed by a wide, mechanical blade swath. Oregon Trail is 12–14 feet wide. Bladed swath is about 17 feet wide. Noted fragment of aqua-colored bottle glass.
C1155	Area has wide, shallow rut running parallel to the north edge of Highway 78. It is 15 feet wide and located about 10 meters north of the highway. A 9-foot-wide two-track runs parallel to the swale's north side. Carsonite markers have been placed on the two-track.

Recreation and Travel Opportunities

The only BLM-managed recreation site within AU3 is the Cove Recreation Site at the C.J. Strike Reservoir (IOP C1502). This recreational opportunity provides striking views of the reservoir and Snake River as well as ample Oregon NHT interpretation through surviving ruts marked by BLM Carsonite trail markers.

The NPS ATR (NHT[3]) parallels the South Alternate of the Oregon NHT for the majority of AU3, facilitating access to significant viewing points along the trail. These include the C.J. Strike Ruts (IOP C1501), a viewpoint along the Snake River (IOP C120), viewpoints on the north side of the C.J. Strike Reservoir adjacent to associated trail segments (NHT[2]) (IOPs C1526 and C137), and a point where the auto route joins the North Trail (IOP C113).

An additional BLM-managed recreation site is the Indian Bathtub Recreation Site, which is over 8 miles south of the trail and was established as recreation site in 1891 near Bruneau Hot Springs (ISHS 1995). Recreational opportunities at this site may or may not be related to the trail.

Other recreational opportunities in the area consist of extensive dispersed OHV and Jeep trails, averaging 5-10 miles from the trail at the foothills of the Owyhee Mountains. In addition, some dispersed camping and fishing occurs within large patches of BLM-managed land that is divided by segments of private land and is considered discontinuous.

Natural Resources

The vegetation in AU3 is primarily disturbed grassland and areas of shrub-steppe with sparse big sage and rabbitbrush. Cheatgrass is the predominant groundcover, mixed with needlegrass and tower mustard in some areas. Soil types include sandy loam, silty sand, and sandy silt with scattered gravel and some small boulders in select locations.

A combination of geologic features creates the natural setting within AU3. Portions of the upper rim of the north and northeast wall of the Snake River Canyon are visible, illustrating the region's basic stratigraphy and delineating the river's presence and location within the natural setting. The C.J. Strike Reservoir, though not historic, provides some variation within the viewshed. The view northward across the reservoir includes dark, basalt-capped plateaus with contrasting light colored rhyolite underneath (C120). Other geologic formations include Flat Iron Butte, the Owyhee Mountains to the west, and low bluffs and rock outcroppings of basalt bedrock to the north and northeast.

Other Landscape Elements

Landscape elements that support the trail in AU3 include Idaho State Highway 78, the main transportation corridor along the south side of the Snake River, and C.J. Strike Reservoir. Although both of these elements detract from the Oregon NHT's resources, qualities, values, and settings by obscuring the trail in areas, they also provide recreation opportunities for interpretation and vicarious experiences. Idaho State Highway 78 serves as an alternate route ("Segment B") of the NPS ATR and portions of the Oregon NHT retain visible ruts that are publically accessible in recreation areas near C.J. Strike Reservoir. Bruneau Dunes State Park is south of the Oregon NHT along Idaho State Highway 78 and is minimally developed, causing no diminishment of the Oregon NHT resources, qualities, values, and settings.

The towns of Glenns Ferry, Hammett, and Bruneau are within 5 miles of the Oregon HNT but do not detract from the trail's resources, qualities, values, and settings. Other transportation elements near the trail include Highway 51, Crane Falls Road, Tendall Road, and several other paved and gravel county and private roads that provide access to communities, agricultural lands, and the reservoir. Tendall Road and a paralleling H-frame transmission line follow the Oregon NHT north of the C.J. Strike Reservoir Bruneau Arm and diminish the historic setting along this stretch of trail. The trail is diminished by other H-frame transmission lines that cross the Oregon NHT or are in the foreground/middleground within AU3.

Land in AU3 includes large segments of both BLM and private property. Agricultural development is evident with center pivot farming and other agricultural fields adjacent to and covering the Oregon NHT.

Inventory Results: Analysis Unit 4

Visual Resources

AU4 includes the Oregon NHT South Alternate as well as the Sinker Creek HPRSEG and Utter Massacre HPHS Segment toward the west end of the Study Area. For the purposes of the VRI, the AU is composed of two sub-units, delineated by developed agricultural land (4a) and undeveloped rural land (4b). Table 3.1-12 lists the field and remote IOPs analyzed for the VRI within this AU.

Table 3.1-12. Analysis Unit 4 – Inventory Observation Points

IOP	IOP Description
C90	Oregon NHT South Alternate Snake River Birds of Prey
C91	Oregon NHT South Alternate Sinker Creek Butte Area
C132	Simulation Point
C1505	Oregon NHT Crossing-FEIS Proposed Route 8
C1506	Oregon NHT Crossing-Route 9D
C1507	Oregon NHT Crossing-Route 9G
C1514	Oregon NHT Crossing-Revised Proposed Route 9
C1523	Oregon NHT Castle Butte Landmark
C1524	Wild Horse Butte
C1527	Sinker Creek HPRSEG near Sinker Creek Butte
C1528	Utter Massacre Site (HPHS)

Scenic Quality Rating Units

This segment of the trail passes mostly through Class A (AU4b) and Class B (AU4a) scenic areas. The majority of AU4 (AU4b) is characterized by the repeating vertical nature and contrasting brown, black, orange, and yellow hues of several distinct and prominent buttes. The cluster of these landforms is unique within the region and is a defining feature of the AU and the Oregon NHT experience. Vegetation mostly consists of a limited variety of sagebrush and grassland, interspersed with less dominant species. Water is not a dominant component of the landscape in AU4. Small creeks, including Sinker Creek and Rabbit Creek, were part of the Oregon NHT emigrant experience but are not dominant expressions in the landscape. The snow-capped peaks of the Owyhee Mountains and Silver City Range visible within the adjacent scenery greatly enhance AU4's visual quality. Idaho State Highway 78 and the small towns of Murphy and Grand View are visible from portions of the trail but do not detract from the scenic quality. Limited additional cultural modifications are neutral and add little or no visual variety to the landscape.

The dense agricultural area in AU4a is predominantly flat river valley, with the primary variations in the landscape occurring through different agricultural crops. Due to the changing nature of agricultural activity, the vegetation and color within AU4a varies throughout the year. Within AU4a, I-84/US 26 primarily follows the route of the Oregon NHT and diminishes the trail's visual experience caused by this cultural modification.

Sensitivity Level Rating Units
The entirety of AU4 is rated as highly sensitive, due to the congressional designation and associated protection measures for the Oregon NHT South Alternate and its constituent parts, which include the Sinker Creek HPRSEG and Utter Massacre HPHS. The Utter Massacre HPHS is not located on BLM-managed land.

Distance Zones
AU4 includes viewsheds from the trail within the foreground-middleground (up to 5 miles) and background (5-15 miles) distance zones, as well as seldom seen areas. To the north, west, and southwest, the viewshed from this AU (4a and 4b) is primarily limited to the foreground/middleground, while the viewshed in the south and east is largely open, with some seldom seen areas in creek basins, and in a wide valley north of Grand View. Travel route viewers along Idaho State Highway 78 will pass through the foreground/middleground in this AU (4a and 4b).

Cultural/Historical Resources
In AU4, the Oregon NHT South Alternate route closely follows the Snake River's south bank, except where the route diverges to the east towards the town of Murphy. The historic setting is characterized by a series of prominent buttes and dividing creeks. Beginning in the east, buttes include Black Butte, Jackass Butte, Wild Horse Butte, Fossil Butte, Sinker Creek Butte, Sinker Butte, and Guffey Butte. Primary creeks include Catherine Creek, Castle Creek, Sinker Creek, and Scorpion Creek.

The route in AU4 encompasses the Sinker Creek HPRSEG and is followed by several small sections of braided, non-Oregon NHT segments of trail. The HPRSEG is located between Fossil Creek and Scorpion Creek and includes the divergence towards Murphy. Emigrant diaries mark this segment of the trail as one of the driest, hottest, and dustiest stretches of the entire Oregon Trail. Along this route, the trail crossed the broken arid mesas along the south bank of the Snake River, passing Wild Horse Butte, crossing Sinker Creek, and climbing Sinker Creek Butte (Rau 2001; NPS 1998). The volcanic formations evident in the area's buttes and canyons were noted as distinctive landscape characteristics (La Salle 2011).

AU4 also contains two HPHSs: the Utter Massacre Site and Givens Hot Springs. The Utter Massacre Site HPHS is located near the AU's eastern boundary primarily on private lands. The Utter Massacre site was situated near a major emigrant campsite at Henderson Flats near Castle Butte.

An interpretive sign describing the Utter Massacre (C1528) is situated on a small tract of BLM-managed land off Highway 78, but the significant components of this event took place in several locations within the surrounding area.[1]

The Givens Hot Springs HPHS is located at the western end of AU4 and includes a series of hot springs that bubble up from a flat near the Snake River's south bank. The area surrounding the natural hot springs was a popular campground for both emigrants and American Indians and has since been developed into a privately run modern

[1] The GIS shapefile point for this site received from the BLM shows the site as being on private lands, but since the site has not been mapped, there may be some Utter Massacre related resources or sites located on BLM-managed land that have not been identified.

recreation site for picnics, camping, and RV use (NPS 1998). The site is no longer physically connected to the trail as it is located off Highway 78, and its viewshed has been greatly altered through cultural modification.

No historic or cultural sites associated with the Oregon NHT in AU4 were identified in the Cultural Resources study. Table 3.1-13 describes the resources, qualities, and values of the Oregon NHT observed from selective IOPs in AU4.

Table 3.1-13. IOP Descriptions of Oregon NHT Resources, Qualities, and Values in AU4

IOP	Character-Defining Features
C90	5-foot wide and 3–4 inch deep swale present with obvious two-track ruts. Use seems to be more for OHV than truck.
C91	A 10 to 12-foot wide swale is visible, running east-west. The swale is up to 10 feet deep. A second, shallow swale runs parallel to the south side of the deeper swale. The second swale is about 10 feet wide and about 6 inches deep. The swales are only visible on BLM-managed land, west of a gravel access road. No period artifacts observed. The trail is marked with Carsonite posts on BLM-managed land.
C132	There is a 5-foot wide, 3-inch-deep swale, and two-track ruts.
C1505	The trail route is very diffuse, with considerable erosion on the slopes leading into the drainage.
C1506	The swale is approximately 6 inches deep. The trail is somewhat obscured in places by sagebrush. The width is no more than 5–6 feet, but appears more characteristic of an animal trail because of use by cattle. No associated artifacts observed.
C1507	Grassy flat that was previously at the bottom of the reservoir. No evidence of the trail at this location due to extensive erosion.
C1514	A subtle swale measures 3 inches deep. The trail is approximately 6 feet wide, with some braiding. No associated artifacts observed.
C1523	A shallow swale contains a well-defined two-track road. The road is still being used to access the BLM-managed land. It measures 12 feet wide and about 6 inches deep. No signs mark the trail. The trail runs east-west at this location. It should turn north toward Castle Butte on private hunting club property. No artifacts observed.
C1524	A two-track road is within a shallow swale in places. It measures 10 feet wide and is marked with Carsonite posts.
C1527	At least two swales marked with Carsonite posts. The swales at this point are about 8 feet wide and up to 10 inches deep. The two-track road is within a swale that is about 10 feet wide. No artifacts found.
C1528	The Utter Massacre interpretive sign is located on BLM-managed land off Highway 78, a paved, two-lane road. The roadside sign here describes the Indian assault on the Utter wagon train in September 1860. The trail is located north of this point. No artifacts were noted.

Recreation and Travel Opportunities

There are 19 BLM-managed recreation sites located within AU4 that may or may not be related to the Oregon NHT and appear to be largely connected to off-road OHV recreation. There are extensive OHV trailheads located primarily west of the Oregon Trail South Alternate at the base of the Owyhee Mountains. Table 3.1-14 contains a list of these OHV opportunities.

Table 3.1-14. BLM Recreation Sites within AU4

Site Name	Distance from Trail	Primary Use
McKeeth-Vinson Wash Off-Highway Vehicle (OHV) Recreation Site	5 miles from South Alternate	OHV Off-Road Recreation
Birch Creek Bench OHV Recreation Site	5 miles from South Alternate	OHV Off-Road Recreation
Sinker Creek Rim OHV Recreation Site	7.5 miles from South Alternate	OHV Off-Road Recreation
Rabbit Creek OHV Trailhead Recreation Site	1 mile from South Alternate	OHV Off-Road Recreation
South Rabbit Creek OHV Recreation Site	3.3 miles from South Alternate	OHV Off-Road Recreation
Murphy Y Dispersed Recreation Site	1.6 miles from South Alternate	OHV Off-Road Recreation
Hemmingway Butte OHV Trailhead Recreation Site	1.8 miles from South Alternate	OHV Off-Road Recreation
Fossil Creek OHV Trailhead Recreation Site	5.3 miles from the South Alternate	OHV Off-Road Recreation
Diamond Basin Well OHV Recreation Site	7 miles from the South Alternate	OHV Off-Road Recreation
Priest Dunes OHV Play Area	3.8 miles from the South Alternate	OHV Off-Road Recreation
Kuna Butte Dispersed Recreation Site	12 miles from South Alternate 20 miles from North Alternate	National Conservation Area (NCA) Interpretive site
Three Pole Recreation Site	4 miles from South Alternate 25 miles from North Alternate	NCA Interpretive site
Kuna Cave Recreation Site	9 miles from South Alternate 20 miles from North Alternate	NCA Interpretive site and Natural Feature
Initial Point	9 miles from South Alternate 20 miles from North Alternate	NCA Interpretive Site
Higby Cave Recreation Site	15 miles from South Alternate 14 miles from North Alternate	NCA Interpretive site and Natural Feature
Cabin Draw Recreation Site	2.2 miles from South Alternate	Fishing and Snake River Access
Wilson Creek Trailhead Recreation Site	4 miles from South Alternate	Hiking Trail and Natural Area
Wilson Creek Wayside Recreation Site	2.3 miles from the South Alternate	Wayside
Diamond Creek Campground	11.2 miles from the South Alternate	Hunting and Dispersed Camping

Natural Resources

The ground surface in AU4 is mostly covered with shrub-steppe and disturbed grassland vegetation. Cheatgrass is the most common groundcover and generally dominates the understory. Other plants, such as apricot mallow, towering mustard, and other flowering plants are present in more localized areas. Medium-density sagebrush and bitterbrush, with some rabbitbrush, comprises the overstory. Soils in AU4 are silt and vary from coarse- to fine-grained sand with scattered areas of gravel.

The natural setting in AU4 is defined by a series of rocky buttes, including (from east to west) Black Butte, Jackass Butte, Castle Butte, Wild Horse Butte, Fossil Butte, Sinker Creek Butte, Sinker Butte, and Guffey Butte. These buttes create a unique

concentration of geologic formations within the natural setting. Wild Horse Butte, for example, includes a flat-topped circular butte about 1 mile in diameter that rises approximately 300 feet from the surrounding landscape. From observation areas within the AU, the butte clearly shows a veneer of dark-colored basalt overlying lighter-colored rhyolite.

Other geologic features include the Snake River Canyon, Striker Basin Gulch, Henderson Flats, and other unnamed basalt bluffs and flows. In the distant viewshed, the cliffs of Murphy Rim are visible to the east, and the Owyhee Mountains are visible to the south and southwest. In addition to the river, some drainage features are within AU4, including Rabbit Creek (C132), Castle Creek, and Fossil Creek.

Other Landscape Elements

Landscape elements that support the nature and purpose of the Oregon NHT in AU4 are limited to Idaho State Highway 78, the NPS ATR "Segment B," which follows the South Alternate of the Oregon NHT, and interpretive resources associated with this route. The highway's location and traffic diminish aspects of the trail's resources, qualities, values, and settings, but also provide recreational opportunities for interpretation and vicarious experiences. Other transportation elements near the trail include Con Shea Road, Murphy Flat Road, Warrick Road, Rye Patch Road, and localized OHV routes.

The town of Murphy and the communities of Walters Ferry, Guffey, and Wilson are within 5 miles of the Oregon NHT. The townscape and multiple buildings in Murphy are visible from some IOPs in AU4, causing a slight visual intrusion to the historic setting from nearby IOPs. Land ownership in this AU is composed of large segments of both BLM and private property. Agricultural activity in the AU has introduced farmsteads, irrigated alfalfa and other fields, and fences into the setting. Canyon County, which encompasses the northwest end and concentrated agricultural area of the AU (4a), is the highest producer of corn in the state and grows the majority of Idaho's orchard, seed, and mint crops.

Some existing transmission lines are present within the viewshed to the southeast, east, northeast, and north of the Oregon NHT. Additional landscape elements include a collapsed earthen dam near the Oregon NHT (C1507) and a U.S. Department of Ecology hazardous waste landfill site (near C1523).

Inventory Results: Analysis Unit 5

Visual Resources

AU5 includes the entirety of the North Alternate Study Trail. Table 3.1-15 lists the field IOPs analyzed for the VRI within this AU. For the purposes of this study, other Federal Protection Components of the Oregon NHT situated in AU5, such as the Three Island Crossing HPHS, Upper Salmon Falls HPHS, and North Trail HPRSEG, are considered in AU1.

Table 3.1-15. Analysis Unit 5 – Inventory Observation Points

IOP	IOP Description
C83	Oregon NHT North Alternate Canyon Creek near Stage Station (HPHS)
C84	Oregon NHT North Alternate King Hill
C85	Oregon NHT North Alternate Pioneer Reservoir
C118	Oregon NHT North Alternate south side of Blair Trail Reservoir
C1503	Emigrant Reservoir
C1510	Oregon NHT Crossing – Route 8A
C1511	Oregon NHT Crossing – Revised Proposed Route 8
C1512	Oregon NHT Crossing – Revised Proposed Route 8
C1513	Oregon NHT Crossing – Revised Proposed Route 8
C1525	North Alternate Study Trail Segment between Bennett Creek and Cold Springs Creek

Scenic Quality Rating Units

The North Alternate Study Trail is within a Class C scenic area. The landscape is a combination of mostly undeveloped land with interspersed agricultural activity. The Danskin Mountains bound the north edge of the viewshed, while flat lands and gentle sloping hills are to the south. Distinct land forms are present from portions of the trail, including the Snake River canyon cliffs, rounded basalt boulders, King Hill, and Bennett Mountain ridge. The color is generally grey mixed with muted hues of brown, orange, green, and blue, providing subtle color variations and limited contrast. Small creeks, reservoirs, and seasonal streams exist in the landscape, but water is not a major defining feature of the landscape. Some variety of vegetation is present, though sagebrush and grassland are the major types.

Multiple transmission lines are visible within the landscape and introduce discordant elements to the scenic harmony. Major highways and interstates are present within the foreground/middleground, but are not adjacent to the trail and do not substantially modify the visual setting from the trail.

Sensitivity Level Rating Units

The entirety of AU5 is rated as highly sensitive, due to the inclusion of the North Alternate Study Trail in the NPS' Four Trails Feasibility Study (NPS 2011). This study considers the feasibility of including the North Alternate Study Trail as part of the existing Oregon NHT designation.

Distance Zones

AU5 includes viewsheds from the trail within the foreground-middleground (up to 5 miles), and background (5-15 miles) distance zones, as well as seldom seen areas. The Danskin Mountains comprise the extent of the trail's viewshed to the north, while the Sailor Creek Basin and Bruneau Desert mostly follow the trail's 15-mile viewshed to the south. Areas beyond these landforms, as well as portions of the Snake River Canyon, are in the seldom seen distance zone. Travel route viewers along I-84 and US 26, which serve as the NPS ATR through this AU, will pass through the foreground/middleground south of the trail.

<u>Cultural/Historical Resources</u>

In AU5, the North Alternate Study Trail clings to the southern edge of the Mount Bennett Hills and is not associated with the Snake River. This segment runs from the Salmon Falls crossing of the Snake River to Clover Creek, crossing the Malad River and

traveling through Bliss, then follows the east side of Clover Creek to where the Clover Creek Stage Station would eventually be built. At this point, the Study Trail joined with Kelton Road and followed the same route to a connection with the Primary Trail North Trail near Hot Springs and Alkali Creeks (Eichhorst 2011). Many braided, non-Study Trail segments are located along the Study Trail.

The North Alternate Study Trail was used by thousands of emigrants attempting to find a better route to Oregon across the southern Idaho desert (Eichhorst 2011). Emigrants began using the North Alternate Study Trail in 1852 after retired mountain men installed a ferry above Salmon Falls (Hutchison and Jones 1993). Research suggests that between 1852 and 1854, the North Trail was the primary route traveled, with nearly two-thirds of emigrants using this route (Eichhorst 2011). According to Eichhorst's 2011 article:

> *After receiving instructions from the ferrymen, the emigrants started on the [North Alternate Route] with no trail guide to lead them. As they followed this new route, the diarists gave names to the creeks and rivers they crossed, usually based upon the terrain encountered in the crossing. Unlike the main Oregon Trail which had published guides naming the creeks and thus allowing consistency in the diaries, the [North Alternate Route] names varied with the imagination of the writer."*

The alternate avoided a 30-mile desert crossing between Salmon Falls and the traditional ford at Three Island Crossing (Bagley 2012). The trail had good forage and springs, but at Clover Creek, which William Cornell called Grave Creek and Henry Allyn said was a "creek of poison," contaminated water proved fatal for humans and cattle. After 1854, travel shifted back to the main trail, leaving the alternate lined with graves (Bagley 2012).

The historic setting is characterized by the Bennett Hills to the north and a series of seasonal creek crossings that separate large patches of grasslands. Primary seasonal creeks include Clover Creek, King Hill Creek, Little Canyon Creek, Alkali Creek, Cold Springs Creek, and Ryegrass Creek. Pioneer Reservoir and Blair Trail Reservoir are also associated with the Oregon NHT. The creeks, reservoirs, and prominent hills to the north dominate the historic and cultural landscape.

There are no HPHSs or HPRSEGs associated with the North Alternate Study Trail. The Study Trail, by definition, is still under study in the scoping process and thus full historic documentation and survey of the area has not been completed. There may be potentially historic resources associated with the Oregon NHT located within the vicinity of the North Alternate Study Trail that were not observed during fieldwork and that have yet to be identified.

Eight previously recorded historic sites associated with the North Alternate Study Trail were identified in the Cultural Resources study (Table 3.1-16) in AU5.

Table 3.1-16. Previously Recorded Historic and Cultural Sites Associated with the North Alternate Study Trail in AU5

Site No.	Site Class	Site Type	Description	NRHP Recommendation
10EL1918 (GW1-148)	Historic	Historic Road, Historic Debris Scatter	North Alternate Study Trail, Kelton Road	Eligible/Contributing
10EL1918 (GW1-148)	Historic	Historic Road	North Alternate Study Trail, Kelton Road	Eligible/Contributing
10EL1918 (GW1-139)	Historic	Historic Road	North Alternate Study Trail, Kelton Road	Eligible/Contributing
10GG0689 (GW1-81)	Multi-component	Historic Road, Historic Debris Scatter, Precontact Lithic Material	North Alternate Study Trail, Kelton Road	Eligible/Contributing
10GG0689 (GW1-158)	Multi-component	Historic Road, Precontact Lithic Material	North Alternate Study Trail, Kelton Road	Eligible/Contributing
10GG0689 (GW3-1)	Historic	Historic Road, Historic Debris Scatter, Precontact Lithic Material	North Alternate Study Trail, Kelton Road	Eligible/Contributing
10GG0689 (GW3-2)	Historic	Historic Road	North Alternate Study Trail, Kelton Road	Eligible/Contributing
GW1-159	Historic	Historic Road; Historic Debris Scatter	North Alternate Study Trail near Pioneer Reservoir	Eligible/Contributing

Emigrant diary entries highlight the Malad River Crossing, which included a deep gorge that dropped from the high desert plain to the bottom of the Snake River Canyon as well as the camps at King Hill and near present-day Pioneer Reservoir in addition to Clover Creek and Clover Valley. King Hill was a rocky and at times sandy incline that emigrants noted was particularly difficult to traverse.

Table 3.1-17 describes the resources, qualities, and values of the North Alternate Study Trail observed from selective IOPs in AU5.

Table 3.1-17. IOP Descriptions of the North Alternate Study Trail Resources, Qualities, and Values in AU5

IOP	Character-Defining Features
C83	Rutted trails running east-west. Marked with OCTA Carsonite posts. No artifacts noted.
C84	Two-track road, 10 feet wide and heavily used by local farmers. OCTA Carsonite marker on road. No period artifacts noted.
C85	Trail is a deep rut with a raised berm alongside. The berm has a two-track trail on top that is no longer used. The rut is about 15 feet wide and 12 inches deep. The berm is about 30 feet wide and more than 12 inches tall.
C118	A single rut or swale about 10–12 feet wide and 9 inches deep. Marked with white Carsonite posts. No period artifacts observed. Runs east-west. OCTA markers present.
C1503	Class 2 two-track road still in use.
C1510	Wide rut running in a straight line northeast-southwest. Covered with fairly dense sagebrush and marked with an old Carsonite post. Some rusted tin can scraps noted on the trail.

Table 3.1-17. IOP Descriptions of the North Alternate Study Trail Resources, Qualities, and Values in AU5 (continued)

IOP	Character-Defining Features
C1511	Deep ruts on steep slope marked with white Carsonite OCTA posts.
C1512	Trail evident by vegetation changes.
C1513	Parallel ruts in bedrock possibly from wagon wheels. Cow trails may follow old trail.
C1525	Multiple, braided trails. Up to four parallel trails, some rutted. One main trail still in use as a two-track road. One Carsonite marker on the trail at barbed wire fence and Ross Road. No period artifacts noted.

Recreation and Travel Opportunities

There are two BLM recreation sites located within AU5 that are in close proximity to the North Alternate Study Trail: Emigrant Reservoir (IOP C1503) and Blair Trail Reservoir (IOP C118). The North Alternate Study Trail passes directly through and adjacent to both reservoirs and defined trail ruts are visible. Both sites provide good trail interpretation, and signs of overnight camping are evident at these dispersed recreation sites.

There are no ATRs within AU5, but there are many multiple interconnecting roads that provide good access to the Study Trail and associated viewing areas. These include King Hill Road, a well-graded two-lane gravel road, and Berry Ranch Road, a well-graded single-lane gravel road, along with many other well-graded secondary gravel roads.

Overall, BLM interpretation is very limited in this area as this portion of trail is still under study, and many segments of the trail are not well defined with BLM Carsonite markers. Some markers were noted, but their application was dispersed.

Other recreational opportunities in the area consist of dispersed camping and hunting on BLM-managed lands, though no BLM-managed trailheads or campgrounds are located within AU5.

Natural Resources

AU5 includes a healthy shrub-steppe environment dominated by large sagebrush. The understory is fairly close cropped with a fair amount of bare dirt. A mix of sagebrush and short grasses, including cheatgrass, bottlebrush, squirrel tail, crested wheatgrass, and needlegrass, provide the majority of vegetative cover. Several areas are disturbed by grazing, while select areas include wildflowers such as phlox and lupine. Soils types include sandy silt and silty sand with gravel and cobbles. In some areas, such as the bank of Emigrant Reservoir, shallow basalt bedrock is evident.

Geologic features in the natural setting include the exposed basalt bedrock of Mount Bennett Hills and Bennett Mountain to the north and northwest and the north wall of the broad Snake River Canyon to the north. Rises in land formation include King Hill in the trail's immediate vicinity, as well as Burnt Ridge to the west and the Owyhee Mountains to the southeast. In addition, rounded basalt boulders deposited by the historic Bonneville Flood are scattered across the ground surface. Small reservoirs and canyons, including Pioneer Reservoir, Emigrant Reservoir, and Little Creek Canyon, mark the landscape. Several tributaries, such as Alkali Creek, Clover Creek, Ryegrass Creek, and Cold Springs Creek, are present in the natural setting.

Other Landscape Elements

The only additional landscape element in AU5 that supports the nature and purpose of the Study Trail is I-84, which serves as the NPS ATR in this area. While this major highway provides opportunities for interpretation along the Oregon NHT, the ROW and traffic also diminish the trail's scenic and historic settings. Other transportation elements in this AU include Highway 30, King Hill Road, Berry Ranch Road, Ross Road, and other gravel roads. The communities of Hagerman, Tuttle, Bliss, King Hill, and Glenns Ferry are within 5 miles of the North Alternate Study Trail but do not detract from the trail's resources, qualities, values, and settings.

Multiple intersecting transmission lines, including wood H-frame and steel lattice towers, are within close proximity to the trail in all directions and greatly diminish the overall setting. Several wind farms are also present within AU5, with concentrated wind farm developments west of King Hill and south of Bliss.

Land ownership in AU5 includes large tracts of BLM-managed land separated by concentrated areas of private property. Agricultural activity is interspersed throughout the AU, particularly center-pivot irrigation areas surrounding the population centers. Cattle grazing is evident in select areas near the trail (C1503). Additional landscape elements include Blair Trail Reservoir, Pioneer Reservoir, and an irrigation canal. These elements diminish the Study Trail by obscuring the trail and detracting from its historic setting.

Inventory Results: SRBOP (AU3 and AU4)

The SRBOP, established by Congress in 1993, is part of the BLM's National Landscape Conservation System. The BLM manages the SRBOP to preserve the area's wildlife habitat while providing other compatible land uses. The SRBOP RMP (BLM 2008a) acknowledged the intact visual characteristics of the Oregon NHT when it established a visual protection corridor within the Birds of Prey Avoidance Area that included the Oregon NHT (in addition to other sensitive resources). The Oregon NHT crosses 40.5 miles of the SRBOP, with 22.7 miles of the trail situated on BLM-managed land. Trails associated with the Oregon NHT (i.e., NHT [2] segments of the Oregon Trail that are not Congressionally Designated NHT segments) cross 30.9 miles of the SRBOP, with 17.9 miles of these associated trails situated on BLM-managed land. The Oregon Trail ATR also crosses 43.3 miles of the SRBOP. The inventory within the SRBOP included 18 IOPs (C113, C1155, C120, C132, C137, C1501, C1502, C1505, C1506, C1507, C1508, C1514, C1523, C1524, C1526, C1527, C90, and C91). The resources, values, and qualities of the Oregon NHT within the SRBOP are described in the inventory results for AU3 and AU4.

3.1.2 Direct and Indirect Effects

This section describes the potential direct and indirect impacts associated with the Project (see Chapter 4 for a discussion of cumulative impacts.) The section begins with a discussion of effects common to all of the action alternatives that include Project construction, operations, and decommissioning. This is followed by a detailed analysis of impacts on the Oregon NHT and North Alternate Study Trail as they relate to the No Action Alternative, Segments 8 and 9 Revised Proposed Routes, other routes, and FEIS Routes.

The direct impacts involve physical effects to trail resources, qualities, values and settings typically associated with ground disturbance for the construction of a project. These would include construction of the actual transmission line, ancillary features and road construction. Direct impacts would most likely occur within the Project's 250-foot ROW corridor (or the 500-foot-wide sections where the proposed alternatives include two parallel transmission lines), plus those specific areas for construction activities that may be identified later in Project planning and potentially contained in an HPTP prepared in compliance with the NHPA.

Indirect effects cover a broader range at a landscape scale than direct impacts and include visual, auditory, and atmospheric effects to the resource as a by-product of project construction and operation. Resources indirectly impacted by the Project, as a function of visual, auditory, and atmospheric effects, may be located within the 500-foot-wide or 750-foot-wide corridor for direct impacts; however, these resources may also be located outside this corridor. The area of indirect impacts is the APAI.

Cumulative effects result from the incremental effects related to the Project over time such as increased impacts due to new access roads, future infrastructure projects in the same corridor and additional projects such as wind turbines due to the transmission access. For the Project, the cumulative impacts would be most evident for the indirect visual effects to the resources, qualities, values, and settings of the Oregon NHT and North Alternate Study Trail. Chapter 4.0 discusses the Project's potential for cumulative impacts to NHTs on BLM-managed land. A comprehensive list of all project design features and EPMs, as well as the land ownership to which they apply, can be found in Table 2.7-1 of Chapter 2 of the FEIS. The following impact assessment takes these project design features and EPMs into account when evaluating the Project's potential impact on NHTs.

Plan Amendments

Amendments to the BLM RMPs and MFPs are summarized for each alternative in Table 2.3-1 (see Chapter 2 for more details). The BLM plan amendments are discussed in detail in Appendices F and G. Amendments are needed to permit the Project to cross various areas of BLM-managed land. The effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved, and amendments that alter land management designations could change future use of these areas. Section 3.1.2.5 discusses when Project effects to NHTs would require BLM RMP and/or MFP amendments.

The Segments 8 and 9 Revised Proposed Routes would require BLM plan amendments affecting NHT management. The Segment 8 Revised Proposed Route would require a plan amendment to the 1987 Jarbidge RMP to protect the Oregon NHT ruts from surface disturbance within a 0.25-mile corridor. The Bennett Hills/Timmerman Hills MFP would also require a plan amendment to manage NHT resources with applicable laws and policies. Additional amendments would be required for visual resources that would also affect the cultural aspects of these resources (see Section 3.2 – Visual Resources).

The Segment 9 Revised Proposed Route would require the following three amendments to the SRBOP RMP:

- A corridor 250 feet from the centerline of the proposed powerline would be established with a VRM of Class III. This corridor would maintain a distance of at least 0.5 mile from the NHT, except where it crosses the trail.
- The Snake River Canyon SRMA: This SRMA consists of 22,300 acres in the Snake River Canyon downstream from Grandview, Idaho that is managed for the protection of cultural and scenic values. Allow a 500-kV transmission line to cross the SRMA while protecting cultural resources, which includes NHT resources, from surface disturbance.
- C.J. Strike SRMA: This SRMA consists of 20,000 acres surrounding C.J. Strike Reservoir along the Snake River. The purpose of the SRMA is to provide enhanced recreation management associated with the reservoir, and protection of the Oregon NHT adjacent to the reservoir. Allow a 500-kV transmission line to cross the SRMA while protecting the Oregon Trail from surface disturbance.

VRM Class II areas associated with the Oregon Trail and Snake River in view of the 500-kV transmission line that would not meet VRM Class II objectives of the C.J. Strike SRMA would be reclassified to VRM Class III.

3.1.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West and the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of this Project. No Project-related impacts to NHTs would occur; however, impacts would continue as a result of natural events (such as fire, drought, and severe weather) as well as from existing and planned developments within the Analysis Area and other projects, including wind farms, mining, agricultural, or other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project, and the area would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, impacts similar to those described below may occur due to new transmission lines built instead of this Project.

3.1.2.2 Effects Common to All Routes

Construction

Construction of the Project and its ancillary facilities could directly impact segments of the Oregon NHT and North Alternate Study Trail. Short-term impacts from construction would include the visual intrusion of construction vehicles, equipment, materials, and a work force in staging areas, along access roads, and along the new transmission line right-of-way. Long-term impacts from construction include ground-disturbing activities that could directly disturb ruts, swales, and previously recorded and/or undetected sites associated with the trails. Project crossings and access road construction and/or improvements are the most likely locations for this type of impact to occur. Table 3.1-18

provides a list of Project crossings of the Oregon NHT on BLM-managed land by AU and Project route.

Table 3.1-18. Oregon NHT and North Alternate Oregon Trail Crossings within the APAI

Route[1/]	AU1 or NHT	AU2 or NHT	AU3 or NHT	AU4 or NHT	AU5 or NHT	Total Crossings
Revised Proposed Route 8	–	1	–	1	4	6
Revised Proposed Route 8 (BLM-managed land only)	–	–	–	–	3	3
Route 8G	1	–	–	–	1	2
Route 8G (BLM-managed land only)	–	–	–	–	–	–
Route 8H	1	–	3	1	1	6
Route 8H (BLM-managed land only)	–	–	2	1	0	3
Revised Proposed Route 9	–	–	3	1	0	4
Revised Proposed Route 9 (BLM-managed land only)	–	–	2	2	0	4
Route 9K	–	–	–	–	–	–
Route 9K (BLM-managed land only)	–	–	–	–	–	–
FEIS Routes (other than Proposed 9)	2 (8A)	1 (8)	5 (9D/9G) 1 (9F/9H)	1 (8) 1 (8B) 1 (9D/9F) 1 (9G/9H)	4 (8) 2 (8A)	19
FEIS Routes (other than Proposed 9) (BLM-managed Land)	2 (8A)	–	2 (9D/9G)	1(8) 1 (9D/9F) 1 (9G/9H)	3 (8) 1 (8A)	11
FEIS Proposed Route 9	–	–	–	–	–	–
FEIS Proposed Route 9 (BLM-managed land only)	–	–	–	–	–	–

Note: There is no overlap between the AUs within this table. Each AU is centered on a discrete segment of the Oregon NHT and though the AUs overlap with each other due to the 15-mile buffer, the total number of crossings above is accurate to the segment focused on in each AU.

1/ Neither the Toana Road Variations nor the comparison portion of the Revised Proposed Route, FEIS Proposed 9, or Route 9K would affect an NHT.

Construction or improvement of roads may encourage unauthorized site access, artifact collection, and vandalism. These impacts would be considered adverse if they diminish the NRHP integrity of these resources, particularly their historic setting, feeling, and associational qualities.

Project construction is not expected to permanently preclude the use of or access to any existing trail-related recreation areas or activities. Some short-term impacts are expected. These include impacts to dispersed trail-related recreation activities that would likely diminish the quality of trail-related recreational activities or vicarious experiences for the duration of the construction phase of the Project. These impacts, caused by the presence of construction noises, visual disturbances, or other humans, would be localized and short-term in nature.

Vegetation removal caused by construction activities has the potential for short- and long-term impacts to natural resources, more specifically vegetation communities, within the Project area. Vegetation removal, for instance, can increase the potential for invasive plants and the introduction of noxious weeds by transient construction vehicles moving through the Project area. This would cause changes to the visual presence of existing vegetation communities surrounding the Oregon NHT and North Alternate Study Trail.

Operations

If the transmission line is constructed, the presence of large transmission structures would introduce long-term visual impacts.

Periodic access to the transmission line ROW is required to maintain its operating function. Thus, access roads would be kept open, at least at a two-track level, which would increase the potential for vandalism and illicit artifact collection.

Decommissioning

Impacts from decommissioning would be similar to those for construction.

3.1.2.3 Direct and Indirect Effects by Route

Segment 8

Revised Proposed Route

Construction

The Segment 8 Revised Proposed Route runs southeast-northwest through AUs 2, 4, and 5. This route is found primarily in the Four Rivers BLM management area and, to a lesser extent, through the Shoshone BLM management area. A total of 20 KOPs surveyed along the route fall within three distinct AUs: 8 KOPs within AU2, 2 KOPs within AU4, and 10 KOPs within AU5. The route does not cross the Oregon NHT within AU2 or AU4 on BLM-managed lands, but crosses the trail four times within AU5. KOP site types along this route include primarily cultural and recreational within AU2, cultural and historic within AU4, and cultural, visual, and historic within AU5.

Along this route, cultural modifications within AU2 consist primarily of existing transmission lines between 0.5 and 4.2 miles away. Other cultural modifications within AU2 are windfarms at distances between 4 and 10 miles away, a communication tower, a fence and an unnamed road. Cultural modifications within AU4 consist of the town of Murphy 1 mile south and a transmission line 6.5 miles southeast. Cultural modifications within AU5 consist primarily of transmission lines, including two lines that cross the trail. Other cultural modifications in AU5 are Pioneer Reservoir, Emigrant Reservoir, and N. Berry Ranch Road. King Hill Road crosses the trail twice within AU5.

In AU2, the route runs roughly parallel to the Oregon NHT North Trail HPRSEG at a distance ranging from 1.5 to 5 miles. This route is situated to the south and southwest of the trail and is visible from 28.9 miles of trail; of these, 14.6 miles are on BLM-managed land. The Segment 8 Revised Proposed Route crosses the trail in one location in AU2, but not on BLM-managed land, and is therefore not within the APAI. At the convergence of the Revised Proposed Route and FEIS Route 8A, the Revised Proposed Route is less than 1 mile from the Oregon NHT for approximately 8 miles until

the trail reaches Hot Springs Creek. From Hot Springs Creek, the route parallels the trail for approximately 28 miles at a distance ranging from 2 to 5 miles from the trail.

In AU4, the Segment 8 Revised Proposed Route crosses the trail, on non-BLM-managed land, near the northern edge of the AU and remains within the viewshed for 10.3 miles, 0.3 mile of which is on BLM-managed land, located over 3 miles from the trail. The visual impacts of the route are limited to the northern end of this AU, which has experienced the greatest cultural modifications within this AU due to existing transmission lines and agricultural development. The section of trail with a view of Revised Proposed Route 8 is not a part of the Sinker Creek HPRSEG; it is located about one mile north of the northern end of that HPRSEG.

Through most of AU5, Revised Proposed Route 8 closely follows the North Alternate Study Trail at a distance of 0.5 to 3 miles and crosses the trail in four locations, three of which are located on BLM-managed land. For much of its distance within this AU, the route would be located approximately 1 mile from the trail to either the north or south, as the route weaves around the trail multiple times.

Within AU2 and AU4, the Segment 8 Revised Proposed Route impacts to the trail's scenic/visual resources are anticipated to be low based on the route's weak visual contrast. This route would cause no change to the Scenic Quality Rating through these AUs, because the existing cultural modifications, even when combined with the route, would not reduce the AU's Scenic Quality Rating score below a threshold that would trigger a lower Scenic Quality Rating. Within AU5, the route's impacts to the trail's scenic/visual resources are anticipated to be low or weak based on the route's predominantly moderate visual contrast.

The Segment 8 Revised Proposed Route impacts on recreation within AUs 2 and 4 would be low and, within AU5, low to moderate.

SRBOP

Within AU4, the Segment 8 Revised Proposed Route as well as some FEIS routes cross the SRBOP, though comparably few substantively impact the resources, values, qualities, and settings of the Oregon NHT within the SRBOP.

Operations

If the transmission line is constructed, the presence of large transmission structures would introduce long-term visual impacts.

Periodic access to the transmission line ROW is required to maintain its operating function. Thus, access roads would be kept open, at least at a two-track level, which would increase the potential for vandalism and illicit artifact collection.

Route 8G

Construction

Route 8G, of Segment 8, runs primarily through the Jarbidge BLM management area and, to a lesser extent, through the Four Rivers and Bruneau management areas. A total of 10 KOPs surveyed along the route fall within three AUs: 7 KOPs within AU1b, 1 KOP within AU3, and 2 KOPs within AU4b. The route does not cross the Oregon NHT within AU1b, AU3, or AU4b.

KOP site types along this route include primarily visual, cultural, and historic, with 1 recreation site, within AU1b. Visual, cultural, and historic site types fall within AU3, and cultural and visual within AU4b.

The route runs west and northwest through AU1. Views of this route are present from 22.6 miles of the Oregon NHT; 8.5 of these miles are on BLM-managed land between 0.5 to 4 miles from the trail (with an average distance of 3 miles). Route 8G crosses the Oregon NHT in Cassia Gulch (KOP C1515). For 7.8 miles, this route follows the same alignment as FEIS Route 9B between Big Pilgrim Gulch and Deadman Flat.

Cultural modifications within AU1b consist primarily of existing transmission lines between 0.3 and 2 miles away. Other cultural modifications within AU1 are windfarms at distances between 2 and 14 miles away, a fence and petroleum pipelines. Cultural modifications within AU3 consist of ID 78, 200 feet (60 meters) south, a transmission line 200 feet (60 meters) south and a waste transfer station 80 feet (25 meters) south. Cultural modifications within AU4b consist of transmission and power lines between 2 and 4 miles away. In AU1b, Route 8G may diminish the trail's scenic quality at KOP C1515 and C106 by changing the cultural modification score to a level that prompts a lower Scenic Quality Rating, from a rating of "B" to "C."

Operations

If the transmission line is constructed, the presence of large transmission structures would introduce long-term visual impacts.

Periodic access to the transmission line ROW is required to maintain its operating function. Thus, access roads would be kept open, at least at a two-track level, which would increase the potential for vandalism and illicit artifact collection.

Route 8H

Construction

Within AU1, Route 8H follows the same alignment as Route 8G. Beginning at the eastern boundary of AU1, Route 8H runs west for 35 miles, northwest for 3.5 miles, then west for the final 15 miles to AU1's western boundary. Views of Route 8H within AU1 are present from 22.6 miles of the Oregon NHT; 8.5 of these miles are on BLM-managed land between 0.5 to 4 miles from the trail (with an average distance of 3 miles). Within AU1, Route 8H crosses the Oregon NHT in Cassia Gulch (KOP C1515). Route 8H is visible from the Oregon NHT from all KOPs in AU1b, except for a 1.5-mile portion located approximately 7.5 miles from the west edge of AU1. For 18 miles of AU1, Route 8H also follows the same alignment as FEIS Route 9 and Route 9K between Deadman Flat and Brown's Gulch.

Cultural modifications within AU1 consist primarily of existing transmission lines that range between 0.3 and 2 miles away. Other cultural modifications within AU1 consist of windfarms that range in distance from 2 to 14 miles away, fencing, and petroleum pipelines.

The route crosses the Oregon NHT a total of three times, twice in AU3 (C137 and C1502) and once in AU4 (C132).

Within AU3, Route 8H follows the same alignment as the Segment 9 Revised Proposed Route for 57.2 miles beginning at Dead Man Flat and extending to the western border of AU3. Route 8H also follows the same alignment as Route 8G for the first 35 miles beginning at the eastern border of the AU and terminating just south of Bruneau Dunes State Park. A total of approximately 18 miles of Route 8H would be visible from the Oregon NHT South Alternate within AU3 at a distance of 0.5 to 5 miles (and averaging about 3 miles); 5.7 miles of which are located on BLM-managed land. Within AU3, Route 8H crosses the trail twice on BLM-managed land (C137 and C1502). Route 8H is within one mile of the trail as it follows closely along the southern end of the C.J. Strike Reservoir before crossing the reservoir once to its north side.

For the entirety of AU4, Route 8H follows the same alignment as the Segment 9 Revised Proposed Route. In AU4b, the Route 8H would have a strong visual contrast at eight KOPs (C1527, C91, C132, C1507, C1514, C1505, C90, and C1506). Route 8H would have moderate adverse visual impacts and would not result in a reduction in the AU's Scenic Quality Rating. Even when combined with the Revised Proposed Route, the existing cultural modifications would not reduce the AU's Scenic Quality Rating score below a threshold that would trigger a lower Scenic Quality Rating. Route 8H is visible from the Oregon NHT for 20.2 miles within AU4b at a distance of 0.5 to 5 miles (and averaging 4 miles). Approximately 11.4 miles of the Oregon NHT on BLM-managed land would have views of Route 8H. Route 8H crosses the trail once on BLM-managed land (C132). At the southern end of AU4 near Black Butte, Route 8H is runs at a distance of 4.5 miles from the trail and remains at that distance until crossing the Snake River just north of Sinker Creek Butte. From Sinker Creek Butte to the east end of the town of Murphy, Idaho, Route 8H runs at an average distance of 0.5 mile from the trail and would appear prominent in the viewshed. The segment of Oregon NHT that parallels Route 8H is the Sinker Creek HPRSEG, except within a small section on the east end of Murphy and within a small patch of agricultural land west of Sinker Creek Butte. After the town of Murphy, Route 8H continues west, and the trail continues north at a distance of over 3 miles until the northern edge of this AU.

Within AU5, Route 8H follows the same alignment as Route 8G. Route 8H runs at a distance of approximately 9 to 11 miles from the trail except at the far southeastern edge of AU5, where the North Alternate Study Trail is crossed by Route 8H near Hagerman on private lands. Route 8H runs west and northwest through AU5. There would be little to no visual impact from this route to the Study Trail as it exists on BLM-managed land in AU5.

<u>SRBOP</u>
Route 8H will have six adverse impacts on the Oregon NHT within the SRBOP, two of which occur within AU3 and four within AU4.

<u>Operations</u>
If the transmission line is constructed, the presence of large transmission structures would introduce long-term visual impacts.

Periodic access to the transmission line ROW is required to maintain its operating function. Thus, access roads would be kept open, at least at a two-track level, which would increase the potential for vandalism and illicit artifact collection.

Segment 9

Revised Proposed Route

Construction

The Segment 9 Revised Proposed Route runs primarily through the Four Rivers BLM management area and, to a lesser extent, through the Jarbidge BLM management area. A total of 22 KOPs surveyed along the route fall within three AUs: 3 KOPs within AU1, 9 KOPs within AU3, and 10 KOPs within AU4. The route crosses the Oregon NHT a total of four times, twice in AU3 (C137 and C1502) and twice in AU4 (C132 and C1514).

KOP site types along this route include primarily cultural, historic and visual within AU1; cultural, historic, visual, and recreation within AU3; and cultural, historic, and visual within AU5.

Cultural modifications within AU1 consist primarily of existing transmission lines between 0.3 and 2 miles away. Another cultural modification within AU1 are windfarms located 5 miles east. Cultural modifications within AU3 include existing transmission lines crossing the trail in two places. State Highway 78 and a waste transfer station are both within less than 200 feet (60 meters) and C.J. Strike Reservoir is about 650 feet (200 meters) north. Cultural modifications within AU4 consist primarily of existing transmission and power lines, 0.5 to 6.5 miles away. Other cultural modifications in AU4 are a hazardous waste landfill 2 miles away, a barbed wire fence crossing the trail, the town of Murphy 0.25 mile south, State Highway 78 south by 0.25 mile, and an earthen dam to the north.

The Segment 9 Revised Proposed Route follows the same alignment as Route 9K through all of AU1. The route passes roughly northwest, west, and northwest again through AU1. Most of this route would not be visible from the Oregon NHT, including the North Trail HPRSEG. Very narrow views of this route are present for 0.5 mile of the Oregon NHT within the Black Mesa Flats area southeast of Glenns Ferry at a distance of over 7 miles, but this is not on BLM-managed land. There are no visual impacts to the Oregon NHT from the Segment 9 Revised Proposed Route or Route 9K on BLM-managed land within AU1.

A total of 18 miles of the Segment 9 Revised Proposed Route would be visible from the Oregon NHT South Alternate within AU3 at a distance of 0.5 to 5 miles (and averaging 4 miles). Approximately 5.7 miles of the Oregon NHT South Alternate on BLM-managed land would have views of the Segment 9 Revised Proposed Route. Within this viewshed, the route crosses the trail three times and C.J. Strike Reservoir once. The route follows the trail closely along the southern end of the reservoir within 1 mile before crossing to its north side. The route would not be visible in any other location within this AU.

In AU4b, the Segment 9 Revised Proposed Route would have strong visual contrasts at eight KOPs (C1527, C91, C132, C1507, C1514, C1505, C90, and C1506). The route would have moderate adverse visual impacts and would not result in a reduction in the AU's Scenic Quality Rating. Even when combined with the Revised Proposed Route 9, the existing cultural modifications would not reduce the AU's Scenic Quality Rating score below a threshold that would trigger a lower Scenic Quality Rating. The route is visible from the Oregon NHT for 20.2 miles within AU4b at a distance of 0.5 to 5 miles

(and averaging 4 miles). Approximately 11.4 miles of the Oregon NHT on BLM-managed land would have views of Segment 9 Revised Proposed Route. The route does not cross the trail on BLM-managed land with AU4. At the southern end of AU4 near Black Butte, the route is located 4.5 miles from the trail and remains at that distance until crossing the Snake River just north of Sinker Creek Butte. From Sinker Creek Butte to the east end of the town of Murphy, Idaho, the route is located on average 0.5 mile from the trail and would be very prominent in the viewshed. The segment of Oregon NHT that parallels the Revised Proposed Route for Segment 9 is the Sinker Creek HPRSEG, except within a small section on the east end of Murphy and within a small patch of agricultural land west of Sinker Creek Butte. After the town of Murphy, the route continues west and the trail continues north at a distance of over 3 miles until the northern edge of AU4.

SRBOP

The majority of adverse impacts to the Oregon NHT within the SRBOP are from the Segment 9 Revised Proposed Route and that route's associated FEIS routes (9D, 9G, 9H, and 9F) that lie to the north and south of the Snake River Valley. The Revised Proposed Route has nine adverse impacts within the SRBOP, FEIS Routes 9D and 9G both have eight, while Routes FEIS 9H and 9F both have four. Four of the Revised Proposed Route's adverse impacts are in AU3, and five are in AU4. FEIS Routes 9D and 9G both have four adverse impacts in both AU3 and AU4, and 9H and 9F both have four adverse impacts in AU4.

Operations

If the transmission line is constructed, the presence of large transmission structures would introduce long-term visual impacts.

Periodic access to the transmission line ROW is required to maintain its operating function. Thus, access roads would be kept open, at least at a two-track level, which would increase the potential for vandalism and illicit artifact collection.

FEIS Proposed Route 9

Construction

The 162.2-mile long FEIS Proposed 9 runs primarily through the Jarbidge, Bruneau, and Owyhee BLM management areas, and to a lesser extent, through the Four Rivers BLM management area. A total of 13 Oregon NHT KOPs, situated within AU1, AU3, and AU4, are within 5 miles of the route and would have visibility of the transmission line. The route would not be visible from any KOPs in AU2 or AU5. FEIS Proposed 9 does not cross the Oregon NHT.

KOP site types along this route include visual, cultural, historic, and recreation resources in AU1 and AU2 and visual, cultural, and historic resources in AU4.

Cultural modifications along the route include transmission lines to the northeast in AU1. Transmission lines, Idaho Highway 78, and agricultural fields, and C.J. Strike Reservoir are situated in AU3. Transmission lines, State Highway 78, the town of Murphy, a hazardous waste facility, and an earthen dam are in close proximity to the KOPs in AU4.

Through 34.3 miles of AU1, FEIS Proposed 9 runs generally parallel to the Oregon NHT, varying from 2 to 5 miles south of the trail in distance. The route follows the same alignment as Route 9K for the entirety of AU1 and follows the same alignment as Route 8G through the western 18.1 miles of AU1. Views of FEIS Proposed 9 within AU1 are present from 6.3 miles of the Oregon NHT at the west end of AU1 at a distance of 2 to 3 miles; 1.4 of these miles are on BLM-managed lands. Three KOPs in AU1 have visibility of the route (C106, C97, and C61), from a distance between 3.2 miles and 4.5 miles. The route would not change the scenic quality, and would have no adverse impact on cultural, historic, and recreation resources. The route would have no impact on natural resources.

In AU2, FEIS Proposed 9 is located approximately 3 to 36 miles south of the Oregon NHT North Trail and is not visible from any KOPs in this AU.

In AU3, FEIS Proposed 9 follows the same alignment as Route 9K for 32.4 miles and Route 8G for 23 miles. This route does not follow any other routes for the remaining western half of AU1. The route falls within 1.7 miles south of the Oregon NHT near C.J. Strike Ruts (C1501), and 2.0 and 2.5 miles south of C.J. Strike Reservoir (C1155 and C1502), respectively, but is not visible from these KOPs. The route is visible for 36.9 miles of the Oregon NHT South Alternate in AU3 at a distance of 0.5 to 5 miles (and averaging 4 miles), including three KOPs (C113, C1133, and C137). A total of 13.8 miles of the Oregon NHT South Alternate on BLM-managed land would have views of FEIS Proposed 9. From KOP C113, FEIS Proposed 9 is approximately 2.8 miles south of the Oregon NHT South Alternate and is visually separated from the trail by State Highway 78, which is approximately 200 feet (60 meters) south of the Oregon NHT at this KOP. From the Recreation view at C1133, FEIS Proposed 9 is approximately 4.2 miles southwest of the KOP. From the simulation point at KOP C137, FEIS Proposed 9 is approximately 4.2 miles southwest of the KOP, and is visually separated by other transmission lines that cross the trail within the immediate setting. Within AU3, FEIS Proposed 9 would have no adverse impact on cultural, historic, and recreation resources, and would have no impact on natural resources.

In AU4, FEIS Proposed 9 follows the same alignment as Route 8G for 3.2 miles, and lies approximately 2.3 miles south and east of the Utter Massacre Site (C1528). The route then follows the same alignment as the Segment 9 Revised Proposed Route at the west end of the SRBOP and then also with Routes 8G and 9K before terminating in Hemingway. The route generally parallels the Oregon NHT south of the trail at a distance of 2 to 5 miles, except for a small area to the west of Murphy where the route comes within 1.2 miles of the trail. Though the route is expected to be visible in the distance for almost the entirety of AU4 (approximately 55.4 miles), only 16.6 of those miles are located on BLM-managed land. Impacts in AU4 are localized near the northwest end, where the Sinker Creek HPRSEG heads west toward the route before turning sharply to the north. In this area, situated within the SRBOP, the route is visible from six KOPs (C132, C90, C1506, C1507, C1514, and C1505), with distances ranging from 1 mile (C90) to 3.2 miles (1505) from the KOPs. From C1506 and C1514, both of which are where other Project routes cross the Oregon NHT, FEIS Proposed 9 would moderately contrast with the visual setting, but would not adversely impact scenic/visual, cultural/historic, or natural resources.

In AU5, FEIS Proposed 9 is located approximately 9.8 to 19 miles south of the North Alternative Study Trail and is not visible from any KOPs in this AU.

Operations
If the transmission line is constructed, the presence of large transmission structures would introduce long-term visual impacts.

Periodic access to the transmission line ROW is required to maintain its operating function. Thus, access roads would be kept open, at least at a two-track level, which would increase the potential for vandalism and illicit artifact collection.

Route 9K

Construction
Route 9K of Segment 9 runs primarily through the Jarbidge BLM management area and, to a lesser extent, through the Four Rivers and Bruneau BLM management areas. A total of six KOPs surveyed along the route fall within three AUs: three KOPs within AU1, one KOP within AU3, and two KOPs within AU4. The route does not cross the Oregon NHT.

KOP site types along this route include primarily cultural, historic, and visual resources within AU1 and AU3, and cultural and visual resources within AU4.

Cultural modifications within AU1 consist primarily of existing transmission lines between 0.3 and 2 miles away. Another cultural modification within AU1 is a windfarm 5 miles east. Cultural modifications within AU3 include State Highway 78 about 200 feet (60 meters) south, a waste transfer station about 80 feet (25 meters) south, and existing transmission lines about 200 feet (60 meters) south. Cultural modifications within AU4 consist of existing transmission and power lines between 2 and 4 miles away.

Route 9K follows the same alignment as the Segment 9 Revised Proposed Route through AU1. The route passes roughly northwest, west, and northwest again through the AU. Most of this route would not be visible from the Oregon NHT, including the North Trail HPRSEG. Very narrow views of this route are present for 0.5 mile of the Oregon NHT within the Black Mesa Flats area southeast of Glenns Ferry, but this is not on BLM-managed land. There are no visual impacts to the Oregon NHT from Route 9K on BLM-managed land within AU1. The remainder of Route 9K follows the same alignment as Route 8G, and Route 9K would have an identical impact on the trail as Route 8G in AUs 3 and 4.

Operations
If the transmission line is constructed, the presence of large transmission structures would introduce long-term visual impacts.

Periodic access to the transmission line ROW is required to maintain its operating function. Thus, access roads would be kept open, at least at a two-track level, which would increase the potential for vandalism and illicit artifact collection.

Toana Road Variations 1 and 1-A and the Comparison Portion of the Revised Proposed Route

Neither of the Toana Road Variations (1 and 1-A) would be visible from any Congressionally Designated Trail Segments (NHT[1]) or Oregon Trail Segments (NHT[2]) being analyzed for purposes of this SEIS.

Since the Toana Road Variations have no potential visual impact to any NHT[1] or NHT[2] resources, an effects analysis was not prepared. No construction or operations impacts to NHT resources from the Toana Road Variations are anticipated.

Visual impacts to the Toana Road (an historic property) are addressed within Section 3.3 – Cultural Resources. The Toana Road is not a designated NHT, Study Trail, or Oregon Trail–related feature.

3.1.2.4 Direct and Indirect Effects of the Alternatives

This section includes a summary of direct and indirect effects to the Oregon NHT and North Alternate Study Trail. Table 3.1-19, which summarizes the total number of adverse impacts on the Oregon NHT from each of the seven action alternatives, is accompanied by narratives that describe the nature and magnitude of these adverse impacts to specific NHT resources. The alternatives are visually displayed in Figures A-2 through A-8.

Table 3.1-19. Summary of Adverse Impacts on the Oregon NHT from Each Action Alternative

Alternative	Impact	AU1	AU2	AU3	AU4	AU5	Total	SRBOP[1/]	Alternative Total
Alternative 1 (Revised Proposed Action)	Segment 8 (Revised Proposed Route)								17 Adverse Impact 10 Trail Crossings (7 on BLM-managed land) 24 No Adverse Impact
	Adverse	–	–	–	–	7	**7**	0	
	No Adverse	–	8	–	1	3	**12**	1	
	Segment 9 (Revised Proposed Route)								
	Adverse	–	–	5	5	–	**10**	9	
	No Adverse	3	–	4	5	–	**12**	9	
Alternative 2 (BLM Co-Preferred Alternative)	Segment 8 (Revised Proposed Route)								7 Adverse Impact 6 Trail Crossings (3 on BLM-managed land) 26 No Adverse Impact
	Adverse	---	---	---	---	7	**7**	0	
	No Adverse	---	8	---	1	3	**12**	1	
	Segment 9 (FEIS Proposed Route)								
	Adverse	–	–	–	–	–	**0**	0	
	No Adverse	3	–	4	7	–	**14**	9	
Alternative 3	Segment 8 (Revised Proposed Route)								7 Adverse Impact 6 Trail Crossings (3 on BLM-managed land) 18 No Adverse Impact
	Adverse	–	–	–	–	7	**7**	0	
	No Adverse	–	8	–	1	3	**12**	1	
	Segment 9 (Route 9K)								
	Adverse	–	–	–	–	–	**0**	0	
	No Adverse	3	–	1	2	–	**6**	2	
Alternative 4	Segment 8 (Route 8G)								3 Adverse Impact 2 Trail Crossings (0 on BLM-managed land) 21 No Adverse Impact
	Adverse	3	–	–	–	–	**3**	0	
	No Adverse	4	–	1	2	–	**7**	2	
	Segment 9 (FEIS Proposed Route)								
	Adverse	–	–	–	–	–	**0**	0	
	No Adverse	3	–	4	7	–	**14**	9	

Table 3.1-19. Summary of Adverse Impacts on the Oregon NHT from Each Action Alternative (continued)

Alternative	Impact	AU1	AU2	AU3	AU4	AU5	Total	SRBOP[1/]	Alternative Total
Alternative 5 (BLM Co-Preferred Alternative)	Segment 8 (Route 8G)								3 Adverse Impact 2 Trail Crossings (0 on BLM-managed land) 13 No Adverse Impact
	Adverse	3	–	–	–	–	**3**	0	
	No Adverse	4	–	1	2	–	**7**	2	
	Segment 9 (Route 9K)								
	Adverse	–	–	–	–	–	**0**	0	
	No Adverse	3	–	1	2	–	**6**	2	
Alternative 6	Segment 8 (Route 8H)								11 Adverse Impact 6 Trail Crossings (3 on BLM-managed land) 25 No Adverse Impact
	Adverse	5	–	2	4	–	**11**	6	
	No Adverse	3	–	4	4	–	**11**	7	
	Segment 9 (FEIS Proposed Route)								
	Adverse	–	–	–	–	–	**0**	0	
	No Adverse	3	–	4	7	–	**14**	9	
Alternative 7	Segment 8 (Route 8H)								11 Adverse Impact 6 Trail Crossings (3 on BLM-managed land) 17 No Adverse Impact
	Adverse	5	–	2	4	–	**11**	6	
	No Adverse	3	–	4	4	–	**11**	7	
	Segment 9 (Route 9K)								
	Adverse	–	–	–	–	–	**0**	0	
	No Adverse	3	–	1	2	–	**6**	2	

1/ Column shows the number of impacts on BLM-managed land within the SRBOP.

Alternative 1 – Proposed Action (the Revised Proposed Routes for Segments 8 and 9)

Alternative 1, the Revised Proposed Action, would have 17 adverse impacts on the Oregon NHT, with impacts associated with the Segment 8 Revised Proposed Route in AU5 (7) and Segment 9 Revised Proposed Route in AU3 (5) and AU4 (5). Four of these adverse impacts are to KOPs located on the Oregon NHT Sinker Creek HPRSEG. Alternative 1 would have no adverse impact on the 24 KOPs from which the alternative would be visible. Seven of the 17 adverse impacts would be caused by trail crossings on BLM-managed land.

Alternative 1 would cross the Oregon NHT a total of seven times on BLM-managed land, three of which would be caused by the Segment 8 Revised Proposed Route. Specifically, three of the five adverse impacts in AU3 and five of the seven adverse impacts in AU5 would be caused by Alternative 1 crossing the Oregon NHT.

Nine of the adverse impacts, all associated with the Segment 9 Revised Proposed Route are on the SRBOP. Four of the trail crossings are in the SRBOP.

Alternative 1, compared to all the Alternatives, would have the greatest number of adverse impacts (17) on the Oregon NHT and the largest number of trail crossings on BLM-managed land (7). Alternative 6 and Alternative 7 would have the next largest number of adverse impacts (11 for each alternative).

Alternative 1 would also have the greatest number of adverse impacts (9) to the Oregon NHT within the SRBOP. Alternative 6 and Alternative 7 have the next largest number of adverse impacts in the SRBOP (six for each alternative).

Toana Road Variations 1 or 1-A would not have an impact upon any NHT resources.

Alternative 2 – Revised Proposed 8 and FEIS Proposed 9

Alternative 2, a Co-Preferred Alternative, would have seven adverse impacts on the Oregon NHT, all located within AU5 and associated with the Segment 8 Revised Proposed Route. Three of the adverse impacts would be caused by trail crossings on BLM-managed land. Alternative 2 would have no adverse impact on the 26 KOPs from which the alternative would be visible. FEIS Proposed 9 would have no adverse impacts on the Oregon NHT.

Alternative 2 would have no adverse impact on the 11 KOPs in the SRBOP from which the alternative would be visible.

Compared to Alternative 1, Alternative 2 would have 10 fewer adverse impacts (7) on the Oregon NHT, including 4 fewer trail crossings on BLM-managed land (3), and 9 fewer adverse impacts (0) in the SRBOP. Only AU5 would be adversely impacted by Alternative 2, whereas Alternative 1 would adversely impact three AUs.

Toana Road Variations 1 or 1-A would not have an impact upon any NHT resources.

Alternative 3 – Revised Proposed 8 and the 9K Route

Alternative 3 would have seven adverse impacts on the Oregon NHT, all located within AU5 and associated with the Segment 8 Revised Proposed Route. Three of the adverse impacts would be caused by trail crossings on BLM-managed land. Alternative 3 would have no adverse impact on the 18 KOPs from which the alternative would be visible.

Alternative 3 would have no adverse impact on the four KOPs in the SRBOP from which the alternative would be visible.

Compared to Alternative 1, Alternative 3 would have 10 fewer adverse impacts (7) on the Oregon NHT, including 4 fewer trail crossings on BLM-managed land (3), and 9 fewer adverse impacts (0) in the SRBOP. Only AU5 would be adversely impacted by Alternative 3, whereas Alternative 1 would adversely impact three AUs.

Toana Road Variations 1 or 1-A would not have an impact upon any NHT resources.

Alternative 4 – The 8G Route and FEIS Proposed 9

Alternative 4 would have a total of three adverse impacts on the Oregon NHT, all located within AU1 and associated with the 8G route. Two of these adverse impacts affect KOPs located on the Oregon NHT North Trail HPRSEG. None of the Adverse Impacts would be caused by trail crossings on BLM-managed land. Alternative 4 would have no adverse impact on the 21 KOPs from which the alternative would be visible.

Alternative 4 would have no adverse impact on the 11 KOPs in the SRBOP from which the alternative would be visible.

Compared to Alternative 1, Alternative 4, along with Alternative 5, would have the least number of adverse impacts on the Oregon NHT (3), with 14 fewer impacts. Adverse impacts would be limited to AU1 and are associated with the 8G route. Alternative 4

would not cross the Oregon NHT on BLM-managed land, compared to Alternative 1, which would cross the Oregon NHT seven times on BLM-managed land. Alternative 4 would not adversely impact the Oregon NHT in the SRBOP, compared to Alternative 1, which would have nine adverse impacts in the SRBOP.

Toana Road Variations 1 or 1-A would not have an impact upon any NHT resources.

Alternative 5 – The 8G and 9K Routes

Alternative 5, a Co-Preferred Alternative, would have a total of three adverse impacts on the Oregon NHT, all located within AU1 and associated with Route 8G. Two of these adverse impacts affect KOPs located on the Oregon NHT North Trail HPRSEG. None of the adverse impacts would be caused by trail crossings on BLM-managed land. Alternative 5 would have no adverse impact on the 13 KOPs from which the alternative would be visible.

Alternative 5 would have no adverse impact on the four KOPs in the SRBOP from which the alternative would be visible.

Compared to Alternative 1, Alternative 5, along with Alternative 4, would have the least number of adverse impacts on the Oregon NHT (3), with 14 fewer impacts. Adverse impacts would be limited to AU1 and are associated with Route 8G. Alternative 5 would not cross the Oregon NHT on BLM-managed land, whereas Alternative 1 would cross the Oregon NHT seven times on BLM-managed land. Alternative 5 would not adversely impact the Oregon NHT in the SRBOP, while Alternative 1 would have nine adverse impacts in the SRBOP.

Toana Road Variations 1 or 1-A would not have an impact upon any NHT resources.

Alternative 6 – The 8H Route and FEIS Proposed 9

Alternative 6 would have a total of 11 adverse impacts on the Oregon NHT, with impacts located in AU1 (5), AU3 (2), and AU4 (4). All of the impacts are associated with Route 8H. Six of these adverse impacts affect KOPs located on the Oregon NHT North Trail HPRSEG (3) and the Oregon NHT Sinker Creek HPRSEG. Three of the adverse impacts would be caused by trail crossings on BLM-managed land. Alternative 6 would have no adverse impact on the 25 KOPs from which the alternative would be visible.

Alternative 6 would have an adverse impact on the six KOPs within the SRBOP and no adverse impact on the seven KOPs in the SRBOP from which the alternative would be visible.

Compared to Alternative 1, Alternative 6 would have six fewer adverse impacts (11) on the Oregon NHT, including four fewer trail crossings on BLM-managed land (3), and three fewer adverse impacts (6) in the SRBOP. Alternative 6 would have adverse impacts in AU1, AU3, and AU4, whereas Alternative 1 would have adverse impacts in AU2, AU4, and AU5.

Toana Road Variations 1 or 1-A would not have an impact upon any NHT resources.

Alternative 7 – The 8H and 9K Routes

Alternative 7 would have a total of 11 adverse impacts on the Oregon NHT, with impacts located in AU1 (5), AU3 (2), and AU4 (4). All of the impacts are associated with Route 8H. Six of these adverse impacts affect KOPs located on the Oregon NHT North Trail HPRSEG (3) and the Oregon NHT Sinker Creek HPRSEG. Three of the adverse impacts would be caused by trail crossings on BLM-managed land. Alternative 7 would have no adverse impact on the 17 KOPs from which the alternative would be visible.

Alternative 7 would have an adverse impact on six KOPs within the SRBOP and no adverse impact on the seven KOPs in the SRBOP from which the alternative would be visible.

Compared to Alternative 1, Alternative 7 would have six fewer adverse impacts (11) on the Oregon NHT, including four fewer trail crossings on BLM-managed land (3), and three fewer adverse impacts (6) in the SRBOP. Alternative 7 would have adverse impacts in AU1, AU3, and AU4, whereas Alternative 1 would have adverse impacts in AU2, AU4, and AU5.

Toana Road Variations 1 or 1-A would not have an impact upon NHT resources.

3.1.2.5 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, as well as additional measures proposed by the Project Proponents specifically for the SRBOP.

Environmental Protection Measures

As a part of the FEIS, several EPMs to avoid, minimize, and mitigate impacts to resources were developed. While EPMs for recreational, natural, visual, and cultural resources would address general impacts to historic trails, EPMs that directly address the avoidance and minimization of Project impacts to the Oregon NHT and North Alternate Study Trail are listed below. These measures are included in both the Gateway West FEIS as well as the *Compensatory Mitigation Plan for Unavoidable Impacts to Historic Trails* in the Project ROD (Appendix F) (BLM 2013b).

VIS-6 To minimize sensitive feature disturbance and/or visual contrast in designated areas on federal lands, structures will be placed to avoid sensitive features such as riparian areas, water courses, and cultural sites, and/or to allow conductors to clearly span the features, within the limits of standard tower design. Where conflicts arise between resources, the applicable land manager will be consulted.

VIS-7 To reduce visual impacts on federal land, including potential impacts on recreation values and safety, towers will be placed at the maximum feasible distance from the highway, canyon and trail crossings within limits of standard design and to the extent practical.

VIS-11 Site-specific “micrositing,” within the limits of standard engineering design, will be required near certain sensitive areas, as identified by the agencies,

where proposed transmission facilities would impact visual quality; these situations include:

- Crossings over major highways;
- Crossings of high quality historic trails;
- Crossings over the North Platte and Snake Rivers;
- Sensitive travelways, use areas, residential areas, recreational facilities as identified by the agencies (including national recreation and scenic trails, campgrounds, recreation areas, and trailheads), and other areas identified by management plans; and
- To avoid bisecting forest patches within the Sawtooth National Forest.

The Proponents will consult with the applicable local land management agency during transmission line design.

CR-5 If construction will adversely affect any properties listed on, or eligible for listing on, the NRHP, mitigation will be required. Mitigation will be in accordance with the HPTP and may include, but not be limited to, one or more of the following measures: a) avoidance through the use of relocation of structures through the design process, realignment of the route, relocation of temporary workspace, or changes in the construction and/or operational design; b) the use of landscaping or other techniques that will minimize or eliminate effects on the historic setting or ambience of standing structures; and c) data recovery, which may include the systematic professional excavation of an archaeological site or the preparation of photographic and/or measured drawings documenting standing structures.

These EPMs would avoid or minimize the extent of impacts that could occur to Oregon NHT and North Alternate Study Trail. These EPMs are a part of the current Project description, and as such, the effects of their implementation are included in the impact discussion found in Sections 3.1.2.2, 3.1.2.3, and 3.1.2.4.

Proponent-Proposed MEP and Potential Effects of the MEP within the SRBOP

Habitat Restoration

In general, habitat restoration would improve the physical setting of the Oregon NHT. Restoring habitat to the conditions that predominated in an earlier period would better reflect the trail's historic period of use and improve the overall historical integrity of the landscape and setting. Project impacts to the Oregon NHT, therefore, would be reduced.

Purchase of Private Inholdings

The acquisition of private inholdings may improve protections of the Oregon NHT. Federal ownership would provide regulatory protections for trail resources. Those trail segments within these private inholdings that are eligible for the NRHP, for instance, would be protected by Section 106 of the NHPA. These trails would also be protected by the NTSA, FLPMA, and the requirements of BLM Manual 6280 if BLM were to

assume land management responsibilities for these parcels. Project impacts to the Oregon NHT, therefore, would be reduced.

Law Enforcement

Additional law enforcement would improve protections for the Oregon NHT, particularly in areas where access roads are close, or facilitate access, to the Oregon NHT. Coordination between federal and local law enforcement would allow for the protection of trail resources under federal and Idaho laws and serve as a deterrent to vandalism, disturbance, and artifact theft. Project impacts to the Oregon NHT, therefore, would be reduced.

Visitor Enhancement

Visitor enhancements would be beneficial to the use and interpretation of the Oregon NHT. These enhancements would be consistent with the NPS Oregon Trail CMUP and would assist with raising awareness about Oregon NHT resources and enhance visitor experiences. Project impacts to the Oregon NHT, therefore, would be reduced.

Line and Substation Removal

The removal of transmission line and substations would improve the visual setting of the Oregon NHT and North Alternate Study Trail. Cumulative visual impacts to trail resources would be reduced because views from and to trail resources would be potentially improved. Project impacts to the Oregon NHT, therefore, would be reduced.

3.1.2.6 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

Summary of Remaining Impacts

If the Proponents' EPMs and MEP were implemented, impacts to the resources, qualities, values, associated setting, and primary uses of the NHT would be reduced but the principal effects of the Project, the visual impact of transmission infrastructure, and the potential for direct impacts from Project construction, operation, and decommissioning would remain.

BLM Compensatory Mitigation Categories

National historic trails mitigation for Gateway West would be consistent with the measures developed for Gateway West. Mitigation measures would be implemented through site-specific HPTPs developed after completion of the Class III cultural resource surveys. These plans would include measures to avoid, minimize, or mitigate adverse impacts (direct and/or indirect) to the Oregon NHT and/or the North Alternate Study Trail. In the event of unavoidable adverse impacts to the Oregon NHT and/or the North Alternate Study Trail, the HPTP would include compensatory mitigation measures.

3.2 VISUAL RESOURCES

This section addresses potential impacts on visual resources during construction, operations, and decommissioning from the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; and the Toana Road Variations to the Segment 9 Revised Proposed Route. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). Effects associated with the routes analyzed in the 2013 FEIS were disclosed in that document. With the exception of FEIS Proposed 9, those routes are not being re-analyzed here, as only new information is included in this resource-specific section. After a discussion of the affected environment, this section analyzes the potential impacts the Revised Proposed Routes, Toana Road Variations, and BLM Alternatives could have on visual resources. Potential visual impacts on historic trails are discussed in Section 3.1 – National Historic Trails and Section 3.3 – Cultural Resources.

3.2.1 Affected Environment

The Visual Resources section in the 2013 FEIS discusses those aspects of the environment that could be affected by the Project. It begins with a discussion of the Analysis Area considered, identifies the issues that have driven the analysis, and characterizes the existing conditions in the area crossed by the Project. The extent of the Analysis Area used for this SEIS is restricted to the area crossed by routes in Segments 8 and 9; therefore, not all scenery types discussed in the FEIS would be affected by the Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; and the Toana Road Variations.

We reviewed the data and regulatory requirements described in the FEIS and, with the exception of new direction for managing NHTs provided in BLM Manual 6280 published in 2012, we concluded that they are still valid for this SEIS. In addition, data and regulatory requirements for the Toana Freight Wagon Road Historic District were reviewed because the Segment 9 Revised Proposed Route crosses the historic road west of Salmon Falls Creek. Although the Toana Freight Wagon Road has been documented, there is no formal plan regarding protective measures for scenic resources. Provisions in BLM Manual 6280 for inventorying NHTs and information and regulatory requirements for the Toana Freight Wagon Road Historic District are discussed in Chapter 1.

3.2.1.1 Analysis Area

The Analysis Area used to define and address the existing environment and potential impacts for visual resources is described in detail in the FEIS. The extent of the Analysis Area that was used for this SEIS is restricted to that portion described in the FEIS that corresponds to Segments 8 and 9. Therefore, not all key observation points (KOPs) discussed in the FEIS would be affected by the routes and alternatives considered in this SEIS. As a result, KOPs not found within the Analysis Area for Segments 8 and 9 (but which may be included in the FEIS for the other segment Analysis Areas) are not discussed or analyzed in this document.

Morley Nelson Snake River Birds of Prey National Conservation Area

Portions of the Project would cross through the SRBOP. As a result, this section will discuss specific resources and potential impacts that would occur on the SRBOP. Visual resources are one of the environmental resources and values for which the SRBOP was established to manage and protect.

3.2.1.2 Issues Related to Visual Resources

The following visual-related issues that apply to Segments 8 and 9 were raised during public scoping (Tetra Tech 2009) or in comments on the DEIS, raised by federal and state agencies during scoping and agency discussions, or are issues that must be considered as stipulated in law or regulation

- Conformance with BLM VRM class objectives;
- High impacts to sensitive viewers or from sensitive viewing points, defined as high degree of departure from the existing conditions;
- Sensitive visual resources, such as historic trails or sites, recreation areas, vistas, scenic highways/byways, being degraded and decreased in visual quality; and
- Long-term placement of structures in an undisturbed or otherwise predominantly intact landscape.

We reviewed the scoping comments received for this SEIS and determined that visual resource-related issues considered in the FEIS are still relevant to the SEIS. In addition, the following issues would be applicable to Segments 8 and 9, but were not specifically raised for the FEIS:

- What the impacts would be to the values for which the SRBOP was established to manage and protect, which include visual resources; and
- What the impacts would be to the Toana Freight Wagon Road near Devil Creek (North of Devil Creek Butte).

3.2.1.3 Methods

The Visual Resource section in the 2013 FEIS discusses those aspects of the environment that could be impacted by the Project, as well as the methods that were used to assess potential Project-related impacts to visual resources. We reviewed the data and analysis methods in the FEIS and concluded that they are still valid for this SEIS, and that no significant new data were identified for the visual resources in the analysis area, with the exception of identifying additional KOPs for Segments 8 and 9 of Revised Proposed Routes, FEIS Proposed 9, Routes 8G, 8H, and 9K, the Toana Road Variations, and BLM action alternatives. Simulations were also revised to reflect the proposed updates addressed in this SEIS.

Key Observation Points

The field inventory completed for the FEIS included more than 1,400 potential KOPs that were identified and photographed. Thirty KOPs were selected for the FEIS Proposed Routes for Segments 8 and 9. An additional 59 KOPs were identified and

analyzed for the Revised Proposed Routes and the Toana Road Variations, and a further 36 KOPs were identified and analyzed for Routes 8G, 8H and 9K. All the KOPs described represent moderate to high sensitivity viewers due to scenic designations, recreational opportunities, cultural sensitivity, being representative of a general area, or being associated with residences or residential areas. KOP locations identified and used for visual impact analysis are shown in Appendix E, Figures E.2-1 and E.2-2.

Views from KOPs are described by distance zones and are based on perception thresholds (changes in form, line, color, and texture). Distance zones used to evaluate potential visibility are described in Section 3.2.1.1 of the FEIS.

Photographic Simulations

Simulations created for the FEIS are included in Appendix E of that document. Additional simulations and location maps are located in Appendix G of the FEIS. Since the release of the FEIS, the Proponents modified the proposed Project to include recommendations of the RAC, as described in Chapter 2. A total of nine photographic simulations were developed to help determine the visual impacts associated with the selected KOPs. The original simulations for Segment 8 have been revised to show the reduced distance between the existing 500-kV line and the proposed Gateway West line. The original simulations for Segment 9 have been revised to show the double-circuit lines near the C.J. Strike Reservoir and along the Baja Road in the SRBOP. Simulations were also prepared for the cultural resource analysis (Section 3.3) and the NHT analysis (Section 3.1).

The simulations are included in Appendix E of this document with the KOP location maps for each Project segment. Additional simulations and location maps are located in Appendix G of this document.

3.2.1.4 Existing Conditions

The following section describes the existing visual environment by segment as viewed from numerous KOPs. The description from each KOP is of the view toward the Revised Proposed Route, other routes, or Toana Road Variations unless noted otherwise. Potential viewers, landscape features, contrast, and scenic quality at each KOP are addressed. Photos and simulations are included in Appendices E or G, as noted below.

Segment 8

Revised Proposed Route

The Revised Proposed Route for Segment 8 would link the Midpoint and Hemingway Substations. The Revised Proposed Route for Segment 8 would cross 129.7 miles of BLM-managed lands. That includes 3.2 miles of VRM Class I, 6.5 miles of VRM Class II, and 41.6 miles of VRM Class III. Segment 8 would also cross 35.8 miles of private land and 11.1 miles of state land.

The following 23 KOPs represent views along the Revised Proposed Route for Segment 8. The KOP descriptions have been revised to reflect the revised route location.

KOP C84. Views from this point are from the Oregon NHT. This viewpoint is discussed in Section 3.1 – National Historic Trails.

KOP C85. Views from this point are from the Oregon NHT. This viewpoint is discussed in Section 3.1 – National Historic Trails.

KOP C100. Views from this point are the from Canyon Creek Stage Station historic site that was partly destroyed by a fire in 1976. Refer to Section 3.3 – Cultural Resources of the FEIS for additional details.

KOP 336 (Figure E.2-1). This KOP, which represents travelers on I-84, is located near Indian Creek Reservoir. The terrain is gently rolling with views of the reservoir in the middleground. The vegetation lacks variety in color and texture and is generally made up of low shrubs and grass. Noticeable structures include an existing electric transmission line and an overpass to the southeast with visible retail signs, all of which detract from the scenic quality. Overall scenic quality is considered Class C.

KOP 337 (Figure E.2-1). This KOP, which represents travelers stopping at the Sinclair gas station on I-84 or local residents on Mayfield Road, is located southeast of Indian Creek Reservoir. The terrain is gently rolling with views of distant mountainous silhouettes in the middleground. The vegetation is typical of the Columbia Plateau physiographic province and lacks variety in color and texture and is generally made up of low shrubs and grass. Noticeable structures include an existing high-voltage electric transmission line. Overall scenic quality is considered low.

KOP 338 (Figure E.2-1). Views from this KOP represent those of residents on State Highway 78 looking south. Open views of the flat agricultural land with mesas and mountainous terrain in the middleground and background offer some landscape contrast. Views include the presence of numerous human-made features in the foreground and middleground, detracting from the scenic quality. Overall scenic quality is considered low to moderate for this KOP.

KOP 353 (Figure E.2-1). This KOP, which represents travelers along US 26, is located approximately 3.5 miles east of I-84 on US 26, just south of a railroad. An electrical transmission line is present in this view, along with dispersed residences, fences, and agriculture-related structures, which detract from the scenic quality. Topography in this view is flat to gently rolling and extends from the foreground to the horizon. Vegetation adds some limited variation in color and texture, but the resultant scenic quality is considered low.

KOP 356 (Figure E.2-1). From this KOP, located approximately 3 miles south of Gooding on State Highway 46, there are views toward an existing electrical transmission line. The view south is open with little variation in topography from the foreground to the horizon. The landscape includes relatively homogenous sagebrush and agricultural areas. The views include electrical distribution lines, residences, and other structures, which detract from the scenic quality. The overall scenic quality is considered low.

KOP 358 (Figure E.2-1). This KOP is located on the west side of US 93 south of Shoshone and about 1 mile southwest of the Midpoint Substation, and represents

residential viewers. Views are open and panoramic and include a limited variation in vegetation due to agricultural uses and minimal topographic variation. The existing transmission line is readily visible as are smaller distribution lines. To the northeast, the existing Midpoint Substation is visible, which detracts from the overall scenic quality. Overall scenic quality is low.

KOP 362 (Figure E.2-1). Views from this KOP represent those of recreational drivers traveling along Highway 45 and stopped at this lookout point. Framed views of the surrounding valley and mountainous terrain in the background offer some landscape contrast, but views include the presence of human-made features in the middleground, detracting from the scenic quality. Overall scenic quality is considered moderate for this KOP.

KOP 561 (Figure E.2-1/Appendix G). From this KOP, located at a BLM trailhead directly adjacent to the Marsing Murphy Road, there are views toward existing residences and the Striker Basin. The view is open with variation in topography from the foreground to the horizon. Scenic views in the Striker Basin of Guffey Butte and the surrounding mountainous terrain are important to sensitive viewers such as hikers at the BLM trailhead and the adjacent residences in the view. The pristine mountain views exhibit diversity in form, line, color, and texture. The views include residences and other structures, which detract from the scenic quality; however, the overall scenic quality is considered moderate to high.

KOP 591 (Figures E.2-1). Views from this KOP represent those of travelers on the Snake River Canyon Scenic Byway (Map Rock Road) east of the Snake River. The view looking to the southwest includes rolling topography, water, and prominent hills in the background. From this location there would be views of a diverse variety of vegetation, ground cover, structures, and terrain. Overall scenic quality is considered moderate.

KOP 1118 (Figure E.2-1). Views from KOP 1118 represent the views of residents traveling on Pleasant Valley Road looking directly south toward rolling terrain and mountainous silhouettes. Open panoramic views of the flat to rolling terrain are considered to have low scenic quality due to the few scarce aesthetic landscape elements. Numerous human-made alterations within the view detract from the scenic quality.

KOP 1126 (Figure E.2-1). Views from KOP 1126 represent the views of residents and travelers on I-84 looking north toward the rolling terrain of Smith's Draw and mountainous silhouette of Lucky Peak in the background. Open panoramic views of the flat to rolling terrain in the foreground to middleground are considered to have low scenic quality due to the few scarce aesthetic landscape elements. Numerous human-made alterations within the view detract from the scenic quality.

KOP 1142 (Figure E.2-1). Views from KOP 1142 represent the views of recreational hikers at Initial Point Butte looking south across the flat to rolling terrain with the mountainous silhouette of Coyote Butte in the background. Open panoramic views of the flat to rolling terrain have been impacted by subordinate human-made alterations to

the landscape, which draw the attention of the casual observer and result in a moderate to high scenic quality rating.

KOP 1145 (Figure E.2-1). Views from KOP 1145 represent the views of recreational OHV users at the Hemingway Butte OHV use area, looking southwest toward rocky and angular terrain that constitutes Hemingway Butte and the surrounding area. The visible overhead transmission line in the view is approximately 0.6 mile from the KOP. Open panoramic views of the rugged terrain with heavy OHV scarring are considered to have moderate scenic quality due to the aesthetic landscape elements in the middleground and background. Human-made alterations across the landscape detract from the scenic quality.

KOP 1208 (Figure E.2-1). Views from KOP 1208 represent the views of residences on Bennett Road looking southwest toward the broad Snake River Valley Plain. Open panoramic views of the broad, rolling terrain are considered to have low to moderate scenic quality due to the few aesthetic landscape elements in the middleground and background. Dominant human-made alterations associated with wind energy infrastructure detract from the scenic quality.

KOP 1220 (Figure E.2-1). Views from KOP 1220 represent the views of a residence looking north across agricultural lands. This KOP represents a foreground, uninterrupted view of the Project alignment. Open panoramic views of the broad, rolling terrain are considered to have low scenic quality. Few aesthetic landscape elements in the middleground and background views as well as numerous dominant human-made alterations and landscape scarring from agriculture detract from the scenic quality.

KOP 1222 (Figures E.2-1 and E.2-13a). Views from KOP 1222 represent the views of two residences looking south across both agricultural and natural re-growth lands surrounding Jerome, Idaho. Open panoramic views of the broad, rolling terrain are considered to have low scenic quality. Few aesthetic landscape elements in the middleground and background and numerous dominant human-made alterations detract from the scenic quality.

KOP 1350 (Figure E.2-1/Appendix G). Views from this KOP represent recreational viewers along the Bennett Mountain Road looking south. Open panoramic views of this nearly horizontal landscape are considered to have low scenic quality due to the few aesthetic landscape elements and relatively homogenous sagebrush. The views include three existing electrical transmission lines and the straight paved road, which detract from scenic quality.

KOP 1423 (Figures E.2-1 and E.2-3a). Views from this KOP represent those of recreational users at Celebration Park adjacent to the Snake River looking north away from the river toward the large horizontal geologic formation adjacent to the petroglyphs trail. Partially screened views of boulders and more dramatic terrain in the foreground and middleground offer diverse landscape contrast in form, color, texture, and line. Views are considered to be of moderate to high scenic quality. The human-made changes in the foreground, which detract slightly from the scenic quality, are not dominant when compared to the overall landscape composition.

KOP 1428 (Figures E.2-1 and E.2-12a). Views from this KOP represent those of recreational drivers on the Western Heritage Historic Byway looking east toward Coyote Butte and the SRBOP. Open, panoramic views of the undulating to flat terrain in the middleground and background offer little landscape contrast in form, color, texture, and line. Views are considered to be of moderate scenic quality due to the presence of man-made changes in the middleground (transmission line), which detract from the scenic quality of the natural landscape.

Route 8G

Route 8G would link the Midpoint and Hemingway Substations. Route 8G would cross 114.5 miles of BLM-managed lands, which includes 3.0 miles of VRM Class I, 2.1 miles of VRM Class II, and 32.1 miles of VRM Class III. The alternative would also cross 18.9 miles of private land and 13.5 miles of state land.

The following 30 KOPs along Route 8G have cultural as well as visual resource concerns.

KOP 358 (Figure E.2-1). See the Revised Proposed Route for Segment 8 for a description of the existing condition for KOP 358.

KOP 372 (Figures E.2-1 and E.2-3a). Views from this KOP represent those of residences along the Snake River Plain. Open and panoramic views of the rolling hills in the middleground and background as well as relatively flat adjacent agricultural land offer some landscape contrast. Views are considered to be of moderate scenic quality due to the monotonous landscape features. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class C landscape in the foreground to middleground distance zone.

KOP 386 (Figures E.2-1 and E.2-4a). Views from this KOP represent those of recreational drivers and hikers on the Centennial Trail. KOP 386 is located on BLM-administered lands managed to conform to VRM Class III objectives. Open panoramic views of rolling hills and distant mountains in the middleground and background offer some landscape contrast. However, agricultural operations appear in the foreground and middleground which detract from the view, resulting in a moderate to high scenic quality.

KOP 387 (Figure E.2-1). Views from this KOP represent those of recreational drivers and hikers on the Centennial Trail. KOP 387 is located on BLM-administered lands managed to conform to VRM Class III objectives. Open panoramic views of rolling hills and distant mountains in the middleground and background offer some landscape contrast. However, the wind turbines that appear in the background detract from the view, resulting in a moderate to high scenic quality.

KOP 581 (Figure E.2-2). See FEIS Proposed 9 for a description of existing the condition for KOP 581.

KOP 586 (Figure E.2-2). See Route 9K for a description of existing the condition for KOP 586.

KOP 790 (Figure E.2-1/Figure E.2-6a). Views from KOP 790 represent the views of recreational drivers along the Thousand Springs Scenic Byway looking south toward Hagerman, Idaho. An open, panoramic view of the rolling to rugged terrain, mountainous silhouettes and diverse vegetative patterns is considered to have moderate scenic quality due to the dominant visible human-made alterations such as numerous high-voltage transmission lines as well as the scenic status of the roadway.

KOP 791 (Figure E.2-1). Views from KOP 791 represent the views of recreational drivers along the Thousand Springs Scenic Byway north of Hagerman, Idaho, looking north toward the Lower Salmon Falls and the Devil's Washbasin along the Snake River. A framed, superior view of the rolling to rugged terrain and diverse vegetative patterns is considered to have high scenic quality due to the few visible human-made alterations, and the scenic status of the roadway.

KOP 803 (Figures E.2-1 and E.2-41a of the FEIS). Views from KOP 803 represent the views of recreational users of the Salmon Reserve boat launch and recreational dock on the Snake River just south of Lower Salmon Falls, looking north across the Snake River towards a visible transmission lines and the dam structure. Open panoramic and inferior views of the rolling to rough terrain and more dramatic background views are considered to have moderate scenic quality due to the presence of the dominant water feature in the immediate foreground as well as human-made alterations adjacent to this view which detract from the scenic quality.

KOP 805 (Figure E.2-1). Views from KOP 805 represent the views of a residence looking north on Justice Grade Road toward agricultural fields and cattle operations. A semi-screened view of the rolling to rugged terrain with mountainous silhouettes, and somewhat versatile vegetative patterns with moderate variety in plant species is considered to have low to moderate scenic quality due to the visible human-made alterations such as two high-voltage transmission lines, fences, and irrigation structures as well as construction equipment.

KOP 806 (Figure E.2-1). Views from KOP 806 represent the views of a residence looking south on South 1100 East Road toward agricultural fields and cattle operations. A semi-screened view of the rolling terrain, distant mountainous silhouettes, and somewhat versatile vegetative patterns is considered to have moderate scenic quality due to the visible human-made alterations such as two high-voltage transmission lines, fences, and irrigation structures.

KOP 808 (Figure E.2-1). Views from KOP 808 represent the views of a residence looking south on Ritchie Road toward agricultural fields and cattle operations. A semi-screened view of the rolling terrain with sporadic rock outcroppings, distant mountainous silhouettes, and versatile vegetative patterns is considered to have moderate scenic quality due to the visible human-made alterations such as two high-voltage transmission lines and irrigation structures.

KOP 809 (Figure E.2-1). Views from KOP 809 represent the views of a residence looking south on South 1300 East Road toward agricultural fields and cattle operations. An open, panoramic view of the rolling terrain with sporadic rock outcroppings and monotonous vegetative patterns is considered to have low scenic quality due to the

visible human-made alterations such as two high-voltage transmission lines and irrigation structures.

KOP 811 (Figure E.2-1). Views from KOP 811 represent the views of a recreationalists traveling along a remote section of the Oregon NHT. Open panoramic views of the flat to rolling terrain are considered to have low to moderate scenic quality due to lack of variety. Vegetative variety is monotonous adjacent to KOP 811. The lack of human-made alterations adjacent to this view and the lack of natural landscape elements detract from the scenic quality resulting in the low to moderate rating.

KOP 813 (Figures E.2-1 and E.2-7a). Views from this KOP represent those of remote recreational Oregon Trail users on the Cassia Gulch segment of the Oregon NHT. Open views of the gently undulating to slightly rocky terrain in all directions and visible distance zones offer little landscape contrast regarding form, color, texture, and line. The cultural significance and absence of human-made changes in the view increase the scenic quality, though the lack of variety detracts from the scenic quality and overall the views are considered to be of low to moderate scenic quality.

KOP 814 (Figure E.2-1). Views from this KOP represent those of remote recreational Oregon Trail users on the Cassia Gulch segment of the Oregon NHT. Open views of the gently undulating to slightly rocky terrain in all directions and visible distance zones offer little landscape contrast regarding form, color, texture, and line. The cultural significance and absence of human-made changes in the view increase the scenic quality, though the lack of variety detracts from the scenic quality, and overall the views are considered to be of low to moderate scenic quality.

KOP 816 (Figures E.2-2). KOP 816 represents residential views of agricultural lands with some distinguishing canyon features north of the Saylor Creek Bombing Range. Views of this steep topography with little man-made development other than a wind farm in the middleground and background are considered to have Class B scenic quality.

KOP 1114 (Figure E.2-1). Views from KOP 1114 represent the views of recreational OHV users at the Fossil Creek Trailhead looking southwest toward rolling to rugged terrain commonly found in the Underwood Alkaline Foothills Ecoregion of the Snake River Plain. This KOP represents a foreground to middleground, uninterrupted view of the project alignment and alternative. Open panoramic and elevated views of the rolling to rugged terrain are considered to have Class A scenic quality due to the numerous aesthetic landscape elements in the middleground and background views and a lack of human-made alterations.

KOP 1137 (Figure E.2-1). Views from KOP 1137 represent the views of residences and visitors to the Hot Springs Cemetery on Hot Springs Road looking east toward the flat to undulating terrain north of Bruneau Canyon. Open panoramic views of the rolling to rugged terrain are considered to have Class C scenic quality. Numerous human-made alterations (i.e., crop cultivation) to the landscape are not dominant in this view but detract from the overall scenic quality. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class C landscape in the foreground to middleground distance zone.

KOP 1138 (Figure E.2-1). Views from KOP 1138 represent the views of residences in Hot Spring on the corner of Blackstone Grasmere and Hot Springs Road looking east toward the undulating to mountainous terrain adjacent to Seventy-one Gulch and north of Bruneau Canyon. Open panoramic views of the rolling to rugged terrain are considered to have Class C scenic quality. The juxtaposition of human-made alterations (i.e., crop cultivation) to the landscape is not dominant in this view but slightly detracts from the scenic quality. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class C landscape in the foreground to middleground distance zone.

KOP 1140 (Figure E.2-2). Views from KOP 1140 represent the views of recreational travelers on US 51 adjacent to BLM-managed public lands looking north toward the undulating terrain and scattered mesa silhouettes north of Dead Man Gulch. Open panoramic views of the rolling to rugged terrain are considered to have Class B scenic quality due to the lack of scarce visual resources of interest (i.e., dramatic topography). Numerous human-made alterations to the landscape, dominate the middleground and background view and detract from the scenic quality.

KOP 1141 (Figure E.2-2). Views from KOP 1141 represent the views of recreational drivers along the Owyhee Uplands Backcountry Byway directly north of Rock House Ranch looking northeast across the flat to rolling terrain. Open panoramic views of the flat to rolling terrain are considered to have Class B scenic quality. The juxtaposition of human-made alterations (i.e., crop cultivation) to the landscape is not dominant in this view but detracts from the scenic quality. The Jarbidge VRI indicated that this KOP would have moderate sensitivity in this scenic quality Class B landscape.

KOP 1148 (Figure E.2-1). Views from KOP 1148 represent the views of residences adjacent to public lands south of Murphy, Idaho, looking southwest toward rocky and angular terrain surrounding Sand Canyon. Open panoramic views of the rugged terrain and scattered residences are considered to have Class B scenic quality. Numerous aesthetic landscape elements in the middleground and background views, diverse variations of form, line, color, and texture add to the scenic quality, while visible human-made alterations that are subordinate and partially screened slightly detract from the scenic quality.

KOP 1149 (Figure E.2-1/E.2-9a). Views from KOP 1149 represent the views of travelers on Silver City Road adjacent to public lands west of Sinker Creek, looking southwest toward rocky and angular terrain of the Owyhee Mountains. Open panoramic views of the rugged terrain and scattered sagebrush mixed with low lying grasses are considered to have moderate to high scenic quality. Numerous aesthetic landscape elements in the middleground and background views, diverse variations of form, line, color, and texture add to the scenic quality, while visible human-made alterations such as the roadway itself are subordinate and only slightly detract from the scenic quality.

KOP 1211 (Figure E.2-1). Views from KOP 1211 represent the views from a residence on Shoe String Road looking south toward the town of Wendell and I-84. Open panoramic views of the broad, rolling terrain are considered to have low to moderate scenic quality. Few aesthetic landscape elements in the middleground and background

views as well as industrial/infrastructure human-made alterations, such as the high-voltage transmission lines in the middleground, detract from the scenic quality.

KOP 1213 (Figure E.2-1 and E.2-12a). Views from KOP 1213 represent the views from a residence adjacent to Idaho Highway 46 looking north toward Gooding and Turkey Head Butte. This KOP represents a foreground, partially screened view of the alternative route. Open panoramic views of the broad, rolling terrain are considered to have low to moderate scenic quality. Few aesthetic landscape elements in the middleground and background views as well as industrial/infrastructure human-made alterations, such as the high-voltage transmission lines in the middleground, detract from the scenic quality.

KOP 1220 (Figure E.2-1). See Revised Proposed Route for Segment 8 for a description of existing the condition for KOP 1220.

KOP 1222 (Figures E.2-1 and E.2-13a). See Revised Proposed Route for Segment 8 for a description of the existing condition for KOP 1222.

KOP 1351 (Figure E.2-1). Views from KOP 1351 represent the views of a recreationalists within the Billingsley Creek Wildlife Management Area looking north toward the Malad River. A semi-screened view of the rolling and rugged terrain, including canyon walls, and somewhat versatile vegetative patterns is considered to have moderate scenic quality due to the numerous visible human-made alterations such as two high-voltage transmission lines, fences, and a crane.

KOP 1573 (Figure E.2-2). See Route 9K for a description of the existing condition for KOP 1573.

KOP 1607 (Figure E.2-1). Views from KOP 1607 represent the views of recreational viewers on the Rabbit Creek Trail 3.4 miles northwest of the community of Murphy, looking north toward Guffey Butte in the distance adjacent to the Snake River. Open, panoramic views of the rocky terrain of buttes and undulating terrain, with little human-made development, are considered to have Class B scenic quality. Aesthetic landscape elements in the middleground views have variations of form, line, color, and texture, which increase the scenic quality.

Route 8H

Route 8H follows a combination of portions of the alignments analyzed for Route 8G and the Revised Proposed Route for Segment 9. Route 8H would cross 103.1 miles of BLM-managed lands, which includes no VRM Class I, 15.7 miles of VRM Class II, 55 miles of VRM Class III, and 37 miles of VRM Class IV. The route would also cross 19.7 miles of private land and 14.3 miles of state land.

The following KOPs are located along Route 8H and may have cultural, as well as visual, concerns. Discussions related to cultural resources are provided in Section 3.3 – Cultural Resources.

KOP C137 (Figures E.3-1 and E.1-3a/Appendix G, Figure B-2). Views from this point are on the Oregon NHT - South Alternate within the SRBOP. This viewpoint is discussed in Section 3.1.

KOP 358 (Figure E.2-1). See Revised Proposed Route for Segment 8 for a description of the existing condition for KOP 358.

KOP 372 (Figures E.2-1 and E.2-3a). See Route 8G for a description of the existing condition for KOP 372.

KOP 386 (Figures E.2-1 and E.2-4a). See Route 8G for a description of the existing condition of the alignment for KOP 386.

KOP 387 (Figure E.2-1). See Route 8G for a description of the existing condition for KOP 387.

KOP 401 (Figure E.2-2). Views from this KOP represent those of recreational drivers and hikers traveling along Bruneau Dunes Road in the Bruneau Dunes State Park. Open panoramic views of the rolling sand dunes and distant mountains (ranging up to 3,000 feet in elevation) in the middleground and background offer some landscape contrast. Views are considered to be of moderate to high scenic quality due to human-made elements in the middleground around Dunes Lake, which slightly detract from the scenic quality.

KOP 561 (Figure E.2-1/Appendix G). See Revised Proposed Route for Segment 8 for a description of the existing condition for KOP 561.

KOP 572 (Figure E.2-2). Views from this KOP represent those of recreational hikers at the BLM Rabbit Creek Trailhead. Open panoramic views of the rolling hills in the middleground and background offer some landscape contrast. Modest human-made alterations in the foreground and middleground detract from the view and result in moderate to high scenic quality for views from this KOP.

KOP 790 (Figures E.2-1 and E.2-6a). See Route 8G for a description of the existing condition for KOP 790.

KOP 791 (Figure E.2-1). See Route 8G for a description of the existing condition for KOP 791.

KOP 803 (Figures E.2-1 and E.2-41a of the FEIS). See Route 8G for a description of the existing condition for KOP 803.

KOP 805 (Figure E.2-1). See Route 8G for a description of the existing condition for KOP 805.

KOP 806 (Figure E.2-1). See Route 8G for a description of the existing condition for KOP 806.

KOP 808 (Figure E.2-1). See Route 8G for a description of the existing condition for KOP 808.

KOP 809 (Figure E.2-1). See Route 8G for a description of the existing condition for KOP 809.

KOP 811 (Figure E.2-1). See Route 8G for a description of the existing condition for KOP 811.

KOP 813 (Figures E.2-1 and E.2-7a). See Route 8G for a description of the existing condition for KOP 813.

KOP 814 (Figure E.2-1). See Route 8G for a description of the existing condition of the alignment for KOP 814.

KOP 816 (Figures E.2-1). See Route 8G for a description of the existing condition for KOP 816.

KOP 1115 (Figure E.2-2). Views from KOP 1115 represent the views of residents traveling on Warrick Road looking directly north toward rolling terrain and the Snake River Valley. Open panoramic views of the flat to rolling terrain are considered to have low to moderate scenic quality. The few scarce aesthetic landscape elements and numerous human-made alterations detract from the scenic quality.

KOP 1128 (Figure E.2-2). Views from KOP 1128 represent the views of recreational hikers and OHV users looking south toward the complex terrain of the Bruneau Dunes State Park. Open panoramic views of the undulating and rugged terrain in the middleground are considered to have high scenic quality due to the scarce aesthetic landscape elements and few human-made alterations within the view.

KOP 1129 (Figure E.2-2). Views from KOP 1129 represent the views of recreational hikers and campers at Broken Wheel campground looking southwest toward the complex terrain surrounding the Bruneau Dunes State Park. Open panoramic views of the undulating and rugged terrain in the middleground are considered to have high scenic quality due to the scarce aesthetic landscape elements and few human-made alterations within the view. Landscape modifications have been designed to conform to surrounding aesthetic elements, ensuring change is minimally noticeable.

KOP 1133 (Figure E.2-2). Views from KOP 1133 represent the views of recreational drivers on Crane Falls Road north of the Oregon NHT looking southwest toward rolling to rugged terrain surrounding Wilkins Gulch and the Bruneau Arm of the C.J. Strike Reservoir. Open panoramic and elevated views of the rolling to rugged terrain are considered to have Class B scenic quality. Various aesthetic landscape elements in the middleground and background increase the scenic quality, while highly visible human-made alterations detract from the scenic quality.

KOP 1154 (Figure E.2-2). Views from KOP 1154 represent the views of recreational campers in the Idaho Power Campground at the C.J. Strike Reservoir looking west across agricultural and dominant vegetation along the water retention and control structures associated with the C.J. Strike Reservoir and Snake River Canyon. Screened and enclosed views of the surrounding rugged and engineered terrain are considered to have low to moderate scenic quality due to the few aesthetic landscape elements in the surrounding views and the diverse variations of form, line, color, and texture are screened by the numerous human-made alterations and structures in the foreground. Many elements within the view have an industrial nature to them and detract from the overall scenic quality.

KOP 1155 (Figures E.2-2 and E.2-10a). Views from this KOP represent those of recreational users of the BLM's Cove Recreation Site at the C.J. Strike Reservoir of the

BLM Oregon NHT. The KOP is located at the intersection of Route 78 and a graded gravel/dirt road. The views of the relatively flat to undulating terrain with plateau silhouettes in the background exhibit diversity in form line and texture. Existing human-made features include roads, agricultural field, and a wood-pole H-frame in the middleground and background.

KOP 1156 (Figures E.2-2 and E.2-11a). Views from KOP 1156 represent the views of recreational campers in the BLM's Cove Recreation Site at the C.J. Strike Reservoir looking south across rolling to rocky terrain and curvilinear water features. Open and partially screened views of the surrounding rugged terrain and water features are considered to have Class B scenic quality due to the aesthetic landscape elements in the surrounding views; however, the view is typical of this region. Human-made disturbance is very apparent and detracts from the scenic quality.

KOP 1158 (Figure E.2-2). Views from KOP 1158 represent the views of recreational drivers traveling along Strike Dam Road adjacent to the C.J. Strike Reservoir looking southwest to west across undulating terrain and meandering water features. Open and panoramic views of the surrounding rolling terrain and water features are considered to have moderate scenic quality due to the aesthetic landscape elements in the surrounding views; however, the view is typical of this region. Human-made disturbance is very apparent and detracts from the scenic quality.

KOP 1211 (Figure E.2-1). See Route 8G for a description of the existing condition for KOP 1211.

KOP 1213 (Figure E.2-1 and E.2-12a). See Route 8G for a description of the existing condition for KOP 1213.

KOP 1220 (Figure E.2-1). See Revised Proposed Route for Segment 8 for a description of the existing condition for KOP 1220.

KOP 1222 (Figures E.2-1 and E.2-13a). See Revised Proposed Route for Segment 8 for a description of the existing condition for KOP 1222.

KOP 1337 (Figures E.2-2 and E.2-14a). Views from KOP 1337 represent those of recreational viewers at a scenic lookout adjacent to Swan Falls Dam looking southeast toward Sinker Butte across the Snake River. Open panoramic views of the rugged canyon terrain and meandering water feature are considered to have high scenic quality due to the variety in form, line, color, and texture as well as the scarcity of such views in the surrounding region.

KOP 1351 (Figure E.2-1). See Route 8G for a description of the existing condition of the alignment for KOP 1351.

KOP 1352 (Figure E.2-2). Views from this KOP represent local residents on Warrick Road looking southeast towards the SRBOP approximately 0.8 mile away. Open panoramic views of this landscape along with agricultural crops in the foreground is considered to have low to moderate scenic quality due to the landscape elements such as Sinker Butte. Farm buildings, stockpiles, utility lines, and irrigation equipment detract from the limited views beyond the agricultural area.

KOP 1413 (Figure E.2-2). Views from KOP 1413 represent the views of recreational users at an informational kiosk at the C.J. Strike Dam, looking southwest to west toward rocky and angular terrain surrounding the Snake River. Partially screened views of the rocky terrain rising up from the Snake River Plain and scattered industrial human-made development are considered to have moderate scenic quality. Aesthetic landscape elements in the middleground views with variations of form, line, color, and texture increase the scenic quality, while visible human-made alterations detract from the scenic quality.

KOP 1417 (Figure E.2-2). Views from KOP 1417 represent the views of residences and Rimrock Junior and Senior High School approximately 1.0 mile southwest of the C.J. Strike Reservoir. The view is focused to the west and northwest toward middle line canal and Rim Road. Open, panoramic views of the undulating terrain and irrigated agricultural land are considered to have moderate scenic quality. Rugged terrain associated with the C.J. Strike Reservoir and distant mountainous elements add variations in form, line, color and texture, increase the scenic quality. Visible human-made alterations are subordinate but slightly detracting from the scenic quality.

KOP 1419 (Figure E.2-2). Views from KOP 1419 represent the views of recreational users at the BLM-administered Rabbit Creek OHV trailhead, looking southeast to southwest toward Striker Basin and Sinker Creek Butte. Open, panoramic views of the rocky terrain of buttes rising up from the Snake River Plain, with little human-made development, are considered to have moderate to high scenic quality. Aesthetic landscape elements in the middleground views have variations of form, line, color, and texture, which increase the scenic quality. Few visible human-made alterations across the landscape detract from the scenic quality.

KOP 1420 (Figure E.2-2). Views from KOP 1420 represent the views of residents at the courthouse in Murphy, Idaho, looking northwest toward the Con Shea Basin and Guffey Butte. Open, panoramic views of the undulating terrain with rising, contrasting buttes and scattered human-made development are considered to have moderate scenic quality. Aesthetic landscape elements in the middleground and background views with variations of form, line, color, and texture add to the scenic quality, while visible human-made alterations in the foreground detract from the scenic quality.

KOP 1570 (Figures E.2-2 and E.2-15a). Views from KOP 1570 represent the views of recreational hikers at the top of the Bruneau Dunes. The view is focused to the west across the contrasting natural and riparian vegetation along the edge of Bruneau Dunes Lake at the Bruneau Dunes State Park. Open and superior views of the surrounding rolling terrain are considered to have moderate to high scenic quality. The diverse variations of form, line, color, and texture with few visible human-made alterations and structures in the foreground increase the scenic quality.

KOP 1572 (Figures E.2-2 and E.2-16a). Views from KOP 1572 represent the views of recreational hikers along the outer horseback trail which follows the southwestern perimeter of the Bruneau Dunes State Park. The view is focused to the west across the uniform vegetation and gently undulating terrain. Open and horizontal views of the surrounding almost flat terrain are considered to have moderate scenic quality. There are few aesthetic landscape elements in the surrounding views and a lack of variation in

form, line, color, and texture with few visible human-made alterations and structures in the foreground.

KOP 1586 (Figure E.2-2). Views from KOP 1586 represent the views of recreational users adjacent to the Snake River canyon, looking west to northwest toward Sinker Butte and Sinker Creek Butte. Open, panoramic views of the rocky terrain of buttes and canyon edges rising up from the Snake River Plain, with little human-made development other than a few distant residential structures, are considered to have moderate to high scenic quality. Aesthetic landscape elements in the middleground views such as the Snake River canyon and distant mountain silhouettes exhibit variations of form, line, color, and texture, which increase the scenic quality. Few visible human-made alterations are readily visible in the landscape, and these only rarely detract from the scenic quality. This KOP is located on BLM-administered lands managed to conform with VRM Class II objectives.

KOP 1588 (Figure E.2-2). Views from this KOP represent those of recreational users south of Wild Horse Basin and the Swan Falls area of the Snake River looking northwest toward Sinker Butte in the SRBOP. Open, panoramic, and often superior views of the undulating to flat terrain in the foreground gives way to more rugged terrain as the Snake River Canyon drops in elevation in the middleground as well as the silhouettes of distant mountain ranges in the background offer some variation and landscape contrast in form, color, texture, and line. Views are considered to be of moderate scenic quality due to the muted vegetation tones and the presence of human-made changes in the middleground (transmission line), which detract from the scenic quality of the natural landscape but are not highly visible. This parcel of BLM-administered land is managed to conform with VRM Class II objectives.

KOP 1597 (Figure E.2-2). Views from KOP 1597 represent the views of residential viewers on Warrick Road, looking north toward Sinker Butte. Open, panoramic views of the rocky terrain of buttes adjacent to the Snake River canyon, with little human-made development, are considered to have moderate to high scenic quality. Aesthetic landscape elements in the middleground views have variations of form, line, color, and texture, which increase the scenic quality. Few visible human-made alterations are visible within the landscape, which enhances the scenic quality.

KOP 1607 (Figure E.2-1). See Route 8G for a description of the existing condition for KOP 1607.

Segment 9

All routes for Segment 9 follow the same alignment from Cedar Hill Substation until just before MP 95.6. This means that all routes share the same KOPs until this MP. In addition, the Segment 9 alignment parallels the 8G/8H alignment between MPs 72.2 and 95.6.

Revised Proposed Route

The Revised Proposed Route for Segment 9 would link the Cedar Hill and Hemingway Substations. The Revised Proposed Route for Segment 9 crosses 142.6 miles of BLM-managed land. That includes no VRM Class I, 20.6 miles of VRM Class II, and 48.6

miles of VRM Class III. Segment 9 will also cross 14.7 miles of private land and 7.5 miles of state land.

The following 38 KOP locations were selected to represent the most sensitive or most typical views for the Revised Proposed Route for Segment 9.

KOP C137 (Figures E.3-1 and E.1-3a/Appendix G, Figure B-2). Views from this point are on the Oregon NHT - South Alternate within the SRBOP. This viewpoint is discussed in Section 3.1.

KOP 372 (Figures E.2-2 and E.2-3a). See Route 8G for a description of the existing condition for KOP 372.

KOP 386 (Figures E.2-2 and E.2-4a). See Route 8G for a description of the existing condition for KOP 386.

KOP 387 (Figure E.2-2). See Route 8G for a description of the existing condition for KOP 387.

KOP 401 (Figure E.2-2). See Route 8H for a description of the existing condition for KOP 401.

KOP 407 (Figure E.2-2). See FEIS Proposed Route for Segment 9 for a description of the existing condition for KOP 407.

KOP 419 (Figure E.2-2). Views from KOP 419 represent the views of a residence looking west toward the location of the Revised Proposed Route for Segment 9, approximately 0.5 mile west of the Salmon Falls Creek Canyon. Open panoramic views of the flat to rolling terrain are considered to have low to moderate scenic quality. The presence of numerous human-made alterations associated with heavy agricultural use adjacent to this view and the lack of natural landscape elements detract from the scenic quality.

KOP 452 (Figure E.2-2). See FEIS Proposed 9 for a description of the existing condition for KOP 452.

KOP 454 (Figure E.2-2). Views from KOP 454 represent the views of a residence adjacent to North 2800 East Road looking south, and being located northeast of Hollister, Idaho. Focal views of the prominent terrain are considered to have moderate scenic quality. The presence of highly visible human-made alterations adjacent to this view detracts from the scenic quality, while the natural landscape elements add a variety of form, line, color, and texture within the view, increasing the scenic quality.

KOP 561 (Figure E.2-2). See Revised Proposed Route for Segment 8 for a description of the existing condition for KOP 561.

KOP 572 (Figure E.2-2). See Route 8H for a description of the existing condition for KOP 572.

KOP 793 (Figure E.2-2). Views from KOP 793 represent the views of a residence looking east toward the Revised Proposed for Segment 9, approximately 1.5 miles west of Salmon Falls Creek. Open panoramic views of the flat to rolling to rugged terrain are

considered to have low scenic quality. The presence of numerous human-made alterations and the lack of natural landscape elements detract from the scenic quality.

KOP 816 (Figures E.2-2). See Route 8H for a description of the existing condition for KOP 816.

KOP 1065 (Figure E.2-2/Appendix G, Figure TF-1c). See FEIS Proposed 9 for a description of the existing condition for KOP 1065.

KOP 1067 (Figure E.2-2 See FEIS Proposed 9 for a description of the existing condition for KOP 1067.

KOP 1068 (Figure E.2-2/Appendix G, Figure TF-1a). See FEIS Proposed 9 for a description of the existing condition for KOP 1068.

KOP 1069 (Figure E.2-2). See FEIS Proposed 9 for a description of the existing condition for KOP 1069.

KOP 1115 (Figure E.2-2). See Route 8H for a description of the existing condition for KOP 1115.

KOP 1128 (Figure E.2-2). See Route 8H for a description of the existing condition for KOP 1128.

KOP 1129 (Figure E.2-2). See Route 8H for a description of the existing condition for KOP 1129.

KOP 1133 (Figure E.2-2). See Route 8H for a description of the existing condition for KOP 1133.

KOP 1154 (Figure E.2-2). See Route 8H for a description of the existing condition for KOP 1154.

KOP 1155 (Figures E.2-2 and E.2-10a). See Route 8H for a description of the existing condition for KOP 1155.

KOP 1156 (Figures E.2-2 and E.2-11a). See Route 8H for a description of the existing condition for KOP 1156.

KOP 1158 (Figure E.2-2). See Route 8H for a description of the existing condition for KOP 1158.

KOP 1337 (Figures E.2-2 and E.2-14a). See Route 8H for a description of the existing condition for KOP 1337.

KOP 1352 (Figure E.2-2/Appendix G). See Route 8H for a description of the existing condition for KOP 1352.

KOP 1413 (Figure E.2-2). See Route 8H for a description of the existing condition for KOP 1413.

KOP 1417 (Figure E.2-2). See Route 8H for a description of the existing condition for KOP 1417.

KOP 1419 (Figure E.2-2). See Route 8H for a description of the existing condition for KOP 1419.

KOP 1420 (Figure E.2-2). See Route 8H for a description of the existing condition for KOP 1420.

KOP 1570 (Figures E.2-2 and E.2-15a). See Route 8H for a description of the existing condition for KOP 1570.

KOP 1572 (Figures E.2-2 and E.2-16a). See Route 8H for a description of the existing condition for KOP 1572.

KOP 1586 (Figure E.2-2). See Route 8H for a description of the existing condition for KOP 1586.

KOP 1588 (Figure E.2-2). See Route 8H for a description of the existing condition for KOP 1588.

KOP 1597 (Figure E.2-2). See Route 8H for a description of the existing condition for KOP 1597.

FEIS Proposed 9

FEIS Proposed 9 would cross 5.5 miles of BLM-administered land with VRM Class II objectives (Bruneau FO and Jarbidge FO) and 29.2 miles of BLM-administered land with VRM Class III objectives (Bruneau FO, Burley FO, Jarbidge FO, and Owyhee FO). Approximately 15.0 miles of the FEIS Proposed 9 would cross the SRBOP in two locations. This route would cross an eligible WSR (Salmon Falls Creek). Scenery is one of the outstandingly remarkable values (ORV) identified for this WSR.

Approximately 10.0 miles of FEIS Proposed 9 would be in the eastern end of the SRBOP between Bruneau Dunes State Park and the Saylor Creek Air Force Range (a military withdrawn area). Approximately 5.5 miles would be located in Owyhee County, southeast of Murphy, Idaho. Approximately 11.1 miles of the SRBOP land crossed by the FEIS Proposed 9 is managed by the BLM with VRM Class III objectives. This portion of the FEIS Proposed 9 would be in the designated WWE corridor. The route would also cross 28.3 miles of private land.

The following 27 KOP locations were selected to represent the most sensitive or most typical views for FEIS Proposed 9.

KOP C104 (Figure E.3-2). Views from this KOP represent those of recreational viewers visiting the historic Our Lady Queen of Heaven Catholic Church. This viewpoint is discussed in Section 3.3 – Cultural Resources.

KOP C109 (Figure E.3-2). Views from this point are from the Owyhee County Courthouse. This viewpoint is discussed in Section 3.3 – Cultural Resources.

KOP C137 (Figures E.3-1 and E.1-3a/Appendix G, Figure B-2). Views from this point are on the Oregon NHT - South Alternate within the SRBOP. This viewpoint is discussed in Section 3.1.

KOP 372 (Figure E.2-1 and E.2-3a). See Route 8G for a description of the existing conditions for KOP 372.

KOP 386 (Figure E.2-2 and E.2-4a). See Route 8G for a description of the existing conditions for KOP 386.

KOP 387 (Figure E.2-2). See Route 8G for a description of the existing conditions for KOP 387.

KOP 401 (Figure E.2-1). See Route 8H for a description of the existing conditions for KOP 401.

KOP 407 (Figure E.2-2). Views from KOP 407 represent the views of a residence on East 2900 North Road west of Hub Butte looking south toward the town of Hollister and Flatiron Mountain. Open panoramic views of the flat, rolling, and bold terrain with monotone vegetation are considered to have moderate scenic quality due to the presence of some human-made alterations adjacent to this view, detracting from the scenic quality.

KOP 419 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the existing condition for KOP 419.

KOP 452 (Figure E.2-2). Views from KOP 452 represent the views of a residence on North 3100 East Road east of Hub Butte looking southwest toward Black and Sugarloaf Mountains in the Sawtooth NF. Panoramic and focal views of the flat, rolling, and bold terrain are considered to have moderate scenic quality. The resulting scenic quality is due to the presence of human-made alterations adjacent to this view, which detracts from the scenic quality, and the monotone vegetation as well as some distinct forms within the natural landscape elements in the background.

KOP 454 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the existing condition for KOP 454.

KOP 572 (Figure E.2-1). See Route 8H for a description of the existing conditions for KOP 572.

KOP 581 (Figures E.2-2/Appendix G, Figure B-10). KOP 581 represents residential views along Castle Creek Road adjacent to Foreman's Reservoir as well as recreational users of the Oregon NHT adjacent to this view. The landscape in the foreground is flat to gently sloping and covered with grasses and riparian vegetation adjacent to Castle Creek. Rolling to rugged hills, such as Red Mountain, are seen in the background. There are visible water elements and a few human-made modifications in view, including Castle Creek Road and farm outbuildings immediately adjacent to the viewer. Scenic quality is considered high.

KOP 582 (Figures E.2-2/Appendix G, Figure B-11). The view from KOP 582 represents views from residences and Castle Creek/Oreana Loop Road adjacent to Castle Creek. The views of the flat to undulating terrain, background mountain silhouettes with mottled to clumped vegetation, and meandering waterbody exhibit diversity in form, line, color, and texture with few human-made features. The setting at

this KOP is relatively undisturbed in all directions, except for roadway and a few adjacent wooden structures. Scenic quality adjacent to KOP 582 is considered high.

KOP 592 (Figure E.2-2). Views from KOP 592 represent the views of recreational drivers at the Utter Disaster Historic Site. Open panoramic views of the surrounding mountains in the background offer some landscape contrast; however, electric utilities and other human-made elements in the foreground and middleground modify the setting. Views are considered to be Class C scenic quality due to human-made alterations in the foreground and middleground, detracting from the scenic quality.

KOP 599 (Figure E.2-2). Views from this KOP represent those of local residents and drivers traveling along Mud Flat Road. Open panoramic views of relatively flat landscapes to distant rolling hills in the middleground and background and relatively flat agricultural land dominating foreground views offer little landscape contrast. Views are considered to be of low to moderate scenic quality due to the presence of electric utilities, numerous human-made features, and human-made landscape alterations in the foreground and middleground, detracting from the scenic quality.

KOP 602 (Figure E.2-2). Views from this KOP represent those of residents and attendees of a school on Mud Flat Road. Open panoramic views of distant hills and plateaus in the background and relatively flat to rolling agricultural land dominating foreground and middleground views offer little landscape contrast. Views are considered to be of low to moderate scenic quality. The presence of electric utilities, numerous human-made features, and human-made landscape alterations in the foreground and middleground detract from the scenic quality.

KOP 793 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the existing condition for KOP 793.

KOP 816 (Figures E.2-10). See Route 8H for a description of the existing conditions for KOP 816.

KOP 1065 (Figure E.2-10/Appendix G, Figure TF-1c). Views from KOP 1065 represent the views of recreational users at the crossing of Lilly Grade Road and Salmon Falls Creek looking southeast toward rolling, undulating terrain of the Antelope Pocket. The view is representative of the Dissected High Lava Plateau eco-region which has alluvial fans, rolling plains, and shear-walled canyons that are cut into extrusive rocks. Open panoramic views of the rolling to rugged terrain are considered to have Class B scenic quality due to the muted sagebrush grassland vegetation adjacent to the rocky faces of the canyon. The canyon for Salmon Falls Creek is an aesthetic landscape element in the foreground and middleground views that is a focus point for the view. The Jarbidge VRI indicated that this KOP would have a low overall rating in this scenic quality Class B landscape in the seldom seen distance zone. This parcel of land administered by the BLM is managed to conform to VRM Class II objectives.

KOP 1067 (Figure E.2-10/Appendix G, Figure B-1). Views from this KOP represent those of recreational drivers traveling along Lily Grade Road crossing the Lower Salmon Falls Creek. Low elevation framed views of the vertical rugged terrain in the foreground and middleground offer a variety of landscape elements with form and texture. Views

are considered to be of moderate to high scenic quality due to the lack of human-made elements and the seemingly unaltered landscape.

KOP 1068 (Figure E.2-2/Appendix G, Figure TF-1a). Views from this KOP represent those of recreational drivers and local residents traveling along Lilly Grade Road after crossing the Lower Salmon Falls Creek. Open panoramic views of the flat to rolling terrain in the foreground, middleground, and background offer little variety of landscape elements. Views are considered to be of Class C scenic quality due to the presence of human-made elements, detracting from the scenic quality. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class B landscape in the foreground to middleground distance zone.

KOP 1069 (Figure E.2-2). Views from KOP 1069 represent the views of a residence adjacent to Balanced Rock Road looking southwest toward Castleford Butte. The natural landscape elements within the view are monotone in form. Focal views of the rolling and bold terrain are considered to have Class C scenic quality due to the presence of human-made alterations adjacent to this view, detracting from the scenic quality. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class B landscape in the foreground to middleground distance zone.

KOP 1114 (Figure E.2-2). Views from KOP 1114 represent the views of recreational OHV users at the Fossil Creek Trailhead looking southwest toward rolling to rugged terrain commonly found in the Underwood Alkaline Foothills Ecoregion of the Snake River Plain. This KOP represents a foreground to middleground, uninterrupted view of the project alignment and alternative. Open panoramic and elevated views of the rolling to rugged terrain are considered to have Class A scenic quality due to the numerous aesthetic landscape elements in the middleground and background views and a lack of human-made alterations.

KOP 1137 (Figures E.2-10). See Route 8G for a description of the existing conditions for KOP 1137.

KOP 1152 (Figure E.2-2). Views from KOP 1152 represent the views of residential and recreational visitors of Our Lady Queen of Heaven Catholic Church. The view is focused to the southwest toward the rocky and angular terrain of Lead and Cinnabar Mountains, Hayden Peak, and Cavaney Hill. Open panoramic views of the rugged terrain are considered to have moderate scenic quality due to the aesthetic landscape elements in the background views; however, views of the diverse variations of form, line, color, and texture are screened by the numerous human-made alterations and structures in the foreground, detracting from the scenic quality.

KOP 1607 (Figure E.2-2). Views from KOP 1607 represent the views of recreational viewers on the Rabbit Creek Trail 3.4 miles northwest of the community of Murphy, looking north toward Guffey Butte in the distance adjacent to the Snake River. Open, panoramic views of the rocky terrain of buttes and undulating terrain, with little human-made development, are considered to have moderate to high scenic quality. Aesthetic landscape elements in the middleground views have variations of form, line, color, and texture, which increase the scenic quality.

Route 9K

Route 9K would link the Cedar Hill and Hemingway Substations. Route 9K crosses 156.2 miles of BLM-managed land, including no VRM Class I, 20.6 miles of VRM Class II, and 48.5 miles of VRM Class III. Route 9K would cross 14.7 miles of private land and 7.5 miles of state land.

The following 14 KOP locations were selected to represent the most sensitive or most typical views for Route 9K.

KOP 372 (Figure E.2-2 and E.2-3a). See Route 8G for a description of the existing condition for KOP 372.

KOP 386 (Figure E.2-2 and E.2-4a). See Route 8G for a description of the existing condition for KOP 386

KOP 387 (Figure E.2-2). See Route 8G for a description of the existing conditions for KOP 387.

KOP 401 (Figure E.2-2). See Route 8H for a description of the existing conditions for KOP 401.

KOP 407 (Figure E.2-2). See FEIS Proposed 9 for a description of the existing condition for KOP 407.

KOP 419 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the existing condition for KOP 419.

KOP 452 (Figure E.2-2). See FEIS Proposed Route for Segment 9 for a description of the existing condition for KOP 452.

KOP 454 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the existing condition for KOP 454.

KOP 581 (Figures E.2-2/Appendix G, Figure B-10). See FEIS Proposed 9 for a description of the existing condition for KOP 581.

KOP 582 (Figures E.2-2/Appendix G, Figure B-11). See FEIS Proposed 9 for a description of the existing condition for KOP 582.

KOP 586 (Figures E.2-2 and E.2-5a). The view from KOP 586 represents views from residences on Castle Creek/Oreana Loop Road adjacent to Castle Creek. The views of the flat to undulating terrain, background mountain silhouettes with mottled to clumped vegetation, and meandering waterbody exhibit diversity in form, line, color, and texture with few human-made features other than residential structures. The setting at this KOP is relatively undisturbed in all directions, except for roadway and a few adjacent wooden structures. Scenic quality adjacent to KOP 586 is considered high.

KOP 592 (Figure E.2-2). See FEIS Proposed 9 for a description of the existing condition for KOP 592.

KOP 793 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the existing condition for KOP 793.

KOP 816 (Figures E.2-2). See Route 8H for a description of the existing condition for KOP 816.

KOP 1114 (Figure E.2-2). See Route 8G for a description of the existing condition for KOP 1114.

KOP 1137 (Figure E.2-2). See Route 8G for a description of the existing condition for KOP 1137.

KOP 1138 (Figure E.2-2). See Route 8G for a description of the existing condition for KOP 1138.

KOP 1140 (Figure E.2-2). See Route 8G for a description of the existing condition for KOP 1140.

KOP 1141 (Figure E.2-2). See Route 8G for a description of the existing condition for KOP 1141.

KOP 1148 (Figure E.2-2). See Route 8G for a description of the existing condition for KOP 1148.

KOP 1149 (Figures E.2-2 and E.2-9a). See Route 8G for a description of the existing condition for KOP 1149.

KOP 1152 (Figure E.2-2). See FEIS Proposed 9 for a description of the existing condition for KOP 1152.

KOP 1573 (Figure E.2-2). Views from KOP 1573 represent the views of recreational river users at the Bruneau River take out kiosk adjacent to public lands southeast of Bruneau, Idaho, looking north toward the broad Bruneau River Canyon. Partially screened views of the rolling to rugged terrain and scattered structures are considered to have moderate scenic quality. Numerous aesthetic landscape elements in the middleground and background views plus diverse variations of land form, line, color, and texture add to the scenic quality; the little diversity in color hues with visible human-made alterations that are subordinate and partially screened slightly detract from the scenic quality. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class B landscape in the foreground to middleground distance zone.

KOP 1607 (Figure E.2-2). See Route 8G for a description of the existing condition for KOP 1607.

Toana Road Variations 1 and 1-A and the Comparison Portion of the Revised Proposed Route

Toana Road Variation 1 to the Revised Proposed Route for Segment 9 was recommended by the BLM Jarbidge Field Office archaeologist to avoid paralleling the Toana Freight Wagon Road, an NRHP site. The Segment 9 Revised Proposed Route parallels within 0.25 mile of the Toana Road between MP 38.2 and 40.6, and parallels within 1 mile of the road through Blue Gulch between MP 40.6 and 43.5. Variation 1 is approximately 8.5 miles in length. Approximately 0.3 mile of the route crosses state land, with the remainder on land managed by the BLM. The Toana Road Variation 1-A to the Revised Proposed Route for Segment 9 was recommended by the BLM to

minimize visual impacts to the Toana Freight Wagon Road, and was also intended to utilize existing roads in order to minimize new road construction in the area. Variation 1-A is approximately 8.9 miles long. Approximately 1 mile of the route crosses state land, with the remainder on land managed by the BLM.

The following KOP locations were selected to represent the most sensitive or most typical views for the Toana Road Variations.

KOP C92 (Figure E.2-2). This KOP is located on a segment of the Toana Road 1 mile east of the Revised Proposed Route in Segment 9 (this section of the route is unchanged from the FEIS). The resource at this location consists of a well-used, two-track road. The setting contains a wooden, H-frame transmission line approximately 2.5 miles to the southeast. Ranch and housing structures are visible 1 to 3 miles to the south and southeast.

KOP C140 (Figures E.2-2 and E.3-3c). Views from this KOP represent those of recreational drivers on Toana Road (Toana Road NHT) adjacent to Salmon Falls Creek looking south. Open and panoramic views of rugged terrain and distant mountainous silhouettes dominate the middleground of the view. Views are considered to be of Class C scenic quality due to the lack of major man-made changes which detract from the scenic quality. There are monopole powerline structures which appear subordinate in the overall setting of the view from KOP C140. The adjacent landscape elements are monotonous and do not add much variety in color, form, line, or texture. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class C landscape in the foreground to middleground distance zone as well as the seldom seen distance zone.

KOP C141 (Figure E.2-2 and E.3-4a,c). Views from this KOP represent those of recreational drivers on Toana Road (Toana Road NHT) adjacent to Salmon Falls Creek looking north. Open and panoramic views of rolling terrain dominate the middleground of the view. Views are considered to be of Class C scenic quality due to the lack of major man-made changes which detract from the scenic quality. The adjacent landscape elements are monotonous and do not add much variety in color, form, line, or texture. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class C landscape in the foreground to middleground distance zone as well as the seldom seen distance zone.

KOP 419 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the existing condition for KOP 419.

KOP 1069 (Figure E.2-2). See FEIS Proposed 9 for a description of the existing condition for KOP 1069.

3.2.2 Direct and Indirect Effects

This section presents the effects to visual resources from construction, operations, and decommissioning activities for the Project. A comprehensive list of all project design features and EPMs, as well as the land ownership to which they apply, can be found in Table 2.7-1 of Chapter 2 of the FEIS. The following impact assessment takes these project design features and EPMs into account when considering the potential impact

that the Project could have on visual resources. In addition, the Project includes measures designed to mitigate and enhance the SRBOP, as required by the enabling statute for the SRBOP and the SRBOP RMP. Effects of implementing the MEP are analyzed in detail in Section 3.2.2.5.

Plan Amendments

Amendments to the BLM RMPs and MFPs are summarized for each alternative in Table 2.3-1 (see Chapter 2 for more details). The BLM plan amendments are discussed in detail in Appendices F and G. Amendments are needed to permit the Project to cross various areas of BLM-managed land.

The effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved, and amendments that alter land management designations could change future use of these areas. Visual amendments that would change the VRM classification are proposed for the Twin Falls MFP, 1987 Jarbidge RMP, Bennett Hills/Timmerman Hills MFP, and Bruneau MFP. Additional visual amendments that are currently not proposed include amending VRM Classifications in the SRBOP RMP (in addition to the plans already discussed). The amendments that would change VRM classes are summarized in Table 3.2-1 and are discussed further in Appendices F and G.

Table 3.2-1. Plan Amendments That Would Change VRM Classification

Plan	Alternatives	Amendment Number	Routes	VRM-related Amendment Action
Twin Falls MFP	All Alternatives	SEIS-2 (Proposed)	Segment 9 Revised Proposed Route / 9K/FEIS Proposed 9	The VRM Class I and II areas adjacent to the Roseworth Corridor (established by the 2015 Jarbidge RMP) will be reclassified to match the VRM classes in the Jarbidge RMP.
1987 Jarbidge RMP	Alternative 1 Alternative 2 Alternative 3	SEIS-5 (Proposed)	Revised Proposed 8	The VRM decisions and Map 9 are amended to accommodate a major powerline R/W. These VRM boundaries are modified according to the new manual to reclassify the VRM Class I area associated with Oregon Trail and the Proposed 500-kV line as VRM Class IV.
1987 Jarbidge RMP	Alternative 1 Alternative 6 Alternative 7	SEIS-14	Segment 9 Revised Proposed Route/ 8H	The VRM decisions and Map 9 are amended to accommodate a major powerline R/W. The VRM Classification is amended to change the VRM Class to VRM Class III, adjacent to the proposed line, where the towers would be visible and dominate the landscape

Table 3.2-1. Plan Amendments That Would Change VRM Classification (continued)

Plan	Alternatives	Amendment Number	Routes	VRM-related Amendment Action
SRBOP RMP	Alternative 1 Alternative 6 Alternative 7	SEIS-15	Segment 9 Revised Proposed Route / 8H	A corridor 250 feet from the centerline of the proposed powerline would be established with a VRM of Class III. This corridor would maintain a distance of at least 0.5 mile from the NHT, except where it crosses the trail.
SRBOP RMP	Alternative 1 Alternative 6 Alternative 7	SEIS-18	Segment 9 Revised Proposed Route / 8H	VRM Class II areas associated with the Oregon Trail and Snake River that are in view of the 500-kV transmission line that would not meet VRM Class II objectives of the C. J. Strike SRMA would be reclassified to VRM Class III
Bennett Hills/ Timmer-man Hills MFP	Alternative 1 Alternative 2 Alternative 3	SEIS-9 (Proposed)	Segment 8 Revised Proposed Route	The VRM Class II area within 3,000 feet to the north of the existing transmission line ROW will be reclassified to VRM III (including the existing ROW).
Bruneau MFP	Alternative 2 Alternative 3 Alternative 4 Alternative 5 Alternative 6 Alternative 7	SEIS-12 (Proposed)	FEIS Proposed 9/ 8G/ 9K	The area designated as VRM Class II adjacent to Castle Creek will be reclassified to VRM Class III.

3.2.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West for Segments 8 and 9 and this portion of the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of these segments. No Project-related impacts to visual resources would occur in the Analysis Area; however, impacts to these resources would continue as a result of natural events (such as fire, drought, and severe weather) as well as from existing and planned developments within the Analysis Area and other projects, including wind farms, mining, agricultural, or other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project and the region would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, impacts similar to those described below may occur due to new transmission lines that may be built to meet the increasing demand in place of this Project.

3.2.2.2 Effects Common to All Routes

<u>Construction and Operations</u>

The general impacts that would occur to visual resources from construction, operations, and decommissioning of Gateway West were analyzed in detail within Section 3.2 of the FEIS. We have reviewed Section 3.2 of the FEIS and determined that the general impacts that could potentially occur and the relevant assessment for general impacts to

visual resources considered in the FEIS have not changed except in incremental exceptions. As a result, these general impacts are not re-stated in this SEIS (see Section 3.2 of the FEIS for a description of the general Impacts that could occur to visual resources as a result of the Project). The incremental impacts resulting from the change in route alignment are discussed below.

Towers and transmission lines, as well as existing and new permanent access roads, would be used by maintenance crews and vehicles for inspection and maintenance activities. Visual impacts would result from inspection and maintenance activities producing traffic and dust on access roads; however, these impacts would be temporary.

Increased visual contrast from the clearing and grading of staging areas and construction yards, construction of new access and spur roads, and activities adjacent to construction sites and along the ROW could be long-lasting in semi-arid and forested, mountain environments where vegetation establishment and growth are slow. Views along linear land scars or newly constructed roads would introduce visual change and contrast by causing unnatural vegetative lines and soil color contrast. Vegetation clearing would occur during construction and in some instances would remain substantially cleared for the life of the Project while other areas would be allowed to revegetate or may be planted with native plant materials. The greatest impact would occur from the long-term presence and operations of the transmission line in sensitive visual resource areas due to the cleared ROW, large vertical structures, and multiple overhead conductors, and some access roads (prisms) to the structures.

The assessment of quantitative impacts specifically related to the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; the Toana Road Variations; and the seven BLM action alternatives is presented in Sections 3.2.2.2, 3.2.2.3, and 3.2.2.4. The assessment of potential impacts related to the MEP on visual resources, as well as a list of additional mitigation measures that would be required by the BLM related to impacts on the SRBOP, is presented in Sections 3.2.2.5 and 3.2.2.6.

Decommissioning

Project facilities would be removed at the end of the operational life of the transmission line. Conductors, structures, and related facilities would be removed, with the foundations removed to below the ground surface level. There would be residual visual impacts for many years after the Project has been decommissioned and structures removed such as vegetative cutbacks, cut and fill scars from removal related work activities, and access roads. All of these would result in visual impacts (although all of these impacts would be at ground level thereby reducing the extent of the visual impact compared to tall transmission line towers). These areas would be apparent after the removal of structures but are expected to diminish over time. Additional details concerning decommissioning are provided in Appendix B of the FEIS.

3.2.2.3 Direct and Indirect Effects by Route

This section assesses the quantitative impacts on visual resources from the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; the

Toana Road Variations; and BLM action alternatives (this section generally corresponds to Section 3.2.2.3 of the FEIS).

Assessment of potential impacts on KOPs assumed all sensitive viewers would have views toward the Revised Proposed Routes, other routes, and Toana Road Variations on a high-visibility day (defined as visibility of 5 miles and beyond) and that those KOPs would represent the disparate viewing conditions and viewing opportunities of the characteristic landscapes described in Section 3.2.1.4 – Existing Conditions. Based on the field inventory, more than 1,400 locations were identified and photographed. KOP locations were suggested by the BLM, Forest Service, and NPS and located through literature review within the Project area or identified in the field. Photographs were taken to document existing conditions at each KOP and were used to evaluate visual conditions and potential visibility as well as to assess the level of contrast and impacts that would result from the introduction of the Project elements. Following the inventory, around 100 locations were selected as KOPs as presented in this section. Appendix E, Figures E.2-1 and E.2-2 show the location of all points inventoried as well as the locations of chosen KOPs (both visual and cultural). All the KOPs described herein are considered to represent the most sensitive viewers or are the most representative of typical views and viewing conditions along the Segments 8 and 9 Revised Proposed Routes and other routes and variations.

Visual Resource Management Class Assessment

Where the Segments 8 and 9 Revised Proposed Routes and other routes and variations would cross BLM-managed lands, the following assumptions were made to determine whether change resulting from the Project would conform with management plans or whether an amendment would be required. Visual resources–related impacts that would lead to potential plan amendments are identified in Table 2.3-1 of Chapter 2 and discussed in detail in Appendix G:

- High-voltage transmission lines do not conform to management objectives of BLM VRM Classes I and II.
- The locations of the Revised Proposed Routes, FEIS Proposed 9, Routes 8G, 8H, and 9K, and Toana Road Variations across VRM Class III areas conform with the class objectives if consideration was given to alternative alignments that would avoid the area and feasible mitigation was applied.
- Direction for considering visual resource values stated in RMPs and MFPs as taken into consideration. On BLM-managed land where guidelines were absent or general in nature, the management direction provided in BLM Handbook H-1601-1, Land Use Planning, was considered (BLM 2005).
- Evaluating the effects of a proposed plan amendment on other resources is difficult due to the small areas of land where specific information regarding resources may not be available. Therefore, effects are discussed qualitatively.

Details regarding conformance with VRM objectives as well as plan amendments are provided in Appendix G.

The Visual Impact Assessments tables (Tables 3.2-2 through 3.2-9) listed below for each route have abbreviated terms to represent potential viewers from each particular KOP. The abbreviated terms are listed below with appropriate definitions for each type of viewer. The viewers from each KOP can be defined as:

- RES – A single residential viewer or group of residential viewers.
- REC – A recreational viewer in broad context; more specific details would be provided in the KOP description, but recreational viewers for this analysis included Forest Service campsites and trails, NHT users, historic and scenic highway/byway users, BLM trailheads, NPS lands, and general recreational areas (e.g., RV parks, city parks, ball fields, state parks, and recreation sites).
- COMM – A commuter traveling on major highways or secondary roads not identified as having scenic protection. Often these views were considered residential if they were adjacent to an identified residence or community.

Segment 8

Revised Proposed Route

Segment 8 would link the Midpoint and Hemingway Substations (see Figure A-1). This 129.7-mile single-circuit 500-kV transmission line would stay north of the Snake River until it crosses just north of Guffey Butte, generally parallel to an existing 500-kV transmission line, before ending at the Hemingway Substation. This route is similar to the original proposed route in the 2013 FEIS except that the line would be 250 feet north of the existing 500-kV line rather than 1,500 feet south of the line from the eastern boundary of the SRBOP (MP 99.7) to the Hemingway Substation. The route east of that point is unchanged from the 2013 FEIS Proposed Route. Segment 8 would cross 17.1 miles of BLM-administered land managed to conform to VRM Class III objectives in the SRBOP.

The route would avoid crossing VRM Class II land in the SRBOP, crossing 16.4 miles of VRM Class III and 0.5 mile of VRM Class IV within the SRBOP. The route would cross a total of 3.2 miles of VRM Class I (Four Rivers Field Office, managed under the 1987 Jarbidge RMP) and 6.4 miles of VRM Class II (approximately 6.5 miles managed under the Bennett Hills/Timmerman Hills MFP and 0.14 mile managed under the Twin Falls MFP).

Table 3.2-2 summarizes the potential visual impact for each KOP used to assess the Revised Proposed Route in Segment 8.

Table 3.2-2. Visual Impact Assessment for Each KOP in the Revised Proposed Route in Segment 8

KOP	Viewers[1/]	Land Ownership	Viewer Rating[2/]	Scenic Quality[2/,3/]	Distance (miles)	Visibility[2/]	Contrast[2/]	Impact[2/]
336	RES/COMM	BLM VRM III	M	L	2.20	L	L-M	L-M
337	RES/COMM	BLM VRM IV	M	C	1.30	M	L-M	L-M
338	RES	Private	H	L-M	1.60	M	M	M
353	COMM	Private	H	L	0.75	M	L	L
356	COMM	Private	H & M	L	0.75	M	L	L
358	RES	Private	H	L	0.60	M-H	L	L-M

Table 3.2-2. Visual Impact Assessment for Each KOP in the Revised Proposed Route in Segment 8 (continued)

KOP	Viewers[1/]	Land Ownership	Viewer Rating[2/]	Scenic Quality[2/,3/]	Distance (miles)	Visibility[2/]	Contrast[2/]	Impact[2/]
362	REC	Private	H	M	4.00	L	L	L
561*	RES/REC	BLM VRM III	H	B	1.68	M	L-M	M
591	REC/RES	Private	H	M	3.75	L	L	L
1118*	RES	Private	H	L	0.40	H	M	M
1126	RES/COMM	Private	M	L	0.23	H	M-H	M-H
1142*	REC	BLM VRM III	H	B	1.50	M	L-M	M
1145	REC	BOR VRM IV	H	B	0.50	M-H	M-H	M
1208	RES	Private	H	L-M	1.24	H	M	M
1220	RES	Private	H	L	1.45	M	L-M	L-M
1222	RES	Private	H	L	0.60	H	L	L-M
1350	REC	State of ID	L	L	0.34	H	M	L
1423*	REC	Private	H	M	0.30	H	M	M
1428*	REC	BLM VRM III	H	B	1.84	L-M	L-M	L-M

1/ REC – A recreational viewer. RES – A single resident. COMM – A commuter traveling on major highways or secondary roads.
2/ H – High, M – Medium, L – Low
3/ On or viewing BLM-managed land: A – High, B – Medium, C – Low; on non-BLM-managed land, H, M, and L ratings.
* Asterisk indicates KOP is within the SRBOP.

KOP 336 (Figure E.2-1). Moderate-sensitivity residences and commuters traveling on I-84 near the Indian Creek Reservoir would have a moderate level of Project visibility (approximately 2.20 miles from the Revised Proposed Route 8). The viewer would have an expansive view toward the alignment, which would parallel the existing transmission alignment visible within the view, which is interrupted by numerous retail signs. Contrast levels are anticipated to be moderate. Potential visual impacts on viewers from this KOP and in the general vicinity are expected to be moderate due to the alignment paralleling an existing linear feature and the landscape being of low scenic quality. The moderate contrast is mostly a result of the structures being lit with LED obstruction lighting due to the close proximity to the OCTC. This lighting would be on towers between MPs 0.0 and 6.3 and it is anticipated that lighting would draw the attention of the viewer, thus raising contrast levels and visual impacts for KOP 336. Moderate visual impacts are anticipated to conform with BLM VRM Class III objectives.

KOP 337 (Figure E.2-1). Moderate-sensitivity residences and commuters traveling on I-84 and stopping at the Sinclair gas station near the Indian Creek Reservoir would have a moderate level of Project visibility (1.30 miles). The viewer would have an expansive view toward the alignment, which would parallel the existing transmission alignment visible within the view. Contrast levels are anticipated to be low to moderate. Potential visual impacts on viewers from this KOP and in the general vicinity are expected to be low to moderate due to the alternative paralleling an existing linear feature and the landscape being Class C scenic quality. The low to moderate contrast is mostly a result of the structures being lit with LED obstruction lighting due to the close proximity to the OCTC. This lighting would be on towers between MPs 0.0 and 6.3 and it is anticipated that lighting would draw the attention of the viewer, thus raising contrast levels and visual impacts for KOP 337. The view from KOP 337 would conform to BLM VRM Class IV objectives, which allows for levels of change to the characteristic landscape which

should be moderate. The management activities may attract attention but should not dominate the view of the casual observer.

KOP 338 (Figure E.2-1). Viewers from KOP 338 would be high-sensitivity residents located along the Owyhee Highway viewing across agricultural land approximately 1.60 miles from the alignment. At KOP 338, the viewers would have a moderate level of Project visibility due to open foreground views and distance of the view. Visual contrast levels would be moderate due to the presence of human-made alterations within the vicinity of this KOP and the distance of the viewer. Visual impacts would be moderate due to distance and numerous human-made alterations in the immediate vicinity of the view.

KOP 353 (Figures E.2-1). The Revised Proposed Route 8 would be moderately visible to high-sensitivity residential viewers located along US 26 (0.75 mile away). Views would be considered short in duration at speeds in excess of 45 mph. The views to the west and south are open and panoramic and would include the Revised Proposed Route 8. This segment parallels an existing but smaller transmission line in a low scenic quality landscape resulting in generally low contrast. Impacts on viewers would be low due to the low contrast levels and the temporary nature of the views.

KOP 356 (Figures E.2-1). High-sensitivity residential viewers and moderate sensitivity motorists traveling south on South 1900E Road would have an open panoramic view of the Proposed Route as it parallels a smaller transmission line. Revised Proposed Route 8 would be located 0.75 mile to the south. Project visibility from this area is generally moderate at a viewing distance of about 0.75 mile. Travel speeds of 55 miles per hour (mph) would result in short viewing durations for travelers making impacts temporary in nature. Visual contrast levels would be low due to the viewing distance, travel speed, and the existing transmission lines in a low scenic quality area. Impacts on viewers would be low.

KOP 358 (Figure E.2-1). High-sensitivity residential viewers on the west side of US 93 near the existing Midpoint Substation have an open panoramic view to the north that includes an existing transmission line. Views to the north include an existing transmission line and the Midpoint Substation. Viewing distance to the Revised Proposed Route 8 would be approximately 0.6 mile, resulting in moderate to high Project visibility. Visual contrast levels would be low due to the existing transmission lines and overall low scenic quality. Visual impacts on viewers at this location would be low to moderate.

KOP 362 (Figure E.2-1). Viewers from KOP 362 would be high-sensitivity recreational viewers traveling along US 45 or stopped at the lookout point (approximately 4.0 miles from the Revised Proposed Route 8). At KOP 362, the viewers would have a low level of Project visibility because of the distance to this KOP. Visual contrast levels would be low due to the distance of the KOP. Visual impacts on viewers would be low due to the distance of the alignment from the viewer.

KOP 561 (Figure E.2-1/Appendix G). The Revised Proposed Route 8 would be moderately visible to high-sensitivity recreational hikers and residential viewers located adjacent to Highway 78 (approximately 1.68 miles away). The views are open and

panoramic with strong horizon lines and mountainous silhouettes, as well as uninterrupted views of the Revised Proposed Route. The Revised Proposed Route would not parallel an existing transmission line in a Class B scenic quality landscape. Contrast levels are expected to be low to moderate due to the distance from the view. The Revised Proposed Route would interrupt the viewshed of this landscape. Impacts on viewers would be moderate due to the contrast levels and the scenic quality of the landscape within the view. The view from KOP 561 would conform to BLM VRM Class III objectives, as discussed further in Appendix G.

KOP 591 (Figures E.2-1). Viewers from KOP 591 would be high-sensitivity recreational drivers and residents along the Snake River Canyon Scenic Byway. KOP 591 would be about 3.75 miles from the Revised Proposed Route, and high-sensitivity viewers would have a low level of Project visibility due to the distance of the Project. Visual contrast levels would be low due to the presence of human-made alterations, including houses, transmission poles, and landscape modifications. Visual impacts on viewers would be low due to distance and human-made alterations.

KOP 1118 (Figure E.2-1). High-sensitivity residential viewers at KOP 1118 would have a high level of Project visibility (approximately 0.4 mile from the Revised Proposed Route 8). The viewer would have an expansive view toward the alignment, which would parallel the existing transmission alignment visible in the foreground view. The existing transmission line may screen the Revised Proposed Route 8, resulting in moderate contrast levels. Potential visual impacts on viewers from this KOP and in the general vicinity are expected to be moderate due to the Project paralleling an existing linear feature and the low scenic quality of the landscape as well as the safety lighting, which would draw viewer attention to the alignment. Safety lighting would be required between MPs 90.3 and 108.8 and it is anticipated that lighting would not be required on structures within 0.23 mile of the Saylor Creek Range east of MP 90.

KOP 1126 (Figure E.2-1). High- and moderate-sensitivity residential viewers and drivers at KOP 1126 would have a high level of Project visibility (0.23 mile from the proposed Project alignment). The viewer would have an expansive view toward the alignment, which would parallel the existing transmission alignment visible in the middleground view. Contrast levels are anticipated to be moderate to high. Potential visual impacts on viewers from this KOP and in the general vicinity are expected to be moderate to high due to the Revised Proposed Route 8 paralleling an existing linear feature and the low scenic quality of the landscape as well as the safety lighting, which would draw viewer attention to the alignment. This lighting would be between MPs 90.3 and 108.8 and it is anticipated that lighting would not be required on structures within 0.23 mile of the Saylor Creek Range east of MP 90.

KOP 1142 (Figure E.2-1). High-sensitivity recreational viewers at KOP 1142 would have a moderate level of Project visibility (approximately 1.5 miles from the Revised Proposed Route 8). The viewer would have an expansive, high elevation view toward the Project, which parallels an existing transmission alignment and could be absorbed through backdropping. Contrast levels are anticipated to be low to moderate. Potential visual impacts on recreational viewers from this KOP and in the general vicinity are expected to be moderate due to partial screening by a linear feature in a previously

disturbed landscape, which exhibits Class B scenic quality. The view from KOP 1142 would conform to BLM VRM Class III objectives, which allows for levels of change to the characteristic landscape which should be moderate. The management activities may attract attention but should not dominate the view of the casual observer.

KOP 1145 (Figure E.2-1). High-sensitivity recreational viewers at KOP 1145 would have a high level of Project visibility (approximately 0.5 mile from the Revised Proposed Route 8). The viewer would have an expansive view toward the alignment, which would parallel an existing alignment that it screens, and has a high potential to skyline the view. Contrast levels are anticipated to be moderate to high. Potential visual impacts on recreational users from this KOP and in the general vicinity are expected to be moderate due to the Project creating a dominant linear feature in a landscape with existing human-made disturbance (i.e., a co-dominant relationship). Moderate visual impacts will conform with BLM VRM Class IV objectives.

KOP 1208 (Figure E.2-1). High-sensitivity residential viewers at KOP 1208 would have a high level of Project visibility (approximately 1.2 miles from the Revised Proposed Route 8). The viewer would have an expansive view toward the alignment, which would not parallel any existing alignments or linear features but would be considered co-dominant with the existing wind generation towers. Contrast levels are anticipated to be moderate. Potential visual impacts on residences from this KOP and in the general vicinity are expected to be moderate due to the development of a new linear feature in a disturbed landscape with moderate contrast and low to moderate scenic quality.

KOP 1220 (Figure E.2-1). High-sensitivity residential viewers at KOP 1220 would have a moderate level of Project visibility (approximately 1.45 miles from the Revised Proposed Route 8). The viewer would have an expansive view toward the alignment, which would parallel two existing transmission alignments and would be considered co-dominant with the existing structures. Contrast levels are anticipated to be low to moderate. Potential visual impacts on residences from this KOP and in the general vicinity are expected to be low to moderate due to the Revised Proposed Route 8 creating a co-dominant linear feature in a disturbed landscape.

KOP 1222 (Figures E.2-1 and E.2-13b). High-sensitivity residential viewers at KOP 1222 would have a high level of Project visibility (approximately 0.6 mile from the Revised Proposed Route 8). The viewer would have an expansive and elevated view toward the alignment, which would parallel two existing transmission alignments and be considered co-dominant with the existing structures. Contrast levels are anticipated to be low. The addition of a new industrial linear feature in a disturbed landscape with low scenic quality would create a “forested” visual effect and result in low to moderate visual impacts.

KOP 1350 (Figure E.2-1/Appendix G). Low-sensitivity recreational viewers traveling south on Bennett Mountain Road would have a high level of Project visibility (approximately 0.34 mile away from this KOP). The viewer would have an expansive view of the proposed towers and lines until passing beneath them. The Revised Proposed Route 8 is at various angles to the three existing transmission lines and would be considered co-dominant with them. Contrast levels are anticipated to be moderate. Potential visual impacts on recreational viewers are expected to be low due to a

horizontal landscape with low scenic quality and the presence of other transmission lines.

KOP 1423 (Figures E.2-1 and E.2-3b). Viewers from KOP 1423 would be high-sensitivity recreational viewers at Celebration Park (approximately 0.3 mile from the Revised Proposed Route 8). Due to foreground distances from this particular KOP and partial screening, as well as the existence of a high voltage transmission line, Revised Proposed Route 8 would be highly visible from this KOP though contrast levels would be moderate due to the adjacent human-made alterations within the vicinity of this KOP. Visual impacts on viewers would be moderate due to visibility and contrast as well as the co-dominant relationship with the existing transmission line.

KOP 1428 (Figures E.2-1 and E.2-12b). Viewers from KOP 1428 would be high-sensitivity recreational viewers on the Western Heritage Historic Byway looking east (approximately 1.84 mile from the Revised Proposed Route 8). Due to middleground distances from this particular KOP, lack of screening, and existing human-made development, the Revised Proposed Route 8 would be low to moderately visible from this KOP and contrast levels would be low to moderate due to these same factors and the distance of the view. Visual impacts on viewers would be low to moderate due to scenic quality and contrast resulting from the co-dominant nature of the Revised Proposed Route 8 and the existing high-voltage transmission line. Low to moderate visual impacts would conform to BLM VRM Class III objectives.

Route 8G

Route 8G is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows an alignment similar to the ones analyzed for Routes 8A and 9B in the FEIS for approximately 44 miles, although it generally parallels 250 feet north of the existing 500-kV line rather than1,500 feet to the south in order to avoid the Hagerman Fossil Beds National Monument and development near Hagerman (see Figure A-1). The route then parallels 250 feet north of the Proposed Route for Segment 9 and Route 9K for most of the remaining distance into the Hemingway Substation. Route 8G is 146.9 miles long (including a 1.9-mile rebuild of the existing 500-kV line), compared to the 129.7-mile-long Revised Proposed Route 8.

Route 8G would cross VRM Class III managed land in the SRBOP for approximately 8.8 miles and would not cross any other BLM-managed land within the SRBOP. The route would cross a total of 0.3 mile of VRM Class II managed land, which is located in the Bruneau Field Office.

Table 3.2-3 summarizes the potential visual impact for each KOP used to assess Route 8G. Route 8G would cross 8.8 miles of BLM-administered land managed to conform to VRM Class III objectives in the SRBOP.

Table 3.2-3. Visual Impact Assessment for Each KOP in Route 8G

KOP	Viewers[1/]	Land Ownership	Viewer Rating[2/]	Scenic Quality[2/,3/]	Distance (miles)	Visibility[2/]	Contrast[2/]	Impact[2/]
358	RES	Private	H	L	0.60	M-H	L	L-M
372	RES	Private	H	C	0.50	M-H	M-H	M-H
386	REC	BLM VRM III	H	B	0.24	M-H	H	M-H
387	REC	BLM VRM III	H	B	1.44	M-H	M-H	M
581	RES/REC	Private	H	H	0.10	H	H	H
586	RES	Private	H	H	0.49	M-H	M	M
790	REC	Private	H	M	0.10	H	M	M
791	REC	Private	H	H	0.81	M	M	M
803	RES	Private	H	H	0.41	M	M	M
805	RES	Private	H	M	0.41	M	M	M
806	RES	Private	H	L	<0.10	H	M	M
808	RES	Private	H	L-M	<0.10	H	M-H	M-H
809	RES	Private	H	L	<0.10	H	M-H	M-H
811	REC	BLM VRM II	H		1.33	M-H	M	M
813	REC	BLM VRM III	H	B	<0.10	H	H	H
814	REC	BLM VRM III	H	B	0.16	H	H	H
816	REC	BLM VRM IV	H	B	1.51	M-H	M	M
1114	REC	BLM VRM IV	H	A	0.37	H	H	H
1137	RES	Private	H	C	1.04	M-H	M-H	M-H
1138	RES	Private	H	C	0.5	H	H	H
1140	REC	BLM VRM III	M	C	0.65	H	M	M-H
1141	REC	BLM VRM III	M	H	1.15	H	H	M-H
1148	RES	BLM VRM IV	H	B	<0.10	H	H	H
1149*	REC/RES	BLM VRM III	H	H	<0.10	H	H	H
1211	RES	Private	H	L-M	1.75	M	L-M	L-M
1213	RES	Private	H	L-M	1.80	M	L-M	L-M
1220	RES	Private	H	L	1.00	M-H	L-M	M
1222	RES	Private	H	L	0.80	M-H	L	L-M
1351	REC	State	H	M	0.50	M	M	M
1573	REC	State of Idaho	L	C	0.24	H	H	H
1607	REC	BLM VRM IV	H	B	0.20	H	H	H

1/ REC – A recreational viewer. RES – A single resident.
2/ H – High, M – Medium, L – Low
3/ On or viewing BLM-managed land: A – High, B – Medium, C – Low; on non-BLM-managed land, H, M, and L ratings.
* Asterisk indicates KOP is within the SRBOP.

KOP 358 (Figure E.2-1). High-sensitivity residential viewers on the west side of US 93 near the existing Midpoint Substation have an open panoramic view to the north that includes an existing transmission line. Views to the north include an existing transmission line near Route 8G. Viewing distance to Route 8G would be approximately 0.6 mile, resulting in moderate to high Project visibility. Visual contrast levels would be low due to the existing transmission lines and overall low scenic quality. Visual impacts on viewers at this location would be low to moderate.

KOP 372 (Figures E.2-1 and E.2-3b). Viewers from KOP 372 would be high-sensitivity residential viewers south of the Snake River, Sparlin Island, and the town of Hammett, Idaho. Viewers would be approximately 0.5 mile from where Route 8G would cross the ridge top in the middleground. At KOP 372, visibility of Route 8G would be moderate to high due to the partial screening effect of the closest rolling ridge top in the

middleground of the view and the fact that the Proposed Route would skyline the terrain in the background. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class C landscape in the foreground to middleground distance zone. Visual contrast levels would be moderate to high due to the lack of apparent human-made alterations in the middleground and background. Impacts on viewers would be moderate to high.

KOP 386 (Figures E.2-1 and E.2-4b). Viewers from KOP 386 would be hikers traveling along the Centennial Trail, approximately 0.24 mile from where Route 8G would cross the trail in the middleground. KOP 386 is located on BLM-administered lands managed to conform to VRM Class III objectives. Due to the open landscape with little screening, Route 8G would be highly visible from KOP 386, partially skylining terrain and being backdropped. Visual contrast levels would be high due to the lack of vertical human-made alterations visible. Impacts on viewers would be moderate to high.

KOP 387 (Figures E.2-1). Viewers from KOP 387 would be hikers traveling along the Centennial Trail, approximately 1.44 mile from where Route 8G would cross the trail in the middleground. KOP 387 is located on BLM-administered lands managed to conform to VRM Class III objectives. Due to the open landscape with little screening, Route 8G would be moderate to highly visible from KOP 387. Visual contrast levels would be moderate to high due to the human-made alterations visible in the background. Impacts on viewers would be moderate.

KOP 581 (Figure E.2-2). See Route 9K and FEIS Proposed 9 for a description of the visual effects of the alignment for KOP 581. Route 8G is located 250 feet closer to the KOP than Route 9K, between Route 9K and FEIS Proposed 9.

KOP 586 (Figure E.2-2). See Route 9K for a description of the visual effects of the alignment for KOP 586. Route 8G is located 250 feet closer to the KOP than Route 9K.

KOP 790 (Figures E.2-1 and E.2-6b). High-sensitivity recreational viewers at KOP 790 would have a high level of Project visibility (0.10 mile from Route 8G) traveling along the Thousand Springs Scenic Byway. The view would represent an immediate foreground view of the Project. Contrast levels would be moderate due to the existence of two high-voltage transmission lines. Visual impacts on recreational viewers from this KOP and in the general vicinity are expected to be moderate for Route 8G due to the distance of view, existing structures, and low scenic quality.

KOP 791 (Figure E.2-1). High-sensitivity recreational viewers at KOP 791 would have a high level of Project visibility (0.81 mile from Route 8G). The view would cross the Thousand Springs Scenic Highway, representing a middleground view of the Project. The viewer would have a framed, superior view toward the alternative alignment, which would be partially screened by the adjacent vegetation. Contrast levels would be moderate. Visual impacts on recreational viewers from this KOP and in the general vicinity are expected to be moderate for Route 8G due to the distance of view and high scenic quality. Siting considerations for scenic highway crossings would include crossing the road at a perpendicular angle. There are no specified mitigation guidelines for the Thousand Springs Scenic Highway. KOP 791 would also represent viewers in the adjacent Billingsley Creek Wildlife Management Area.

KOP 803 (Figures E.2-1 and E.2-41b of the FEIS). High-sensitivity recreational viewers at KOP 803 would have a moderate level of Project visibility (0.41 mile from Route 8G). The Project would not parallel the highly visible existing transmission line and the viewer would have a middleground view of the Project. The viewer would have a partially enclosed and focal view toward the Proposed Route that would be partially screened by topography and a dam structure. Contrast levels would be moderate for Route 8G due to the numerous visible transmission lines in the area adjacent to the view. Visual impacts on recreational viewers from this KOP and in the general vicinity would be moderate due to the distance of the view, numerous human-made alterations in the view, and the high scenic quality.

KOP 805 (Figure E.2-1). High-sensitivity residential viewers at KOP 805 would have a moderate level of Project visibility (0.41 mile from Route 8G) on Justice Grade Road. The view would represent a middleground view of the Project. Contrast levels would be moderate due to the existence of two high-voltage transmission lines and intervening terrain and vegetation. Visual impacts on residential viewers from this KOP and in the general vicinity are expected to be moderate for Route 8G due to the distance of view, existing structures, and partial screening.

KOP 806 (Figure E.2-1). High-sensitivity residential viewers at KOP 806 would have a high level of Project visibility (less than 0.10 mile from Route 8G). The view would represent an immediate foreground view of the Project. Contrast levels would be moderate due to the existence of two high-voltage transmission lines. Visual impacts on residential viewers from this KOP and in the general vicinity are expected to be moderate for Route 8G due to the distance of view, existing structures, and low scenic quality.

KOP 808 (Figure E.2-1). High-sensitivity residential viewers at KOP 809 would have a high level of Project visibility (less than 0.10 mile from Route 8G). The view would represent an immediate foreground view of the Project. Contrast levels would be moderate to high. Visual impacts on residential viewers from this KOP and in the general vicinity are expected to be moderate to high for Route 8G due to the distance of view and low scenic quality.

KOP 809 (Figure E.2-1). High-sensitivity recreational viewers at KOP 809 would have a high level of Project visibility (less than 0.10 mile from Route 8G). The view would represent an immediate foreground view of the Project. Contrast levels would be moderate to high. Visual impacts on recreational viewers from this KOP and in the general vicinity are expected to be moderate to high for Route 8G due to the distance of view and low scenic quality.

KOP 811 (Figure E.2-1). High-sensitivity recreational viewers at KOP 811 would have a moderate to high level of Project visibility (1.33 miles from Route 8G) adjacent to an Oregon NHT marker on South Bell Rapids Road. The view would represent a middleground view of the Project. Contrast levels would be moderate due to the lack of existing human-made visual intrusions and distance of the view. Visual impacts on recreational viewers from this KOP and in the general vicinity are expected to be moderate for Route 8G due to the distance of view and moderate contrast levels.

KOP 813 (Figures E.2-1 and E.2-7b). High-sensitivity recreational users at KOP 813 along the Oregon NHT in the Cassia Gulch area would have a high level of Project visibility (less than 0.10 mile from Route 8G). The existing view is a focal view to the north of an existing transmission line, approximately 1 mile away. Hills on either side of this view frame the visible towers, potentially drawing a viewer's attention to them, but also screen many more of the Project towers from view. The Project would be in the immediate foreground from the perspective of this KOP and would be highly visible to any viewers from this location, so contrast levels would be high. Visual impacts of the Project on recreational viewers at this KOP would be high due to the close proximity, absence of human-made changes and cultural significance of the area and the Class B scenic quality. The 2015 Jarbidge RMP reclassified the area where KOP 813 is located as VRM Class III and a transmission line corridor. Impacts to KOP 813 would therefore conform to BLM VRM Class III objectives.

KOP 814 (Figure E.2-1). High-sensitivity recreational viewers at KOP 814 would have a high level of Project visibility (0.16 mile from Route 8G) adjacent to an Oregon NHT marker in Cassia Gulch. The view would represent a foreground view of the Project. Contrast levels would be high due to the lack of existing human-made visual intrusions and close proximity of the view. Visual impacts on recreational viewers from this KOP and in the general vicinity are expected to be high for Route 8G due to the distance of view and high contrast levels.

KOP 816 (Figure E.2-2). See the Segment 9 Revised Proposed Route for a description of the visual effects of the alignment for KOP 816. Route 8G would be 250 feet farther away and thus would have slightly lower impacts than Segment 9 Revised Proposed Route.

KOP 1114 (Figure E.2-1). High-sensitivity recreational viewers at KOP 1114 would have a high level of Project visibility (0.37 mile from Route 8G). The viewer would have an expansive view toward the alignment, which would not parallel any existing alignments or linear features and could skyline in the case of the Revised Proposed Route. Contrast levels that are anticipated to be high. Potential visual impacts on recreational viewers from this KOP and in the general vicinity are expected to be high due to it creating a new linear feature in an undisturbed landscape with Class A scenic quality.

KOP 1137 (Figure E.2-1). High-sensitivity residential viewers at KOP 1137 would have a low level of Project visibility (approximately 1.04 miles from Route 8G) even though the structures will have infrared LED obstruction lighting for structures between MPs 0.0 and 5.8 for the Saylor Creek Range. The viewer would have an expansive view toward the alternative alignment, which would not parallel any existing alignments or linear features and could skyline the view. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class C landscape in the foreground to middleground distance zone. Contrast levels are anticipated to be moderate to high. Potential visual impacts on residential viewers from this KOP and in the general vicinity are expected to be moderate to high due to the route creating a new linear feature in a previously disturbed landscape that exhibits Class C scenic quality as well as the lighting of structures, which makes the structures more visible.

KOP 1138 (Figure E.2-1). Low-sensitivity residential viewers at KOP 1138 would have a high level of Project visibility (approximately 0.5 mile from Route 8G) due to the infrared LED obstruction lighting for structures between MPs 0.0 and 5.8 for the Saylor Creek Range. The viewer would have an expansive view toward the alternative alignment, which would not parallel any existing alignments or linear features and could skyline the view. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class C landscape in the foreground to middleground distance zone. Contrast levels are anticipated to be high. Potential visual impacts on residential viewers from this KOP and in the general vicinity are expected to be high. This is because the route would create a new linear feature with moderate to high contrast in a previously disturbed landscape that exhibits Class C scenic quality and because the structural lighting would make the structures more visible.

KOP 1140 (Figure E.2-2). See Route 9K for a description of the visual effects of the alignment for KOP 816. Route 8G would be 250 feet closer to the KOP and so would have slightly higher impacts than Route 9K.

KOP 1141 (Figure E.2-2). See Route 9K for a description of the visual effects of the alignment for KOP 1141. Route 8G would be 250 feet closer to the KOP and so would have slightly higher impacts than Route 9K.

KOP 1148 (Figure E.2-1). High-sensitivity residential viewers at KOP 1148 would have a high level of Project visibility (less than 0.10 mile from Route 8G). The viewer would have an expansive view toward the alignment, which would not parallel any existing alignments or linear features and could skyline the view. Contrast levels are anticipated to be high. Potential visual impacts on residences from this KOP and in the general vicinity are expected to be high due to the alternative creating a new highly visible linear feature in a landscape with minor disturbance and Class B scenic quality. High visual impacts would conform to BLM VRM Class IV objectives.

KOP 1149 (Figures E.2-1 and E.2-9b). High-sensitivity recreational viewers at KOP 1149 would have a high level of Project visibility (less than 0.1 mile from Route 8G). The viewer would have an expansive view toward the alignment, which would not parallel any existing alignments or linear features and could skyline the view. Contrast levels are anticipated to be high. Potential visual impacts on recreational users from this KOP and in the general vicinity are expected to be high due to the alternative creating a new highly visible linear feature in a landscape with minor disturbance and high scenic quality.

KOP 1211 (Figure E.2-1). High-sensitivity residential viewers at KOP 1211 would have a moderate level of Project visibility (approximately 1.8 miles from Route 8G). The viewer would have an expansive view toward the alignment, which would parallel an existing, co-dominant transmission line and be partially screened by the structures. Contrast levels are anticipated to be low to moderate. Potential visual impacts on residences from this KOP and in the general vicinity are expected to be low to moderate due to the alternative creating a co-dominant linear feature in a disturbed landscape with low to moderate contrast and low to moderate scenic quality.

KOP 1213 (Figures E.2-1 and E.2-12b). High-sensitivity residential viewers at KOP 1213 would have a moderate to high level of Project visibility (approximately 1.8 miles from Route 8G). The viewer would have an expansive view toward the alignment, which would parallel an existing co-dominant transmission line. Contrast levels are anticipated to be low to moderate. Potential visual impacts on residences from this KOP and in the general vicinity are expected to be low to moderate to high due to the alternative creating a co-dominant linear feature in a disturbed landscape with moderate to high contrast and low to moderate scenic quality.

KOP 1220 (Figure E.2-1). High-sensitivity residential viewers at KOP 1220 would have a moderate to high level of Project visibility (approximately 1.0 mile from Route 8G). The viewer would have an expansive view toward the alignment, which would parallel two existing transmission alignments and would be considered co-dominant with the existing structures. Contrast levels are anticipated to be low to moderate due to the co-dominant nature of the existing structures. Potential visual impacts on residences from this KOP and in the general vicinity are expected to be moderate due to Route 8G creating a co-dominant linear feature in a disturbed landscape with moderate to high visibility.

KOP 1222 (Figures E.2-1 and E.2-13c). High-sensitivity residential viewers at KOP 1222 would have a high level of Project visibility (approximately 0.8 mile from Route 8G). The viewer would have an expansive and elevated view toward the alignment, which would parallel two existing transmission alignments and be considered co-dominant with the existing structures. Contrast levels are anticipated to be low. The addition of a new industrial linear feature in a disturbed landscape with low scenic quality would create a “forested” visual effect and result in low to moderate visual impacts.

KOP 1351 (Figure E.2-1). High-sensitivity recreational viewers at KOP 1351 would have a moderate level of Project visibility (0.50 mile from Route 8G) at the Billingsley Creek Wildlife Management Area. The view would represent a middleground view of the Project. Contrast levels would be moderate due to the existence of two high-voltage transmission lines and intervening terrain and vegetation. Visual impacts on recreational viewers from this KOP and in the general vicinity are expected to be moderate for Route 8G due to the distance of view, existing structures, and partial screening.

KOP 1573 (Figure E.2-2). See the Segment 9 Revised Proposed Route for a description of the visual effects of the alignment for KOP 1573. Route 8G would be 250 feet farther from the KOP and so would have slightly lower impacts than the Segment 9 Revised Proposed Route.

KOP 1607 (Figure E.2-1). Viewers from KOP 1607 are high-sensitivity recreational viewers on the Rabbit Creek Trail. At KOP 1607, high-sensitivity viewers would have a high level of Project visibility 0.20 mile from the alignment, and visual contrast levels would be high due to the few human-made alterations and distance of the alignment. The alignment would likely be backdropped within the view, which can absorb the lattice structures and lower contrast levels but not likely from this close distance. Visual

impacts on viewers would be high. High visual impacts would conform to BLM VRM Class IV objectives.

Route 8H

Route 8H is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows a combination of portions of the alignments analyzed for 8G and the Revised Proposed Route for Segment 9. The route is 137.5 miles long (including a 1.9-mile rebuild of the existing 500-kV line and a 25.7-mile removal and rebuild of a 138-kV line), compared to the 129.7-mile-long Segment 8 Revised Proposed Route. Approximately 44 miles of the route follows the 8G alignment, while the remainder of 8H follows the alignment of the Segment 9 Revised Proposed Route.

The route would cross three areas of VRM Class II managed land in the SRBOP for approximately 15.1 miles. The route would also cross VRM Class II land managed under the 1987 Jarbidge RMP for approximately 0.3 mile, just east of the SRBOP.

Table 3.2-4 summarizes the potential visual impact for each KOP used to assess Route 8H. Route 8G would cross approximately 15.1 miles of BLM-administered land managed to conform to VRM Class II objectives and 40 miles of VRM Class III land in the SRBOP.

Table 3.2-4. Visual Impact Assessment for Each KOP in Route 8H

KOP	Viewers[1/]	Land Ownership	Viewer Rating[2/]	Scenic Quality[2/,3/]	Distance (miles)	Visibility[2/]	Contrast[2/]	Impact[2/]
358	RES	Private	H	L	0.60	M-H	L	L-M
372	RES	Private	H	C	0.50	M-H	M-H	M-H
386	REC	BLM VRM III	H	B	0.24	M-H	H	M-H
387	REC	BLM VRM III	H	B	1.44	M-H	M-H	M
401	401*	REC	Private	H	M-H	3.50	L	M
561	RES/REC	BLM VRM III	H	B	0.50	H	M-H	M-H
572	REC	BLM VRM III	H	B	0.30	H	M-H	M-H
790	REC	Private	H	M	0.10	H	M	M
791	REC	Private	H	H	0.81	M	M	M
803	RES	Private	H	H	0.41	M	M	M
805	RES	Private	H	M	0.41	M	M	M
806	RES	Private	H	L	<0.10	H	M	M
808	RES	Private	H	L-M	<0.10	H	M-H	M-H
809	RES	Private	H	L	<0.10	H	M-H	M-H
811	REC	BLM VRM II	H		1.33	M-H	M	M
813	REC	BLM VRM III	H	B	<0.10	H	H	H
814	REC	BLM VRM III	H	B	0.16	H	H	H
816	REC	BLM VRM IV	H	B	1.40	M-H	M	M
1115	RES	Private	H	L-M	2.40	L	M	M
1128*	REC	State of Idaho	H	H	2.75	L-M	M	M-H
1129*	REC	State of Idaho	H	H	3.20	L	L-M	M
1133	REC	BLM VRM I	H	B	0.25	H	H	M-H
1154	REC	Private	H	L-M	0.25	L-M	L-M	L-M
1155*	REC/ COMM	Private	H	M-H	<0.5	H	M	M-H
1156*	REC	BLM VRM II	H	B	0.40	M	L-M	M

Table 3.2-4. Visual Impact Assessment for Each KOP in Route 8H (continued)

KOP	Viewers[1/]	Land Ownership	Viewer Rating[2/]	Scenic Quality[2/,3/]	Distance (miles)	Visibility[2/]	Contrast[2/]	Impact[2/]
1158*	REC	State of Idaho	H	M	0.35	M-H	L-M	M
1211	RES	Private	H	L-M	1.75	M	L-M	L-M
1213	RES	Private	H	L-M	1.80	M	L-M	L-M
1220	RES	Private	H	L	1.00	M-H	L-M	M
1222	RES	Private	H	L	0.80	M-H	L	L-M
1337*	REC	State	H	H	1.40	M	M	M
1351	REC	State	H	M	0.50	M	M	M
1352	RES	Private	L	L-M	1.40	L-M	L	L
1413	RES	Private	H	M-H	0.27	H	M	M
1417	RES	Private	H	M	0.80	M-H	M-H	M-H
1419*	REC	BLM VRM III	H	B	<0.3	H	H	H
14204/	RES	Private	H	M	1.50	M-H	M-H	M-H
1570*	REC	State of Idaho	H	M-H	1.90	M-H	M-H	M-H
1572*	REC	State of Idaho	H	M	0.50	H	H	H
1586*	REC	BLM VRM II	H	B	1.50	H	H	H
1588*	REC	BLM VRM II	H	B	1.30	M	M	M
1597*	RES	BLM VRM II	H	B	0.50	H	H	H
1607	REC	BLM VRM IV	H	B	1.20	M	M-H	M-H

1/ REC – A recreational viewer. RES – A single resident.
2/ H – High, M – Medium, L – Low
3/ On or viewing BLM-managed land: A – High, B – Medium, C – Low; on non-BLM-managed land, H, M, and L ratings.
* Asterisk indicates KOP is within the SRBOP.

KOP C137 (Figures E.3-1 and E.1-3b). Views from this point are on the Oregon NHT - South Alternate within the SRBOP. This viewpoint is discussed in Section 3.1.

KOP 358 (Figure E.2-1). See Route 8G for a description of the visual effects of the alignment for KOP 386.

KOP 372 (Figure E.2-2). See Route 8G for a description of the visual effects of the alignment for KOP 372.

KOP 386 (Figure E.2-2). See Route 8G for a description of the visual effects of the alignment for KOP 386.

KOP 387 (Figure E.2-2). See Route 8G for a description of the visual effects of the alignment for KOP 387.

KOP 401 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 401.

KOP 561 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 561.

KOP 572 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 572.

KOP 790 (Figures E.2-1 and E.2-6b). See Route 8G for a description of the visual effects of the alignment for KOP 790.

KOP 791 (Figure E.2-1). See Route 8G for a description of the visual effects of the alignment for KOP 791.

KOP 803 (Figures E.2-1 and E.2-41a of the FEIS). See Route 8G for a description of the visual effects of the alignment for KOP 803.

KOP 805 (Figure E.2-1). See Route 8G for a description of the existing condition for KOP 805.

KOP 806 (Figure E.2-1). See Route 8G for a description of the visual effects of the alignment for KOP 806.

KOP 808 (Figure E.2-1). See Route 8G for a description of the visual effects of the alignment for KOP 808.

KOP 809 (Figure E.2-1). See Route 8G for a description of the visual effects of the alignment for KOP 809.

KOP 811 (Figure E.2-1). See Route 8G for a description of the visual effects of the alignment for KOP 811.

KOP 813 (Figures E.2-1 and E.2-7b). See Route 8G for a description of the visual effects of the alignment for KOP 813.

KOP 814 (Figures E.2-1). See Route 8G for a description of the visual effects of the alignment for KOP 813.

KOP 816 (Figures E.2-2). See the Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 816.

KOP 1115 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1115.

KOP 1128 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1128.

KOP 1129 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1129.

KOP 1133 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1133.

KOP 1154 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1154.

KOP 1155 (Figures E.2-2 and E.2-10b). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1155.

KOP 1156 (Figures E.2-2 and E.2-11b). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1156.

KOP 1158 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1158.

KOP 1211 (Figure E.2-1). See Route 8G for a description of the visual effects of the alignment for KOP 1211.

KOP 1213 (Figure E.2-1 and E.2-12b). See Route 8G for a description of the visual effects of the alignment for KOP 1213.

KOP 1220 (Figure E.2-1). See Route 8G for a description of the visual effects of the alignment for KOP 1220.

KOP 1222 (Figures E.2-1 and E.2-13b). See Route 8G for a description of the visual effects of the alignment for KOP 1222.

KOP 1337 (Figures E.2-2 and E.2-14b). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1337.

KOP 1351 (Figure E.2-1). See Route 8G for a description of the visual effects of the alignment for KOP 1351.

KOP 1352 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1352.

KOP 1413 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1413.

KOP 1417 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1417.

KOP 1419 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1419.

KOP 1420 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1420.

KOP 1570 (Figures E.2-2 and E.2-15b). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1570.

KOP 1572 (Figures E.2-2 and E.2-16b). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1572.

KOP 1586 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1586.

KOP 1588 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1588.

KOP 1597 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1597.

KOP 1607 (Figure E.2-1). See FEIS Proposed 9 for a description of the visual effects of the alignment for KOP 1607.

Segment 8 Conformance to BLM VRM Classes

Segment 8 of the Revised Proposed Route would not conform to VRM Class II management for land managed under the Bennett Hills/Timmerman Hills MFP. In

addition, the route would also cross VRM Class I land managed under the 1987 Jarbidge RMP and would not conform to that classification. Amendments are proposed for Co-Preferred Alternative 2 to change VRM Class II area designations in the Bennett Hills/Timmerman Hills MP to VRM Class III and to change VRM Class I designations in the 1987 Jarbidge RMP to VRM Class IV. Route 8G would cross a parcel of VRM Class II designated land managed under the Bruneau MFP and an amendment is proposed for Co-Preferred Alternative 5 to change the VRM classification to VRM Class III. Route 8H would require amendments to the 1987 Jarbidge RMP and SRBOP RMP to change VRM Class II designations to VRM Class III. See Tables 3.2-1 and 3.2-2 and Appendices F and G for further information on these proposed amendments for the Co-Preferred Alternatives and amendments associated with other action alternatives.

Segment 9

Revised Proposed Route

The Revised Proposed Route for Segment 9 would link the proposed Cedar Hill and existing Hemingway Substations with a 165.3-mile single-circuit 500-kV transmission line that skirts the Jarbidge and Owyhee Military Operating Areas to the north, then follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering the Hemingway Substation (see Figure A-1). It follows an alignment similar to the 2013 FEIS Route 9D/9G between MPs 95.6 and 154.7, except that two portions of the route (totaling 25.7 miles) would be double-circuited with existing 138-kV lines. The first area is 5.2 miles near C.J. Strike Reservoir and the Bruneau Arm (MP 106.2 to 109.3 and 109.9 to 112.1), and the second area is 20.2 miles along the Baja Road (MP 121.0 to 141.2). Several rebuilds totaling approximately 0.6 mile are also required to tie the existing 138-kV lines into the new double-circuit alignments. The existing tower height for the 138-kV structure is between 60 to 90 feet and the approximate tower height of the proposed double-circuit 500/138-kV structure is between 125 to 200 feet. Figure 2.2-2 in Chapter 2 shows a sketch of the proposed double-circuit 500/138-kV structure. Figure 2.2-3 in Chapter 2 shows the ROW design configuration for the 500/138-kV double-circuit structure compared to the existing 138-kV structure for the portion of the Revised Proposed Route for Segment 9 within the SRBOP. The taller structure height increases visual impacts by making contrast greater and allowing the structure greater opportunity to skyline views; which has been taken into account in the analysis.

The Revised Proposed Route for Segment 9 would cross 15.1 miles of BLM-administered land managed to conform to VRM Class II objectives and a little over 38 miles of VRM Class III lands in the SRBOP. Except for minor variations, the route is similar to the 2013 FEIS Route 9D/9G between MPs 141.2 to 154.7. From MP 154.7 and into the Hemingway Substation, the route is the same as the 2013 FEIS Proposed Route.

Table 3.2-5 summarizes the potential visual impact for each KOP on the Revised Proposed Route for Segment 9.

Table 3.2-5. Visual Impact Assessment for Each KOP in the Revised Proposed Route for Segment 9

KOP	Viewers[1/]	Land Ownership	Viewer Rating[2/]	Scenic Quality[2/,3/]	Distance (miles)	Visibility[2/]	Contrast[2/]	Impact[2/]
372	RES	Private	H	C	0.60	M-H	M-H	M-H
386	REC	BLM VRM III	H	B	0.28	M-H	H	M-H
387*	REC	BLM VRM III	H	B	1.00	H	M-H	M
401*	REC	Private	H	M-H	3.50	L	M	L-M
407	RES	BLM VRM IV	H	B	0.90	H	H	H
419	RES	Private	H	L-M	1.60	L-M	M	L-M
452	RES	Private	H	M	1.00	M-H	M-H	H
454	RES	Private	H	M	<0.10	H	L-M	M
561*	RES/REC	BLM VRM III	H	B	0.50	H	M-H	M-H
572*	REC	BLM VRM III	H	B	0.30	H	M-H	M-H
793	RES	Private	H	L	2.40	L-M	L-M	L-M
816	REC	BLM VRM IV	H	B	1.40	M-H	M	M
1065	REC/RES	BLM VRM IV	M-H	B	0.50	H	H	H
1067	REC	BLM VRM III	H	A	<0.10	H	H	H
1068	REC/RES	BLM VRM IV	H	B	0.84	M-H	M-H	M-H
1069	RES	Private	H	B	0.30	H	M-H	M-H
1115	RES	Private	H	L-M	2.40	L	M	M
1128*	REC	State of Idaho	H	H	2.75	L-M	M	M-H
1129*	REC	State of Idaho	H	H	3.20	L	L-M	M
1133	REC	BLM VRM I	H	B	0.25	H	H	M-H
1154	REC	Private	H	L-M	0.25	L-M	L-M	L-M
1155*	REC/ COMM	Private	H	M-H	<0.50	H	M	M-H
1156*	REC	BLM VRM II	H	B	0.40	M	L-M	M
1158*	REC	State of Idaho	H	M	0.35	M-H	L-M	M
1337*	REC	State	H	H	1.40	M	M	M
1352	RES	Private	L	L-M	1.40	L-M	L	L
1413	RES	Private	H	M-H	0.27	H	M	M
1417	RES	Private	H	M	0.80	M-H	M-H	M-H
1419*	REC	BLM VRM III	H	B	<0.30	H	H	H
1420[4/]	RES	Private	H	M	1.50	M-H	M-H	M-H
1570*	REC	State of Idaho	H	M-H	1.90	M-H	M-H	M-H
1572*	REC	State of Idaho	H	M	0.50	H	H	H
1586*	REC	BLM VRM II	H	B	1.50	H	H	H
1588*	REC	BLM VRM II	H	B	1.30	M	M	M
1597*	RES	BLM VRM II	H	B	0.50	H	H	H
1607	REC	BLM VRM IV	H	B	1.20	M	M-H	M-H

1/ REC – A recreational viewer. RES – A single resident. COMM – A commuter traveling on major highways or secondary roads.
2/ H – High, M – Medium, L – Low.
3/ On or viewing BLM-managed land: A – High, B – Medium, C – Low; on non-BLM-managed land, H, M, and L ratings.
* Asterisk indicates KOP is within the SRBOP.

KOP 372 (Figures E.2-2 and E.2-3b). Viewers from KOP 372 would be high-sensitivity residential viewers south of the Snake River, Sparlin Island, and the town of Hammett, Idaho. Viewers would be approximately 0.6 mile from where the Revised Proposed Route for Segment 9 would cross the ridge top in the middleground. At KOP 372, visibility of the Revised Proposed Route for Segment 9 would be moderate to high due to the partial screening effect of the closest rolling ridge top in the middleground of the view and the fact that the Revised Proposed Route for Segment 9 would skyline the

terrain in the background. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class C landscape in the foreground to middleground distance zone. Visual contrast levels would be moderate to high due to the lack of apparent human-made alterations in the middleground and background. Impacts on viewers would be moderate to high.

KOP 386 (Figure E.2-2). See Route 8G for a description of the visual effects of the alignment for KOP 386. The FEIS Proposed 9 route would be 250 feet south of the 8G alignment and therefore 250 feet farther from the KOP, which would lessen the visual impact to some degree.

KOP 387 (Figures E.2-2). Viewers from KOP 387 would be hikers traveling along the Centennial Trail, approximately 1.0 mile from where the Revised Proposed Route for Segment 9 would cross the trail in the middleground. KOP 387 is located on BLM-administered lands managed to conform to VRM Class III objectives. Due to the open landscape with little screening, the proposed transmission facilities would be highly visible from KOP 387. Visual contrast levels would be moderate to high due to the human-made alterations visible in the background. Impacts on viewers would be moderate.

KOP 401 (Figure E.2-2). Viewers from KOP 401 would be high-sensitivity recreational viewers traveling along the Bruneau Dunes Road, 3.5 miles from where the Revised Proposed Route for Segment 9 would cross the middleground. At KOP 401, high-sensitivity viewers would have a low level of Project visibility due to the screening effects of the dominant sand dunes in the middleground of the view. Visual contrast levels would be moderate due to the human-made alterations in the middleground. Impacts on viewers would be low to moderate.

KOP 407 (Figure E.2-2). Viewers from KOP 407 would be high-sensitivity residential viewers on East 2900 North Road (approximately 0.9 mile from where the Revised Proposed Route for Segment 9 would cross the foreground, blocking views of the rugged terrain and skylining views where backdropping terrain is not present). From KOP 407, the Revised Proposed Route would be highly visible to viewers due to skylining the middleground terrain. Existing human-made alterations would not screen views of the Revised Proposed Route for Segment 9 and visual contrast levels are anticipated to be high due to the lack of linear human-made alterations within the foreground and middleground of the view. Impacts on viewers would be high due to the contrast level of skylined views and the distance of the viewer.

KOP 419 (Figure E.2-2). Views from KOP 419 represent the views of a residence looking northwest toward the Revised Proposed Route for Segment 9, approximately 0.5 mile west of the Salmon Falls Creek Canyon, which is not visible from this KOP. Viewers at this location would be approximately 1.6 miles from the Revised Proposed Route for Segment 9, representing a foreground-middleground view. Residential viewers at KOP 419 would have a moderate level of Project visibility. The viewers would have a panoramic view toward the Revised Proposed Route for Segment 9. Distance and screening from the nearby transmission line would decrease visibility; however, lack of screening topography would allow towers to still be visible. Contrast

levels would be moderate due to the light coloring of the background landscape, however distance and presence of other linear structures closer to the viewer would reduce visibility. Impacts on residential viewers from this KOP and in the general vicinity are expected to be low to moderate due to the distance of the view and the low to moderate scenic quality.

KOP 452 (Figure E.2-2). Viewers from KOP 452 would be high-sensitivity residential viewers on North 3100 East Road (approximately 1.0 mile from where the Revised Proposed Route for Segment 9 would cross the foreground blocking views of the rugged terrain). From KOP 452, the Revised Proposed Route for Segment 9 would be moderately to highly visible to the viewers. For comparison, the existing monopole transmission line visible within the view is approximately 2.6 miles from this KOP (1.6 miles farther than the Revised Proposed Route for Segment 9). Existing human-made alterations such as linear structures impact the viewers from KOP 452 and would reduce the contrast of the Revised Proposed Route for Segment 9 with the existing landscape to a rating of moderate to high. Impacts on viewers would be high due to contrast and the close proximity of the viewer.

KOP 454 (Figure E.2-2). High-sensitivity residential viewers at KOP 454 would have a high level of Project visibility (less than 0.10 mile from the Revised Proposed Route for Segment 9, representing a foreground view of the alignment). Views from KOP 454 represent the views of a residence looking south toward the alignment and a highly visible existing monopole transmission line that skylines the view. The visible transmission line is located approximately less than 0.1 mile from the Revised Proposed Route for Segment 9. Viewers would have a focal view toward the alignment with few opportunities for screening, resulting in contrast levels that would be low to moderate due to the existing transmission line. Visual impacts on residential viewers from this KOP and in the general vicinity are expected to be moderate for the Revised Proposed Route for Segment 9 due to the distance of the view as well as the presence of visible human-made alterations adjacent to the view, which lower scenic quality.

KOP 561 (Figure E.2-2/Appendix G). The Revised Proposed Route for Segment 9 would be highly visible to high-sensitivity recreational hikers and residential viewers located adjacent to Marsing Murphy Road (approximately 0.5 mile away). The views are open and panoramic with strong horizon lines and mountainous silhouettes, as well as uninterrupted views of the Revised Proposed Route for Segment 9. The Revised Proposed Route for Segment 9 would not parallel an existing transmission line in a Class B scenic quality landscape. Contrast levels are expected to be moderate to high. The Revised Proposed Route would interrupt the viewshed of this landscape. Screening or other mitigation efforts would be less successful at lowering impacts to scenic resources in the surrounding area. Impacts on viewers would be moderate to high due to the contrast levels and the scenic quality of the landscape within the view. The view from KOP 561 would not conform to BLM VRM Class III objectives, as discussed further in Appendix G.

KOP 572 (Figure E.2-2). Viewers from KOP 572 are high-sensitivity recreational viewers traveling along the BLM Rabbit Creek Trail (less than 0.3 mile from where the Revised Proposed Route for Segment 9 would cross the trail and hills in the foreground

and middleground). At KOP 572, high-sensitivity viewers would have a high level of Project visibility, and visual contrast levels would be moderate to high due to the few human-made alterations within the view. The rolling topography in the vicinity may offer opportunities for backdropping, which could absorb the lattice structures and lower contrast levels. Visual impacts on viewers would be moderate to high.

KOP 793 (Figure E.2-2). High-sensitivity residential viewers at KOP 793 would have a low-moderate level of Project visibility (approximately 2.4 mile from the Revised Proposed Route for Segment 9). Viewers at this location would have a middleground view of the alignment. The viewer would have an expansive and panoramic view toward the Revised Proposed Route for Segment 9 with few opportunities for screening. Contrast levels are anticipated to be low to moderate. Impacts on residential viewers from this KOP and in the general vicinity would be low to moderate for the Revised Proposed Route for Segment 9 due to the distance of the view and high contrast level as well as presence of highly visible human-made alterations, which lower scenic quality.

KOP 816 (Figures E.2-2). KOP 816 exhibits diversity in form, line, color, and texture that would result in moderate levels of contrast with the proposed transmission facilities along Revised Proposed Route for Segment 9 approximately 1.4 miles from the viewing location. The views from KOP 816 are interrupted by a wind farm in the middleground to background viewing distance zone. Views of the Snake River are not apparent from this particular KOP and visual impacts are anticipated to be moderate from this distance. From an elevated viewing location, it is apparent that screening and other mitigation efforts would not mitigate impacts to scenic resources in the surrounding area. This area is managed by the BLM to conform to VRM Class IV objectives.

KOP 1065 (Figure E.2-2/Appendix G). Moderate and high-sensitivity residential and recreational viewers at KOP 1065 would be traveling south on Lilly Grade Road (approximately 0.5 mile from where the Revised Proposed Route for Segment 9 would span the canyon of Salmon Falls Creek). Lilly Grade is the transition between the WSA to the south and the eligible WSR segment to the north. North of Lilly Grade is also an ACEC (see Section 3.17.2). At KOP 1065, visibility of the Revised Proposed Route for Segment 9 would be high due to the distance to the alignment. Visual contrast levels would be high due to the lack of human-made alterations visible in the foreground, middleground, and background. Impacts on viewers from KOP 1065 and in the surrounding area would be high due to contrast levels and distance of the Revised Proposed Route for Segment 9 from the viewer. High visual impacts would conform with BLM VRM Class IV objectives.

KOP 1067 (Figure E.2-2). High-sensitivity recreational viewers at KOP 1067 would be traveling across the Lower Salmon Creek Falls Canyon on Lilly Grade Road (approximately 400 feet from where the Revised Proposed Route would span the canyon ridge top in the foreground). At KOP 1067, visibility of the Revised Proposed Route for Segment 9 would be high due to the distance of where the alignment would span the canyon. Visual contrast levels would be high due to the few human-made alterations in the foreground and middleground. Impacts on viewers would be high.

KOP 1068 (Figure E.2-2/Appendix G). Low-sensitivity residential and recreational viewers at KOP 1068 would be traveling on Lilly Grade Road (0.84 mile from where the Revised Proposed Route for Segment 9 would span the canyon ridge top and cross the foreground). Lilly Grade is the transition between the WSA to the south and the eligible wild and scenic river segment to the north. North of Lilly Grade is also an ACEC (see Section 3.17.2). The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class B landscape in the foreground to middleground distance zone. At KOP 1068, visibility of the Revised Proposed Route for Segment 9 would be moderate to high due to the distance to the alignment. Visual contrast levels would be moderate to high due to the human-made alterations visible in the foreground, middleground, and background. Impacts on viewers from KOP 1068 and in the surrounding area would be moderate to high due to contrast levels and distance of the Project from the viewer.

KOP 1069 (Figure E.2-2). Viewers from KOP 1069 would be high-sensitivity residential viewers on Balanced Rock Road, approximately 0.3 mile from where the Revised Proposed Route for Segment 9 would cross the foreground, blocking views of the rugged terrain. From KOP 1069, the Revised Proposed Route for Segment 9 would be highly visible to viewers. Existing human-made alterations would not partially screen views of the Proposed Route for Segment 9 but visual contrast levels are anticipated to be moderate to high due to the human-made alterations within the foreground and middleground. Impacts on viewers would be moderate to high due to contrast and distance of the viewer. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class B landscape in the foreground to middleground distance zone.

KOP 1115 (Figure E.2-2). High-sensitivity residential viewers at KOP 1115 would have a low level of Project visibility (approximately 2.4 miles from the Revised Proposed Route for Segment 9). The viewer would have an expansive view toward the alignment, which would not parallel any existing alignments or linear features and may skyline the middleground view. Contrast levels are anticipated to be moderate. Potential visual impacts on viewers from this KOP and in the general vicinity are expected to be moderate due to the alternative creating a new linear feature within a landscape of low to moderate scenic quality and at a distance great enough to lower visibility.

KOP 1128 (Figure E.2-2). High-sensitivity recreational viewers at KOP 1128 would have low to moderate Project visibility (2.75 miles from the Revised Proposed Route for Segment 9). The viewer would have a partially screened, inferior view of the alignment, resulting in contrast levels anticipated to be moderate. Potential visual impacts on viewers from this KOP and in the general vicinity are expected to be moderate to high due to the landscape being of high scenic quality and the partial screening of the view.

KOP 1129 (Figure E.2-2). High-sensitivity recreational viewers at KOP 1129 would have low Project visibility (approximately 3.2 miles from the Revised Proposed Route for Segment 9). The viewer would have a partially to fully screened, inferior view of the alignment. Contrast levels anticipated to be low to moderate. Potential visual impacts on viewers from this KOP and in the general vicinity are expected to be moderate due to

the landscape being of high scenic quality, contrast levels, and the anticipated screening of the view.

KOP 1133 (Figure E.2-2). High-sensitivity recreational viewers at KOP 1133 would have a high level of Project visibility (0.25 mile from the Revised Proposed Route for Segment 9). The viewer would have an expansive view toward the alignment, which would not parallel any existing alignments or linear features and has the potential to skyline the view. Contrast levels are anticipated to be high. Potential visual impacts on recreational drivers from this KOP and in the general vicinity are expected to be high due to the alignment creating a new highly visible linear feature of high contrast in a landscape with Class B scenic quality.

KOP 1138 (Figure E.2-2). Low-sensitivity residential viewers at KOP 1138 would have a high level of Project visibility (approximately 4.5 miles from the Revised Proposed Route for Segment 9) due to the infrared LED obstruction lighting for structures between MPs 0.0 and 5.8 for the Saylor Creek Range. The viewer would have an expansive view toward the alternative alignment, which would not parallel any existing alignments or linear features and could skyline the view. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class C landscape in the middleground distance zone. Contrast levels are anticipated to be moderate. Due to the distance, potential visual impacts on residential viewers from this KOP and in the general vicinity are expected to be low.

KOP 1148 (Figure E.2-2). High-sensitivity residential viewers at KOP 1148 would have a low level of Project visibility (3.2 miles from the Revised Proposed Route for Segment 9). The viewer would have an expansive view toward the alignment, which would not parallel any existing alignments or linear features and could skyline the view. Contrast levels are anticipated to be moderate. Potential visual impacts on residences from this KOP and in the general vicinity are expected to be moderate due to the alignment creating a new distant visible linear feature in a landscape with minor disturbance and Class B scenic quality.

KOP 1154 (Figure E.2-2). High-sensitivity recreational viewers at KOP 1154 would have a low to moderate level of Project visibility (0.25 mile from the Revised Proposed Route for Segment 9). The viewer would have a partially to fully screened view toward the alignment, which would parallel an existing alignment, resulting in contrast levels that are anticipated to be low to moderate. Potential visual impacts on recreational viewers from this KOP and in the general vicinity are expected to be low to moderate due to existing disturbance, screening, and low to moderate scenic quality.

KOP 1155 (Figures E.2-2 and E.2-10b). High-sensitivity recreational viewers at KOP 1155 would have a high level of Project visibility (less than 0.5 mile from the Revised Proposed Route for Segment 9). The viewer would have an expansive view toward the alignment, which would not parallel any existing alignments or linear features and has the potential to skyline the view due to background terrain being too small of a scale to adequately absorb structures. The Project's design shares some similarities with existing structures in the area but would introduce new elements that are of different form and color. Due to the existing structures in the south, the distance of KOP 1155 to the Revised Proposed Route for Segment 9, and the cumulative effect of adding new

structures in an area with numerous vertical human-made elements, the contrast for this KOP is assessed as moderate. The Project's elements would draw the attention of the casual observer but would not dominate the setting. Potential visual impacts on recreational viewers and drivers from this KOP and in the general vicinity are expected to be moderate to high due to the alternative creating a new highly visible linear feature of high contrast in a landscape with moderate to high scenic quality.

KOP 1156 (Figures E.2-2 and E.2-11b). High-sensitivity recreational viewers at KOP 1156 would have a moderate level of Project visibility (approximately 0.4 mile from the Revised Proposed Route for Segment 9). The viewer would have a partially screened view toward the alignment, which would parallel an existing alignment. Contrast levels are anticipated to be low to moderate. Potential visual impacts on recreational viewers from this KOP and in the general vicinity are expected to be moderate due to existing disturbance, partial screening, and Class B scenic quality.

KOP 1158 (Figure E.2-2). High-sensitivity recreational viewers at KOP 1158 would have a moderate to high level of Project visibility (0.35 mile from the Revised Proposed Route for Segment 9). The viewer would have an open, panoramic view toward the alignment, which would parallel an existing alignment, resulting in contrast levels that are anticipated to be low to moderate. Potential visual impacts on recreational viewers from this KOP and in the general vicinity are expected to be moderate due to existing disturbance and highly visible human-made elements as well as moderate scenic quality.

KOP 1337 (Figures E.2-2 and E.2-14b). High-sensitivity recreational viewers visiting the overlook above Swan Falls Dam at KOP 1337 would have a moderate level of Project visibility from approximately 1.3 miles away, looking southwest toward the Revised Proposed Route for Segment 9, which represents a foreground view. The presence of the existing transmission lines and Sinker Butte in the view toward Segment 9 would result in co-dominant Project elements and partial screening, resulting in contrast levels that would be moderate. Visual impacts on recreational viewers would be moderate due to distance and contrast levels.

KOP 1352 (Figure E.2-2/Appendix G). Low-sensitivity agricultural workers and commuters at KOP 1352 would have a low to moderate level of Project visibility (approximately 1.4 miles away from the Revised Proposed Route on the SRBOP). The towers would be partially seen above the skyline, except where they cross in front of Sinker Butte. The presence of existing utility lines, irrigation equipment, stockpiles, and agricultural fields dominate the view, resulting in low contrast levels. Potential visual impacts are expected to be low within this landscape of low to moderate scenic quality.

KOP 1413 (Figure E.2-2). High-sensitivity recreational viewers at KOP 1413 would have a high level of Project visibility (approximately 0.27 mile from the Revised Proposed Route for Segment 9). The viewer would have a partially screened view toward the alternative alignments, which would parallel an existing transmission alignment but could skyline the view. Contrast levels are anticipated to be moderate. Potential visual impacts on residential and recreational viewers from this KOP and in the general vicinity are expected to be moderate due to the alternative adding industrial clutter to a previously disturbed landscape that exhibits moderate to high scenic quality.

KOP 1417 (Figure E.2-2). High-sensitivity residential viewers at KOP 1417 would have a moderate to high level of Project visibility (approximately 0.8 mile from the Revised Proposed Route for Segment 9). The viewer would have an expansive view toward the alignment, which would parallel a linear feature (monopole structures) and could skyline the view. Contrast levels are anticipated to be moderate to high. Potential visual impacts on residential viewers from this KOP and in the general vicinity are expected to be moderate to high due to the alignment creating a new linear feature in a previously disturbed landscape that exhibits moderate scenic quality.

KOP 1419 (Figure E.2-2). High-sensitivity recreational viewers at KOP 1419 would have a high level of Project visibility (approximately 0.3 mile from the Revised Proposed Route for Segment 9). The viewer would have an expansive, open view toward the alignment, which would not parallel any existing alignments or linear features and could skyline the view. Contrast levels are anticipated to be high. Potential visual impacts on recreational viewers from this KOP and in the general vicinity are expected to be high due to the alternative creating a new linear feature in a previously undisturbed landscape that exhibits Class B scenic quality.

KOP 1420 (Figure E.2-2). High-sensitivity residential viewers at KOP 1420 would have a moderate to high level of Project visibility (approximately 1.5 miles from the Revised Proposed Route for Segment 9). The viewer would have an expansive, open view toward the alternative alignment, which would not parallel any existing alignments or linear features but would be partially backdropped by terrain. Contrast levels are anticipated to be moderate to high. Potential visual impacts on recreational viewers from this KOP and in the general vicinity are expected to be moderate to high due to the alternative creating a new linear feature in a slightly disturbed landscape that currently exhibits moderate scenic quality.

KOP 1570 (Figures E.2-2 and E.2-15b). High-sensitivity recreational viewers at KOP 1570 at the top of the Bruneau Sand Dunes would have high Project visibility (approximately 1.9 miles from the Revised Proposed Route for Segment 9) due to the infrared LED obstruction lighting for structures between MPs 0.0 and 0.9 for the Saylor Creek Range. The viewer would have an open, horizontal, and high elevation view toward the alignment. Contrast levels are anticipated to be moderate to high due to the distance of the view and structures skylining the horizon, being backdropped by the terrain, and being lit. Potential visual impacts on viewers from this KOP and in the general vicinity are expected to be moderate to high due to the moderate to high contrast levels and the high visibility due to the infrared LED obstruction lighting.

KOP 1572 (Figures E.2-2 and E.2-16b). High-sensitivity recreational viewers at KOP 1572 traveling along one of the trails within the Bruneau Dunes State Park would have high Project visibility (approximately 0.5 mile from the Revised Propose Route for Segment 9) due to the infrared LED obstruction lighting for structures between MPs 0.0 and 0.9 for the Saylor Creek Range. The viewer would have an open and horizontal view toward the alignment. Contrast levels are anticipated to be high due to the distance of the view and the structures skylining the horizon. Potential visual impacts on viewers from this KOP and in the general vicinity are expected to be high due to the

high contrast levels, high visibility, and the close distance of the view as well as the lighting of the structures.

KOP 1586 (Figure E.2-2). Viewers from KOP 1586 are high-sensitivity recreational users adjacent to the Snake River Canyon (approximately 1.5 miles from where the Revised Proposed Route for Segment 9 would cross the trail in the foreground) due to the infrared LED obstruction lighting for structures between MPs 30.6 and 43.5 for the OCTC. At KOP 1586, high-sensitivity viewers would have a high level of Project visibility, and visual contrast levels would be high due to the few human-made alterations, distance of the revised proposed route alignment, and lighting of structures. It should be noted that this portion of Revised Proposed Route for Segment 9 would be the double-circuit 500/138-kV rebuild. The scale of these structures often increases visibility and contrast. The rolling topography in the vicinity as well as distant mountainous silhouettes may offer opportunities for backdropping, which could absorb the H-frame double-circuit structures and lower contrast levels but not likely from this close distance. Visual impacts on viewers would be high due to the high contrast levels and the high visibility due to the scale of the structures and infrared LED obstruction lighting.

KOP 1588 (Figure E.2-2). Viewers from KOP 1588 would be high-sensitivity recreational viewers in the SRBOP looking northwest (approximately 1.3 miles from the Revised Proposed Route for Segment 9). Due to middleground distances from this particular KOP, lack of screening, and existing human-made development, Revised Proposed Route Segment 9 would be moderately visible from this KOP and contrast levels would be moderate due to these same factors and the distance of the view. Visual impacts on viewers would be moderate due to scenic quality and contrast resulting from the co-dominant nature of the Revised Proposed Route for Segment 9 and the existing high-voltage transmission lines adjacent to the view. It should be noted that moderate impacts would conform with VRM Class II objectives.

KOP 1597 (Figure E.2-2). Viewers from KOP 1597 are high-sensitivity residential viewers on Warrick Road (0.5 mile from where the Revised Proposed Route for Segment 9 would cross the road in the foreground). At KOP 1597, high-sensitivity viewers would have a high level of Project visibility, and visual contrast levels would be high due to the few human-made alterations and distance of the alternative alignment. The rolling topography in the vicinity as well as distant mountainous silhouettes may offer opportunities for backdropping, which could absorb the lattice structures and lower contrast levels but not likely from this close distance. Visual impacts on viewers would be high.

KOP 1607 (Figure E.2-1). See FEIS Proposed 9 for a description of the visual effects of the alignment for KOP 1607.

FEIS Proposed 9

The Proponents originally designed the 162.2-mile-long FEIS Proposed Route in Segment 9 to follow existing utility corridors and avoid the SRBOP and other protected areas where feasible. Approximately 54 miles of the route is within or adjacent to a utility corridor. FEIS Proposed 9 is approximately 3.1 miles shorter than the Revised Proposed Route but it

crosses 13.6 miles of the SRBOP compared to 54.2 miles for the Revised Proposed Route. All Segment 9 routes (Revised Proposed Route, FEIS Proposed 9, and Route 9K) cross the Salmon Falls Creek at Lilly Grade adjacent to an existing single-phase 34.5-kV distribution line just north of the Salmon Falls Creek wilderness study area.

FEIS Proposed 9 would cross 0.3 miles of BLM-administered land with VRM Class II objectives (Bruneau Field Office and Burley Field Office) and just under 30 miles of BLM-administered land with VRM Class III objectives (Bruneau, Burley, Jarbidge, and Owyhee Field Offices). Approximately 11.1 miles of FEIS Proposed 9 would cross the SRBOP in two locations. This route would cross an eligible WSR (Salmon Falls Creek). Scenery is not one of the ORVs identified for this recreational portion of the river.

Approximately 8.8 miles of FEIS Proposed 9 would be in the eastern end of the SRBOP between Bruneau Dunes State Park and the Saylor Creek Air Force Range (a military withdrawn area). Approximately 11.1 miles of the SRBOP land crossed by the Proposed Route is managed by the BLM with VRM Class III objectives. This portion of the Proposed Route would be in the designated WWE corridor, except for a small distance near Murphy, Idaho. The route would also cross 28.3 miles of private land.

Table 3.2-6 summarizes the potential visual impact for each KOP on the 2013 FEIS Proposed Route for Segment 9.

Table 3.2-6. Visual Impact Assessment for Each KOP in FEIS Proposed 9

KOP	Viewers[1/]	Land Ownership	Viewer Rating[2/]	Scenic Quality[2/,3/]	Distance (miles)	Visibility[2/]	Contrast[2/]	Impact[2/]
372	RES	Private	H	C	0.60	M-H	M-H	M-H
386	REC	BLM VRM III	H	B	0.28	M-H	H	M-H
387	REC	BLM VRM III	H	B	1.44	M-H	M-H	M
401	REC	Private	H	M-H	3.50	L	M	L-M
407	RES	BLM VRM IV	H	B	0.90	H	H	H
419	RES	Private	H	L-M	1.6	L-M	M	L-M
452	RES	Private	H	M	1.00	M-H	M-H	H
454	RES	Private	H	M	<0.10	H	L-M	M
572	REC	BLM VRM III	H	B	0.60	H	M-H	M-H
581	RES/REC	Private	H	H	<0.10	H	H	H
582	RES	Private	H	H	1.20	M-H	M	M
592	REC	BLM VRM IV	M-H	C	2.25	L	L	L
599	RES	Private	H	L-M	0.25	M	M	M
602	RES	Private	H	L-M	0.50	M-H	M	L-M
793	RES	Private	H	L	2.4	L-M	L-M	L-M
816	REC	BLM VRM IV	H	B	1.40	M-H	M	M
1065	REC/RES	BLM VRM IV	M-H	B	0.50	H	H	H
1067	REC	BLM VRM III	H	A	<0.10	H	H	H
1068	REC/RES	BLM VRM IV	H	B	0.84	M-H	M-H	M-H
1069	RES	Private	H	B	0.30	H	M-H	M-H
1114	REC	BLM VRM IV	H	A	0.25	H	H	H
1137	RES	Private	H	C	2.00	M	M	M
1152	RES	Private	H	M	1.0	M	M	M
1607	REC	BLM VRM IV	H	B	1.20	M	M-H	M-H

1/ REC – A recreational viewer. RES – A single resident.
2/ H – High, M – Medium, L – Low
3/ On or viewing BLM-managed land: A – High, B – Medium, C – Low; on non-BLM-managed land, H, M, and L ratings.
* Asterisk indicates KOP is within the SRBOP.

KOP 372 (Figures E.2-2 and E.2-3b). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 372.

KOP 386 (Figure E.2-2). See Route 8G for a description of the visual effects of the alignment for KOP 386. The FEIS Proposed 9 route would be 250 feet south of the 8G alignment, therefore 250 further from the KOP, which would lessen the visual impact to some degree.

KOP 387 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 387.

KOP 401 (Figure E.2-2). See Route 8H for a description of the existing conditions for KOP 401.

KOP 407 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 407.

KOP 419 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 419.

KOP 452 (Figure E.2-10). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 452.

KOP 454 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 454.

KOP 572 (Figure E.2-2). Viewers from KOP 572 are high-sensitivity recreational viewers traveling along the BLM Rabbit Creek Trail (less than 0.5 mile from where the Proposed Route would cross the trail and hills in the foreground and middleground). At KOP 572, high-sensitivity viewers would have a high level of Project visibility, and visual contrast levels would be moderate to high due to the few human-made alterations within the view. The rolling topography in the vicinity may offer opportunities for backdropping, which could absorb the lattice structures and lower contrast levels. Visual impacts on viewers would be moderate to high.

KOP 581 (Figures E.2-2/Appendix G, Figure B-10). Scenic views of the various buttes throughout the Snake River Plain as well as distant mountain ranges are important to sensitive residential viewers or recreational users visiting portions of the Oregon NHT adjacent to KOP 581. KOP 581 is located on a segment of the Oregon NHT approximately 300 feet north of Segment 9 of the Proposed Route as it follows the Snake River in a southeast to northwest direction. The views of the flat to undulating terrain, background mountain silhouettes with mottled to clumped vegetation, and meandering waterbody exhibit diversity in form, line, color, and texture with few human-made features. The setting at this KOP is relatively undisturbed in all directions, except for a roadway and a few adjacent wooden structures. From this KOP, the proposed Project would be partially screened by the ridge but would still skyline the mountainous views. The close distance of the Project from KOP 581 results in the features dominating the landscape with such prominence that the visual contrast would be strong and visual impacts are considered high.

KOP 582 (Figures E.2-2/Appendix G, Figure B-11). The landscape conditions looking towards the route from KOP 582, approximately 1.2 miles northeast of Segment 9 of the Proposed Route, have high scenic quality. The view shows the flat topography in the foreground and middleground with mountains and buttes in the distance. The view from KOP 582 represents views from residences and drivers on the Castle Creek/Oreana Loop Road, approximately 1.5 miles north of the alignment, where drivers and residences would have a partially obstructed view of the Project. The middleground distance of the Project from KOP 582 would result in moderate visual contrast and visual impacts would be considered moderate.

KOP 592 (Figure E.2-2). Viewers from KOP 592 would be high- and moderate-sensitivity recreational viewers traveling along US 78 (Murphy Grandview Road), 2.25 miles from the Proposed Route. At KOP 592, viewers traveling on the highway or at the historic marker would have a low level of Project visibility due to middleground distances and existing vegetation screening. Also these views would be brief due to travel speeds in excess of 55 mph. Visual contrast levels would be low due to screening and the numerous human-made alterations in the vicinity of this KOP, which include transmission lines, houses, and other structures as well as screening from vegetation. Visual impacts on viewers would be low.

KOP 599 (Figure E.2-2). Viewers from KOP 599 would be high-sensitivity residential viewers living and traveling along Mud Flat Road, 0.25 mile from where the Proposed Route would cross the road in the middleground. At KOP 599, high-sensitivity viewers would have a moderate level of Project visibility due to partial screening of existing human-made alterations and distance from this KOP. Visual contrast levels would be moderate due to the human-made alterations in the middleground distance. Impacts on viewers would be moderate.

KOP 602 (Figure E.2-10). Viewers from KOP 602 would be high-sensitivity residential and moderate-sensitivity motorists along Mud Flat Road, approximately 0.5 mile from where the Proposed Route would cross the road and valley in the middleground. From KOP 602, the Proposed Route would be moderately to highly visible to the viewers. Existing human-made alterations would partially screen views of the Proposed Route from this KOP. Visual contrast levels would be moderate due to the human-made alterations within the foreground and middleground. Impacts on viewers would be low to moderate.

KOP 793 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 793.

KOP 816 (Figures E.2-2). KOP 816 exhibits diversity in form, line, color, and texture that would result in moderate levels of contrast with the proposed transmission facilities along Segment 9 approximately 1.4 miles from the viewing location. The views from KOP 816 are interrupted by a wind farm in the middleground to background viewing distance zone. Views of the Snake River are not apparent from this particular KOP and visual impacts are anticipated to be moderate from this distance. From an elevated viewing location, it is apparent that screening and other mitigation efforts would not mitigate impacts to scenic resources in the surrounding area. This area is managed by the BLM to conform with VRM Class III objectives.

KOP 1065 (Figure E.2-2/Appendix G, Figure TF-1d). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1065

KOP 1067 (Figure E.2-2/Appendix G, Figure B-1). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1067.

KOP 1068 (Figure E.2-2/Appendix G, Figure TF-1b). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1068.

KOP 1069 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 1069.

KOP 1114 (Figure E.2-2). High-sensitivity recreational viewers at KOP 1114 would have a high level of Project visibility (0.25 mile from the Proposed Route). The viewer would have an expansive view toward the alignment, which would not parallel any existing alignments or linear features and could skyline in the case of the Proposed Route. Contrast levels that are anticipated to be high. Potential visual impacts on recreational viewers from this KOP and in the general vicinity are expected to be high due to it creating a new linear feature in an undisturbed landscape with Class A scenic quality.

KOP 1137 (Figure E.2-2). High-sensitivity residential viewers at KOP 1137 would have a moderate to high level of Project visibility (approximately 2.0 miles from the FEIS Proposed Segment 9) due to the infrared LED obstruction lighting for structures between MPs 0.0 and 5.8 for the Saylor Creek Range. The viewer would have an expansive view toward the alternative alignments, which would not parallel any existing alignments or linear features and could skyline the view. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class C landscape in the foreground to middleground distance zone. Contrast levels are anticipated to be moderate. Potential visual impacts on residential viewers from this KOP and in the general vicinity are expected to be moderate due to the alternative creating a new linear feature in a previously disturbed landscape that exhibits Class C scenic quality as well as the lighting of structures, which makes the structures more visible.

KOP 1152 (Figure E.2-2). High-sensitivity residential and recreational viewers at KOP 1152 would have a moderate level of Project visibility (approximately 1.0 mile from Segment 9). The viewer would have a partially screened view toward the alignment, which would not parallel any existing alignments or linear features but could be backdropped by the surrounding terrain. Contrast levels are anticipated to be moderate. Potential visual impacts on residences from this KOP and in the general vicinity are expected to be moderate due to the creation of a new partially screened linear feature in a landscape with existing disturbance and moderate scenic quality.

KOP 1607 (Figure E.2-2). Viewers from KOP 1607 are high-sensitivity recreational viewers on the Rabbit Creek Trail. At KOP 1607, high-sensitivity viewers would have a moderate level of Project visibility approximately 1.2 miles from the alignment, and visual contrast levels would be moderate to high due to the few human-made alterations and distance of the alignment which will likely be backdropped within the view, which could absorb the lattice structures and lower contrast levels but not likely from this distance. Visual impacts on viewers would be moderate to high.

Route 9K

Route 9K is being considered by the BLM as a modified version of FEIS Route 9E (the FEIS Preferred Route) to avoid crossing the northwestern portion of the SRBOP and to minimize direct and indirect impacts to priority sage-grouse habitat. The alternative is approximately 174.6 miles long, compared to the 165.3-mile-long Revised Proposed Route for Segment 9 (see Figure A-1). Route 9K would avoid crossing VRM Class II managed land within the SRBOP. The route would cross a total of approximately 0.5 mile of VRM Class II managed land. This route, like FEIS Proposed 9 and 8G, would cross a small portion of VRM II managed land managed by the Bruneau MFP for approximately 0.4 mile and VRM Class II in the Burley Field Office near Salmon Falls Creek for 0.14 mile.

Table 3.2-7 summarizes the potential visual impact for each KOP on Route 9K. Route 9K would cross 8.7 miles of BLM-administered land managed to conform to VRM Class III lands in the SRBOP.

Table 3.2-7. Visual Impact Assessment for Each KOP on Route 9K

KOP	Viewers[1/]	Land Ownership	Viewer Rating[2/]	Scenic Quality[2/,3/]	Distance (miles)	Visibility[2/]	Contrast[2/]	Impact[2/]
372	RES	Private	H	C	0.60	M-H	M-H	M-H
386	REC	BLM VRM III	H	B	0.28	M-H	H	M-H
387*	REC	BLM VRM III	H	B	1.00	H	M-H	M
401*	REC	Private	H	M-H	3.50	L	M	L-M
407	RES	BLM VRM IV	H	B	0.90	H	H	H
419	RES	Private	H	L-M	1.6	L-M	M	L-M
452	RES	Private	H	M	1.00	M-H	M-H	H
454	RES	Private	H	M	<0.10	H	L-M	M
581	RES/REC	Private	H	H	0.15	H	H	H
582	RES	Private	H	H	1.50	M-H	M	M
586	RES	Private	H	H	0.54	M-H	M	M
592	REC	BLM VRM IV	M-H	C	2.25	L	L	L
793	RES	Private	H	L	2.4	L-M	L-M	L-M
816	REC	BLM VRM IV	H	B	1.40	M-H	M	M
1065	REC/RES	BLM VRM IV	M-H	B	0.50	H	H	H
1067	REC	BLM VRM III	H	A	<0.10	H	H	H
1068	REC/RES	BLM VRM IV	H	B	0.84	M-H	M-H	M-H
1069	RES	Private	H	B	0.30	H	M-H	M-H
1114	REC	BLM VRM IV	H	A	0.42	H	H	H
1137	RES	Private	H	C	1.09	M-H	M-H	M-H
1138	RES	Private	H	C	0.56	H	H	H
1140	REC	BLM VRM III	M	C	0.70	H	M	M-H
1141	REC	BLM VRM III	M	H	1.20	H	H	M-H
1148	RES	BLM VRM IV	H	B	0.12	H	M-H	M-H
1149*	REC/RES	State of Idaho	H	M-H	0.10	H	H	H
1152	RES	Private	H	M	1.0	M	M	M
1573	REC	State of Idaho	L	C	0.20	H	H	H
1607	REC	BLM VRM IV	H	B	0.15	H	H	H

1/ REC – A recreational viewer. RES – A single resident. HIST – A site identified as having historic value.
2/ H – High, M – Medium, L – Low.
3/ On or viewing BLM-managed land: A – High, B – Medium, C – Low; on non-BLM-managed land, H, M, and L ratings.
* Asterisk indicates KOP is within the SRBOP.

KOP 372 (Figures E.2-2 and E.2-3b). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 372.

KOP 386 (Figure E.2-2). See Route 8G for a description of the visual effects of the alignment for KOP 386. Route 9K would be 250 feet south of the 8G alignment and therefore 250 feet farther from the KOP, which would lessen the visual impact to some degree.

KOP 387 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 387.

KOP 401 (Figure E.2-2). See Route 8H for a description of the visual effects of the alignment for KOP 401.

KOP 407 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 407.

KOP 419 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 419.

KOP 452 (Figure E.2-10). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 452.

KOP 454 (Figure E.2-2). See Revised Proposed Route for Segment 9 for a description of the visual effects of the alignment for KOP 454.

KOP 581 (Figure E.2-2/Appendix G). Scenic views of the various buttes throughout the Snake River Plain as well as distant mountain ranges are important to sensitive residential viewers or recreational users visiting portions of the Oregon NHT adjacent to KOP 581. KOP 581 is located on a segment of the Oregon NHT 0.15 of a mile from Route 9K as it follows the Snake River in a southeast to northwest direction. The views of the flat to undulating terrain, background mountain silhouettes with mottled to clumped vegetation, and meandering waterbody exhibit diversity in form, line, color, and texture with few human-made features. The setting at this KOP is relatively undisturbed in all directions, except for a roadway and a few adjacent wooden structures. From this KOP, Route 9K would be partially screened by the ridge but would still skyline the mountainous views. The close distance of the Project from KOP 581 results in the features dominating the landscape with such prominence that the visual contrast would be high and visual impacts are considered high.

KOP 582 (Figure E.2-2/Appendix G). The landscape conditions looking towards the route from KOP 582, approximately 1.5 miles northeast of Route 9K, have high scenic quality. The view shows the flat topography in the foreground and middleground with mountains and buttes in the distance. The view from KOP 582 represents views from residences and drivers on the Castle Creek/Oreana Loop Road, where drivers and residences would have a partially obstructed view of Route 9K. The middleground distance of the Project from KOP 582 would result in moderate visual contrast and visual impacts would be considered moderate.

KOP 586 (Figures E.2-2 and E.2-5b). The landscape conditions looking toward the alternative route from KOP 586, approximately 0.54 mile northeast of Route 9K, have

high scenic quality. The view shows the flat topography in the foreground, hilly terrain in the middleground, and mountainous silhouettes in the distance. The view from KOP 586 represents views from residences and drivers on the Oreana Short Cut Road, where drivers and residences would have a partially obstructed view of Route 9K (moderate to high visibility). The middleground distance of the Project from KOP 586 would result in moderate visual contrast and visual impacts would be considered moderate.

KOP 592 (Figure E.2-2). Viewers from KOP 592 would be high- and moderate sensitivity recreational viewers traveling along US 78 (Murphy Grandview Road), 2.25 miles from Route 9K. At KOP 592, viewers traveling on the highway or at the historic marker would have a low level of Project visibility due to middleground distances and existing vegetation screening. Also these views would be brief due to travel speeds in excess of 55 mph. Visual contrast levels would be low due to screening and the numerous human-made alterations in the vicinity of this KOP, which include transmission lines, houses, and other structures as well as screening from vegetation. Visual impacts on viewers would be low.

KOP 1114 (Figure E.2-2). High-sensitivity recreational viewers at KOP 1114 would have a high level of Project visibility (0.42 mile from Route 9K). The viewer would have an expansive view toward the alignment, which would not parallel any existing alignments or linear features and could skyline in the case of Route 9K. Contrast levels that are anticipated to be high. Potential visual impacts on recreational viewers from this KOP and in the general vicinity are expected to be high due to it creating a new linear feature in an undisturbed landscape with Class A scenic quality.

KOP 1137 (Figure E.2-2). High-sensitivity residential viewers at KOP 1137 would have a moderate to high level of Project visibility (approximately 1.09 miles from Route 9K) due to the infrared LED obstruction lighting for structures between MPs 0.0 and 5.8 for the Saylor Creek Range. The viewer would have an expansive view toward the alternative alignments, which would not parallel any existing alignments or linear features and could skyline the view. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class C landscape in the foreground to middleground distance zone. Contrast levels are anticipated to be moderate to high. Potential visual impacts on residential viewers from this KOP and in the general vicinity are expected to be moderate to high due to the alternative creating a new linear feature in a previously disturbed landscape that exhibits Class C scenic quality as well as the lighting of structures which make the structures more visible.

KOP 1138 (Figure E.2-2). Low-sensitivity residential viewers at KOP 1138 would have a high level of Project visibility (approximately 0.56 mile from Route 9K) due to the infrared LED obstruction lighting for structures between MPs 0.0 and 5.8 for the Saylor Creek Range. The viewer would have an expansive view toward the alternative alignment, which would not parallel any existing alignments or linear features and could skyline the view. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class C landscape in the foreground to middleground distance zone. Contrast levels are anticipated to be high. Potential visual impacts on residential viewers from this KOP and in the general vicinity are expected to be high. This is

because the alternative would create a new linear feature with moderate to high contrast in a previously disturbed landscape that exhibits Class C scenic quality and because the structural lighting would make the structures more visible.

KOP 1140 (Figure E.2-2). Moderately sensitive traveling recreational viewers at KOP 1140 would have a high level of Project visibility (approximately 0.7 mile from Route 9K). The viewer would have an expansive view toward the alternative alignment, which would not parallel any existing alignments or linear features and skylines the view. Contrast levels are anticipated to be moderate. Potential visual impacts on traveling recreational viewers from this KOP and in the general vicinity are expected to be moderate to high due to the alternative creating a new linear feature in a previously disturbed landscape at a short viewing distance.

KOP 1141 (Figure E.2-2). Moderate-sensitivity recreational viewers at KOP 1141 would have a high level of Project visibility (1.20 mile from Route 9K). The viewer would have an expansive view toward the alternative alignment, which would not parallel any existing alignments or linear features and could skyline the view. Contrast levels are anticipated to be high. Potential visual impacts on recreational viewers from this KOP and in the general vicinity are expected to be moderate to high due to the alternative creating a new linear feature with high contrast in a previously disturbed landscape which exhibits Class B scenic quality.

KOP 1148 (Figure E.2-2). High-sensitivity residential viewers at KOP 1148 would have a high level of Project visibility (0.11 mile from Route 9K). The viewer would have an expansive view toward the alignment, which would not parallel any existing alignments or linear features and could skyline the view. Contrast levels are anticipated to be moderate to high. Potential visual impacts on residences from this KOP and in the general vicinity are expected to be moderate to high due to the alternative creating a new highly visible linear feature in a landscape with minor disturbance and Class B scenic quality.

KOP 1149 (Figures E.2-2 and E.2-9b). Scenic views of the various buttes and distant mountain ranges are important to sensitive residential viewers or recreational users visiting and traveling along Silver City Road adjacent to KOP 1149. KOP 1149 is located approximately 0.10 mile from Route 9K. The views of the flat to undulating terrain, background mountain silhouettes with mottled to clumped vegetation exhibit diversity in form, line, color, and texture with few human-made features. The setting at this KOP is relatively undisturbed in all directions, except for the roadway itself. From this KOP, Route 9K would be completely visible and may skyline the mountainous views. Where views are farther than 0.10 mile, the mountains have the opportunity to visually absorb the lattice structures, though at this close distance the structures appear more imposing. Views would be brief with speeds on the Silver City Road being in excess of 45 mph. The close distance of the Project from KOP 1149 results in the features dominating the landscape with such prominence that the visual contrast would be high and visual impacts are considered high.

KOP 1152 (Figure E.2-2). High-sensitivity residential and recreational viewers at KOP 1152 would have a moderate level of Project visibility (approximately 1.0 mile from Route 9K). The viewer would have a partially screened view toward the alignment,

which would not parallel any existing alignments or linear features but could be backdropped by the surrounding terrain. Contrast levels are anticipated to be moderate. Potential visual impacts on residences from this KOP and in the general vicinity are expected to be moderate due to the creation of a new partially screened linear feature in a landscape with existing disturbance and moderate scenic quality.

KOP 1573 (Figure E.2-2). High-sensitivity recreational viewers at KOP 1573 would have a high level of Project visibility (0.20 mile from Route 9K) due to the infrared LED obstruction lighting for structures between MPs 0.0 and 5.8 for the Saylor Creek Range. The viewer would have a partially screened view toward the alignment, which would not parallel any existing alignments or linear features but would be partially screened by the surrounding terrain, resulting in contrast levels that are anticipated to be high. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class C landscape in the foreground to middleground distance zone. Potential visual impacts on recreational viewers from this KOP and in the general vicinity are expected to be high. This is because the alternative would create a new partially screened linear feature in a landscape with minor disturbance and Class C scenic quality and because the structural lighting would make the structures more visible.

KOP 1607 (Figure E.2-2). Viewers from KOP 1607 are high-sensitivity recreational viewers on the Rabbit Creek Trail. At KOP 1607, high-sensitivity viewers would have a high level of Project visibility 0.15 mile from the alternative alignment, and visual contrast levels would be high due to the few human-made alterations and distance of the alignment. The alignment would likely be backdropped within the view, which could absorb the lattice structures and lower contrast levels but not likely from this close distance. Visual impacts on viewers would be high.

Toana Road Variations 1 and 1-A and the Comparison Portion of the Revised Proposed Route

Two variations to a portion of the Revised Proposed Route in Segment 9 were also analyzed. These are both short variations (less than 9 miles long) in routing just west of Salmon Falls Creek, in the Jarbidge RMP management area. Toana Road Variation 1 to the Segment 9 Revised Proposed Route was recommended by the BLM Jarbidge Field Office archaeologist to avoid paralleling the Toana Freight Wagon Road, an NRHP site. The Segment 9 Revised Proposed Route parallels within 0.25 mile of the Toana Road between MP 38.2 and 40.6, and parallels within 1 mile of the road through Blue Gulch between MP 40.6 and 43.5. Variation 1 is approximately 8.5 miles in length. Approximately 0.3 mile of the route crosses state land, with the remainder on land managed by the BLM. The Toana Road Variation 1-A to the Segment 9 Revised Proposed Route was recommended by the BLM to minimize visual impacts to the Toana Freight Wagon Road, and was also intended to utilize existing roads in order to minimize new road construction in the area. Variation 1-A is approximately 8.9 miles long. Approximately 1 mile of the route crosses state land, with the remainder on land managed by the BLM.

<u>Toana Road Variation 1</u>

Table 3.2-8 summarizes the potential visual impact for each KOP in the Segment 9 Toana Road Variation 1.

Table 3.2-8. Visual Impact Assessment for Each KOP in the Segment 9, Toana Road Variation 1

KOP	Viewers[1/]	Land Ownership	Viewer Rating[2/]	Scenic Quality[2/,3/]	Distance (miles)	Visibility[2/]	Contrast[2/]	Impact[2/]
C140	REC	BLM VRM III	H	C	2.10	L	M	M
C141	REC	BLM VRM III	H	C	0.30	H	M-H	M-H
419	RES	Private	H	L	3.80	L	L	L
793	RES	Private	H	L	4.25	L	L	L
1069	RES	Private	H	B	1.00	M-H	M-H	M-H

1/ REC – A recreational viewer. RES – A single resident. HIST – A site identified as having historic value.
2/ H – High, M – Medium, L – Low.
3/ On or viewing BLM-managed land: A – High, B – Medium, C – Low; on non-BLM-managed land, H, M, and L ratings.

KOP C140 (Figures E.2-2 and E.3-3d). Viewers from KOP C140 would be high-sensitivity recreational viewers on the Toana Road adjacent to Salmon Falls Creek looking south, approximately 2.10 miles from where the Toana Road Variation 1 would cross the middleground, skylining the undulating terrain. From KOP C140, the Toana Road Variation 1 would have low visibility due to the distance. There are no visible human-made alterations, resulting in visual contrast levels, anticipated to be moderate. Impacts on viewers would be moderate due to contrast and the distance of the viewer. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class C landscape in the foreground to middleground distance zone as well as seldom seen distance zone.

KOP C141 (Figures E.2-2 and E.3-4b). Viewers from KOP C141 would be high-sensitivity recreational viewers on Toana Road adjacent to Salmon Falls Creek looking north, approximately 0.30 mile from where the Toana Road Variation 1 would cross the foreground, skylining the undulating terrain. From KOP 015, the Toana Road Variation 1 would have high visibility due to the close distance. There are no visible human-made alterations, resulting in visual contrast levels anticipated to be moderate to high. Impacts on viewers would be moderate to high due to contrast and the close distance of the viewer. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class C landscape in the foreground to middleground distance zone as well as seldom seen distance zone.

KOP 419 (Figure E.2-2). Views from KOP 419 represent the views of a residence looking northwest toward the Toana Road Variation 1 alignment directly east of the Salmon Falls Creek Canyon, which is not visible from this KOP. Viewers at this location would be approximately 3.80 miles from the Toana Road Variation 1, representing a middleground to background view of Variation 1. High-sensitivity residential viewers at KOP 419 would have a low level of Project visibility. The viewers would have a panoramic view toward the Toana Road Variation 1 with opportunities for screening and skylining. Contrast levels would be low. Impacts on residential viewers from this KOP and in the general vicinity are expected to be low due to the distance of the view and the low contrast levels.

KOP 793 (Figure E.2-2). High-sensitivity residential viewers at KOP 793 would have a low level of Project visibility (approximately 4.25 miles from Toana Road Variation 1). Viewers at this location would have a background view of the alternative. The viewer would have an expansive and panoramic view toward the Toana Road variation 1 with

few opportunities for screening. Contrast levels are anticipated to be low from this distance. Impacts on residential viewers from this KOP and in the general vicinity would be low for the Toana Road Variation 1 due to the distance of the view and low contrast level as well as presence of highly visible human-made alterations, which lower scenic quality.

KOP 1069 (Figure E.2-2). Viewers from KOP 1069 would be high-sensitivity residential viewers on Balanced Rock Road, approximately 1.00 mile from where the Toana Road Variation 1 would cross the middleground, blocking views of the rugged terrain. From KOP 1069, Variation 1 would be moderate to highly visible to the viewers. Existing human-made alterations would not partially screen views of Variation 1 but visual contrast levels are anticipated to be moderate to high due to the human-made alterations within the foreground and middleground. Impacts on viewers would be moderate to high due to contrast and distance of the viewer. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class B landscape in the foreground to middleground distance zone.

Toana Road Variation 1-A

Table 3.2-9 summarizes the potential visual impact for each KOP in Toana Road Variation 1-A.

Table 3.2-9. Visual Impact Assessment for Each KOP in the Segment 9 Toana Road Variation 1-A

KOP	Viewers[1/]	Land Ownership	Viewer Rating[2/]	Scenic Quality[2/,3/]	Distance (miles)	Visibility[2/]	Contrast[2/]	Impact[2/]
C140	REC	BLM VRM III	H	C	2.10	L	M	M
C141	REC	BLM VRM III	H	C	0.30	H	M-H	M-H
419	RES	Private	H	L	3.42	L	L	L
793	RES	Private	H	L	3.65	L	L	L
1069	RES	Private	H	B	0.60	M-H	M-H	M-H

1/ REC – A recreational viewer. RES – A single resident. HIST – A site identified as having historic value.
2/ H – High, M – Medium, L – Low.
3/ On or viewing BLM-managed land: A – High, B – Medium, C – Low; on non-BLM-managed land, H, M, and L ratings.

KOP C140 (Figures E.2-2 and E.3-3e). Viewers from KOP C140 would be high-sensitivity recreational viewers on the Toana Road adjacent to Salmon Falls Creek looking south, approximately 2.10 miles from where the Toana Road Variation 1-A would cross the middleground to background, skylining the undulating terrain. From KOP C140, the Toana Road Variation 1-A would have low visibility due to the distance. There are no visible human-made alterations, resulting in visual contrast levels, anticipated to be moderate. Impacts on viewers would be moderate due to contrast and the distance of the viewer. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class C landscape in the foreground to middleground distance zone as well as seldom seen distance zone.

KOP C141 (Figures E.2-2 and E.3-4d). Viewers from KOP C141 would be high-sensitivity recreational viewers on Toana Road adjacent to Salmon Falls Creek looking north, approximately 0.3 mile from where the Toana Road Variation 1-A would cross the foreground, skylining the undulating terrain. From KOP C141, the Toana Road Variation 1-A would have high visibility due to the close distance. There are no visible

human-made alterations, resulting in visual contrast levels anticipated to be moderate to high. Impacts on viewers would be moderate to high due to contrast and the close distance of the viewer. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class C landscape in the foreground to middleground distance zone as well as seldom seen distance zone.

KOP 419 (Figure E.2-2). Views from KOP 419 represent the views of a residence looking northwest toward the Toana Road Variation 1-A alignment directly west of the Salmon Falls Creek Canyon, which is not visible from this KOP. Viewers at this location would be approximately 3.42 miles from Variation 1-A, representing a middleground to background view of the variation alignment. High-sensitivity residential viewers at KOP 419 would have a high level of Project visibility. The viewers would have a panoramic view toward Toana Road Variation 1-A with few opportunities for screening. Contrast levels would be low due to the distance of the view. Impacts on residential viewers from this KOP and in the general vicinity are expected to be low due to the distance of the view and the low to moderate scenic quality.

KOP 793 (Figure E.2-2). High-sensitivity residential viewers at KOP 793 would have a low level of Project visibility (approximately 3.65 miles from Toana Road Variation 1-A). Viewers at this location would have a middleground to background view of the alignment. The viewer would have an expansive and panoramic view toward Toana Road Variation 1-A resulting in contrast levels that are anticipated to be low. Impacts on residential viewers from this KOP and in the general vicinity would be low for Toana Road Variation 1-A due to the distance of the view and low contrast level as well as presence of highly visible human-made alterations, which lower scenic quality.

KOP 1069 (Figure E.2-2). Viewers from KOP 1069 would be high-sensitivity residential viewers on Balanced Rock Road, approximately 0.6 mile from where Toana Road Variation 1-A would cross the middleground, blocking views of the rugged terrain. From KOP 1069, Variation 1-A would be moderate to highly visible to the viewers. Existing human-made alterations would not partially screen views of Variation 1-A but visual contrast levels are anticipated to be moderate to high due to the human-made alterations within the foreground and middleground. Impacts on viewers would be moderate to high due to contrast and distance of the viewer. The Jarbidge VRI indicated that this KOP would have low sensitivity in this scenic quality Class B landscape in the foreground to middleground distance zone.

Segment 9 and Toana Road Variations – Conclusion

All Segment 9 routes would not conform to the visual resource management in the Twin Falls MFP, where the alignments cross VRM Class II land in the Salmon Falls ACEC. FEIS Proposed 9 and Route 9K would also cross VRM Class II land managed by the Bruneau MFP and would not conform to management of that VRM classification. The Revised Proposed Route would cross a small parcel of VRM Class II land managed by the 1987 Jarbidge RMP and multiple parcels of VRM Class II land within the SRBOP and would not conform to visual management objectives for the existing VRM classification.

Both Toana Road Variations and the comparison portion of the Revised Proposed Route/FEIS Proposed 9/Route 9K cross similar landscapes; however, the Variations both cross a parcel of state land while the comparison portion of the Revised Proposed Route would cross only BLM-managed land. The BLM-managed lands crossed by all three routes are classified as VRM Class IV. Visual impacts would be moderate due to the barren landscapes with evenly distributed viewers. The Toana Road Variations would be 2 to 3 miles from the Toana Road for most of their length. However, the comparison portion of the Segment 9 Revised Proposed Route/FEIS Proposed 9/9K alignment would be approximately 0.25 mile from the Toana Road for more than 2 miles and within a mile of the road for another 3 miles. Therefore, the transmission lines and towers would be more visible to recreationists using the Toana Road if the Revised Proposed Route, FEIS Proposed 9, or 9K is selected, compared to either of the Toana Road Variations. Also, both Variations cross the Toana Road at a 90 degree angle while the Revised Proposed Route, FEIS Proposed 9, and 9K alignment crosses the road at an angle that would increase the time that the transmission would be viewed in the foreground. Simulations for the Revised Proposed Route/FEIS Proposed 9/9K and the Toana Road Variations are included in Appendix E.

3.2.2.4 Direct and Indirect Effects of the Alternatives

The following section provides a review of the seven BLM Alternatives and comparisons of effects related to visual resources. Table 3.2-10 lists the quantitative impacts that would occur to visual resources under these Action Alternatives. The alternatives are visually displayed in Figures A-2 through A-8 in Appendix A.

Table 3.2-10. Comparison of Visual Resources Effects from the Seven Action Alternatives

Alternative	Miles Crossing VRM Class I	Miles Crossing VRM Class II	Miles Crossing VRM Class III	Miles Crossing VRM Class IV	KOPs with M-H or H Impact Rating[1/]
Alternative 1	3.2	22.4	89.2	106.6	22
Alternative 2	3.2	6.8	69.1	128.7	12
Alternative 3	3.2	7.0	74.5	149.8	18
Alternative 4	0.0	0.31	64.0	179.3	22
Alternative 5	0.0	0.8[2/]	69.4	200.4	21
Alternative 6	0.0	15.9	83.0	138.3	29
Alternative 7	0.0	16.1	86.5	158.4	36

M – Moderate; H – High
1/ Duplicate KOPs were removed where they would both be looking in the same direction.
2/ Includes parallel lines crossing the same parcel of VRM class II (see alternative description below for clarification).

<u>Alternative 1 – Proposed Action (the Revised Proposed Routes for Segments 8 and 9)</u>

Alternative 1 would follow the Revised Proposed Routes to link the Hemingway Substation with the Midpoint Substation (Segment 8) and the Cedar Hill Substation with the Hemingway Substation (Segment 9). Alternative 1 would cross 221 miles of BLM-managed land (78.4 miles for Segment 8 and 142.6 for Segment 9), which includes 3.2 miles of VRM Class I, 22.4 of VRM Class II, and 89.2 miles of VRM Class III. Alternative 1 would also cross 50.5 miles of private land (35.8 miles for Segment 8 and

14.7 miles for Segment 9) and 19.2 miles of state land (11.5 miles for Segment 8 and 7.7 for Segment 9).

Approximately 86.9 miles of Alternative 1 would cross the SRBOP along both routes (25.1 miles for Segment 8 and 61.8 miles for Segment 9). The Revised Proposed Route for Segment 9 would cross an eligible WSR (Salmon Falls Creek). Scenery is not one of the ORVs identified for the recreational portion of the river crossed by Segment 9.

Approximately 15.3 miles of Alternative 1 would cross SRBOP land managed by the BLM with VRM Class II objectives, while approximately 40 miles would cross the SRBOP on BLM land managed for VRM Class III objectives. The routing for Segment 9 under this alternative is not within a WWE corridor.

The 56 KOP locations described above for the Revised Proposed Routes in Segments 8 (19 KOPs) and 9 (37 KOPs), and additional analyses for 5 KOPs related to the Toana Road Variations, represent the most sensitive or most typical views for Alternative 1.

The Toana Road Variations (1 and 1-A) would result in Segment 9 being farther away from the historic trail. The Segment 9 Revised Proposed Route would have a greater visual impact on the National Register site than either variation. Variation 1 would have the least impact of the three options.

Alternative 2 – Revised Proposed 8 and FEIS Proposed 9

Alternative 2 would link the Hemingway Substation with the Midpoint Substation using the Revised Proposed Route for Segment 8 and the Cedar Hill Substation and Hemingway Substation using the FEIS Proposed Route for Segment 9. Alternative 2 would cross 207.8 miles of BLM-managed land (78.4 miles for Segment 8 and 129.4 for Segment 9), which includes 3.2 miles of VRM Class I, 6.8 miles of VRM Class II, and 69.1 miles of VRM Class III. This is the same amount of VRM Class I land crossed as Alternative 1 but about one-third of the VRM Class II area crossed, and none of the VRM Class II land crossed would be in the SRBOP.

Alternative 2 would also cross 64.1 miles of private land (35.8 miles for Segment 8 and 28.3 miles for Segment 9) and 16.1 miles of state land (11.5 miles for Segment 8 and 4.6 for Segment 9).

Approximately 38.7 miles of this alternative would cross the SRBOP. The Segment 8 Revised Proposed Route would cross through much of the northwest portion of the SRBOP for 25.1 miles, while FEIS Proposed 9 would cross a smaller amount in two locations, totaling 13.6 miles. This alternative would cross an eligible WSR (Salmon Falls Creek). Scenery is not one of the ORVs identified for the recreational portion of the river crossed by FEIS Proposed 9.

Alternative 2 would not cross SRBOP land managed by the BLM with VRM Class II objectives, while approximately 19 miles of the alternative would cross the SRBOP on BLM land managed for VRM Class III objectives. FEIS Proposed 9 of this alternative would be within a designated WWE corridor for much of its route west of the Jarbidge Field Office; however, it would cross a small section of the SRBOP outside of the WWE corridor near Murphy, Idaho. In addition, FEIS Proposed 9 would cross VRM Class II

land for 0.2 mile managed by the Bruneau MFP (within the WWE corridor). The Segment 8 Revised Proposed Route would cross approximately 6.5 miles of VRM Class II land managed by the Bennett Hills/Timmerman Hills MFP and 3.2 miles of VRM Class I land managed under the 1987 Jarbidge RMP.

The Toana Road Variations (1 and 1-A) would result in the Segment 9 portion of this alternative being farther away from the historic trail. FEIS Proposed 9 would have a greater visual impact on the National Register site than either variation. Variation 1 would have the least impact of the three options.

Alternative 3 – Revised Proposed 8 and the 9K Route

Alternative 3 would link the Midpoint Substation and Hemingway Substation using the Revised Proposed Route for Segment 8, and the Cedar Hill Substation and the Hemingway Substation using Route 9K. Alternative 3 would cross 234.6 miles of BLM-Managed lands (78.4 miles for Segment 8 and for 156.2 miles for Segment 9), which includes 3.2 miles of VRM Class I, 7 miles of VRM Class II, and 74 miles of VRM Class III. This total is the same amount of VRM Class I land crossed as Alternatives 1 and 2 and approximately the same amount of VRM Class II land crossed as Alternative 2. Alternative 3 would also cross 49.6 miles of private land and 16.1 miles of state land.

Approximately 34.9 miles of this alternative would cross the SRBOP, which is 52 miles less than Alternative 1. This Alternative would not cross the C.J. Strike SRMA anywhere, nor the Snake River SRMA or the Oregon Trail SRMA where the Project would potentially conflict with VRM goals. This Alternative would cross an eligible WSR (Salmon Falls Creek). Scenery is not one of the ORVs identified for the recreational portion of the river crossed by the Segment 9 portion.

Approximately 6 miles of Segment 9 for this Alternative would be in the eastern end of the SRBOP between Bruneau Dunes State Park and the Saylor Creek Air Force Range (a military withdrawn area), all of which is managed by the BLM for VRM Class III objectives. Route 9K would be in the designated WWE corridor for all but approximately 2 miles of its routing through the SRBOP. Similar to Alternative 2, Route 9K would cross VRM Class II land managed by the Bruneau MFP; however, unlike FEIS Proposed 9 in Alternative 2, it would not cross the parcel within the WWE corridor. The same VRM Class I and II areas would be crossed by Segment 8 as would be crossed in Alternatives 1 and 2.

The Toana Road Variations (1 and 1-A) would result in Segment 9 being farther away from the historic trail. A review of the KOPs suggests this would have a much reduced visual impact from the historic trail from that of the comparison portion of FEIS Proposed 9. Variation 1 would have the least impact to the Toana Road of the three options.

Alternative 4 – The 8G Route and FEIS Proposed 9

Alternative 4 would link the Midpoint Substation and Hemingway Substation using Route 8G and the Cedar Hill Substation and the Hemingway Substation using FEIS Proposed 9). Alternative 4 would cross 243.9 miles of BLM-managed lands, which includes no

VRM Class I, 0.6 mile of VRM Class II[1], and 64 miles of VRM Class III. This Alternative avoids crossing VRM Class I and II lands associated with the Oregon Trail and avoids crossing much of the SRBOP. FEIS Proposed 9 would be closer to developments and residential areas than the Segment 9 Revised Proposed Route or Route 9K. This Alternative would also cross 47.2 miles of private land and 18.2 miles of state land.

Approximately 20.5 miles of Alternative 4 would cross the SRBOP in two locations. Both routes would cross in the eastern end, while only FEIS Proposed 9 would cross two sections near Murphy, Idaho. The Segment 9 route for this Alternative would cross an eligible WSR (Salmon Falls Creek). Scenery is not one of the ORVs identified for this recreational portion of the river.

The 8G and FEIS Proposed 9 routes would be parallel to each other, approximately 250 feet apart, for the easternmost 7.6 miles through the SRBOP. At that point, FEIS Proposed 9 continues in the WWE corridor for the remaining 1.2 miles through this section of the SRBOP, while Route 8G turns south for approximately 2 miles through the SRBOP, outside of an existing corridor. This portion of Alternative 4 would be in the eastern end of the SRBOP between Bruneau Dunes State Park and the Saylor Creek Air Force Range (a military withdrawn area). Approximately 12.7 miles of the SRBOP land crossed by this alternative is managed by the BLM with VRM Class III objectives (7.6 miles of which include two lines, approximately 250 feet apart).

The Toana Road Variations (1 and 1-A) would result in Segment 9 being farther away from the historic trail. FEIS Proposed 9 would have a greater visual impact on the National Register site than either variation. Variation 1 would have the least impact of the three options.

Alternative 5 – The 8G and 9K Routes

Alternative 5 would link the Midpoint Substation and Hemingway Substation using Route 8G and the Cedar Hill Substation and Hemingway Substation using Route 9K. Alternative 5 would cross 270.7 miles of BLM-managed lands (114.5 miles for route 8G and 156.2 miles for Route 9K), which includes no VRM Class I, 0.8 mile of Class II[2], and 69.4 miles of VRM Class III. This Alternative avoids crossing VRM Class I land, as well as VRM Class II land in the SRBOP or VRM Class II managed under the Bennett Hills/Timmerman Hills MFP. Alternative 5 would also cross 32.7 miles of private land and 18.2 miles of state land.

Approximately 19.7 miles of Alternative 5 (which includes the miles for each of the two parallel lines) would cross the SRBOP, all but 2.3 miles of which would be on BLM-managed land in one location and managed as VRM Class III. This Alternative would cross an eligible WSR (Salmon Falls Creek). Scenery is not one of the ORVs identified for the recreational portion of the river crossed by Segment 9.

Approximately 19.7 miles of Alternative 5 would be in the eastern end of the SRBOP between Bruneau Dunes State Park and the Saylor Creek Air Force Range (a military

[1] FEIS Proposed 9 would cross 0.14 mile VRM II near Salmon Falls Creek, but both routes would cross the same VRM Class II parcel in the Bruneau Field Office, approximately 550 feet apart. Route 8G would cross for approximately 0.3 mile, while FEIS Proposed 9 would cross for approximately 0.2 mile.

[2] However, since both lines are only 250 apart, this includes the 0.31 mile for Route 8G added to the 0.36 mile for Route 9K. The remaining 0.14 mile is for the Route 9K crossing of Salmon Falls Creek.

withdrawn area). Approximately 5.5 miles would be located in Owyhee County, southeast of Murphy, Idaho. The 8G and 9K routes parallel each other through the northern portion of the Jarbidge Field Office and for the rest of the alignment into Hemingway Substation. As such, the 8.6 miles of VRM Class III crossed in the SRBOP consists of two lines, approximately 250 feet apart. Approximately 7.6 miles of the routing through the SRBOP would be in the designated WWE corridor.

The Toana Road Variations (1 and 1-A) would result in Segment 9 being farther away from the historic trail. Route 9K would have a greater visual impact on the National Register site than either variation. Variation 1 would have the least visual impact on the Toana Road of the three options.

Alternative 6 – The 8H Route and FEIS Proposed 9

Alternative 6 would link the Midpoint Substation and Hemingway Substation using Route 8H, and the Cedar Hill Substation and Hemingway Substation using FEIS Proposed 9. Alternative 6 would cross 285.6 miles of BLM-managed lands (103.1 miles for 8H and 129.4 miles for FEIS Proposed 9), which includes no VRM Class I, approximately 14.3 miles of Class II, and 83 miles of VRM Class III. This Alternative would not cross VRM Class I or VRM Class II lands managed under the Bennett Hills/Timmerman Hills MFP (which are crossed in Alternatives 1 through 3). It would still cross VRM Class II lands within the SRBOP (same as Alternative 1) and have a single line crossing a small parcel of VRM Class II land to the south on 8G. Alternative 6 would also cross 42.1 miles of private land and 9.2 miles of state land.

Approximately 75.4 miles of Alternative 6 would cross the SRBOP. Route 8H would cross through the southern part of the SRBOP, while FEIS Proposed 9 would cross the eastern section and then a smaller section along the southern edge. This route would cross an eligible WSR (Salmon Falls Creek). Scenery is not one of the ORVs identified for the recreational portion of the river crossed by Segment 9.

Approximately 10 miles of this Alternative (in Segment 9) would be in the eastern end of the SRBOP, within a WWE corridor, between Bruneau Dunes State Park and the Saylor Creek Air Force Range (a military withdrawn area). Approximately 49 miles of the SRBOP land crossed by this Alternative is managed by the BLM with VRM Class III objectives, while 15.4 miles would cross VRM Class II land within the SRBOP.

The Toana Road Variations (1 and 1-A) would result in Segment 9 being farther away from the historic trail. FEIS Proposed 9 would have a greater visual impact on the National Register site than either variation. Variation 1 would have the least impact of the three options.

Alternative 7 – The 8H and 9K Routes

Alternative 7 would link the Midpoint Substation and Hemingway Substation using Route 8H, and the Cedar Hill Substation and Hemingway Substation using Route 9K. Alternative 7 would cross 259.3 miles of BLM-managed lands (103.1 miles for 8H and 156.2 for 9K), which includes no VRM Class I, 14.6 miles of Class II, and 86.5 miles of VRM Class III. Alternative 7 would cross similar amounts of VRM Class II land as Alternative 6, and like Alternatives 4–6 would not cross VRM Class I land. This Alternative, as well as Alternatives 1 and 6, would cross VRM Class II land within the SRBOP and along the

Snake River; crossing multiple SRMAs and Oregon Trail viewsheds. Alternative 7 would also cross 33.5 miles of private land and 18.9 miles of state land.

Approximately 71.6 miles of Alternative 7 would cross the SRBOP. Route 8H would cross through the southern part of the SRBOP, while Route 9K would cross the eastern section. This route would cross an eligible WSR (Salmon Falls Creek). Scenery is not one of the ORVs identified for the recreational portion of the river crossed by Segment 9.

Approximately 6.4 miles of this Alternative (both routes) would be in the eastern end of the SRBOP between Bruneau Dunes State Park and the Saylor Creek Air Force Range (a military withdrawn area), and within a designated WWE corridor. Alternative 7 is similar to Alternative 6 regarding visual effects on VRM goals; however, Alternative 6 includes an alignment closer to human habitations and would cross the SRBOP for a slightly longer distance. Approximately 48 miles of the SRBOP land crossed by Alternative 7 is managed by the BLM with VRM Class III objectives, while 15.4 miles would cross VRM Class II land within the SRBOP.

The Toana Road Variations (1 and 1-A) would result in Segment 9 being farther away from the historic trail. Route 9K would have a greater visual impact on the National Register site than either variation. Variation 1 would have the least impact of the three options.

3.2.2.5 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, as well as additional measures proposed by the Project Proponents specifically for the SRBOP.

Environmental Protection Measures

The Proponents have committed to Project design features and EPMs to minimize or avoid impacts on environmental resources. These measures, the areas where they would be applicable (e.g., private, state, or federally managed lands), as well as the details of each measure are provided in Table 2.7-1 of the FEIS. The following measures are directly related to visual resources to minimize impacts to the visual contrast of the transmission line in the landscape:

VIS-1 The 500-kV transmission line lattice steel towers would be specified to have a dull galvanized finish. The proposed surface finish is a galvanized finish, treated after the initial galvanizing process to produce a dulled finish to reduce surface reflectivity. This process results in an installed tower with more visual absorption and thus allows the towers to blend in better with the landscape.

VIS-2 The three subconductor (500-kV) and two subconductor (230-kV) that make up the conductor bundles would be specified to have a non–specular finish. Similar to the dulled finish of the transmission structures, the conductors reduce surface reflectivity. This process results in eliminating the shiny ribbon effect often seen in older untreated transmission lines and thus allows the conductors to blend in better with the landscape.

VIS-4 No paint or permanent discoloring agents would be applied to rocks or vegetation to indicate limits of survey or construction activity except as required under the timber sale contracts.

VIS-5 To minimize ground disturbance and/or reduce scarring (visual contrast) of the landscape, the alignment of any new access roads or cross-country routes will follow the landform contours where practicable, providing that such alignment does not impact resource values additionally or result in new impacts to resources that were previously avoided.

VIS-6 To minimize sensitive feature disturbance and/or visual contrast in designated areas on federal lands, structures will be placed so as to avoid sensitive features such as, but not limited to, riparian areas, water courses and cultural sites and/or to allow conductors to clearly span the features, within the limits of standard tower design. Where conflicts arise between resources, the applicable land manager will be consulted.

VIS-7 To reduce visual impacts on federal land, including potential impacts on recreation values and safety, towers are to be placed at the maximum feasible distance from the highway, canyon and trail crossings within limits of standard design and to the extent practical.

VIS-8 Crossings of rivers shall be at approximately right angles where practical. Strategic placement of structures shall be done both as a means to screen views of the transmission line and rights-of-way and to minimize the need for vegetative clearing.

VIS-9 Insulators will be made of materials that have reduced potential to reflect and refract light. Glass insulators that are highly reflective will be prohibitive in scenic areas on federally managed lands.

VIS-10 For segments of the line 1) within the 0- to 0.5-mile zone of Interstate highways where existing lines of the same voltage are paralleled and 2) within the 0- to 0.5-mile zone of residences where existing lines of the same voltage are paralleled, new towers will be located adjacent to existing towers, within the limits of standard transmission line design and considering the ruling span length of adjacent proposed and existing lines.

VIS-11 Site-specific “micrositing,” within the limits of standard engineering design, will be required near certain sensitive areas, as identified by the agencies, where proposed transmission facilities would impact visual quality; these situations include:

- Crossings over major highways;
- Crossings of high quality historic trails;
- Crossings over the North Platte and Snake Rivers;
- Sensitive travelways, use areas, residential areas, recreational facilities as identified by the agencies (including national recreation and scenic trails, campgrounds, recreation areas, and trailheads), and other areas identified by management plans; and

- To avoid bisecting forest patches within the Sawtooth National Forest.

The Proponents will consult with the applicable local land management agency during transmission line design.

VIS-12 The lighting specified for the marshaling yards shall be the minimum required to meet safety and security standards. All light fixtures within 1,000 feet of a residence shall be hooded to eliminate any potential for glare and to prevent light from spilling off the site or up into the sky. Additionally, the fixtures shall have sensors and switches to permit the lighting to be turned off at times when it is not required.

VIS-13 To reduce visual contrast in areas where overstory vegetation is removed for access, tower pads, or conductor clearance, specific sections of the clearing edges on federal land will be feathered (trees thinned/removed from the edge of the right-of-way out or away from the right-of-way boundary) to give a natural appearance, where not in conflict with regulatory requirements (e.g., NERC, WECC, and Occupational Safety and Health Administration requirements). This will be a onetime application and conducted with agency approval.

VIS-14 To mitigate potential visual impacts on federal land, the construction and maintenance plan to be developed by the Proponents will include measures to reduce ROW scarring and enhance restoration. The plan will be approved by the land management agency prior to ground clearing and construction.

These EPMs would avoid or minimize the extent of impacts that could occur to visual resources. These EPMs are a part of the current Project description, and as such, the effects of their implementation are included in the impact discussion found in Sections 3.2.2.2, 3.2.2.3, and 3.2.2.4.

Proponent-Proposed MEP and Potential Effects of the MEP within the SRBOP

The Proponents have developed an MEP to mitigate the effects of Project-related impacts within the SRBOP, as well as comply with the SRBOP's enabling statute (P.L. 103-64) which requires enhancement of resources within the SRBOP specifically identified by the enabling statute. The Proponents' plan contains two forms of mitigation: "compensation mitigation" and "enhancement." For this analysis, mitigation is defined as avoidance, minimization, and compensation measures aimed at offsetting adverse impacts of the Project; enhancement is defined as additional mitigation measures that are required in order to enhance the objectives and values for which the SRBOP was established.

The Proponents' MEP offers a portfolio that contains five types of mitigation/enhancement proposals. The following discusses the benefit and/or impact that these proposed mitigation/enhancement proposals could have on visual resources.

Habitat Restoration

The goal for the Proponents' habitat restoration proposal is to convert "non-native grasslands to native perennial plant communities" as well as to conduct "noxious weed control." The proposed habitat restoration proposal would have a beneficial effect on visual resources because the natural vegetation would create a more visually pleasing color palette and make landscapes appear more natural.

Purchase of Private Inholdings

There are private lands within the SRBOP that could contain natural resources that through private ownership could be visually altered. The Proponents have proposed (within the MEP) to provide funding for the purchase, transaction fees, and ownership transfer of a portion of these lands to the U.S. government, to be managed by the BLM in perpetuity. Once purchased and deeded to the United States, these lands could be managed together with adjacent BLM-administered lands and would not require additional funding for separate management. The Proponents have indicated that the selection of the parcels that would be purchased and deeded to the BLM would be determined by the Oversight Committee. However, the composition and exact membership of the individuals and agencies within the proposed Oversight Committee have not been identified to date. Therefore, the effectiveness of the Oversight Committee cannot be determined until the individuals and agencies that will be included in the committee are identified, and the process that will be used by the committee to make its final decisions is determined. The MEP makes a preliminary estimate of $3,000 an acre for the cost of purchasing lands and transferring them to the BLM for management; however, it acknowledges that the exact price is uncertain until the parcels are identified by the Oversight Committee and purchase negotiations begin.

This proposal is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute (e.g., P.L. 103-64 states that "The Secretary is authorized to acquire lands and interests therein within the boundaries of the conservation area by donation, purchase with donated or appropriated funds, exchange, or transfer from another Federal agency, except that such lands or interests owned by the State of Idaho or a political subdivision thereof may be acquired only by donation or exchange").

The Proponents have indicated that all efforts proposed in regard to the purchasing of private inholdings are intended to apply to enhancement of the SRBOP (with no mitigation component).

Purchasing private inholdings and transferring control of the land to the BLM would likely result in a change in how the lands are managed. The BLM would manage the lands in accordance with the BLM's RMP as well as the SRBOP's enabling statute, which in part, provides protection for visual resources. However, the current condition or management of the private lands cannot be determined at this time because no specific parcels or willing landowners have been identified to date. Therefore, although this proposal may result in the long-term visual enhancement of the area and protection of visual resources by BLM VRM classification, the extent and type of visual resources that may be enhanced and protected, cannot be made until the specific parcels are identified by the Oversight Committee.

Law Enforcement

The Proponents' MEP contains a proposal for the funding of increased law enforcement within the SRBOP for a period of 10 years. The goal of this increased funding is to change adverse behaviors in the SRBOP by aiding law enforcement in their coverage and ability to manage public induced damage to resources. This proposal is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute.

Under the Proponents' proposal, approximately 17 percent of the funding would go to mitigation, while the remaining funding would go to enhancement; however, the Proponents' proposal does not provide the rationale for this financial breakdown (i.e., why 17 percent would apply to mitigation and 83 percent to enhancement). The Proponents' stated intent for the mitigation funding is to prevent an increase in illegal behavior that could occur as a result of the presence of new Project related roads in the area. Although the Proponents' intent for the enhancement funding, is to "permanently reduce illegal behaviors in the SRBOP thereby further protecting the objectives and values for which the SRBOP was established," the MEP only offers this funding for a period of 10 years, which would neither constitute a permanent fund nor last for the life of the Project.

If illegal or inappropriate activities were conducted in the SRBOP, they could have adverse impacts to visual resources. For example, visitors could destroy sensitive landscape features or create land scarring with illegal OHV use in the SRBOP. As a result, the increase in law enforcement funding meant to limit or prevent inappropriate activities may result in the increased protection of visual resources and the enhancement of existing measures in place to protect visual resources. However, it is not certain if these activities actually occur in the SRBOP, or if they do occur, at what frequency. As a result, because the current baseline conditions of the area (i.e., if these activities occur or how often they occur) cannot be identified at this time, a determination of this proposal's ability to enhance the objectives and values for which the SRBOP was established cannot be made.

Visitor Enhancement

The MEP contains a proposal to fund programs meant to enhance the experiences of visitors to the SRBOP. The Oversight Committee (which has not been established or identified to date; see previous discussion above) would be responsible for selecting the programs that would be funded; however, the Proponents' MEP offers the following as examples of programs that could be funded include:

- The "Raptor Camp," which provides an opportunity for the public to learn the values of natural resources in the SRBOP;
- Public service announcements and educational materials that educate the public and promote responsible use of the SRBOP; or
- Cultural resource education programs and other materials (displays, videos, and brochures) to help members of the public understand the value of cultural resources and how their preservation in place can preserve and enhance their collective cultural heritage.

This proposal is in compliance with the objectives and a goal of the BLM's RMP as well as the SRBOP's enabling statute.

The Proponents have indicated that all efforts proposed under this program are intended to apply to enhancement of the SRBOP (with no mitigation component).

Enhancement of the visitors' experience is an important component of the SRBOP, and the visitors experience is called out specifically in the SRBOP's enabling statute (see Section 4 of P.L. 103-64, "Management and Use"). It is, therefore, an important part of the mitigation/enhancement package; however, it would not have a direct impact on visual resources. Visitor enhancement programs that contains an educational component aimed at the importance of visual resources protection could, however, have indirect long-term beneficial impacts by promoting the public's interest in protecting these resources. However, because the exact programs that would be funded have not been identified to date, a determination of this proposal's ability to enhance the objectives and values for which the SRBOP was established cannot be made.

Line and Substation Removal

The Proponents have proposed to remove some existing infrastructure within the SRBOP. This includes:

- Removing approximately 7 miles of existing 46-kV line on BLM-managed lands, from the Bowmont Substation to Gage Substation;
- Construction of an approximately 1-mile-long section on private land to connect the remaining portion of the line to the Idaho Power system;
- Reconstructing 3.9 miles of existing 12.5 kilovolt lines, including 0.25 mile on BLM-managed lands;
- Converting approximately 4 miles of the existing 46-kV line on BLM-managed lands between the Gage and Ferry substations to a 12.5-kV distribution line; and
- Removing the existing Gage Substation and associated equipment/apparatus, which are on BLM-managed land.

Although not specifically addressed in the SRBOP's enabling statute, the removal of electric distribution facilities does not contradict the objectives and goals of the BLM's RMP or the SRBOP's enabling statute. The Proponents have indicated that all activities associated with the line and substation removal effort are intended as enhancement of the SRBOP (with no mitigation component). However, the activities proposed in the MEP would not provide enhancement of visual resources adversely affected by the Project. These actions would provide a small measure of mitigation for the adverse impacts resulting from construction of two new 500-kV transmission lines through the SRBOP.

3.2.2.6 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

Summary of Remaining Impacts

After implementation of the EPMs and MEP discussed above, some Project-related impacts would likely remain. The impact assessment found in Sections 3.2.2.3, 3.2.2.4, and 3.2.2.5 incorporates the avoidance and minimization contributions of the EPMs in the impact analysis; as a result, Sections 3.2.2.3, 3.2.2.4, and 3.2.2.5 take these measures and their impact offsets into consideration. The design features outlined in the Proponents' MEP (discussed above) may reduce the magnitude of impacts to some degree (thereby reducing the need for additional compensatory mitigation); however, the extent of this reduction cannot be fully quantified at this time (as discussed in detail above).

Note that Sections 3.2.2.3, 3.2.2.4, and 3.2.2.5 outline the current extent of known impacts that would occur Project-wide, as well as those that would be unique to the SRBOP.

BLM Compensatory Mitigation Categories

In addition to the design features and EPMs meant to avoid and minimize impacts to visual resources (as described above in Section 3.2.2.5), there are strategies to compensate and mitigate minimization measures are fully implemented. The mitigation strategy may vary depending on the type of adverse effect. For direct effects, mitigation options such as topographic or vegetative screening would be used to the maximum extent possible to reduce the visibility of the transmission line. Other treatment measures for direct, indirect, and cumulative effects may include, but would not be limited to, the following:

- Acquire private land containing NHT segments for long-term protection, as deemed appropriate by the Authorizing Officer; and/or
- Print publication (e.g., brochure or book), or visual media publication (e.g., website, podcast, or video).

The BLM may require additional mitigation for some remaining impacts of the Project on environmental resources (including impacts that occur outside of the SRBOP), per the guidelines found in the BLM Regional Mitigation Manual (BLM 2013c) and DOI Manual 600 DM 6, *Implementing Mitigation at the Landscape-scale* (DOI 2015). Mitigation for residual Project-related impacts that would occur within the SRBOP is discussed below.

The BLM will continue to work with applicable stakeholders to identify the impacts that would remain on the SRBOP after implementation of the EPMs and MEP, as well as the existing compensatory mitigation plans discussed above. The BLM will then design mitigation options that address applicable remaining impacts (see Section 3.0 for a discussion of the BLM's policy regarding mitigation). These options will contain components that will ensure that impacts to resources and values on the SRBOP that require mitigation are compensated for, as well as that enhancement of these resources is provided in order to comply with the enabling statute of the SRBOP. Based on internal and external scoping, the BLM is considering eight mitigation categories (see Section 2.6.2 in Chapter 2). The following mitigation category is being considered to address remaining impacts to visual resources within the SRBOP:

- Implement habitat/vegetation restoration efforts (including, but not limited to, enhancement of visual resources in the Project area).

3.3 CULTURAL RESOURCES

This section addresses potential impacts to cultural resources from the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; and the Toana Road Variations to the Segment 9 Revised Proposed Route. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). The impacts of each of the seven BLM action alternatives on historic properties (i.e., NRHP-eligible sites) are discussed at the end of this section. Effects associated with the various routes analyzed in the 2013 FEIS were disclosed in that document. With the exception of FEIS Proposed 9, those FEIS routes are not being re-analyzed here, as only new information is included in this resource-specific section.

The NHPA requires a federal agency to take into account the effect of an undertaking on any historic properties within the APE. Under NEPA, the impacts to cultural resources must be analyzed to inform the decision on the Project. The purpose of this assessment is to reduce, minimize, or mitigate effects to cultural resources from all phases of the Project.

Cultural resources include all landscapes, buildings, sites, districts, structures, or objects that have been created by or associated with humans and are considered to have historical or cultural value.

3.3.1 Affected Environment

3.3.1.1 Analysis Area

The Analysis Area used to define and address the existing environment and potential impact area is described in detail within the FEIS. The extent of the Analysis Area that was used for this SEIS is restricted to that portion described in the FEIS that corresponds to Segments 8 and 9. Therefore, not all cultural resources discussed in the FEIS would be affected by the routes being considered in the SEIS. As a result, cultural resources not found within the Analysis Area for Segments 8 and 9 (but which may be included in the FEIS for the other segments' Analysis Areas) are not discussed or analyzed in this document (see Section 3.3.1.4 for additional details).

Morley Nelson Snake River Birds of Prey National Conservation Area

Portions of the Project would cross through the SRBOP. As a result, this section will discuss specific impacts that would occur to cultural resources on the SRBOP. Cultural resources are one of the environmental resources and values for which the SRBOP was established.

3.3.1.2 Issues Related to Cultural Resources

The following cultural resources issues relevant to Segments 8 and 9 were brought up by the public during public scoping (Tetra Tech 2009) or in comments in the DEIS, raised by federal and state agencies during scoping and agency discussions, or they may be issues that must be considered as stipulated by law or regulation.

- What values do the area's Native American communities ascribe to places of historic and traditional significance?
- Would all impacted Native American tribes be consulted?
- What would be the impact on Native American tribes and would their treaty rights and privileges be addressed?
- Would a complete inventory of potentially impacted cultural sites be conducted?
- Would the design of structures such as tower and substations minimize their visual impact to the setting of historic properties?
- What are the impacts on eligible prehistoric resources?
- What are the impacts on eligible historic resources?
- What would be the visual and recreational impacts on historic trails?
- Would traditional cultural properties (TCPs) be impacted?
- Would a property for which setting is an important aspect of integrity be affected?

These questions can be distilled to the following general issues.

- *Native American Consultation*. The BLM, as an agency of the federal government, is obliged under the NHPA (36 CFR 800.2(c)) and other laws and mandates to consult with all affected Indian tribes. Such consultation under NHPA does not preclude, or absolve, the government from compliance with treaties or other statutes and regulations, such as NAGPRA, AIRFA, ARPA, and agency-specific legislation, which address tribal privileges, TCPs, or other cultural resources. Impacted Tribes have expressed their concerns through formal tribal consultations and the public involvement process, and those concerns were addressed in the FEIS.
- *Inventory of Cultural Sites*. Once the BLM has selected a Preferred Route, a Class III (intensive pedestrian) inventory of that route must be completed, so that cultural resources that may be directly or indirectly impacted can be identified. This will occur after the Draft SEIS has been published, but before issuance of the Final SEIS.
- *Determinations of Eligibility and Effects*. All cultural resources identified during the Class III inventory will be evaluated for NRHP eligibility. Through the Section 106 process, the BLM, in consultation with the Idaho SHPO, will determine the NRHP eligibility of all cultural resources within the APE and determine Project effects (direct and indirect) upon those resources. Where those effects are determined to be adverse, appropriate mitigation measures would be implemented to avoid, minimize, or treat those adverse effects.

- *Visual Impacts on Historic Trails*. The Project would impact the Oregon NHT, and variations of that trail, as well as several historically significant non-NHTs. Project impacts on the Oregon NHT and its variations are discussed in Section 3.1 of this SEIS. Impacts to eligible Non-NHT linear routes are considered in this section.

3.3.1.3 Methods

The Cultural Resources section in the 2013 FEIS discusses those aspects of the environment that could be impacted by the Project, as well as the methods that were used to assess potential Project-related impacts to those cultural resources. The data, analysis methods, and regulatory requirements in the FEIS have been reviewed and are still valid for the SEIS. No significant new cultural resources data in the analysis area were identified.

The FEIS Proposed 9 route is included in three of the BLM action alternatives considered in this SEIS (i.e., Alternatives 2, 4, and 6). The impact values related to the FEIS Proposed 9 have been reanalyzed using the data that have become available since the publication of the FEIS. As a result, the impact values reported in the FEIS for FEIS Proposed 9 may differ in some instances from what is reported in this SEIS.

To identify cultural resources and TCPs within the Analysis Area, the Proponents sponsored the completion of a literature review, Class II (sample) survey, and ethnographic studies of the Proposed Route and other routes/alternatives. The methods used for each of these objectives are explained below.

Phase 1: Literature Review

As set forth in BLM Manual 8110 (BLM 2004b), a literature review consists of a reasonable compilation of existing information about known cultural resources, which is assembled from a review of previously recorded sites in the SHPO database and from the available literature (PA Stipulation II.C.1.). The Analysis Area for the literature review encompasses a one-mile-wide linear corridor, 0.5-mile on either side of the centerlines of the Revised Proposed Routes in Segments 8 and 9; FEIS Proposed 9; Routes 8G, 8H, and 9K; the Toana Road Variations; as well as the seven BLM action alternatives.

The size of the Analysis Area for the literature review is deliberately larger (than the area of disturbance) to aid route siting efforts, to accommodate shifts in the route alignment, and to cover areas where construction or operation facilities may occur outside the 500-foot-wide (or 750-foot-wide, in those places where a proposed route parallels another route) intensive survey corridor (URS 2009a).

Data were gathered by official files search requests to the Idaho SHPO for sites and inventories located in any township, range, and section intersected by the one-mile-wide literature review corridor. This approach produced a slightly larger sample, because the corridor might cross an extreme corner of a section, in which case all cultural resources within the entire section would be captured. Besides collecting information on previously recorded cultural resources within the Analysis Area, the records search identified areas that have been previously surveyed. Additional data sources consulted for the literature review include current published and unpublished literature,

chronologies, cultural and historical contexts, and information provided by the BLM and the NPS Trails Office. The full analysis is filed as a confidential document with the BLM Field Offices that are crossed by the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; and the Toana Road Variations.

The Idaho SHPO provided records search results in digital format. Information consisted of Adobe PDF files with information pertaining to previous inventories and recorded resources. Inventory-level information included the title, author, and year of past inventory reports, as well as agency name, project number, reconnaissance level, and acreage. Information provided for recorded resources included select data for archaeological sites, historic sites, linear sites, and isolates.

Phase 2: Class II Sample Surveys

Class II investigations involve pedestrian field surveys that may locate new sites and provide additional knowledge on site types, densities, and precise locations of sites within the Area of Analysis (BLM 2004b). Phase 2 of the project includes 15 percent sample surveys and a visual impact survey (PA Stipulation II.C.2.).

Field surveys of a 12 to 17 percent (average 15 percent) sample of the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; and the Toana Road Variations were completed in 2014 and 2015. The purpose of the current effort is to provide sufficient information for a comparison of alternatives by associating known cultural resources with the appropriate routes; helping to predict relative site densities for the Revised Proposed Routes, Variations, and Routes/Alternatives; and providing additional information regarding cultural resources within the Analysis Area. The sample units are located on public lands along the length of the route (URS 2009b). Each sample unit measures one mile in length and 500 feet to 750 feet in width. Several survey units associated with the Route 8G and 9K corridor were 250 feet wider because the two lines will parallel each other and require a wider corridor.

These segments were randomly chosen from a Geographic Information System (GIS) analysis of public lands filtered to exclude areas in which cultural resources inventories have occurred in the last 5 years. Areas greater than 25 percent slope or exhibiting recent disturbance were also excluded from the survey. Each sample segment was surveyed on foot using 30-meter-wide transects.

Ethnographic Studies

The PA stipulates in Section IV that consideration of properties of traditional religious or cultural importance to one or more Indian tribes may be addressed in an ethnographic study. Such studies are not required, but tribes may request them. The Shoshone-Paiute and Shoshone-Bannock Tribes requested ethnographic studies to protect Tribal interests and to assist the BLM in meeting its obligations under NEPA, NHPA, EO 13175, AIRFA, ARPA, and other laws and EOs. The BLM will treat all information gathered during the development of the ethnographic research as confidential. The first ethnographic study requested by the Shoshone-Paiute Tribes was completed in July 2011. A second study regarding cultural landscapes in southern Wyoming and Idaho was completed in 2013 for the FEIS. Other ethnographic studies have not yet been undertaken.

3.3.1.4 Existing Conditions

"Prehistoric (pre-contact)" refers to artifacts and features created and used by the aboriginal inhabitants of the region "before contact with Europeans and resulting in written records" (NPS 2000), while "historic (post-contact)" includes artifacts and features" dating to the period since the first significant contact between Native Americans and Europeans" (NPS 2000). The protohistoric period refers to a brief period, at the time of contact with Europeans, when cultural materials and ideas were exchanged between cultural groups, but written records were still scarce.

Prehistoric Resources Overview

Prehistoric resources are divided into site categories that reflect the purpose and intensity of aboriginal occupation at specific locations: lithic (chipped stone) scatters, landscapes, and quarries; open and sheltered camps, with or without evidence of specialized activities; rock images (petroglyphs and pictographs); and isolated finds.

The Project crosses the Great Basin culture area of Idaho, a region that extends beyond the physiographic Great Basin to include portions of the Columbia Plateau and Rocky Mountains. Cultural overviews presented by Butler (1978, 1986), Franzen (1981), Holmer (1986), Meatte (1990), Simms (2008), and Swanson (1974), as well as the literature review prepared for this Project (Nilsson et al. 2009), discuss settlement and subsistence, technology, and cultural interaction of indigenous groups in the study area over time. The reader is referred to these overviews for detailed information regarding the cultural continuity and variability presented in Idaho's archaeological record.

The Great Basin's vast area encompasses six distinct archaeological subareas that have been defined based on artifact inventories and variable adaptations made to the local environment (Cressman 1943; Jennings 1957, 1964, 1986). The Project traverses the Snake River subarea.

These overviews provide insights about the different degrees of cultural continuity and variability presented in the archaeological record. The prehistoric overview presented below draws principally from Butler's (1986) synthesis of the prehistory of the Snake and Salmon River area. Three major periods are discussed: Paleo-Indian, Archaic, and Late period.

Paleo-Indian Period (12,500 – 5800 B.C.)

The Paleo-Indian period encompasses the hunting of big-game animals that became extinct during the terminal phase of the Late Pleistocene or in the early Holocene. Chief among these animals were elephants (*Mammuthus* spp.) and certain species of bison (*B. antiquus)*. Other hunted species, such as camel (*Camelops* spp.), horse (*Equus* spp.), mountain sheep (*Ovis* spp.), elk (*Cervus* spp.), and deer (*Odocoileus* spp.), were not extirpated, but they were eventually replaced by modern types that were sought after into the Historic Period (Butler 1986:127).

Paleoenvironmental studies indicate that a cooler, moister environment existed than what is present today (Davis et al. 1986). Conditions began to ameliorate approximately 11,500 years ago (Davis 1984; Davis et al. 1986) and, by 10,000 years ago, climatic warming culminated in the establishment of modern environmental conditions (Franzen et al. 1981).

Paleo-Indian people were extensively mobile and engaged in a food economy driven by the availability of big game that ranged widely across the landscape (Simms 2008:133). Archaeological evidence for the Paleo-Indian period is most clearly associated with hunting weaponry, namely distinctive spear points. Based on point types, the Paleo-Indian period can be divided into three subperiods—Clovis, Folsom, and Plano—a sequence with cultural-historical ties to the northwestern Plains (Jennings 1974) and the Upper Snake and Salmon River country (Butler 1978), but not to the larger Great Basin cultural area (Butler 1986:128).

The Clovis subperiod (10,000-9000 B.C.) is minimally documented in the Upper Snake and Salmon River area. The earliest temporally distinct artifacts in the area are fluted, lanceolate Clovis points. In western North America, Clovis points typically date to approximately 10,000-9000 B.C. The archaeological deposit at Jaguar Cave, in the mountains along the Continental Divide north of the Snake River Plain, yielded butchered remains of sheep recovered from contexts dating to ca. 9500 B.C., but no diagnostic artifacts (Sadek-Kooros 1966). The Simon site near Fairfield, Idaho, at the foot of the Rocky Mountains, produced chipped stone bifaces, some of which included a series of finely made Clovis points (Butler 1986:128). Clovis points were also recovered near Twin Falls along the Snake River.

The Folsom subperiod (9000-8600 B.C.) is represented in the Upper Snake and Salmon River country by widespread surface finds and a single, radiocarbon-dated, archaeological component at Owl Cave (Wasden Site) on the eastern Snake River Plain. A fluted Folsom point, dating to 10,920 ± 150 B.P., and other stone tools at the Wasden site were associated with mammoth, camel, and an extinct form of bison.

Widespread changes in vegetation communities between 10,000 and 8,000 years ago are inferred to have contributed to the extinction of species of elephant, camel, horse, and bison. During this period of paleoecological transition, a variety of point styles dominate archaeological assemblages and form the basis for the Plano subperiod (8600-5800 B.C.). Points included within the Plano rubric include those from Agate Basin (Miller 1986), Haskett (Butler 1965), Birch Creek (Swanson 1972), and Milnesand, Scottsbluff, Eden, Angostura, and Plainview (Gruhn 1961a, 1961b). Plano points at the Wasden site are associated with a species of bison that is intermediate in size between extinct and modern forms (Franzen et al. 1981:223). Closer to the Project area is the Hetrick site near Weiser that has a cultural continuum covering 11,000 years, with Plano type points most closely aligned with Windust points of the Columbia Plateau (Rudolph 1995).

Archaic Period (5800 B.C. – A.D. 500)

Like their Paleo-Indian predecessors, the Early and Middle Archaic (5000 B.C. to 1000 B.C.) inhabitants of the Project area appear to have depended on large game as a principal resource (Butler 1986; Swanson 1972). Climatic conditions during the Early and Middle Late Archaic were markedly warmer and drier than now (Barnosky et al. 1987; Davis et al. 1986; Dort 1968; Swanson 1972). Other trends include variability in subsistence and settlement patterns observed between high and low elevation sites (Swanson 1974), as well as a shift towards the use of stemmed and notched projectile point styles.

Early Archaic point styles (5000 B.C. to 2500 B.C.) are commonly referred to as Northern Side-notched (Bitterroot) and stemmed indented base, Pinto series points. Such points have been recovered from Wilson Butte Cave (Gruhn 1961a), Veratic Cave (Swanson 1972), and Weston Canyon rockshelter (Miller 1972) in southern Idaho.

The Middle Archaic (2500 B.C. to A.D. 1300) is characterized by increased variability in point styles. Large side-notched and Humboldt concave base points mark the early Middle Archaic, while Elko and Eastgate series points become prevalent in archeological assemblages towards the end of the Middle Archaic. Evidence from the Given Hot Springs area in the Project area indicates that large, semi-subterranean houses were being built by ca. 2300 B.C. (Green 1982). Butler (1978) has noted the appearance of earth ovens at the beginning of the Middle Archaic. A feature of the Middle Archaic pattern in western Idaho is a distinctive burial pattern called the Western Idaho Burial complex (Pavesic 1983), dated to ca. 4000-2000 B.C. As evidenced by the Braden burial site near Weiser, Idaho, this pattern includes offerings of large bifacially worked blades, some with distinctive “turkey tails” notching; large, corner-notched and side-notched points; obsidian preforms; and red ochre.

Hunter-gatherer subsistence and settlement strategies continued throughout the later Middle Archaic (Gruhn 1961a; Swanson et al. 1964; Swanson 1972). A noted change in the size of projectile point styles infers the possible introduction of bow and arrow technology or the use of smaller dart shafts. Ceramics appear in the archaeological record at this time, but they are scarce and it is uncertain if they represent trade items (Holmer 1986:243) or occupation by the Northern Fremont (Franzen et al. (1981:225).

Late Period (A.D. 500 – 1805)

The introduction of ceramics associated with historically known Shoshonean speakers and small Desert Side-notched projectile points marks the beginning of the Late Period. Hunter-gatherer settlements and subsistence strategies continued to be practiced, but an increased number of sites suggests that population density increased at this time (Franzen et al. 1981:225). At least two distinctive sets of cultural manifestations have been identified: the Northern Fremont (a Formative stage culture) and the Shoshonean (an Archaic stage culture).

The apparent continuity of aboriginal settlement and subsistence patterns through the Holocene was affected by the introduction of the horse (discussed in the following subsection).

Protohistoric Resources Overview

The Protohistoric stage begins in the 1700s with the appearance of European-American trade goods being traded up the Columbia River from the Pacific coast and continues to the early 1800s with the first direct European-American contact by the Lewis and Clark expedition in 1804/1805. At the time of initial European-American contact, Southern Paiute and Northern Shoshone and Bannock groups occupied much of southern Idaho. Other tribes, such as the Western Shoshone and Nez Perce, are known to have moved through the area as well (Murphy and Murphy 1986).

The Protohistoric stage in Idaho is marked by the appearance of the horse in the region by approximately A.D. 1750 (Steward 1938: 201), even though many tribes did not

adopt the animal (Plew 2000). Ethnohistoric studies indicate that following the introduction of the horse, aboriginal groups residing in the Snake River Plain were highly mobile, ranging from the Great Basin to the Columbia Plateau and Great Plains. Although movement of residential groups varied annually, the reasons for such variability can only be inferred. Varying resource availability and historic factors are two potential causes. In addition to shifts in subsistence and settlements, horses provided enhanced social status resulting in increased social stratification and warfare.

The stage is defined by increased mobility among the differing cultural groups; by the adoption of new material cultures, such as new house types (Meatte 1990); and by the use of new hunting strategies for bison (Plew 2000). With the incorporation of the horse, tribes in Idaho could travel to the Plains where bison were more plentiful. Sites recorded in Idaho dating to this period are few and are often associated with earlier components (Meatte 1990; Plew 2000). The stage is thought to be a "continuation of the Late Archaic Lifeway" (Plew 2000). Sites near the Project area dating to this stage with documented material evidence, such as metal artifacts and glass seed beads, include the Three Island Crossing and Bliss sites (Plew 2000).

Historic Resources Overview

Historic resources are segregated into broad socioeconomic themes, such as historic trails; transportation routes, including railroads, roads, and bridges; agricultural or animal husbandry resources, including ranches and features related to sheepherding; historic sites and rural settlements, including refuse scatters, homesteads, camps, and isolated finds; waterworks, including canals, ditches, and other irrigation features; and energy development, consisting mostly of power transmission lines.

The category of historic trails, exclusive of NHTs, includes routes of Indian trails, emigrant trails, and other trails and routes. Other sites that are associated with historic trails, such as emigrant graves, are treated with those trails.

Ethnohistoric Overview

Native American culture including trade, warfare, and inter-tribal relations has always involved the dynamic interaction of multiple groups. The influx of European-Americans into tribal homelands brought about many sudden and detrimental changes to Native American culture, including population decimation due to disease and warfare, loss of traditional territories and resources, and forced assimilation into European-American culture. Ethnographic and ethnohistoric studies have more recently attempted to record the pre-contact customs, languages, religion, and social structures of tribes.

The Shoshone, Bannock, and Paiute tribes occupied portions of southern Idaho, western Wyoming, and northern Utah. Other tribes, such as the Western Shoshone and Nez Perce, are known to have moved through the area (Murphy and Murphy 1986).

An ethnographic study requested by the Shoshone-Paiute Tribes has been completed. In addition to his own reassessment of the Shoshone-Bannock Tribes, Walker (1993) cites Lowie (1924), Stewart (1939), and Fowler and Liljeblad (1986) as the principal ethnographic sources for the Northern Paiute (Walker 2009). Traditional ethnographies of the Northern Shoshone and Bannock Tribes are Lowie (1909), Steward (1938), Murphy and Murphy (1960, 1986), and Walker (1973, 1978, 1993).

Previous Inventories

Segment 8 Revised Proposed Route Analysis Area

The search of the Idaho SHPO cultural records revealed that 158 previous cultural resources studies, inclusive of inventories and other investigations, were conducted within the Segment 8 Revised Proposed Route Analysis Area. A total of 152 inventory projects have been conducted since 1958. These projects examined 420,651 acres of federal, state, and private lands. The inventories included 360,770 acres of intensive survey and 59,881 acres of reconnaissance-level survey. In addition to the inventory projects, six non-inventory studies consisting of professional papers and monographs have also been prepared.

Segment 9 Revised Proposed Route Analysis Area

The search of the Idaho SHPO cultural records revealed that 201 previous cultural resources studies, inclusive of inventories and other investigations, were conducted within the Segment 9 Revised Proposed Route Analysis Area. A total of 195 inventory projects have been conducted since 1963. These projects examined 407,161 acres of federal, state, and private lands. The inventories included 357,551 acres of intensive survey and 49,610 acres of reconnaissance-level survey. In addition to the inventory projects, six non-inventory studies consisting of local or regional monographs have also been prepared.

FEIS Proposed 9 Analysis Area

The search of the Idaho SHPO cultural records revealed that 200 previous cultural resources studies, inclusive of inventories and other investigations, were conducted within the FEIS Proposed 9 Analysis Area. A total of 192 inventory projects have been conducted since 1963. These projects examined 262,003 acres of federal, state, and private lands. The inventories included 261,102 acres of intensive survey and 901 acres of reconnaissance-level survey. In addition to the inventory projects, eight non-inventory studies consisting of local or regional monographs, site excavation reports, sampling plans, and annual BLM reports have also been prepared.

Route 8G Analysis Area

The search of the Idaho SHPO cultural revealed that 148 previous cultural resources studies, inclusive of inventories and other investigations, were conducted within the Route 8G Analysis Area. A total of 144 inventory projects have been conducted since 1963. These projects examined 304,896 acres of federal, state, and private lands. The inventories included 29,265 acres of intensive survey and 9,631 acres of reconnaissance-level survey. In addition to the inventory projects, four non-inventory studies consisting of local or regional monographs, sampling plans, and an annual BLM report have also been prepared.

Route 8H Analysis Area

The search of the Idaho SHPO cultural records revealed that 142 previous cultural resources studies, inclusive of inventories and other investigations, were conducted within the Route 8H Analysis Area. A total of 135 inventory projects have been conducted since 1963. These projects examined 457,497 acres of federal, state, and private lands. The inventories included 398,947 acres of intensive survey and 58,550

acres of reconnaissance-level survey. In addition to the inventory projects, seven non-inventory studies, consisting of local or regional monographs and monitoring reports, have also been prepared.

Route 9K Analysis Area

The search of the Idaho SHPO cultural records revealed that 205 previous cultural resources studies, inclusive of inventories and other investigations, were conducted within the Route 9K Analysis Area. A total of 198 inventory projects have been conducted since1963. These projects examined 254,560 acres of federal, state, and private lands. The inventories included 253,869 acres of intensive survey and 691 acres of reconnaissance-level survey. In addition to the inventory projects, seven non-inventory studies consisting of local or regional monographs, monitoring reports, sampling plans, and a BLM annual report have also been prepared.

Toana Road Variations 1 and 1-A

The search of the Idaho SHPO cultural records revealed that seven inventory projects have been conducted since 1977. These projects examined approximately 59,164 acres of BLM-managed land; no state or private land was inventoried. The inventories encompassed 59,164 acres of intensive survey; no reconnaissance-level has been conducted.

In total, the Idaho SHPO records searches identified a diverse range of previously recorded cultural resources across the Analysis Areas. A total of 1,544 resource locations[1] have been identified, including 807 prehistoric and 737 historic resources. Most (46 percent) prehistoric resources are limited activity sites (e.g., lithic scatters and lithic procurement sites), followed by isolated finds, sheltered camps, open camps, rock features, and rock images. Most historic resources are historic sites (66 percent), predominately refuse scatters, followed by transportation-related sites, such as emigrant and other trail segments, railroad segments, historic roads, and modern roads; energy development sites, including transmission lines, the C.J. Strike and Lower Salmon power plants and their ancillary facilities; waterworks sites, such as ditches and canals; and agricultural/animal husbandry sites, including former ranches or other features.

Tables 3.3-1 and 3.3-2 summarize the prehistoric and historic resources, respectively, by site type and route. Further details about the cultural resources affected by each route are provided below.

[1] Cultural resources locations include properties with prehistoric, historic, or multiple (prehistoric and historic) components. For discussion purposes, resources associated with multiple component sites have been grouped within the categories of both prehistoric and historic resources.

Table 3.3-1. Summary of Prehistoric Resources[1/] by Route and Type[2/]

Revised Proposed Routes, Other Routes, and Variations	Site Types						Total	Percent
	Open Camp	Rock Feature	Sheltered Camp	Rock Image	Limited Activity	Isolated Finds		
Segment 8 Revised Proposed Route	17	0	0	5	49	46	117	14.5
Route 8G	6	0	6	0	32	47	91	11.3
Route 8H	8	9	12	0	31	50	110	13.6
Segment 9 Revised Proposed Route	4	9	12	0	73	48	146	18.1
FEIS Proposed 9	2	0	6	0	78	63	149	18.5
Route 9K	2	0	6	0	78	62	148	18.3
Toana Variation 1	0	0	2	0	12	5	19	2.4
Toana Variation 1-A	0	0	2	0	19	6	27	3.3
TOTALS	**39**	**18**	**46**	**5**	**372**	**327**	**807**	**100.0**
Percent	**4.9**	**2.2**	**5.7**	**0.6**	**46.1**	**40.5**	**100.0**	

1/ Includes prehistoric resources that are listed in the NRHP, officially determined eligible for the NRHP, or unevaluated (and assumed NRHP-eligible for the purposes of this analysis) within the 1-mile-wide Analysis Area.

2/ The Revised Proposed Routes, Other Routes, and Route Variations are mutually exclusive, so resource types, especially linear sites, may be found in multiple routes. Each instance is included in the table. Multiple component sites, those containing both prehistoric and historic components, were counted twice.

Table 3.3-2. Summary of Historic Resources[1/] by Route and Type[2/]

Revised Proposed Routes, Other Routes, and Variations	Site Types						Total	Percent
	Historic Trails	Agricultural/ Animal Husbandry	Energy Development	Transportation	Water Works	Historic Sites		
Segment 8 Revised Proposed Route	17	6	0	13	15	100	151	20.6
Route 8G	4	9	15	1	5	66	100	13.6
Route 8H	10	7	31	2	3	77	130	17.7
Segment 9 Revised Proposed Route	10	6	17	3	9	65	110	15.0
FEIS Proposed 9	5	9	1	3	14	80	112	15.2
Route 9K	5	8	1	2	12	67	95	13.0
Toana Variation 1	1	0	1	0	1	14	17	2.3
Toana Variation 1-A	1	0	1	0	1	16	19	2.6
TOTALS	**53**	**45**	**67**	**24**	**60**	**485**	**734**	**100.0**
Percent	**7.2**	**6.1**	**9.1**	**3.3**	**8.2**	**66.1**	**100.0**	

1/ Includes prehistoric resources that are listed in the NRHP, officially determined eligible for the NRHP, or unevaluated (and assumed NRHP-eligible for the purposes of this analysis) within the 1-mile-wide Analysis Area.

2/ The Revised Routes and Route Variations are mutually exclusive, so resource types, especially linear sites, may be found in multiple routes. Each instance is included in the table. Multiple component sites, those resources containing both prehistoric and historic components, were counted twice.

Prehistoric Site Types

Open Camps are minimally defined by the presence of cultural midden and/or one or more hearth features. The resource type includes village sites, midden sites, and ceramic sites:

- *Village Sites*, or residential bases, comprise larger sites or cluster of dwellings/ house pits. Within southern Idaho, these sites are typically located along the frontage of the Snake River or other permanent or semi-permanent streams. Village sites often exhibit cultural middens, as well as a diversity of other features such as storage caches, vegetal processing stations, cairns, hearths, ovens, and fire-affected rock concentrations. They may also contain mortuary remains or rock images.
- *Midden Sites* are open camps exhibiting culturally modified soils containing materials such as discarded artifacts, food remains, shells, bones, charcoal, ashes, and miscellaneous detritus. Such sites are often distinguished by areas of darkened soil or by mounds formed from the accumulation of domestic refuse, including cooking and eating equipment, food, and waste. Other cultural features such as fire hearths, house depressions, or fire-affected rock may also be present.
- *Ceramic Sites* are open camps that are further distinguished by the presence of prehistoric pottery. Such temporally diagnostic artifacts are useful in determining not only the age of an occupation, but the cultural affiliation of the occupants.

Rock Feature Sites are places defined, either primarily or exclusively, by cultural structures constructed from local field stone. In the Project area, stone alignments, such as walls or hunting blinds, cairns (or stacked rock features), and talus pits are the most visible rock features. Artifact assemblages, typically of a sparse nature, may be associated with such sites.

Sheltered Camps generally consist of a rock overhang or cave, with evidence of human occupancy, such as smoke-stained ceilings, artifact scatters, midden deposits, or other features, such as hearths, fire-affected rock, and ash and charcoal lenses. In the Project area, rock shelters and caves are most representative of this resource type.

Rock Image Sites include pictographs or petroglyphs, which are respectively drawn or inscribed on rock faces. The images often depict events such as battles, spiritual visions, environmental observations, hunting activities, deaths and burials, or simply the visitation of an individual or group at that location. Within the Project area, Celebration Park, on the Snake River, features a particularly dense concentration of over 90 boulders covered in symbols that vary from zoomorphic and anthropomorphic shapes to complex geometric forms.

Limited Activity Sites are short-term camps where a specialized activity occurred. They include lithic scatters, lithic landscapes, lithic procurement sites, harvesting locations, and processing sites.

- *Lithic Scatters* are assemblages of stone materials that remain from lithic procurement activities or stone tool manufacture or repair, and may include bifaces, unifaces, and flaking debris.
- *Lithic Landscapes* cover many miles and are areas or regions where aboriginal peoples habitually tested and procured tool stone and lithic materials. The result is a cultural landscape created by thousands of years of repeated use (Berrigan 1992; Stainbrook 1994; Harrell 1996). Such landscapes often contain an abundance of lithic scatter sites or lithic procurement sites.
- *Lithic Procurement Sites* are locations where aboriginal peoples extracted lithic materials from primary or secondary geological contexts. Lithic resources were procured in varied manners, ranging from intentional quarrying (quarry) to collection of surface toolstone sources (procurement area), to artifact scavenging and reuse. A quarry implies an open excavation, such as from pits and vertical or horizontal shafts, for mining of mineral resources. A procurement area implies the collection and use of surface tool stone from areas such as primary outcrops, stream and terrace gravels, and colluvial deposits. In the Project area, obsidian and ignimbrite are among the principal tool stones procured for flaked stone artifact manufacture.
- *Harvesting Sites* are locations where diagnostic artifacts and features indicate the collection of faunal or floral resources without evidence of occupation. In the Project area, salmon fishing employed the use of stone weirs across small streams or channels, among other techniques. Features like earthen pit ovens reflect harvesting of floral resources such as camas and other bulbs.
- *Resource Processing Sites* are locations where diagnostic artifacts and features indicate the collection of processing of floral remains without evidence of occupation (Tate et al. 1989). They are often separated from other sites because they identify a specific type of resource extraction activity. Resource processing sites may include locations with peeled trees or groundstone artifacts or features.

Isolated Finds are locations with a single artifact such as a flake, biface, point, core, pestle, and so on.

Archaeological District is defined as “a grouping of sites, buildings, structures, or objects that are linked historically by function, theme, or physical development or aesthetically by plan” (NPS 2000). Districts are not included in the site count summaries as a whole; however, individual sites that are within the districts, within the Analysis Area, are included in the site number totals by segment in Table 3.3-1.

Historic Site Types

Historic Trails include Indian trails, NHTs, and other linear routes.

- *Indian Trails* are networks of trails and trade relationships established by various Native American tribes. Indian trails had a pronounced impact on the early

European American history of the Plains. Native guides led explorers along them, traders built their posts beside them, and battles were fought near them. Some emigrant trails developed from Indian trails, although wagon traffic sometimes necessitated modifications to the routes (Blakeslee 1988).

- *NHTs* describe a web of pathways that became variously known as the Oregon, Mormon Pioneer, California, or Pony Express Trails, which was actually a network of trail segments, river crossings, and landmarks that stretched across 1,800 miles of territory and linked the western frontier to the settled lands of the east. Most components of these four historic trails have been congressionally designated as NHTs and are part of the National Trails System.
- *Other Linear Routes* include some nineteenth century wagon trail segments (known to have been used by emigrants bound for Oregon, Utah, or California) that were not included in the original national trails feasibility studies, have not been designated as components of a NHT, and are, therefore, not part of the National Trails System and are addressed here as individual historic trails. Interconnecting with these transcontinental trails are regional and local historic stage and freight roads, which likewise are not part of the National Trails System. They, too, are addressed in this document as individual trails.

Agricultural/Animal Husbandry Sites are locations, features, or structures associated with cultivating land; raising crops; feeding, breeding, or tending domestic animals; and raising livestock.

Energy Exploration/Resource Extraction Sites. As the explorers and trappers of the late eighteenth century and early nineteenth century were replaced by the growing number of emigrants traveling to or through the Project area, mineral and natural resources began to be actively explored, prospected, and widely exploited. Resource types within this category include lumbering sites, mining sites, and power transmission sites:

- *Lumbering sites* are buildings, structures, objects, sites, or districts associated with cutting or preparing lumber.
- *Mining sites* include any buildings, structures, objects, sites, or districts associated with natural resources extraction, such as oil, gas, coal, or other mineral. Mining sites are identified by single and multi-family houses (made out of milled wood, brick, stone, or logs), bunk and boarding houses, concrete and stone foundations, commercial buildings (saloons, stores, and warehouses), industrial buildings (machine shops and warehouses), mining-related buildings (pump and fan houses, elevator and hoist houses, changing rooms, tool storage houses), cisterns, wells, privies, and railroad features (trestles, spurs, switching equipment, lights, and yards). Mining-related features include adits, shafts, air shafts, hoist frames, and trestles. Artifacts include domestic materials (glass, clothing items, ceramics, food and beverage containers, and tools), machinery (pumps, fans, hoist and elevator equipment), and miscellaneous items such as head lamps, lunch pails, pipes, and other personal items.
- *Power Transmission sites* are locations, features, or structures involved with the movement of energy from one place to another. Until recently, transmission lines

have not been widely recorded as historic sites (see Appendix D of the State Protocol between the BLM Wyoming and Wyoming SHPO [BLM 2006]). However, Appendix D of BLM (2006) also allows that "Professional judgment and common sense should be applied." The historic context statement written for the BPA (Kramer 2009), and a report prepared for the Western Area Power Administration that was submitted to the Colorado and Wyoming SHPOs (Schweigert 1998), will be used to help guide resource evaluation during the Phase 4 survey. Both documents contain a detailed historic context on the design and construction of electrical transmission systems in the western U.S.

Transportation sites include buildings, structures, objects, sites, or districts that are associated with the movement of people and their belongings from one place to another. These sites can be related to air, rail, water, road, or pedestrian travel (NPS 2000). Resources within this category include historic roads, bridges, and railroads.

Waterworks sites consist of buildings, structures, objects, sites, or districts that are man-made features that supply water.

Historic sites encompass the remaining resources that do not share a related socioeconomic theme. These resources include inscriptions, military sites, and urban and rural sites:

- *Inscriptions* are sites where historical, religious, or other records are cut, impressed, painted, or written on stone, brick, metal, or other hard surface.
- *Military sites* can include buildings, structures, objects, sites, or districts that are associated with any activity that occurred to support military action or where military activities have taken place. Sites can include, but are not limited to, arms storage, fortification, facilities, battle sites, and roads (NPS 2000).
- *Urban sites* are locations, features, or structures associated with human settlement in a town or city.
- *Rural sites* include buildings, structures, objects, sites, or districts associated with human settlement in the non-urban setting, distinct from those found in any of the other categories.

3.3.2 Direct and Indirect Effects

A comprehensive list of all comparison features and the Project routes and alternatives to which they apply can be found in Tables 2.7-1 through 2.7-3. The following impact assessment takes these features into account when considering the potential impacts the Project could have on cultural resources.

Plan Amendments

Amendments to the BLM RMPs and MFPs are summarized for each alternative in Table 2.3-1 (see Chapter 2 for more details). The BLM plan amendments are discussed in detail in Appendices F and G. Amendments are needed to permit the Project to cross various areas of BLM-managed land.

The effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved, and amendments that alter

land management designations could change future use of these areas. Only one amendment has been proposed that considers cultural resources. Existing ruts from the main route and the north and south alternate routes of the Oregon Trail and Kelton Road would be protected from surface disturbance. In addition, incompatible uses would not be allowed within 0.5 mile of those ruts. All cultural resources would be managed with applicable laws and policies.

3.3.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West for Segments 8 and 9 and this portion of the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of these segments. No Project-related impacts to cultural resources would occur in the Analysis Area; however, impacts to these resources would continue as a result of natural events (e.g., fire, drought, and severe weather), as well as from existing and planned developments within the Analysis Area and from other projects, including wind farms, mining, agricultural, and other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project and the region would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, impacts similar to those described below may occur due to new transmission lines that may be built to meet the increasing demand in place of this Project.

3.3.2.2 Effects Common to All Routes

The direct and indirect effects on cultural resources specifically related to the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; the Toana Road Variations; and the seven BLM action alternatives are presented below in Sections 3.3.2.3 and 3.3.2.4. The assessment of potential impacts related to the MEP on cultural resources, as well as a list of additional mitigation measures that would be recommended by the BLM related to impacts on the SRBOP, is presented in Section 3.3.2.5.

Construction and Operations

Construction of the transmission line and its ancillary facilities could directly impact existing cultural resources, such as prehistoric or historic archaeological sites or districts, buildings, trails, roads, and landscapes. Construction or other ground-disturbing activities could directly or indirectly impact previously undetected cultural resources, especially those that are buried and presently not visible. Such impacts are likely to be adverse. Identification of new or previously recorded cultural resources and increased use of existing and new access roads may encourage unauthorized site access, illicit artifact collection, and vandalism. Impacts on the setting and feeling for cultural resources may be introduced through the addition of structural elements to the landscape. Construction of transmission line structures introduces an indirect (visual) impact upon existing cultural resources, especially historic trails, where setting is a key element of their NRHP eligibility. Because of the abundance and importance of NHTs in

the region, visual impacts to these resources are accorded a separate discussion in Section 3.1 – National Historic Trails.

Once the transmission line has been constructed, the presence of large transmission structures would introduce long-term visual impacts. The Proponents have proposed the following design features to minimize visual impact:

- A surface finish for each galvanized steel lattice and H-frame tower (single or double circuit) to produce a dulled finish that reduces surface reflectivity; and
- Conductors for the 500-kV and 230-kV lines that are made of aluminum/steel stranding with a non-specular or diffuse finish.

Periodic access to the transmission line ROW is required to maintain its operating function. Thus, access roads would be kept open, at least at a two-track level, which increases the potential for vandalism and illicit collection.

Decommissioning

Impacts from decommissioning would be similar to those for construction. No specific EPMs are provided by the Proponents to address decommissioning; however, the EPMs identified for construction would be applicable and would be generally effective at reduction the potential for adverse impacts.

3.3.2.3 Direct and Indirect Effects by Route

Segment 8

Revised Proposed Route

The Segment 8 Revised Proposed Route would link the Midpoint and Hemingway substations (see Figure A-1). This 129.7-mile single-circuit 500-kV transmission line would stay north of the Snake River until it crosses just north of Guffey Butte, generally parallel to an existing 500-kV transmission line, before ending at the Hemingway Substation. This route is similar to the original proposed route in the 2013 FEIS except that the line would be 250 feet north of the existing 500-kV line rather than 1,500 feet south of the line from the eastern boundary of the SRBOP (MP 99.7) to the Hemingway Substation. The route east of that point is unchanged from the 2013 FEIS Proposed Route.

The Revised Proposed Route in Segment 8 may affect 268 previously recorded sites (117 prehistoric and 151 historic), for a ratio of approximately 2.1 sites/mile. The Segment 8 Revised Proposed Route would cross two NHTs, including the North Alternate Oregon Trail North/Kelton Road/Goodale's Cutoff and the South Alternate Oregon Trail. It would also cross several non-NHTS, including the Boise City to Silver City Road, Dorsey Road, Grandview to Boise Road, and Reynolds Creek Road. All of these sites are eligible, or assumed eligible, for listing in the NRHP and, as such, require treatment of effects.

Route 8G

Route 8G is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows an alignment similar to the ones analyzed for routes 8A and 9B in the FEIS for approximately 44 miles, although it generally parallels 250 feet north

of the existing 500-kV line rather than 1,500 feet to the south in order to avoid the Hagerman Fossil Beds National Monument and development near Hagerman (see Figure A-1). The route then parallels 250 feet north of the Segment 9 Proposed Route and Route 9K for most of the remaining distance into the Hemingway Substation. The route is 146.9 miles long (including a 1.9-mile rebuild of the existing 500-kV line), compared to the 129.7-mile-long Revised Proposed Route 8.

Route 8G includes 191 previously recorded sites (91 prehistoric and 100 historic), for a ratio of approximately 1.3 sites/mile. Route 8G would cross the North Alternate Oregon Trail/Kelton Road/Goodale's Cutoff NHT, as well as two non-NHTs, the Silver City to Boise City Road and the Reynolds Creek Road. All of these sites are eligible, or assumed eligible, for listing in the NRHP and, as such, require treatment of effects.

Route 8H

Route 8H is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows a combination of portions of the alignments analyzed for 8G and the Revised Proposed Route for Segment 9. The route is 137.5 miles long (including a 1.9-mile rebuild of the existing 500-kV line and a 25.7-mile removal and rebuild of a 138-kV line), compared to the 129.7-mile-long Segment 8 Revised Proposed Route. Approximately 44 miles of the route follows the 8G alignment, while the remainder of 8H follows the alignment of the Segment 9 Revised Proposed Route.

The route may affect 240 previously recorded sites (110 prehistoric and 130 historic), for a ratio of approximately 1.8 sites/mile. Route 8H would cross two NHTs, the North Alternate Oregon Trail/Kelton/Goodale's Cutoff and the South Alternate Oregon Trail, as well as several non-NHTs, including the Silver City to Boise City Road, Reynolds Creek Road, Snake River Road, Dorsey Road, and the Dorsey Ferry. All of these sites are eligible, or assumed eligible, for listing in the NRHP and, as such, require treatment of effects.

Segment 9

Revised Proposed Route

The Segment 9 Revised Proposed Route would link the proposed Cedar Hill and existing Hemingway Substations with a 165.3-mile single-circuit 500-kV transmission line that skirts the Jarbidge and Owyhee Military Operating Areas to the north, then follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering the Hemingway Substation (see Figure A-1). It follows an alignment similar to the 2013 FEIS Route 9D/G between MP 95.6 and 154.7, except that two portions of the route (totaling 25.7 miles) would be double-circuited with existing 138-kV lines. The first area is 5.2 miles near C.J. Strike Reservoir and the Bruneau Arm (MP 106.2 to 109.3 and 109.9 to 112.1), and the second area is 20.2 miles along the Baja Road (MP 121.0 to 141.2). Several rebuilds totaling approximately 0.6 mile are also required to tie the existing 138-kV lines into the new double-circuit alignments. Except for minor variations, the route is similar to the 2013 FEIS Route 9D/9G between MP 141.2 to 154.7. From MP 154.7 and into the Hemingway Substation, the route is the same as the 2013 FEIS Proposed Route.

The Segment 9 Revised Proposed Route may affect 257 previously recorded sites (146 prehistoric and 111 historic), for a ratio of approximately 1.6 sites/mile. The route would cross two NHTs, the North Alternate Oregon Trail/Kelton/Goodale's Cutoff and the South Alternate Oregon Trail, as well as several non-NHTs, including the Silver City to Boise City Road, Reynolds Creek Road, Snake River Road, Dorsey Road, Dorsey Ferry, and US 93. All of these sites are eligible, or assumed eligible, for listing in the NRHP and, as such, require treatment of effects.

FEIS Proposed Route 9

The Proponents originally designed the 162.2-mile-long FEIS Proposed Route in Segment 9 to follow existing utility corridors and avoid the SRBOP and other protected areas where feasible. Approximately 54 miles of the route is within or adjacent to a utility corridor. FEIS Proposed 9 is approximately 3.1 miles shorter than the Revised Proposed Route but it crosses 13.6 miles of the SRBOP compared to 54.2 miles for the Revised Proposed Route. Both the Revised Proposed Route and FEIS Proposed 9 cross the Salmon Falls Creek at Lilly Grade adjacent to an existing single-phase 34.5-kV distribution line just north of the Salmon Falls Creek WSA.

FEIS Proposed 9 may affect 262 previously recorded sites (149 prehistoric and 113 historic), for a ratio of approximately 1.6 sites/mile. FEIS Proposed 9 would cross only one NHT, the North Alternate Oregon/Kelton Road/Goodale's Cutoff. It would also cross the Silver City to Boise City Road, Reynolds Creek Road, Toana Freight Wagon Road, and US 93. All of these sites are eligible, or assumed eligible, for listing in the NRHP and, as such, require treatment of effects.

Route 9K

Route 9K is being considered by the BLM as a modified version of FEIS Route 9E (the FEIS Preferred Route) to avoid crossing the northwestern portion of the SRBOP and to minimize direct and indirect impacts to priority sage-grouse habitat. The route is approximately 174.6 miles long, compared to the 165.3-mile-long Revised Proposed Route (see Figure A-1).

Route 9K may affect 244 previously sites (148 prehistoric and 96 historic), for a ratio of approximately 1.4 sites/mile. Route 9K would cross one NHT, the North Alternate Oregon Trail/Kelton/Goodale's Cutoff, as well as several non-NHTs, including the Silver City to Boise City Road, Reynolds Creek Road, Toana Freight Wagon Rod, and US 93. . All of these sites are eligible, or assumed eligible, for listing in the NRHP and, as such, require treatment of effects.

Toana Road Variations 1 and 1-A and the Comparison Portion of the Revised Proposed Route

Toana Road Variation 1 to the Segment 9 Revised Proposed Route was recommended by the BLM Jarbidge Field Office archaeologist to avoid paralleling the Toana Freight Wagon Road, an NRHP-eligible site. The Segment 9 Revised Proposed Route parallels within 0.25 mile of the Toana Road between MP 38.2 and 40.6, and parallels within 1 mile of the road through Blue Gulch between MP 40.6 and 43.5. Variation 1 is approximately 8.5 miles in length. Approximately 0.3 mile of the route crosses State land, with the remainder on land managed by the BLM. The Toana Road Variation 1-A to the Segment 9 Revised Proposed Route was recommended by the BLM to minimize

visual impacts to the Toana Freight Wagon Road, and was also intended to utilize existing roads in order to minimize new road construction in the area. Variation 1-A is approximately 8.9 miles long. Approximately 1 mile of the route crosses State land, with the remainder on land managed by the BLM.

Toana Road Variations 1 and 1-A may affect 82 previously recorded sites (46 prehistoric and 36 historic), for a ratio of approximately 4.7 sites/mile. The Toana Road Variations may also affect the Toana Road. All of these sites are eligible, or assumed eligible, for listing in the NRHP and, as such, require treatment of effects.

Prehistoric Resources Summary

Previously recorded prehistoric resources in the Analysis Area include all six defined resource types. The majority (approximately 79 percent) of recorded resources consist of limited activity areas, such as lithic scatters, followed in order by open camps, sheltered camps, rock features, and rock images. Two archaeological districts with prehistoric resources were also identified in the Analysis Area and are described further below. Table 3.3-3 provides a summary of previously recorded sites by route, site type, and NRHP eligibility.

The NRHP eligibility of most of the site types, with the exception of rock feature sites and isolated finds, is unevaluated. More than 75 percent of the rock feature sites have been evaluated as eligible and, not surprisingly, more than 90 percent of the isolated finds have been evaluated as not eligible for listing in the NRHP. Nearly one-quarter of the open camps have been listed in the NRHP and a substantial number of limited activity sites have been evaluated as eligible (13 percent) or not eligible (24 percent) for the NRHP.

Table 3.3-3. Previously Recorded Prehistoric Resources by Route Segment, Site Type, and NRHP Eligibility

Site Type and Route	Not Eligible	Eligible	NR-Listed	Unevaluated	Totals
Open Camps					
Revised Proposed Route 8	0	2	9	6	17
Route 8G	0	0	0	6	6
Route 8H	0	1	0	7	8
Revised Proposed Route 9	0	1	0	3	4
FEIS Proposed 9	0	0	0	2	2
Route 9K	0	0	0	2	2
Toana Variation 1	0	0	0	0	0
Toana Variation 1-A	0	0	0	0	0
Totals	**0**	**4**	**9**	**26**	**39**
Rock Feature Site					
Revised Proposed Route 8	0	0	0	0	0
Route 8G	0	0	0	0	0
Route 8H	0	7	0	2	9
Revised Proposed Route 9	0	7	0	2	9
FEIS Proposed 9	0	0	0	0	0
Route 9K	0	0	0	0	0
Toana Variation 1	0	0	0	0	0
Toana Variation 1-A	0	0	0	0	0
Totals	**0**	**14**	0	**4**	**18**

Table 3.3-3. Previously Recorded Prehistoric Resources by Route Segment, Site Type, and NRHP Eligibility (continued)

Site Type and Route	Not Eligible	Eligible	NR-Listed	Unevaluated	Totals
Sheltered Camps					
Revised Proposed Route 8	0	0	0	0	0
Route 8G	0	1	0	5	6
Route 8H	0	5	0	7	12
Revised Proposed Route 9	0	4	0	8	12
FEIS Proposed 9	0	0	0	6	6
Route 9K	0	0	0	6	6
Toana Variation 1	0	0	0	2	2
Toana Variation 1-A	0	0	0	2	2
Totals	**0**	**10**	0	**36**	**46**
Rock Image Site					
Revised Proposed Route 8	1	0	0	4	5
Route 8G	0	0	0	0	0
Route 8H	0	0	0	0	0
Revised Proposed Route 9	0	0	0	0	0
FEIS Proposed 9	0	0	0	0	0
Route 9K	0	0	0	0	0
Toana Variation 1	0	0	0	0	0
Toana Variation 1-A	0	0	0	0	0
Totals	**1**	**0**	0	**4**	**5**
Limited Activity Site					
Revised Proposed Route 8	11	11	0	27	49
Route 8G	9	5	0	18	32
Route 8H	14	9	0	8	31
Revised Proposed Route 9	20	8	0	45	73
FEIS Proposed 9	19	3	0	56	78
Route 9K	16	3	0	59	78
Toana Variation 1	0	2	0	10	12
Toana Variation 1-A	0	9	0	10	19
Totals	**89**	**50**	**0**	**233**	**372**
Isolated Finds					
Revised Proposed Route 8	43	0	0	3	46
Route 8G	46	0	0	1	47
Route 8H	45	0	0	5	50
Revised Proposed Route 9	43	0	0	5	48
FEIS Proposed 9	60	0	0	3	63
Route 9K	61	0	0	1	62
Toana Variation 1	0	0	0	5	5
Toana Variation 1-A	6	0	0	0	6
Totals	**304**	**0**	**0**	**23**	**327**

National Register Historic District (NRHD)

The western end of the Segment 8 Revised Proposed Route, within the SRBOP, crosses the National Register Historic District (NRHD), which extends along the course of the Snake River for over 24 miles and across four counties. The district contains over 114 prehistoric and historic archaeological sites (Green and Torgeson 1977). The district was nominated to the NRHP in 1977 (Green and Torgeson) and listed in 1978 (NPS 2010). The district is significant primarily for its dense abundance of prehistoric

sites, including 77 open campsites, with numerous villages possessing pithouse features among them, and 33 rock shelter sites. The district also contains some of the most impressive prehistoric rock images found in the state of Idaho (Green and Torgeson 1977). Historic resources are also present within the district, including several associated with early placer mining activity in the area. Historic sites within the district boundaries include the Guffey Railroad Bridge, the old town site of Guffey, the Swan Falls Dam and Power Plant, and the associated wagon road leading to Swan Falls Ferry. The Swan Falls Dam and Power Plant dates to 1901 and was listed on the NRHP in 1976 (NPS 2010). The associated wagon road was recommended as NRHP eligible in 2006 (Root et al. 2006). The wagon road serviced an electrically powered ferry located 0.5 mile downriver from the Swan Falls Dam and Power Plant. The Segment 8 Revised Proposed Route comes closest to the district boundary beginning at the Ada–Canyon county line where it extends west and just north of the northern district boundary for a distance of 2.75 miles. Within this extent, the corridor lies between 350 feet and 2,600 feet north of the district. East of the county line, the corridor is between one-quarter mile to one-half mile from the district for a distance of one mile. Beyond this one-mile area, the corridor turns northeast, where it continues to extend away from the district at distances exceeding one mile.

Twenty-one district sites (18 percent) are within the Analysis Area, composed of 15 prehistoric and 6 historic resources. Prehistoric resources include 9 open camps, 1 limited activity site, and 5 rock image sites. Of these, 7 open camps are NRHP-listed properties and 2 are unevaluated. The rock image sites comprise four unevaluated and one property that is not eligible. The single limited activity site is an eligible property.

Historic resources within the district and Analysis Area consist of one unevaluated historic site (refuse scatter), two unevaluated historic trails or ferry locations (Perry's Ferry and the road to Monahan's Ferry), and three separate SHPO numbers for Guffey Railroad Bridge, a NRHP-listed property.

Celebration Archaeological Park is located 0.3 mile south of the Revised Proposed Route in Segment 8, within the boundary of the NRHD. It was established in 1989 to allow visitors to explore the area's unique natural and cultural resources in southwestern Idaho. The park is located on the Snake River, south of Melba, near the western edge of the SRBOP. The park is open year-round and is part of the Western Heritage Historic Byway. The park contains a unique historic bridge and prehistoric features including hundreds of petroglyphs in a large boulder field. The Park also contains the historic Guffey Bridge, a 500-foot-long, two-span bridge, which was built in 1897 to support the rail line proposed for connecting Silver City and Nampa. It is the only Parker-through-truss railroad bridge in Idaho.

Open Camp Sites

Open camp sites occur within the Segment 8 and 9 Revised Proposed Routes Analysis Area. Most (80 percent) of the camps are found within Segment 8, while the remainder (20 percent) occurs within Segment 9. Such camps exhibit multifaceted cultural assemblages that may include flaked stone, ground stone, and ceramic artifacts, as well as organic remains such as burnt bone and shell, and cultural midden. Three open camps within the Segment 8 Revised Proposed Route (and NRHD) also contain house pit depressions. Rock features, including rock cairns, fire hearths, and occasional rock

art often characterize open camp sites. One open camp also contains a historic component associated with the Old Guffey townsite. Nine open camp sites occur with the boundary of the NRHD. NRHP eligibility status for the open camp sites includes four eligible, 26 unevaluated, and nine NRHP-listed properties.

Rock Feature Sites

Half of the rock feature sites are found along the Segment 9 Revised Proposed Route, while the other half occur along Route 8H. These sites are defined primarily or exclusively, by cultural structures constructed from local field stone. Rock cairns (55 percent) primarily compose these sites, with other rock feature sites containing one or more talus pits (33 percent) or a rock wall, possibly a hunting blind. NRHP eligibility status for these 18 sites includes four unevaluated properties and 14 eligible properties.

Sheltered Camp Sites

More than half of the sheltered camp sites along the Segment 9 routes, with smaller numbers along Route 8G and 8H and none along the Segment 8 Revised Proposed Route. A few sites occur along the Toana Road Variation 1 and 1-A routes. Rockshelters primarily compose these types of sites, which may also contain a broad range of flaked stone and/or ground stone artifacts, bone and/or shell remains, and rock features such as cairns or fire hearths. NRHP eligibility status for the 46 sheltered camps includes 36 unevaluated properties and 10 eligible properties.

Rock Image Sites

Prehistoric rock image sites are only found along the Segment 8 Revised Proposed Route, within the Archaeological District and Celebration Archaeological Park. Single or multiple petroglyph features adorned with anthropomorphic, zoomorphic, and geometric designs compose the images at these sites. Rock images included within the Archaeological District and Celebration Archaeological Park are considered among the most elaborate and spectacular prehistoric rock images in Idaho. NRHP eligibility status for these five sites includes four unevaluated properties and one site that is not eligible.

Limited Activity Sites

Limited activity sites include short-term camps where specialized activities occurred. Within the Analysis Area, lithic scatters with or without cultural features and lithic procurement sites comprise the Limited Activity Sites. These sites occur across all studied routes, but are most abundant (62 percent) along the Segment 9 routes. Because they are shorter, the Toana Variation routes include a relatively larger number of limited activity sites. Lithic scatters are the most common prehistoric site type identified within the Analysis Area, and the most represented limited activity site type. Many lithic scatter sites identified in the Analysis Area include stone tools that are related to the locally occurring obsidian and ignimbrite sources, such as Browns Bench.

Browns Bench is a 50-mile-long, northeast-to-southwest trending geologic formation containing ash-flow obsidian (Hughes and Smith 1993) located southwest of Twin Falls, west of present-day Salmon Falls Creek Reservoir, and into portions of northern Nevada. It is a well-documented source of culturally utilized obsidian. Toolstone specimens—in archaeological and secondary geological contexts—possessing the

locality's specific geochemical signature have been recovered from localities as far away as 124 miles from the primary source (Jackson et al. 2009: 87; Jones et al. 2003: 20). As a primary source of valued tool stones, locales within the Toana Variations Route Analysis Area hold high potential for the presence of cultural resources.

In addition to lithic scatters, the limited activity sites also include a small group of sites that also demonstrate lithic procurement activities, where small nodules of local, naturally occurring tool stone were fashioned into flaked stone artifacts.

NRHP eligibility status for the limited activity sites includes 233 unevaluated, 89 not eligible, and 50 eligible properties.

Historic Resources Overview

The previously recorded historic resources identified within the record search area for the Segments 8 and 9 Revised Proposed Routes, FEIS Proposed 9, Toana Road Variations, and Routes 8G, 8H, and 9K include all defined resource types. Approximately 65 percent of the recorded resources fall within the Historic Sites category and are largely composed of refuse scatters or isolated artifact locations. Waterworks-related sites encompass about 12 percent of historic resources, with most of these associated with C.J. Strike Reservoir. Approximately 6 percent are agricultural-related sites, 5 percent are energy-related properties, and only 3 percent of historic sites relate to transportation activities. Segments of historic trails (7 percent), including variants of the Oregon NHT and non-NHTs, are present, crossing both the Segments 8 and 9 Revised Proposed Routes. The NHTs are described in greater detail in Section 3.1, while the non-NHT historic trails, sites, stage roads, and freight roads are described below. Goodale's Cutoff and the North Side Alternative Route Study Trails are discussed below because neither of these trails are situated on BLM-managed land, would not be subject to the BLM Manual 6280 analysis, and are not substantively discussed in Section 3.1 – National Historic Trails. Table 3.3-4 provides a summary of previously recorded sites by route, site type, and NRHP eligibility.

Table 3.3-4. Previously Recorded Historic Resources by Route Segment, Site Type, and NRHP Eligibility

Site Type and Route	Not Eligible	Eligible	NRHP-Listed	Unevaluated	Totals
Historic Trails					
Revised Proposed Route 8	0	13	0	4	17
Route 8G	0	4	0	0	4
Route 8H	0	5	0	5	10
Revised Proposed Route 9	0	3	0	7	10
FEIS Proposed 9	0	3	1	1	5
Route 9K	0	3	1	1	5
Toana Variation 1	0	0	1	0	1
Toana Variation 1-A	0	0	1	0	1
Totals	**0**	**31**	**4**		**53**
Agricultural/Animal Husbandry Sites					
Revised Proposed Route 8	2	0	0	4	6
Route 8G	0	1	0	8	9
Route 8H	0	1	0	6	7

Table 3.3-4. Previously Recorded Historic Resources by Route Segment, Site Type, and NRHP Eligibility (continued)

Site Type and Route	Not Eligible	Eligible	NRHP-Listed	Unevaluated	Totals
Revised Proposed Route 9	0	0	0	6	6
FEIS Proposed 9	0	0	0	9	9
Route 9K	0	0	0	8	8
Toana Variation 1	0	0	0	0	0
Toana Variation 1-A	0	0	0	0	0
Totals	**2**	**2**	**0**	**41**	**45**
Energy Exploration Sites					
Revised Proposed Route 8	0	0	0	0	0
Route 8G	14	0	0	1	15
Route 8H	28	1	0	2	31
Revised Proposed Route 9	15	1	0	1	17
FEIS Proposed 9	1	0	0	0	1
Route 9K	1	0	0	0	1
Toana Variation 1	1	0	0	0	1
Toana Variation 1-A	1	0	0	0	1
Totals	**61**	**2**	**0**	**4**	**67**
Transportation Sites					
Revised Proposed Route 8	3	7	0	3	13
Route 8G	0	0	0	1	1
Route 8H	0	2	0	0	2
Revised Proposed Route 9	0	2	0	1	3
FEIS Proposed 9	1	0	0	2	3
Route 9K	0	0	0	2	2
Toana Variation 1	0	0	0	0	0
Toana Variation 1-A	0	0	0	0	0
Totals	**4**	**11**	**0**	**9**	**24**
Waterworks Sites					
Revised Proposed Route 8	5	6	0	4	15
Route 8G	1	3	0	1	5
Route 8H	1	1	0	1	3
Revised Proposed Route 9	7	0	0	2	9
FEIS Proposed 9	8	2	0	4	14
Route 9K	7	2	0	3	12
Toana Variation 1	0	0	0	1	1
Toana Variation 1-A	0	0	0	1	1
Totals	**29**	**14**	**0**	**17**	**60**
Historic Sites					
Revised Proposed Route 8	77	2	1	20	100
Route 8G	45	1	0	20	66
Route 8H	53	9	0	15	77
Revised Proposed Route 9	45	8	0	12	65
FEIS Proposed 9	62	0	0	18	80
Route 9K	50	0	0	17	67
Toana Variation 1	10	0	0	4	14
Toana Variation 1-A	11	1	0	4	16
Totals	**353**	**21**	**1**	**110**	**485**

Non-National Historic Trails/Stage/Freight Roads Overview

- *Toana Freight Wagon Road* – The Toana (also spelled Toano) Freight Wagon Road was used in the early 1870s to haul freight from Nevada to Boise and other Idaho mining camps. This road runs north-south along the west side of Salmon Falls Creek in Twin Falls County, passing along the west side of Hagerman Fossil Beds National Monument. The Toana Road linked the town of Toano, Nevada, with southwestern Idaho. The route was first laid out in 1870, when surveyors mapped out a road that was 50 miles shorter than the existing road. The construction of the road is reported to have been managed by John W. Moffat, and the road was opened for traffic by the summer of 1870 (Gray 2005). The road had two branches: a western section that merged with the Oregon NHT at Glenns Ferry near Tuano Gulch, and an eastern section that connected with the Kelton Road near the mouth of Salmon Falls Creek (Gray 2005). After the road was built, a series of stations were set up at 8- to 12-mile intervals where horses could be fed and watered. "Home" stations, which had sleeping and eating facilities, were also built at 50- to 60-mile intervals. The road was listed in the NRHP in November 2006. FEIS Proposed 9 and the Toana Road Variation 1 and Variation 1-A corridors would cross the route of the Toana Freight Wagon Road.
- *Dorsey's Road* – Dorsey's Road, also known as Grand View to Boise Road, ran from Dorsey's Ferry on the Snake River north past the present location of Indian Creek Reservoir. This road was apparently named for Dave Dorsey, a man who acquired a ranch on the Snake River in the 1870s, located just north of Grand View. Dorsey built a ferry at this location and the road leading from Boise to his ferry gave Boise businessmen a direct route to the railroad and mining camps in northern Nevada (Jones 1982a). The Segment 8 Revised Proposed Route would cross this NRHP-eligible road on the southeast side of Indian Creek Reservoir.
- *Boise City-Silver City Road / Reynolds Creek Road* – This road was a wagon and stage route that ran between Boise and Silver City. Silver City was established after 1863, and is located 15 miles east of the Idaho-Oregon line. Both gold and silver were mined at this location. Silver City was the county seat from 1866 to 1935. The road was in use as part of a major transportation corridor from 1864 to 1910. The Revised Proposed Routes in Segments 8 and 9 and Routes 8G, 8H, and 9K cross this historic route. The road is listed in the NRHP (ISHS 1971).
- *Snake River Road* – This historic road first appears on GLO maps in 1895. The 15.5 miles of recorded road extends from the National Guard Maneuver Area Boundary to the Snake River just below Rabbit Creek. The Segment 9 Revised Route and Route 8H would cross this NRHP-eligible road.
- *Goodale's Cutoff Study Trail* – Established in 1862, this alternate route of the Oregon Trail left the main trail near Fort Hall, crossed the Snake River Plain to the Lost River and then turned west and rejoined the main trail between Ditto Creek and Boise. No previously recorded segments of Goodale's Cutoff are located within the record search area, but approximately 1.8 miles of the NPS-defined route of the trail, located on private lands, is within 2 to 5 miles of the Project. The Project would not cross the NPS-defined route of the trail.

- *North Side Alternative Route Study Trail* – Established in approximately 1852, this alternate route of the Oregon Trail left the main trail near Fort Hall, crossed the Snake River, and traveled a route on the north side of the river to rejoin the main trail near Three Island Crossing. No previously recorded segments of the North Side Alternative Route Study Trail are located within the record search area, but approximately 11.6 miles of the NPS-defined route of the trail would be within 5 miles of the Project. Approximately 11 miles of the Study Trail is situated on private agriculturally developed lands that exhibit minimal to no evidence of the trail visible from aerial photographs. The NPS-defined trail route is crossed by the Segments 8 and 9 Revised Proposed Routes as well as Routes 8G and 8H.
- *Snake River Ferries:*
  - Dorsey Ferry – Located on the Snake River near Grand View, Dorsey Ferry was constructed in ca. 1875 by Dave Dorsey and moved upriver in 1880 where it was operated by Hiram Pixley and John Henry. In 1877, the ferry operation became known as the Grand View Ferry, which operated until 1921 when the Grand View Bridge was completed. None of the routes would cross the ferry location.
  - Monahan's Ferry and Perry's Ferry – In 1867, Martin Monahan established a ferry operation on the Snake River near the mouth of Rabbit Creek. Three years later, in 1870, he moved the ferry upriver to capture the stage business on the Idaho Central's Elko road. This ferry operation was short-lived, however. In 1871, the stages reverted to the Winnemucca and Reynolds Creek route and Monahan went out of business. Two decades later, in approximately 1897, Frederick Perry and Fred Brunzell began operating a ferry near the original location of Monahan's Ferry. At this time the ferry became known as the Guffey Ferry. Fred Perry and his wife ran the ferry until the completion of the Walters Ferry bridge in 1921. None of the routes would cross either ferry location.

Agricultural/Animal Husbandry Sites

Previously recorded sites within the Agricultural/Animal Husbandry category include homesteads, ranches, and sheepherding camps. Homesteading sites dating to the 1860s to 1880s consist of Hyde House and Joyce Ranch. One undated homesite is now under C.J. Strike Reservoir, while one other homestead of unknown affiliation dates from circa 1916 to 1940. A historic homestead at Feeny Wells dates from the early twentieth century. Ranching-related sites, dating to the early twentieth century, include four sites with features, such as corrals and feeding pens for cattle, as well as the Roy Johnson Ranch, the latter now under C.J. Strike Reservoir. Sheepherding-related sites focus on campsites and associated features such as rock cairns that are likely associated with activities conducted by Caucasian sheepherders.

Energy Exploration/Resource Extraction

Three sites associated with power transmission cross the Segment 9 Revised Proposed Route or the Toana Road Variations.

Power Transmission Sites

- *Idaho Power Company 69-kV Transmission Line #220* – Idaho Power Company 69-kV electric transmission line #220 was constructed in 1918. The line begins in the southern part of Gooding County, crosses through the northwestern portion of Twin Falls County, and continues through the southeastern quadrant of Owyhee County. The electric transmission line remains in use today. The Toana Road Variation 1 and Variation 1-A corridors would cross the Idaho Power Company line, which is a non-eligible property.
- *Swan Falls-Silver City Transmission Line* – The Swan Falls-Silver City Transmission Line Corridor was the first long-distance high-tension electrical transmission line in southern Idaho. The 22-kV line originated at Swan Falls Dam and ran southwest for about 15 miles before turning south for another 10 miles to Dewey and Silver City where it provided power electricity for stamp mills, air compressors, drills, water pumps and lighting. A short feeder line also connected the town of Murphy. By the early 1940s, a local electrical distribution network was initiated as line was extended connecting the community of Reynolds. The line was still in place as late as 1947. The Segment 9 Revised Proposed Route would cross the Swan Falls-Silver City Transmission Line, an unevaluated property.
- *C.J. Strike Hydroelectric Power Plant* – The C.J. Strike Power Plant is located on the south bank of the Snake River, just below where the Bruneau and Snake Rivers meet. Named after former Idaho Power President C.J. Strike, the plant was completed in 1952. The power plant encompasses several principal components, including a powerhouse, crane, trash rack rake, reservoir, dam, intake structure, three penstocks, irrigation canal diversions, parks, spillway, switchyard, tailrace, turbines/generators, transmission lines, and an access bridge. The Segment 9 Revised Proposed Route would pass approximately 0.25 mile south of the C.J. Strike Power Plant, an unevaluated property.

Transportation

Previously recorded sites included under the Transportation theme consist of bridges, historic roads, and railroads.

Bridges

- *C.J. Strike Spillway Bridge* – The C.J. Strike Spillway Bridge is a pile-supported steel beam (girder) bridge upon which C.J. Strike Dam Cut-off Road crosses the Snake River. Bridge construction began in the last months of 1950 and was concluded by spring of 1951. The bridge was built specifically to provide a reliable river crossing to facilitate the construction of the C.J. Strike Hydroelectric complex, located just upstream of the bridge. The Segment 9 Revised Proposed Route comes close to, but would not cross, the C.J. Strike Spillway Bridge, an unevaluated property.
- *Guffey Railroad Bridge* – The Guffey Railroad Bridge was built in 1897 on the Boise, Nampa, and Owyhee Railroad line that extended from Nampa to Silver City, Idaho, to transport supplies into the Owyhee mining district and handle ore shipments. The expense of the line was so excessive that construction was

halted at Murphy. Large stock pens were subsequently built at both Guffey and Murphy, and cattle shipping became the mainstay of the railroad. The rail line was abandoned in 1947 and the track removed. The Segment 8 Revised Proposed Route would pass approximately 0.25 mile north of the Guffey Railroad Bridge, a NRHP-listed property and the only remaining Parker-Through-Truss Railroad Bridge in Idaho (Idaho Heritage Trust 2015).

Historic Roads

The cultural records search identified one U.S. highway that has been recorded as a historical site, consisting of US 20. Although near the Segment 8 Route, This NRHP-eligible road is near, but is not crossed by the Segment 8 route. A circa 1930s, non-eligible road with an adjacent 1960s-era telephone cable trench would cross the Segment 8 Revised Proposed Route near Indian Creek. A non-eligible historic road that first appears on GLO maps in 1911 would cross the Segment 8 Revised Proposed Route near the Oregon Short Line railroad track.

Railroads

- *Oregon Short Line* – The Oregon Short Line Railroad was established in April 1881 to provide a standard gauge railway from Granger, Wyoming, to Huntington, Oregon. The railroad line was completed to the Idaho-Oregon border by 1884, connecting to the Oregon Railway & Navigation Company line. The Oregon Short Line Railroad eventually assumed control of the Oregon Railway & Navigation Company and in turn was taken over by UPRR, giving UPRR a direct line to the Pacific coast. The Revised Proposed Route in Segment 8 would cross the Oregon Short Line Railroad, an eligible property.
- *UPRR* – Segments of railway identified in the cultural record search as UPRR lines also coincide with the Oregon Short Line Railroad, which leased its operation to UPRR beginning in 1936. The Revised Proposed Route in Segment 8 would cross the UPRR line, an eligible property.

Waterworks

Waterworks sites identified within the Segment 8 records search area include several canals and earthen berms associated with reservoirs. Canals include two unevaluated water conveyances known as the Waldvogel Canal and the Southern Lateral Check Structure, which is associated with the Waldvogel Canal. The Segment 8 Revised Proposed Route corridor would cross both of these canal-related features. Also present near Indian Creek Reservoir is a small, unevaluated earthen dam site with an associated irrigation ditch and historic-period artifacts. The Segment 8 Revised Proposed Route corridor would not cross this site.

The cultural records search for the Segment 9 Revised Proposed Route area revealed several buildings and structures at C.J. Strike Reservoir, near Bruneau. Specific features in the Analysis Area that have been recorded as historic sites include a large temporary camp for dam construction (NRHP-eligible) and various cottage and other buildings and structures associated with the operator's village (not eligible). Other water-supply features in the Owyhee County area recorded as historical sites include the unevaluated Bernard Ditch, which is crossed both the Segments 8 and 9 Revised Proposed Routes.

The cultural files search identified several canal sites within the Toana Road Variations included one waterworks resource, consisting of the unevaluated Devil Creek Canal. The Toana Road Variation 1 and Variation 1-A corridors would cross the Devil Creek Canal.

One agricultural waterway, the NRHP-eligible Murphy Irrigation Ditch system, was identified within the Route 8G/9K Analysis Area, but it does not cross the Route 8G/9K corridor. A second waterworks site in the Route 8G/9K Analysis Area consists of a historic reservoir and other features likely constructed by the Oreana or Marsing/Givens Civilian Conservation Corps camp in the 1930s. The other features associated with the NRHP-eligible site include two rock-lined ditches, a rock-lined dam, three check dams, and a rock-lined spillway.

Historic Sites

The Historic Sites category includes resources that do not share a related socioeconomic theme. Identified resources consist of Rural Sites, which include isolated finds, rock features, refuse scatters, ruins of former structures and/or dwellings, and the former Lower Castle Creek School.

Rural Sites

Rural Sites comprise the largest site type identified by the cultural records search, accounting for approximately 66 percent of all historic resources. Rural sites occur within all routes, where they are predominately represented by an abundance of refuse scatters, which totaled 56 resources or 74 percent of the Rural Sites. Isolated finds include a small group of six individual glass, metal, or ceramic artifacts. A group of 19 resources was identified as historic-period rock features, including one or more rock walls, miscellaneous alignments, cairns, or rings. Artifacts are typically not associated with the rock features. Finally, a small group of four resources reflects habitation ruins in the form of foundations and/or earthen depression with or without associated artifacts. One such site is the Old Guffey townsite (abandoned) and its original encampment, which was founded in the 1890s as a way station on the Boise Nampa & Owyhee Railroad.

Class II, 15 Percent Sample Surveys

Pedestrian cultural resources inventories were conducted for a 7 to 58 (average 26.6) percent sample of the Analysis Area for the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed Route 9; Routes 8G, 8H, and 9K; and the Toana Road Variations. The average surveyed area (26 percent) is greater than the prescribed 15 percent because of overlap among the routes. A total of 256 sites have been identified for all of the routes, ranging from 1 to 65 sites in each route. Table 3.3-5 summarizes the 15 percent sample survey results.

Table 3.3-5. Summary of 15 Percent Sample Surveys of the Analysis Area for the Revised Proposed Routes and Other Routes/Variations

Route	Length (miles)	Miles Surveyed	Survey Coverage (%)	Sites
Revised Proposed Route 8	129.7	75.0	57.8	65
Route 8G	146.9	10.7	7.3	27
Route 8H	137.5	19.4	14.1	13
Revised Proposed Route 9	165.3	51.3	31.0	34
FEIS Proposed 9	162.2	73.9	45.6	55
Route 9K	174.6	46.9	26.9	44
Toana Variation 1	8.5	1.1	12.9	1
Toana Variation 1-A	8.9	1.5	16.9	7
TOTALS	**973.4**	**279.8 (29%)**	**26.6 (average)**	**246**

Note: Mileages are rounded to the nearest tenth of a mile.

Segment 8 Revised Proposed Route Archaeological Sites

The 75 miles surveyed for the Segment 8 Revised Proposed Route identified 65 archaeological sites, or slightly less than one site per mile. These resources consist of 26 prehistoric sites, including 24 lithic scatters and two open camps; and 39 historic sites, including 22 refuse scatters, seven canals or ditches, six historic trail segments, and four other transportation routes. The historic trails or transportation routes include the North Alternate of the Oregon Trail, the Oregon Short Line Railroad, US 20, and US 30.

Route 8G Archaeological Sites

The approximately 11 miles surveyed for Route 8G identified 27 archaeological sites, or nearly three sites per mile. These resources consist of 12 prehistoric sites, all lithic scatters; and 15 historic sites, including 12 refuse scatters, a telegraph line, and two historic trail segments; and one paleontological site. The historic trail segments are the Road from Silver City to Boise City and the Reynolds Creek Road.

Route 8H Archaeological Sites

The approximately 19 miles surveyed for Route 8H identified 13 archaeological sites, or 2 sites for every 3 miles. These resources consist of 4 prehistoric sites, all lithic scatters; and 9 historic sites, including 4 refuse scatters, the Swan Falls-Silver City Transmission Line, and 4 historic trails. The historic trails segments include South Alternate of the Oregon Trail, the Dorsey Road, the Road from Silver City to Boise City, and the Reynolds Creek Road.

Segment 9 Revised Proposed Route Archaeological Sites

The approximately 51 miles surveyed for the Segment 9 Revised Proposed Route identified 34 archaeological sites, or approximately 2 sites for every 3 miles. These resources consist of 11 prehistoric sites, all lithic scatters, with one site also containing a historic refuse scatter; and 23 historic sites, including 10 refuse scatters, the Castleford Dump, the Swan Falls-Silver City Transmission Line, 5 historic trails or other transportation routes, and 6 canals or ditches. The historic trails/transportation segments include the South Alternate of the Oregon Trail, the Dorsey Road, the Road from Silver City to Boise City, the Reynolds Creek Road, and US 93.

FEIS Proposed 9 Archaeological Sites

The approximately 74 miles surveyed for the FEIS Proposed Route 9 identified 55 archaeological sites, or slightly less than one site per mile. These resources consist of 20 prehistoric sites, all lithic scatters, with 2 sites also containing historic refuse scatters; 35 historic sites, including 21 refuse scatters, the Castleford Dump, a telegraph line, 3 historic trails or other transportation routes, and 9 canals or ditches; and one paleontological site. The historic trails/transportation segments include the Road from Silver City to Boise City, the Reynolds Creek Road, and US 93.

Route 9K Archaeological Sites

The approximately 47 miles surveyed for Route 9K identified 44 archaeological sites, or slightly less than one site per mile. These resources consist of 16 prehistoric sites, all lithic scatters, with one site also containing a historic refuse scatter; 28 historic sites, including 17 refuse scatters, the Castleford Dump, a telegraph line, 3 historic trails, and 6 canals or ditches; and one paleontological site. The historic trails segments include the Road from Silver City to Boise City, the Reynolds Creek Road, and US 93.

Toana Road Variation 1 Archaeological Sites

Only one site, the Toana Freight Wagon Road, was recorded along the Toana Road Variation 1 route.

Toana Road Variation 1-A Archaeological Sites

Seven sites were recorded along the Toana Road Variation 1-A route, including the Toana Freight Wagon Road, five lithic scatters or lithic toolstone procurement areas, and one refuse scatter. One of the lithic scatters also contains a historic refuse scatter.

Site Evaluation and Determination of Eligibility to the National Register of Historic Places

As part of the compliance with the NHPA (54 U.S.C. § 300101 *nonseq.*), the regulations at 36 CFR Part 800 require that sites within the APE that may be affected by the undertaking need to be evaluated for eligibility to the NRHP. No formal determinations of eligibility have been made for cultural resources recorded during the Class II survey, and many remain unevaluated. However, information on NRHP-eligible properties obtained from the Class I record searches may have eligibility determinations as the result of previous undertakings and/or planning efforts.

The identified cultural resources and NRHP-eligible properties in the Analysis Area pertaining to each of the routes in the Project area are presented in Table 3.3-6.

Table 3.3-6. National Register of Historic Places Eligibility for Cultural Resources Located within the Project APE

Site ID	Component Type	Prehistoric Site Type or Historic Theme	Site Description	NRHP Eligibility
Segment 8 Revised Proposed Route				
10AA417	Historic	Transportation	Oregon Short Line Railroad	Eligible
10AA577	Historic	Transportation	Oregon Short Line Railroad	Eligible
10AA775	Historic	Historic Sites	Refuse Scatter	Not Eligible
10EL1372	Historic	Historic Sites	Oregon Trail/Kelton Road	Eligible

Table 3.3-6. National Register of Historic Places Eligibility for Cultural Resources Located within the Project APE (continued)

Site ID	Component Type	Prehistoric Site Type or Historic Theme	Site Description	NRHP Eligibility
10EL1918	Historic	Historic Trails	North Alternate Oregon Trail/ Kelton Road	Eligible
10GG677	Prehistoric	Limited Activity	Lithic scatter	Unevaluated
10GG689	Historic	Historic Trails	North Alternate Oregon Trail/ Kelton Road	Eligible
39-18207	Historic	Transportation	Old U.S. Highway 30 Alignment - Elmore County Segment	Unevaluated
39-18221	Historic	Transportation	U.S. Highway 20	Eligible
47-17625/ 53-17027	Historic	Waterworks	X Canal	Eligible
GW1-066	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-070	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-073	Historic	Waterworks	Y Canal Lateral	Eligible
GW1-074	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-075	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-077	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-081	Multiple	Limited Activity/Historic Sites	Lithic Scatter and Historic Refuse Scatter	Unevaluated
GW1-095	Historic	Waterworks	Walker Ditch/Seven Mile Ditch	Not Eligible
GW1-098	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW1-099	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-107	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW1-121	Historic	Agricultural/Animal Husbandry	Foundations and Refuse scatter	Not Eligible
GW1-124	Prehistoric	Limited Activity	Lithic Scatter	Eligible
GW1-126	Prehistoric	Open Camp	Lithic Scatter and Rock Features	Eligible
GW1-127	Historic	Historic Sites	Telephone Line	Unevaluated
GW1-130	Historic	Waterworks	Feeder Irrigation Canal	Eligible
GW1-136	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW1-137	Prehistoric	Limited Activity	Lithic Scatter	Eligible
GW1-138	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW1-139	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW1-140	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW1-141	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW1-143	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW1-144	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW1-145	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW1-148	Historic	Historic Trails	North Alternate Oregon Trail/Kelton Road	Eligible
GW1-149	Historic	Historic Trails	North Alternate Oregon Trail/Kelton Road	Eligible
GW1-206	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-207	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-208	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW1-210	Prehistoric	Limited Activity	Lithic Scatter	Eligible
GW1-211	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW1-215	Historic	Historic Sites	Refuse Scatter	Not Eligible

Table 3.3-6. National Register of Historic Places Eligibility for Cultural Resources Located within the Project APE (continued)

Site ID	Component Type	Prehistoric Site Type or Historic Theme	Site Description	NRHP Eligibility
GW1-216	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-217	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW2-035	Prehistoric	Limited Activity	Lithic Scatter	Eligible
GW2-036	Prehistoric	Limited Activity	Lithic Scatter	Eligible
GW2-037	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW2-080	Historic	Historic Sites	Refuse Scatter	Unevaluated
GW2-083	Historic	Waterworks	X Canal Lateral	Eligible
GW2-085	Historic	Waterworks	South Gooding Main Canal Lateral Ditch	Not Eligible
GW2-087	Historic	Waterworks	Y Canal Lateral	Eligible
GW2-088	Prehistoric	Open Camp	Lithic Scatter	Eligible
GW2-090	Prehistoric	Limited Activity	Lithic Scatter	Eligible
GW3-001	Historic	Historic Trails	North Alternate Oregon Trail and Refuse Scatter	Eligible
GW3-137	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW3-138	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW3-002	Historic	Historic Trails	North Alternate Oregon Trail	Eligible
GW3-006	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW787-1	Prehistoric	Limited Activity	Lithic Scatter	Eligible
GW8-3-1	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW8-3-2	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW8-5-1	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW8-6-1	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW965-1	Historic	Historic Sites	Refuse Scatter	Not Eligible
Route 8G				
10OE9764	Historic	Historic Sites	Refuse Scatter	Unevaluated
10OE10502	Historic	Historic Sites	Refuse Scatter	Not Eligible
10OE11098	Historic	Historic Trails	Road From Silver City to Boise City	Eligible
73-18011	Historic	Historic Trails	Reynolds Creek Road	Eligible
GW1-019	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW1-020	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW1-021	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW1-206	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-207	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-268	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW2-286	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW2-287	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW3-004	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW3-005	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW3-006	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW3-134	Prehistoric	Limited Activity	Lithic Scatter	Eligible
GW3-135	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW3-136	Historic	Historic Sites	Telegraph Line	Unevaluated
GW942-1	Historic/Paleontological	Historic Sites/Other	Refuse Scatter and Paleontological Site	Not Eligible
GW942-2	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW942-4	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW943-2	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated

Table 3.3-6. National Register of Historic Places Eligibility for Cultural Resources Located within the Project APE (continued)

Site ID	Component Type	Prehistoric Site Type or Historic Theme	Site Description	NRHP Eligibility
GW944-1	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW944-2	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW964-1	Multiple	Limited Activity/Historic Sites	Lithic Scatter and Historic Refuse and Cairns	Unevaluated
GW964-2	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW965-1	Historic	Historic Sites	Refuse Scatter	Not Eligible
Route 8H				
10EL1985	Historic	Historic Trails	Dorsey Road	Unevaluated
10OE6025	Historic	Historic Trails	South Alternate Oregon Trail	Eligible
10OE11098	Historic	Historic Trails	Road From Silver City to Boise City	Eligible
73-17987	Historic	Energy Exploration	Swan Falls-Silver City Transmission Line Right-of-Way Corridor	Unevaluated
73-18011	Historic	Historic Trails	Reynolds Creek Road	Eligible
GW1-206	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-207	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW3-004	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW3-005	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW3-006	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW964-1	Multiple	Limited Activity/Historic Sites	Lithic Scatter and Historic Refuse Scatter and Cairns	Unevaluated
GW964-2	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW965-1	Historic	Historic Sites	Refuse Scatter	Not Eligible
Segment 9 Revised Proposed Route				
10AA365	Historic	Historic Sites	Refuse Scatter	Not Eligible
10EL1985	Historic	Historic Trails	Dorsey Road	Unevaluated
10EL11098	Historic	Historic Trails	Road from Silver City to Boise City	Eligible
10OE6025	Historic	Historic Trails	South Alternate Oregon Trail	Eligible
10TF1033	Prehistoric	Limited Activity	Lithic Scatter	Eligible
10TF1374	Historic	Historic Sites	Castleford Dump	Unevaluated
10TF1642	Historic	Waterworks	Canal Segments	Not Eligible
10TF1646	Historic	Historic Trails/Transportation	Contact Trail and Stage Road/Highway 93	Unevaluated
73-17987	Historic	Energy Exploration	Swan Falls-Silver City Transmission Line Right-of-Way Corridor	Unevaluated
73-18011	Historic	Historic Trails	Reynolds Creek Road	Eligible
GW1-005	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-019	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW1-020	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW1-021	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW1-029	Historic	Waterworks	Ditch	Not Eligible
GW1-033	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-059	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW1-060	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW1-062	Multiple	Limited Activity/Historic Sites	Lithic Scatter and Historic Refuse Scatter	Unevaluated

Table 3.3-6. National Register of Historic Places Eligibility for Cultural Resources Located within the Project APE (continued)

Site ID	Component Type	Prehistoric Site Type or Historic Theme	Site Description	NRHP Eligibility
GW1-063	Historic	Waterworks	Ditch	Not Eligible
GW1-199	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-200	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-201	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-258	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW2-026	Historic	Waterworks	Lateral No. 211 Canal	Not Eligible
GW2-033	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW2-069	Historic	Waterworks	Ditch	Not Eligible
GW2-126	Historic	Waterworks	Ditch	Not Eligible
GW2-172	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW2-173	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW2-175	Historic	Historic Sites	Refuse Scatter and Cistern	Not Eligible
GW2-200	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW9-1-1	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW9-2-1	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
FEIS Proposed 9				
10OE2423	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
10OE3075	Historic	Historic Sites	Refuse Scatter	Unevaluated
10OE7673	Historic	Waterworks	Earthen Canal	Unevaluated
10OE9199	Historic	Historic Sites	Refuse Scatter	Unevaluated
10OE9358	Historic	Waterworks	Ditch	Eligible
10OE9441	Multiple	Limited Activity/ Historic Sites	Lithic Isolate and Historic Refuse	Unevaluated
10OE9764	Historic	Historic Sites	Refuse Scatter	Unevaluated
10OE10502	Historic	Historic Sites	Refuse Scatter	Not Eligible
10OE11098	Historic	Historic Trails	Road From Silver City to Boise City	Eligible
10TF1033	Prehistoric	Limited Activity	Lithic Scatter	Eligible
10TF1374	Historic	Historic Sites	Castleford Dump	Unevaluated
10TF1642	Historic	Waterworks	Canal Segments	Not Eligible
10TF1646	Historic	Historic Trails /Transportation	Contact Trail and Stage Road/Highway 93	Unevaluated
73-18011	Historic	Historic Trails	Reynolds Creek Road	Eligible
GW1-005	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-019	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW1-020	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW1-021	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW1-029	Historic	Waterworks	Ditch	Not Eligible
GW1-033	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-059	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW1-060	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW1-062	Multiple	Limited Activity/Historic Sites	Lithic Scatter and Historic Refuse scatter	Unevaluated
GW1-063	Historic	Waterworks	Ditch	Not Eligible
GW1-195	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW1-196	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW1-197	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-199	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-200	Historic	Historic Sites	Refuse Scatter	Not Eligible

Table 3.3-6. National Register of Historic Places Eligibility for Cultural Resources Located within the Project APE (continued)

Site ID	Component Type	Prehistoric Site Type or Historic Theme	Site Description	NRHP Eligibility
GW1-201	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-224	Historic	Waterworks	Triangle Dairy Irrigation Canal	Not Eligible
GW1-258	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW2-026	Historic	Waterworks	Lateral No. 211 Canal	Not Eligible
GW2-033	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW2-069	Historic	Waterworks	Ditch	Not Eligible
GW2-126	Historic	Waterworks	Ditch	Not Eligible
GW2-172	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW2-173	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW2-175	Historic	Historic Sites	Refuse Scatter and Cistern	Not Eligible
GW2-200	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW3-134	Prehistoric	Limited Activity	Lithic Scatter	Eligible
GW3-135	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW3-136	Historic	Historic Sites	Telegraph Line	Unevaluated
GW9-1-1	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW9-2-1	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW921-1	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW932-1	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW934-1	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW942-1	Historic/Paleontological	Historic Sites/Other	Refuse Scatter and Paleontological Site	Not Eligible
GW942-2	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW942-4	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW943-2	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW944-1	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW944-2	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW955-1	Historic	Historic Sites	Refuse Scatter	Not Eligible
Route 9K				
10OE9764	Historic	Historic Sites	Refuse Scatter	Unevaluated
10OE10502	Historic	Historic Sites	Refuse Scatter	Not Eligible
10OE11098	Historic	Historic Trails	Road from Silver City to Boise City	Eligible
10TF1033	Prehistoric	Limited Activity	Lithic Scatter	Eligible
10TF1374	Historic	Historic Sites	Castleford Dump	Unevaluated
10TF1642	Historic	Waterworks	Canal Segments	Not Eligible
10TF1646	Historic	Historic Trails	Contact Trail and Stage Road/Highway 93	Unevaluated
73-18011	Historic	Historic Trails	Reynolds Creek Road	Eligible
GW1-005	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-019	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW1-020	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW1-021	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW1-029	Historic	Waterworks	Ditch	Not Eligible
GW1-033	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-059	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW1-060	Prehistoric	Limited Activity	Lithic Scatter	Not Eligible
GW1-062	Multiple	Limited Activity/Historic Sites	Lithic Scatter and Historic Refuse Scatter	Unevaluated
GW1-063	Historic	Waterworks	Ditch	Not Eligible

Table 3.3-6. National Register of Historic Places Eligibility for Cultural Resources Located within the Project APE (continued)

Site ID	Component Type	Prehistoric Site Type or Historic Theme	Site Description	NRHP Eligibility
GW1-199	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-200	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-201	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-258	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW1-268	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW2-026	Historic	Waterworks	Lateral No. 211 Canal	Not Eligible
GW2-033	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW2-069	Historic	Waterworks	Ditch	Not Eligible
GW2-126	Historic	Waterworks	Ditch	Not Eligible
GW2-172	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW2-173	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW2-175	Historic	Historic Sites	Refuse Scatter and Cistern	Not Eligible
GW2-200	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW2-286	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW2-287	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW3-134	Prehistoric	Limited Activity	Lithic Scatter	Eligible
GW3-135	Historic	Historic Sites	Refuse scatter	Not Eligible
GW3-136	Historic	Historic Sites	Telegraph Line	Unevaluated
GW9-1-1	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW9-2-1	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW942-1	Historic/Paleo	Historic Sites/Other	Refuse Scatter and Paleontological Site	Not Eligible
GW942-2	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW942-4	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW943-2	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW944-1	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW944-2	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
Toana Road Variation 1				
83-7967	Historic	Historic Trails	Toana Freight Wagon Road	NR-listed
Toana Road Variation 1-A				
10TF1034	Prehistoric	Limited Activity	Lithic Scatter and Toolstone Procurement Area	Eligible
10TF1035	Prehistoric	Limited Activity	Lithic Scatter	Eligible
DD-24	Prehistoric	Limited Activity	Lithic Scatter and Toolstone Procurement Area	Eligible
DD-25	Multiple	Limited Activity/ Historic Sites	Lithic Scatter, Toolstone Procurement Area, and Historic Refuse Scatter	Eligible
83-7967	Historic	Historic Trails	Toana Freight Wagon Road	NR-listed
GW1581-1	Historic	Limited Activity	Refuse Scatter	Not eligible
GW1581-4	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated

Segment 8 Revised Proposed Route

Cultural resources identified within the Analysis Area of the Segment 8 Revised Proposed Route APE include 39 historic and 26 prehistoric resources. Collectively, the NRHP eligibility of these sites includes 24 eligible, 23 not eligible, and 18 unevaluated properties.

The eligible sites include several segments of the North Alternate of the Oregon Trail, US 20, the X Canal and Y Canal or laterals of those canals, two open camps, and three lithic scatters. Most of the not eligible sites are historic refuse scatters. The Unevaluated sites include mostly lithic scatters, as well as a telegraph line and a segment of US 30.

Route 8G

Cultural resources identified within the Analysis Area of the Route 8G APE include 15 historic and 12 prehistoric resources. Collectively, the NRHP eligibility of these sites includes 3 eligible, 16 not eligible, and 8 unevaluated properties.

The eligible sites include several segments of the Road from Silver City to Boise City, the Reynolds Creek Road, and a prehistoric lithic scatter. Most of the not eligible sites are historic refuse scatters and prehistoric lithic scatters. The unevaluated sites include mostly lithic scatters, as well as a telegraph line.

Route 8H

Cultural resources identified within the Analysis Area of the Route 8H APE include nine historic and four prehistoric resources. Collectively, the NRHP eligibility of these sites includes three eligible, six not eligible, and four unevaluated properties.

The eligible sites include segments of the South Alternate of the Oregon Trail, the Road from Silver City to Boise City, and the Reynolds Creek Road. The not eligible sites include several historic refuse scatters and prehistoric lithic scatters. The unevaluated sites include two lithic scatters and segments of the Swan Falls-Silver City Transmission Line and the Dorsey Road.

Segment 9 Revised Proposed Route

Cultural resources identified within the Analysis Area of the Segment 9 Revised Proposed Route APE include 23 historic and 11 prehistoric resources. Collectively, the NRHP eligibility of these sites includes 4 eligible, 21 not eligible, and 9 unevaluated properties.

The eligible sites include segments of the South Alternate of the Oregon Trail, the Road from Silver City to Boise City, the Reynolds Creek Road, and one prehistoric lithic scatter. The not eligible sites include several prehistoric lithic scatters and historic refuse scatters, as well as segments of several canals and ditches. The unevaluated sites include several lithic scatters and the Castleford Dump, as well as segments of the Dorsey Road, US 93, and the Swan Falls-Silver City Transmission Line.

FEIS Proposed 9

Cultural resources identified within the Analysis Area of the FEIS Proposed 9 APE include 35 historic and 20 prehistoric resources. Collectively, the NRHP eligibility of these sites includes 5 eligible, 33 not eligible, and 17 unevaluated properties.

The eligible sites include segments of the Road from Silver City to Boise City and the Reynolds Creek Road, as well as two prehistoric lithic scatters and a historic ditch. The not eligible sites include mostly historic refuse scatters and prehistoric lithic scatters, as well as segments of several canals and ditches. The unevaluated sites include several lithic scatters and refuse scatters, the Castleford Dump, US 93, and a telegraph line.

Route 9K

Cultural resources identified within the Analysis Area of the Route 9K APE include 28 historic and 16 prehistoric resources. Collectively, the NRHP eligibility of these sites includes 4 eligible, 27 not eligible, and 13 unevaluated properties.

The eligible sites include segments of the Road from Silver City to Boise City and Reynolds Creek Road, and two prehistoric lithic scatters. Most of the not eligible sites are historic refuse scatters and prehistoric lithic scatters, as well as several segments of historic canals and ditches. The unevaluated sites include mostly lithic scatters, a few refuse scatters, the Castleford Dump, a telegraph line, and US 93.

Toana Road Variation 1

The Analysis Area of the Toana Variation 1 APE includes the Toana Freight Wagon Road, which is listed in the NRHP.

Toana Road Variation 1-A

The Analysis Area of the Toana Road Variation 1-A APE includes five prehistoric and two historic resources. Collectively, the NRHP eligibility of these sites includes one listed, four eligible, one not eligible, and one unevaluated properties.

The Toana Freight Wagon Road is listed in the NRHP. The eligible sites include four lithic scatters or toolstone procurement area. The not eligible sites include one historic refuse scatter. The unevaluated site is a lithic scatter.

Cultural Resources Within the SRBOP

Portions of the Segment 8 Revised Proposed Route, Route 8H, and the Segment 9 Revised Proposed Route cross the SRBOP. Cultural resources recorded within the SRBOP area include 24 properties, comprising 22 historic resources and 2 prehistoric resources. Eighteen of these sites are previously recorded resources, while 6 others were identified during the Class II sample survey. The Revised Proposed Route for Segment 8 would avoid the utility avoidance/restricted area around an NHRD within the SRBOP. Although site density near the river is higher in this area for both prehistoric and historic resources, the Segment 8 Proposed Revised Route would span the Snake River Canyon and thereby avoid any direct impacts to most of the sites and indirect effects can be minimized by paralleling closely the existing transmission line. The Revised Proposed Route runs parallel with and, in some places, crosses the North Alternate of the Oregon NHT.

Although previous surveys in the area of the Revised Proposed Route for Segment 9 have been relatively limited, they have demonstrated that the area was a center for cultural interactions, suggesting that actual site density may be higher than expected. The Revised Proposed Route would cross an NRHD and parallel or cross NHTs through the SRBOP. The Segment 9 Revised Proposed Route would cross one NHT segment, while FEIS Proposed 9 would not cross any NHT segments.

3.3.2.4 Direct and Indirect Impacts of the Alternatives

This section assesses the quantitative impacts on cultural resource from the seven BLM action alternatives. Table 3.3-7 lists the quantitative impacts that would occur to cultural

resources under the action alternatives. The tabulation does not include isolated finds, whose explanatory value lies more in the aggregate than singly.

These data reveal that none of the action alternatives is clearly better at avoiding impacts to cultural resources than any of the other alternatives. In fact, the distribution of all known and recently recorded cultural resources is remarkably uniform across all of the action alternatives. This general assessment aside, it is equally clear that Alternative 4 has the fewest impacts, while Alternative 2 has the most impacts. The number of affected cultural resources for the other five alternatives falls between those two extremes. All of the action alternatives cross two NHTs and several non-NHTs.

The “quantity” of affected resources is complemented by the “quality” of those resources. Such quality is measured here by the ratio of NRHP-eligible to not eligible resources. This ratio is highest with Alternatives 1, 2, and 3, and lowest with Alternatives 4 through 7. Of course, many resources have not yet been evaluated for NRHP eligibility and the ratio of eligible to not eligible sites could change once those assessments are completed. These assessments also do not take into account the number and distribution of undiscovered resources that may be identified and documented during the follow-up Class III surveys.

In summary, when all quantitative and qualitative factors are considered, Alternative 4 would impact fewer and less consequential cultural resources, while Co-Preferred Alternative 2 (Revised Proposed Route 8 and the FEIS Proposed 9) would have the greatest and most consequential impacts. Co-Preferred Alternative 5 (8G and 9K routes) would be favored over Co-Preferred Alternative 2. Alternative 2 would impact 22 historic trails and 480 historic sites compared to 10 historic trails and 356 historic sites for Alternative 5 (see Table 3.3-7).

Table 3.3-7. Comparison of Impacts to Cultural Resources from the Seven Action Alternatives[1/]

Alternative[2/]	Prehistoric Resources (Number)					Historic Resources (Number)						Totals	*Percent*
	Open Camp	Rock Feature	Sheltered Camp	Rock Image	Limited Activity	Historic Trails	Agricultural/ Animal Husbandry	Energy Develop-ment	Trans-portation	Water Works	Historic Sites		
1	21	9	12	5	122	27	15	17	16	24	165	**433**	***15.9***
2	19	0	8	5	139	22	15	1	16	29	180	**434**	***15.9***
3	19	0	6	5	127	22	14	1	15	29	167	**405**	***14.8***
4	8	0	12	0	110	9	18	16	4	19	146	**342**	***12.5***
5	8	0	14	0	122	10	17	17	3	18	147	**356**	***13.1***
6	10	9	18	0	109	15	16	32	5	17	157	**388**	***14.2***
7	10	9	18	0	109	15	15	32	4	15	144	**371**	***13.6***
Totals	**95**	**27**	**88**	**15**	**838**	**120**	**110**	**116**	**63**	**151**	**1,106**	**2,729**	***100.0***
Percent	***3.5***	***1.0***	***3.2***	***0.6***	***30.7***	***4.4***	***4.0***	***4.3***	***2.3***	***5.5***	***40.5***	***100.0***	

1/ Isolated Finds are not included in this table, and the totals do not equal those in Tables 3.3-1 and 3.3-2, because the action alternatives incorporate several routes.

2/ Alternative 1 = Proposed Action (Revised Proposed Routes for Segments 8 and 9)
Alternative 2 = Revised Proposed Route 8 and FEIS Proposed 9 including Toana Road Variation 1 (Co-Preferred)
Alternative 3 = Revised Proposed Route 8 and Route 9K
Alternative 4 = Route 8G and FEIS Proposed 9
Alternative 5 = Route 8G and Route 9K including Toana Road Variation 1 (Co-Preferred)
Alternative 6 = Route 8H and FEIS Proposed 9
Alternative 7 = Route 8H and Route 9K

3.3.2.5 Mitigation

Cultural resources mitigation for Gateway West Segments 8 and 9 would follow the executed Project PA (Appendix E of the ROD [BLM 2013b]). Mitigation measures would be implemented through site-specific HPTPs developed after completion of the Class III cultural resource surveys. These plans would include measures to avoid, minimize, or treat adverse impacts (direct and/or indirect) to cultural resources.

3.3.2.6 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, as well as additional measures proposed by the Project Proponents specifically for the SRBOP.

Environmental Protection Measures

The Proponents have committed to Project design features and EPMs to minimize or avoid impacts on historic properties, regardless of whether they are found on private, state, or federally managed lands, in accordance with Section 106 of the NHPA. Details of each measure are provided in Table 2.7-1 in Chapter 2 of the 2013 FEIS.

Should historic properties (i.e., NRHP-eligible resources) be adversely impacted, the following EPM would be implemented project-wide:

CR-5 If construction will adversely impact any properties listed in, or eligible for listing in, the NRHP, mitigation will be required. Mitigation will be in accordance with the PA and the HPTPs that will be made part of the PA and may include, but not be limited to, one or more of the following measures:

a) avoidance through the use of relocation of structures through the design process, realignment of the route, relocation of temporary workspace, or changes in the construction and/or operational design;

b) the use of landscaping or other techniques that will minimize or eliminate effects on the historic setting or ambience of standing structures; and

c) data recovery, which may include the systematic professional excavation of an archaeological site or the preparation of historic narratives, photographs, and/or measured drawings documenting standing structures. This EPM would avoid potential direct impacts to cultural resources if relocation of Project features is possible. The Agencies would require the Proponents to revise the siting of ground-disturbing activities to avoid or minimize impacts to cultural resources. If avoidance is not feasible, this measure would minimize potential impacts through recovery and documentation of archaeological sites and the use of techniques to restore the visual setting of standing structures.

In addition, the following EPMs would be implemented to minimize impacts to cultural resources. Details on the applicable lands for each EPM are also described in Table 2.7-1 of the FEIS.

CR-1 All work conducted in accordance with the HPTPs will be performed by qualified archeologists with trained assistants.

CR-2 An Unanticipated Discovery Plan will be included as part of each HPTP. This plan will specify what steps will be taken if subsurface cultural resources are discovered during construction, including stopping construction in the vicinity of the find, notification of the appropriate land management agency, identification of a qualified archaeologist to conduct an evaluation of the find, and the development of an approved data recovery program or other mitigation measures.

CR-3 A Cultural Resource Monitoring and Mitigation Plan will be developed and will include provisions for the preparation and curation of any collections from federal lands and for the preparation of a final report based on the data recovered for activities on federal lands.

CR-4 Literature reviews and Class III (intensive pedestrian) surveys will be completed for cultural resources in those areas that have not previously been surveyed. A literature review will be conducted on public and private lands and will cover a study area of one-half mile on either side of the proposed and variations, as well as areas identified for use as staging areas and access roads. Class III surveys covering the APE as specified in the PA will be completed.

CR-6 Avoidance areas will be flagged or otherwise marked prior to construction activities. Flagging or other marking will be removed once construction is completed in an area.

CR-7 To minimize unauthorized collecting of archaeological materials or vandalism to known archaeological sites, all workers will attend mandatory training on the significance of cultural resources and the relevant federal regulations intended to protect them.

CR-8 If human remains are discovered, construction will be immediately halted, the BLM Manager, law enforcement and the coroner will be notified, and measures specified in the HPTP will be followed.

The purpose of the proposed EPMs is to avoid or minimize the extent of impacts that could occur to cultural resources. CR-4 is a standard operating procedure for the survey compliance part of the PA. These EPMs are a part of the Revised Proposed Action, and as such, the effects of their implementation are included in the impact discussion found in Sections 3.3.2.2, 3.3.2.3, and 3.3.2.4.

Proponent-Proposed MEP and Potential Effects of the MEP within the SRBOP

The Proponents have developed an MEP to mitigate the effects of Project-related impacts within the SRBOP, as well as comply with the SRBOP's enabling statute (P.L. 103-64) which requires enhancement of resources within the region. The Proponents' plan contains two forms of mitigation: "compensation mitigation" and "enhancement." For this analysis, mitigation is defined as avoidance, minimization, and compensation measures aimed at offsetting adverse residual impacts of the Project; enhancement is defined as additional mitigation measures that are required in order to enhance the objectives and values for which the SRBOP was established.

One of the goals of the Proponents' MEP proposal is to return treated areas to their baseline condition, which is defined using the Natural Resources Conservation Service (NRCS) Ecological Site Description (ESD) of the affected area (see Section 3.6 – Vegetation, for a definition of ESDs). However, the NRCS ESDs have not been defined for 38 percent of Segment 8 and 12 percent of Segment 9. The site descriptions for the unidentified areas would need to be established in order to determine the baseline conditions of the area, which are necessary to define restoration goals. This is because a determination of the adequacy of any proposed mitigation and enhancement cannot be made unless the baseline conditions for all areas impacted as well as those proposed for mitigation/enhancement are known to fully calculate both the debit (i.e., Project impact) and mitigation/enhancement credit. As a result, more information is required from the Proponents to fully assess the proposed MEP.

The Proponents' MEP offers a portfolio that contains five types of mitigation/enhancement proposals. The following discusses the benefit and/or impact that these proposed mitigation/enhancement proposals could have to cultural resources.

Habitat Restoration

The goal for the Proponents' habitat restoration proposal is to convert "non-native grasslands to native perennial plant communities" as well as to conduct "noxious weed control." The proposed habitat restoration measures may contribute to reestablishing historic vegetation context around sites; however, they also have the potential to disturb extant cultural resource sites.

Purchase of Private Inholdings

There are private lands within the SRBOP that contain important cultural and natural resources. The Proponents have proposed (as part of the MEP) to provide funding for the purchase, transaction fees, and ownership transfer of a portion of these lands to the U.S. government, to be managed by the BLM in perpetuity. Once purchased and deeded to the United States, these lands could be managed together with adjacent BLM-administered lands and would not require additional funding for separate management.

This proposal is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute (e.g., P.L. 103-64 states that "The Secretary is authorized to acquire lands and interests therein within the boundaries of the conservation area by donation, purchase with donated or appropriated funds, exchange, or transfer from another Federal agency, except that such lands or interests owned by the State of Idaho or a political subdivision thereof may be acquired only by donation or exchange").

The Proponents have indicated that all efforts proposed in regard to the purchasing of private inholdings are intended to apply to enhancement of the SRBOP. However, the current condition or management of the private lands cannot be determined at this time because no specific parcels or willing landowners have been identified to date. Therefore, although this proposal may result in the long-term enhancement of the area and protection of cultural resources, the extent and type of cultural resources that may be protected, as well as a determination of this proposal's ability to enhance the

objectives and values for which the SRBOP was established, cannot be made until the specific parcels are identified by the Oversight Committee.

Law Enforcement

The Proponents' MEP contains a proposal for the funding of increased law enforcement within the SRBOP for a period of 10 years. The goal of this increased funding is to change adverse behaviors in the SRBOP by aiding law enforcement in their coverage and ability to manage public induced damage to resources. This proposal is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute.

If illegal or inappropriate activities were conducted in the SRBOP, they could have adverse impacts to cultural resources. For example, visitors could destroy or remove sensitive artifacts and cultural items found in the SRBOP. As a result, increased law enforcement funding may result in the increased protection of cultural resources. However, it is not certain if these activities actually occur in the SRBOP, or if they do occur, at what frequency. As a result, because the current baseline conditions of the area (i.e., if these activities occur or how often they occur) cannot be identified at this time, a determination of this proposals' ability to enhance the objectives and values for which the SRBOP was established cannot be made.

Visitor Enhancement

The MEP contains a proposal to fund programs meant to enhance the experiences of visitors to the SRBOP. The Proponents' MEP offers the following as examples of programs that could support the cultural resource goals:

- Public service announcements and educational materials that educate the public and promote responsible use of the SRBOP; or
- Cultural resource education programs and other materials (displays, videos, and brochures) to help members of the public understand the value of cultural resources and how their preservation in place can preserve and enhance their collective cultural heritage.

This proposal is in compliance with the objectives and a goal of the BLM's RMP as well as the SRBOP's enabling statute.

The Proponents have indicated that all efforts proposed under this program are intended to apply to enhancement of the SRBOP (with no mitigation component).

Enhancement of the visitors' experience is an important component of the SRBOP, and the visitors' experience is called out specifically in the SRBOP's enabling statute (see Section 4 of P.L. 103-64, "Management and Use"). Visitor enhancement programs that contain an educational component aimed at the importance of cultural resources protection could, have indirect long-term beneficial impacts by promoting the public's interest in protecting these resources. However, because the exact programs that would be funded have not been identified to date, a determination of this proposal's ability to enhance the objectives and values for which the SRBOP was established cannot be made.

Line and Substation Removal

The Proponents have proposed to remove some existing infrastructure within the SRBOP. This action includes:

- Removing approximately 7 miles of existing 46-kV line on BLM-managed lands, including all structures (although structures may remain if requested by the BLM), from the Bowmont Substation to Gage Substation;
- Constructing approximately a one-mile-long section on private land to connect the remaining portion of the line to the Idaho Power system;
- Reconstructing 3.9 miles of existing 12.5-kV lines, including 0.25 mile on BLM-managed lands;
- Converting approximately 4 miles of the existing 46-kV line on an existing BLM ROW between the Gage and Ferry Substations to a 12.5-kV distribution line; and
- Removing the existing Gage Substation and associated equipment/apparatus, which are on BLM-managed land.

Although not specifically addressed or called out in the SRBOP's enabling statute, this proposal does not contradict the objectives and goals of the BLM's RMP or the SRBOP's enabling statute.

The Proponents have indicated that all efforts proposed as part of the line and substation removal effort are intended to apply to enhancement of the SRBOP (with no mitigation component).

Removal of these portions of the line and the substation could discourage unwarranted and unnecessary travel in the SBROP and could reduce if not eliminate disturbance or destruction of cultural resources adjacent to these existing infrastructures. However, all BMPs and EPMs implemented during construction would also need to be implemented during this effort to prevent cultural resources from being impacted during the removal of these existing lines and substation.

3.3.2.7 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

<u>Summary of Remaining Impacts</u>

After implementation of the EPM and MEP discussed above, some Project-related impacts would likely remain. The impact assessment found in Sections 3.3.2.2, 3.3.2.3, and 3.3.2.4 incorporates the avoidance and minimization contributions of the EPMs in the impact analysis; as a result, Sections 3.3.2.2, 3.3.2.3, and 3.3.2.4 take these measures and their impact offsets into consideration. The design features outlined in the Proponents' MEP (discussed above in Section 3.3.2.5) may reduce the magnitude of these impacts to some degree; however, the extent of this reduction cannot be fully quantified at this time.

BLM Compensatory Mitigation Categories

The goals for the preservation of cultural resources for the Project are to avoid and minimize impacts to historic properties that are NRHP listed or determined eligible for listing in the NRHP and to provide compensatory mitigation for all unavoidable impacts to such resources. Adverse effects to historic properties will probably occur that cannot be entirely avoided by this Project. Even if the Project could be redesigned to avoid all direct effects through ground disturbance, a major change in the setting of certain important resources where setting is an aspect of integrity, including NHTs, cannot be entirely avoided and has already been identified. In addition, the location, nature, and extent of some resources preclude complete avoidance. Minimization is undertaken through the design elements proposed by the Proponent. These include steps such as micrositing of towers, access roads, and other associated facilities to avoid direct impacts to sites.

In addition to the design features and EPMs proposed to avoid and minimize impacts to cultural resources (as described above in Section 3.3.2.5), the PA and HPTP propose a strategy to mitigate for the cultural resources impacts that would remain once the avoidance and minimization measures were fully implemented. These measures would be applicable to Segments 8 and 9, if approved.

Generally speaking, the mitigation for cultural resources comes in two parts: NHPA Section 106 mitigation for adverse effects to historic properties, and mitigation under NEPA for impacts to cultural resources as part of the human environment. The mitigation under the NHPA only applies to historic properties listed on or eligible for the NRHP. Consequently, other cultural sites and traditional cultural and religious places important to Tribes or other cultural groups may not be included.

While describing the mitigation for resources in the NEPA document is necessary, it is more challenging for cultural resources due to the phased Section 106 process for compliance with the NHPA. The PA developed for the Project to describe this NHPA process will have a conceptual HPTP followed by site-specific Segment Plans that will outline the mitigation for sites within an identified segment of the Project.

The objectives of the conceptual HPTP are to:

- Identify possible mitigation strategies.
- Consult with parties to the PA, Tribes, and the public regarding the mitigation options, as outlined in the PA process.
- Identify associated components of the HPTP implementation such as site evaluation, data recovery plans, reporting, inadvertent discoveries, etc.
- Identify specific on-the-ground protection measures to protect resources remaining in situ that will be avoided during construction.

The general HPTP will outline generic mitigation options especially covering broad resource categories such as historic trails. The mitigation strategy may vary depending on the type of adverse effect(s). Mitigation plans for direct, indirect, and cumulative effects may include the following:

- Land acquisition for long-term protection of cultural resources or access to properties such as the NHT;

- Conservation/protection easements;
- Establishment of a funding pool with partners for cultural resources preservation/enhancement(e.g., multiple projects affecting trails could contribute);
- Public outreach and education projects;
- Establishment of stewardship/monitoring program;
- Development/expansion of resource interpretation and recreational use;
- Development/updating of resource management plans;
- Research and documentation (e.g., Historic American Buildings Survey, Historic American Landscapes Survey, NRHP nominations, ethnographies, oral histories, etc.); and/or
- Improvement of the integrity of historic settings by eliminating visual intrusions (e.g., removing signs, fencing, and vegetation) or enhancement (e.g., planting vegetation).

The conceptual plan (HPTP) lays the groundwork for the detailed mitigation plans (Segment Plans) that will be developed once all portions of the selected route have been completely inventoried (100 percent, Class III level) and identified resources have been officially evaluated for listing in the NRHP.

The unique quality of cultural resources is that they are non-renewable, and it may not be appropriate to mitigate loss of such resource values by preserving an equivalent one. The mitigation norm for such impacts is through recovery of important data and materials for a cultural resource site. Data recovery plans are addressed as part of the project in the PA and HPTP. For indirect effects, minimization options include lower tower height and reconfigured tower types, visual softening by blending of colors of materials with the environment and use of non-reflective material components and maximum span lengths, and reduction and reclamation/closure of temporary access roads.

The Proponents will implement compensatory mitigation for unavoidable adverse effects that remain after all appropriate and practical avoidance has been achieved. The goal of the cultural resources mitigation section in the SEIS is to identify the types of resources that will be subject to mitigation as well as general methods for avoidance, protection, and/or treatment of those resources.

For the proposed project, compensatory mitigation opportunities are considered in terms of a broad approach to cultural resource categories. The common characteristics and chronological associations within a group of historic properties will be examined in order to identify and evaluate the qualitative data potential and preservation options collectively within this context. The framework for planning a project-wide mitigation strategy is based on the concept of the treatment of historic properties on the themes, trends, and patterns of history shared by the properties organized into related historic contexts and specific property types (NPS 1991). Historic contexts were outlined in the technical studies and SEIS, for various property types, as the framework for providing NRHP evaluation recommendations. This approach facilitates mitigation planning by comparing similar historic properties and associations with one another to ascertain

which specific properties provide the best essential information, and may be the most definitive example, that will preserve the historical significance of the collective group of historic properties, or which are the most important for interpretation, etc., related to any particular context or property type.

Application of compensatory mitigation to cultural resources must be consistent with federal and state agencies responsibilities under the NHPA and any related protocols and PAs. This will include coordination with the SHPO, Tribes, and the ACHP. As a general rule of thumb, mitigation on-site within the Project is the highest priority for historic property mitigation, with off-site mitigation less desirable in most cases.

For Gateway West, the Oregon NHT is a perfect example of this approach. The trail is national in scope and crosses multiple states and thus is a prime thematic resource for which to integrate a broad, conceptual mitigation plan that will step down into Segment Plans, once the effects to specific parts of the trail and/or associated features and sites such as emigrant camps and river crossings, are determined.

Detailed, site-specific Segment Plans will be prepared for the historic properties identified as having adverse effects from the undertaking and that cannot be avoided once the selected alternative is chosen. Development of the Segment Plans will involve coordination and consultation with consulting parties to the PA, Tribes, and the Proponents. Alterations to the mitigation plans, implementation, and monitoring will all be identified through this collaborative process. These coordination efforts will also provide opportunities to discuss the minimization of impacts to the construction schedule and implementation of phased mitigation fieldwork.

The BLM may require additional mitigation for any remaining impacts of the Project on environmental resources (including impacts that occur outside the SRBOP), per the guidelines found in the BLM Regional Mitigation Manual (BLM 2013c) and DOI Manual 600 DM 6, *Implementing Mitigation at the Landscape-scale* (DOI 2015). Mitigation for Project-related impacts that would occur within the SRBOP is discussed below.

The BLM will continue to work with applicable stakeholders to identify the impacts that would remain on the SRBOP after implementation of the EPMs and MEP, as well as the existing compensatory mitigation plans discussed above. The BLM will then design mitigation options that address these applicable remaining impacts (see Section 3.0 for a discussion of the BLM's policy regarding mitigation). These options will contain components that will ensure that all impacts to resources and values on the SRBOP that require mitigation are compensated for, and enhancement of these resources is provided in order to comply with the enabling statute of the SRBOP. Based on internal and external scoping, the BLM is considering eight mitigation categories (see Section 2.6.2 in Chapter 2). The following mitigation categories are being considered to address remaining impacts to cultural resources within the SRBOP:

- Increase funding for recreation and visitor management;
- Acquire private lands as deemed appropriate by the Authorizing Officer;
- Increase funding to law enforcement on the SRBOP; and
- Increase cultural resource interpretation and preservation measures.

3.4 SOCIOECONOMICS

This section addresses potential impacts on socioeconomics from the Revised Proposed Routes for Segments 8 and 9; FEIS Proposed 9; Routes 8G, 8H, and 9K; and the Toana Road Variations to the Segment 9 Revised Proposed Route. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). The section analyzes the potential impacts the Project's activities could have on population, economic conditions, housing, property values, education, public services, and tax revenues. The counties crossed by the routes and alternatives for Segments 8 and 9 and the communities located within the vicinity of the proposed facilities comprise the overall socioeconomic Analysis Area. Effects associated with the routes analyzed in the 2013 FEIS were disclosed in that document. With the exception of FEIS Proposed 9, those FEIS routes are not being re-analyzed here, as only new information is included in this resource-specific section.

3.4.1 Affected Environment

This section discusses those aspects of the environment that could be impacted by the Project. It starts with a discussion of the Analysis Area considered, identifies the issues that have driven the analysis, and characterizes the existing conditions within the Analysis Area.

The following affected environment section is limited to a discussion of data and information that differs from that presented in the 2013 FEIS. The Analysis Area for this SEIS is restricted to the area crossed by Segments 8 and 9; as a result, not all of the resources discussed in the FEIS would be affected by the routes and alternatives being considered in this SEIS.

Morley Nelson Snake River Birds of Prey National Conservation Area

Portions of the Project would cross through the SRBOP. Socioeconomics is not one of the environmental resources and values for which the SRBOP was established to manage and protect; however, education and science (as it related to the SRBOP) was identified as one the values for which the SRBOP was established.

3.4.1.1 Analysis Area

The Revised Proposed Route for Segments 8 and 9 combined is 295 miles long. The counties crossed by each segment and the approximate length of each segment are identified in Table 3.4-1. The length of transmission line by county ranges from less than 5 miles in Lincoln County, to approximately 88 miles in Elmore County (Table 3.4-2).

Table 3.4-1. Counties Crossed by Segments 8 and 9

Segment	Counties	Revised Proposed Routes Transmission Length (miles)[1/]
8	Ada, Canyon, Elmore, Gooding, Jerome, Lincoln, Owyhee	130
9	Ada, Cassia, Elmore, Owyhee, Twin Falls	165
	Total	**295**

1/ Miles are rounded here to nearest whole mile.

Table 3.4-2. Miles by County (Revised Proposed Routes

County	Segment 8	Segment 9	Total County Length
Ada	30	15	44
Canyon	3	0	3
Cassia	0	2	2
Elmore	54	34	88
Gooding	28	0	28
Jerome	6	0	6
Lincoln	3	0	3
Owyhee	6	70	76
Twin Falls	0	45	45
Total	**130**	**165**	**295**

Note: Miles are rounded here to nearest whole mile so rows/columns may not sum exactly.

3.4.1.2 Issues Related to Socioeconomics

The following socioeconomic-related issues were brought up by the public during public scoping (Tetra Tech 2009) and comments on the DEIS, were raised by federal and state agencies during scoping and agency discussions, or are issues that must be considered as stipulated in law or regulation:

- Whether sufficient housing would be available for temporary and permanent workers;
- Whether the temporary workforce would have detrimental effects on existing services in local municipalities;
- What the effects would be on population numbers;
- What the effects would be on economic conditions;
- Whether education or schools would be affected;
- Whether public services such as police or fire protection would be impacted;
- How the project would affect tax income to local governments;
- How development of the Project would impact municipal infrastructure and other planned development;
- How the presence of the transmission line would affect the quality of life and enjoyment of the land by local residents;
- What the economic impacts would be to individuals;
- How this Project would affect tourism and recreation;
- Whether construction or operations of the Project would disrupt delivery of any public utilities such as electricity or sewer;
- What municipalities and other population concentrations would be impacted; and
- Under what circumstances private land would be condemned, and what the effects of this would be.

We reviewed the scoping comments received for this SEIS and determined that socioeconomic-related issues considered in the 2013 FEIS have not changed. Comments received during the SEIS scoping were concerned about potential impacts to

private lands and the SRBOP. Some comments requested that the SEIS assess the economic benefits and costs of routing the Project through the SRBOP compared to a route that crossed private lands. Multiple comments expressed concern that the Project would adversely affect adjacent property values (see Appendix I).

3.4.1.3 Methods

The Socioeconomics section in the 2013 FEIS discusses the methods used for the socioeconomics analysis; we reviewed the methods presented in the FEIS and concluded that they are still valid for this SEIS (see the 2013 FEIS for details regarding the methods used for the socioeconomic analysis). Information was updated where available.

3.4.1.4 Existing Conditions

Population

The nine counties that comprise the Analysis Area had a total estimated population of 814,478 in 2014 (Table 3.4-3). More than three-quarters of this total (77 percent) was concentrated in just two counties: Ada (52 percent) and Canyon (25 percent) counties. These two counties, located at the western end of the Analysis Area, include the cities of Boise and Nampa, with respective 2013 populations of 214,237 and 86,518 (Idaho Department of Labor 2015a).

Much of the overall socioeconomic Analysis Area is sparsely populated, with an average Analysis Area-wide population density of 14.3 persons per square mile, and population densities below 10 persons per square mile in four of the affected counties (compared to a national average of 90.3) (Table 3.4-3).

The Revised Proposed Routes for Segments 8 and 9 are located in unincorporated areas of the counties they cross. The Revised Proposed Route for Segment 9 would, however, pass within 1 mile of the impact area for the community of Murphy. City impact areas, as used here, are areas of city impact established under Section 50-222 of the Idaho Code (see Section 3.17 – Land Use and Recreation).

Table 3.4-3. Demographic Characteristics in the Potentially Affected Counties

Geographic Area	2014 Population	Percent of 2014 Study Area Population	Land Area (Square Miles)	2014 Population Density (Persons/ Square Mile)	Population Change 1990 to 2000 (Percent)	Population Change 2000 to 2014 (Percent)	Net Migration 2000 to 2010	Projected Population Change 2011 to 2020 (Percent)
Idaho	**1,634,464**	**NA**	**82,747**	**19.8**	**29**	**26**	**136,598**	**9**
Ada	426,236	52.3	1,055	404.0	46	42	56,062	11
Canyon	203,143	24.9	590	344.3	46	55	36,628	14
Cassia	23,540	2.9	2,566	9.2	10	10	-1,301	9
Elmore	26,094	3.2	3,078	8.5	37	-10	-4,355	3
Gooding	15,064	1.8	731	20.6	22	6	-568	7
Jerome	22,818	2.8	600	38.0	21	24	1,112	14
Lincoln	5,316	0.7	1,206	4.4	22	31	197	12
Owyhee	11,353	1.4	7,678	1.5	27	7	-364	5
Twin Falls	80,914	9.9	1,925	42.0	20	26	7594	10
County Total	**814,478**	**100.0**	**56,769**	**14.3**	**28**	**37**	**96,122**	**10**
United States	318,857,056	NA	3,531,905	90.3	13	13	NA	10

NA – not applicable
Sources: Idaho Department of Labor 2015b; U.S. Census Bureau 2008, 2012c, 2012d, 2012e

The population in Idaho increased by 37 percent between 2000 and 2014, almost three times the national average (13 percent) (Table 3.4-3). Ada and Canyon Counties both experienced large increases in population over this time period, with respective net gains of 42 percent and 55 percent. Jerome, Lincoln, and Twin Falls Counties also experienced relatively large increases in population from 2000 to 2014, 24 percent, 31 percent, and 26 percent, respectively. Cassia, Gooding, and Owyhee Counties experienced more modest gains, and Elmore County experienced a net decrease in population over this period (Table 3.4-3).

The number of births exceeded the number of deaths in all of the affected counties, and Ada and Canyon Counties also experienced large absolute and relative increases in population from net in-migration. However, three of the affected Idaho counties experienced net out-migration, which in Elmore County resulted in a net loss of population (i.e., out-migration exceeded the gain from natural increase) (Table 3.4-3).

The statewide population in Idaho is projected to increase by 9 percent between 2011 and 2020. Population is projected to increase in all of the affected counties, with larger than state average increases projected for the two larger counties (Ada and Canyon) and also Jerome and Lincoln Counties (Table 3.4-3).

Economic Conditions

Agriculture is an important employer in five of the Analysis Area counties (Cassia, Gooding, Jerome, Lincoln, and Owyhee Counties), ranging from 13.7 percent of total employment in Cassia County in 2013 to 27.2 percent and 27.3 percent in Owyhee and Gooding Counties, respectively, compared to 4.3 percent of total employment statewide and just 1.4 percent nationally (Table 3.4-4). Cassia and Jerome Counties also had relatively high concentrations of employment in transportation and warehousing.

Ada County accounted for almost one-third of all jobs in Idaho (31 percent) and the distribution of employment by sector was similar to the state average, with the exception of agriculture, which accounted for just 0.6 percent of total employment in Ada County in 2013 versus 4.3 percent statewide (Table 3.4-4).

Table 3.4-4. Employment by Sector, 2013

Economic Sector	Ada	Canyon	Cassia	Elmore	Gooding	Jerome	Lincoln	Owyhee	Twin Falls	Idaho
Total employment[1/]	279,078	79,193	14,369	13,056	8,664	11,540	2,658	4,208	46,660	903,446
Percent of Total[2/]										
Farm Employment	0.6	4.2	13.7	7.2	27.3	18.3	21.3	27.2	4.8	4.3
Mining, forestry, and other	0.5	1.8	4.5	2.9	3.9	4.5	(L)	6.7	1.9	2.1
Utilities	0.3	0.2	0.4	0.2	0.5	(D)	(D)	(D)	0.5	0.3
Construction	5.6	7.9	4.5	2.9	3.9	3.9	(D)	4.3	4.6	5.9
Manufacturing	6.2	10.8	10.2	4.1	10.0	13.6	(D)	4.9	8.5	7.2
Wholesale trade	3.9	3.6	3.2	0.9	2.7	(D)	(D)	2.9	3.0	3.5
Retail trade	11.1	12.1	12.1	8.9	6.4	8.9	6.1	7.7	12.4	11.3
Transportation and warehousing	2.2	4.3	7.2	2.2	4.2	9.8	2.9	(D)	3.9	2.9
Real Estate	5.3	4.3	3.0	3.4	(D)	3.4	(D)	(D)	4.0	4.7
Producer Services[3/]	23.9	13.6	(D)	(L)	(D)	(D)	2.1	(D)	19.1	17.8
Arts, entertainment, and recreation	2.4	1.2	1.1	0.7	1.5	1.6	(D)	1.2	1.3	2.1
Accommodation and food services	6.8	5.2	4.5	5.9	3.6	3.1	(D)	3.9	6.7	6.5
Education	1.7	2.8	0.6	1.2	0.2	0.8	1.1	(D)	0.7	1.7
Health care and social assistance	12.6	10.3	9.9	6.5	3.6	5.4	6.9	(D)	13.0	10.5
Other services	4.6	5.6	4.7	3.9	5.1	5.3	(D)	4.0	5.0	5.0
Government	12.3	12.2	11.8	42.7	14.1	9.5	18.2	17.5	10.7	14.0

1/ Total employment includes self-employed individuals. Employment data are by place of work, not place of residence, and, therefore, include people who work in the area but do not live there. Employment is measured as the average annual number of jobs, both full- and part-time, with each job a person holds counted at full weight.

2/ Percentages for the counties do not sum to 100 because employment counts are not provided for sectors with less than 10 jobs or for sectors where counts would disclose confidential information. These sectors are identified by (D) in the above table. These numbers are, however, included in the totals.

3/ Five 2-digit North American Industry Classification System (NAICS) service categories are combined here to form the producer services classification for ease of presentation: information; finance and insurance; professional and technical services; management of companies and enterprises; and administrative and waste services.

Source: U.S. Bureau of Economic Analysis 2014

Elmore County is specialized in the government sector, which accounted for 42.7 percent of total county employment in 2013 versus 14.0 percent statewide, reflecting the presence of the Mountain Home Air Force Base in the southwestern corner of the county.

Seasonally adjusted unemployment rates in the nine Analysis Area counties in March 2015 ranged from 3.2 percent (Gooding County) to 5.8 percent (Elmore County) compared to the Idaho state average of 3.8 percent (Table 3.4-5). Statewide, unemployment remained at a 7-year low, with total employment staying at a record high (Idaho Department of Labor 2015c).

Table 3.4-5 Employment Overview, March 2015

Geographic Area	Civilian Labor Force[1/2/]	Employed[2/]	Unemployed[2/]	Adjusted Unemployment Rate[3/]
Ada	214,659	207,325	7,334	3.4
Canyon	90,005	85,321	4,684	5.2
Cassia	11,261	10,863	398	3.5
Elmore	3,427	3,229	199	5.8
Gooding	6,551	6,341	210	3.2
Jerome	11,499	11,110	389	3.4
Lincoln	2,659	2,551	107	4.0
Owyhee	4,810	4,645	165	3.4
Twin Falls	39,549	38,076	1,473	3.7
Idaho	**787,239**	**757,109**	**30,130**	**3.8**

1/ Civilian labor force includes employed and unemployed workers 16 years and older by place of residence. Employed includes non-farm payroll employment and the self-employed.
2/ Numbers for the civilian labor force, employed, and unemployed are actual counts and not seasonally adjusted.
3/ All unemployment rates presented here are seasonally adjusted. Unemployment rates fluctuate with the seasons, with unemployment generally higher during the winter months. Adjusted unemployment rates are adjusted to account for these known fluctuations to reveal underlying economic trends.
Source: Idaho Department of Labor 2015d

Agriculture

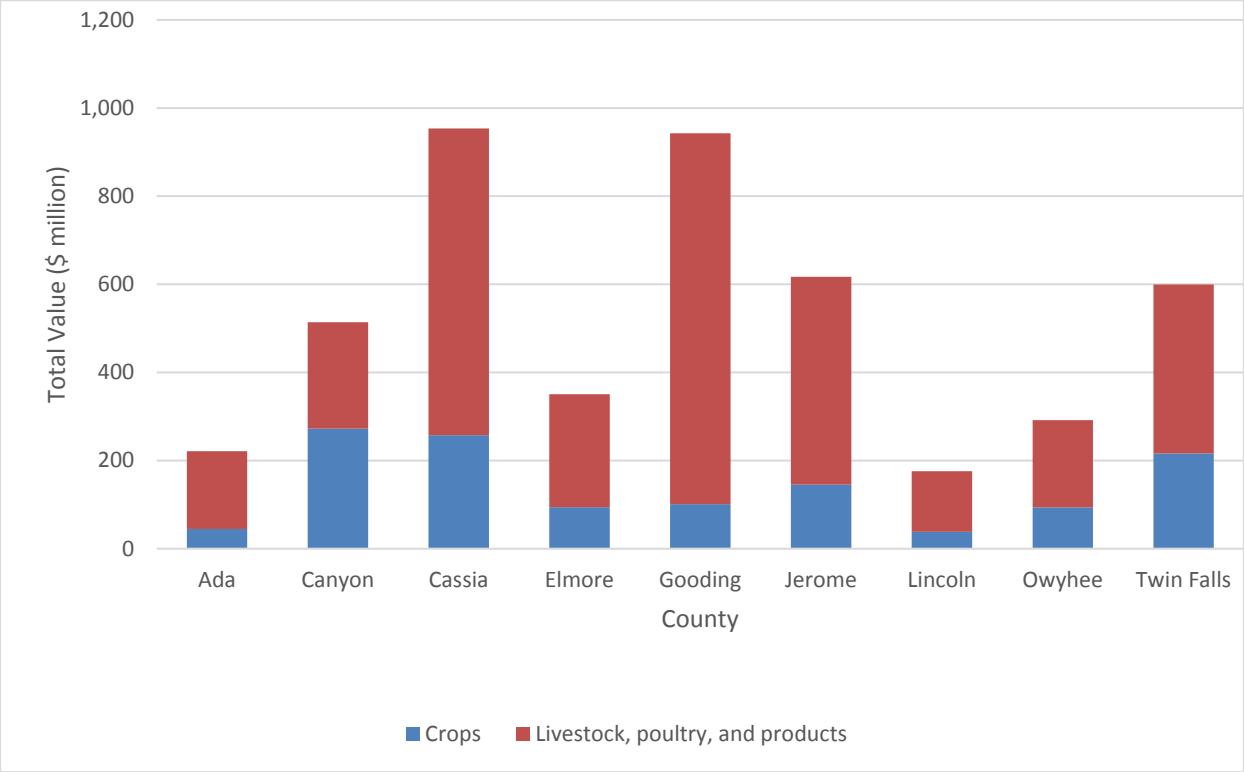
Land in farms accounted for almost one quarter (22 percent) of the total land area in Idaho in 2012. Land in farms as a share of total land area by county ranged from 17 percent (Lincoln County) to 97 percent (Owyhee County) (Table 3.4-6). Average farm sizes ranged from 117 acres in Ada County to 1,295 acres in Owyhee County. Viewed as a percent of total market value, livestock, poultry, and products accounted for a larger share than crops in all counties, with the exception of Canyon County where crops accounted for 53 percent of total market value (Table 3.4-6; Figure 3.4-1).

According to the 2012 Census of Agriculture, the number of farms in Owyhee County decreased between 2007 and 2012 dropping from 620 to 578, while the area occupied by farms increased by 32 percent from 569 million acres to 749 million acres (USDA 2012).

Table 3.4-6. Summary of Agriculture by County and State, 2012

Geographic Area	Number of Farms	Land in Farms (acres)	Percent of Total County Area	Average Farm Size (acres)	Total Value of Agricultural Products Sold ($ million)	Percent of Total Market Value	
						Crops	Livestock
Ada	1,233	144,049	21	117	221	20	80
Canyon	2,331	303,836	45	130	514	53	47
Cassia	668	611,055	37	915	954	27	73
Elmore	349	344,820	18	988	351	27	73
Gooding	596	239,640	51	402	943	11	89
Jerome	560	188,075	49	336	617	24	76
Lincoln	310	129,724	17	418	176	22	78
Owyhee	578	748,771	97	1,295	292	32	68
Twin Falls	1,294	484,004	39	374	600	36	64
Idaho	**24,816**	**11,760,109**	**22**	**474**	**7,801**	**44**	**56**

1/ Percent of total area is the land in farms divided by the total respective county or state land area.
Source: USDA 2012



Source: USDA 2012

Figure 3.4-1. Total Market Value of Agricultural Products Sold, 2012

Recreation and Tourism

Estimates of travel and tourism-related spending and associated employment in Idaho for 2011 found that statewide travel-related employment accounted for about 3 percent of total employment (Table 3.4-7). These estimates include people traveling for recreation and tourism purposes, as well as other types of traveler, including people

Table 3.4-7. Economic Impact of Travel and Tourism by County and State, 2011

Geographic Area	Sales Receipts ($ million)	Wages ($ million)	Travel and Tourism Employment	
			Number of Jobs	As a Percent of Total Employment
Ada	580	217.8	7,915	3.0
Canyon	107	33.8	1,575	2.1
Cassia	13	5.2	263	1.9
Elmore	17	5.6	297	2.3
Gooding	16	3.4	161	1.9
Jerome	24	6.4	269	2.4
Lincoln	2	0.5	27	1.1
Owyhee	3	1.4	76	1.8
Twin Falls	90	27.1	1,260	2.8
Idaho	**1,765**	**620.3**	**26,757**	**3.0**

Source: EMSI and Drake Cooper 2012; U.S. Bureau of Economic Analysis 2012

traveling for business or family reasons. While these estimates account for other types of travel, they represent the best available data and are frequently used to represent the economic contribution of recreation and tourism to local and regional economies. Viewed at the county level, travel and tourism ranged from 1.1 percent of total employment (Lincoln County) to 3.0 percent (Ada County). Ada County alone accounted for an estimated 30 percent of all travel and tourism-related employment in Idaho in 2011, as well 33 percent of travel-related sales receipts and 35 percent of wages.

Popular outdoor recreational activities in southwestern Idaho include hunting and fishing, OHV use, hiking, and bird watching. Idaho requires off-highway motorcycles/all- terrain vehicles (ATVs), snowmobiles, and other recreation vehicles (motor homes, campers, travel trailers) to be registered. OHV registration by residence is presented for the Analysis Area counties for 2008 to 2012 in Table 3.4-8. These data are not comprehensive because not all OHV users comply with registration requirements, but they do provide an indication of the relative distribution of OHVs. Ada and Canyon Counties accounted for 43 percent and 27 percent of OHV registrations in the Analysis Area counties, respectively. Viewed as a percentage of total population, registered OHVs ranged from 5.3 percent in Ada County to 10.1 percent in Gooding County compared to 8.6 percent statewide.

Table 3.4-8. OHV Registration by Residence, 2008-2012

County	2008	2009	2010	2011	2012	2008-2012 Percent Change
Ada	23,379	22,322	21,954	21,697	21,843	-7%
Canyon	14,176	13,420	13,301	13,215	13,445	-5%
Cassia	1,718	1,888	1,892	1,908	1,992	16%
Elmore	2,354	2,332	2,281	2,227	2,185	-7%
Gooding	1,532	1,569	1,531	1,503	1,532	0%
Jerome	1,836	1,898	1,887	1,827	1,927	5%
Lincoln	444	451	446	414	457	3%
Owyhee	1,072	1,028	1,003	1,007	1,009	-6%
Twin Falls	6,373	6,528	6,408	6,220	6,307	-1%
Analysis Area Total	**52,884**	**51,436**	**50,703**	**50,018**	**50,697**	**-4%**
Idaho	135,362	136,847	137,141	134,392	137,262	1%

1/ Data include registered off-highway motorcycles, all-terrain vehicles, utility vehicles, and specialty off-highway vehicles.
Source: Idaho Department of Parks and Recreation 2013

In 2012, registered OHV owners took close to 1 million trips in Idaho, with the average OHV household taking 12 OHV-related trips, with a party size of just over 4 people (Anderson and Taylor 2012). OHV trips in the Analysis Area counties ranged from about 2,000 in Lincoln County to an estimated 55,000 in Owyhee County (Table 3.4-9). Trips were estimated as total trips taken in each county in Idaho, either by residents of the county or by OHV users from other Idaho counties. Owyhee County was the second most visited county in Idaho, with the majority of visits coming from out-of-county households; Ada County was the fifth most visited county (Table 3.4-9).

Table 3.4-9. OHV Trips by County, 2012

County	OHV Trips (thousands)		
	Home-county Households	Out-of-county Households	Total
Ada	31	18	49
Canyon	11	4	14
Cassia	7	8	15
Elmore	11	23	33
Gooding	3	4	6
Jerome	3	1	4
Lincoln	1	1	2
Owyhee	4	51	55
Twin Falls	14	5	19
Idaho	**416**	**543**	**959**

Source: Anderson and Taylor 2012

SRBOP

Recreation use on the SRBOP varies based on a combination of road access, the proximity to population centers, and the two major topographic features (the Snake River Plain and the Snake River Canyon) (BLM 2008a). Recreational uses on the Snake River Plain are predominately dispersed activities including OHV use, recreational shooting, wildlife viewing, geocaching, and horseback riding. The Snake River Canyon provides opportunities for fishing, camping, float and power boating, hiking, mountain biking, horseback riding, waterfowl hunting, and parasailing (BLM 2008b). Recreation use occurs year-round. Visitor use has historically been higher in the spring and early summer months and lowest during winter months, but use during the summer and fall has increased over the last decade or so (BLM 2008a).

There are many ways to access the SRBOP, including more than 50 roads or trails, which makes it difficult to accurately estimate visitor use. The BLM estimated that the SRBOP receives average annual visitor use of approximately 175,000 visits, most of which occurs in the western portion of the SRBOP and along the Snake River Canyon and C.J. Strike Reservoir (BLM 2008a, p. 2-69). This number is believed to still be reasonably accurate (Fluckiger 2015).

In addition, an estimated 4,600 people visited the Cove Recreation Site in 2014. An estimated 14,000 people per year visit Dedication Point, which is an overlook on the rim of the Snake River Canyon with a short (0.25-mile-long) trail and interpretive signs (Fluckiger 2015).

The BLM provides multiple educational classes, programs, materials, and opportunities for the public to learn more about the natural and cultural resources found on the SRBOP. These include, but are not limited to, "Desert Discovery Days," "WILD About Raptors," "Southwest Idaho Ecosystem Discovery," "Raptor Quest Junior Explorer" booklets, and various raptor presentations. More information about these programs can be found on the web at: http://www.blm.gov/id/st/en/prog/NLCS/MNSRBP_NM.html.

Idaho Army National Guard

The SRBOP includes the 138,000-acre OCTC used by the IDANG for training since 1953. A recent study evaluated the regional economic impact of IDANG operations at the OCTC and Gowen Field on a three county area comprised of Ada, Canyon, and Elmore Counties (Gardner et al. 2012). Facilities at the OCTC include the Snake River Training Facility, six tactical training bases, numerous firing ranges with support buildings, a live-fire shoot house, and a battle command center. Gowen Field is located on the south side of the Boise Municipal Air Terminal, outside the SRBOP and the Gateway West project area. IDANG operates armor, helicopter, and other training units at Gowen Field, which is also used by the Idaho Air National Guard, Army National Guard, and reserve units of the Army, Navy, and Marines (Gardner et al. 2012).

Based on expenditures for goods and services in the three county area (Ada, Canyon, and Elmore Counties), operation of the IDANG facilities at OCTC and Gowen Field in 2011 supported an estimated total of 4,192 full- or part-time jobs, with labor earnings estimated to be $188.9 million. Employment totals included workers directly employed by IDANG facilities, as well as jobs supported elsewhere in the three county region (Gardner et al. 2012).

Housing

Detailed information on housing units and temporary accommodation is presented for the potentially affected counties in the 2013 FEIS.

Education

Summary information is presented for the school districts in the potentially affected counties in the 2013 FEIS.

Public Services

Summary information on public services, including police and fire services, health care, and municipal services in provided in the 2013 FEIS.

Tax Revenues

Sales, Use, and Lodging Taxes

The sales and use tax rate in Idaho is 6 percent. Sales tax is levied on goods and services purchased within the state. Use tax is imposed on goods purchased tax-free outside Idaho for consumption, use, or storage in Idaho. Use tax is paid directly to the state, rather than to the seller of the good. The state also applies a travel and convention tax of 2 percent on hotel/motel occupants and campground users (Idaho State Tax Commission 2011). Long-term temporary residents (more than 30 days) are exempt from the travel and convention tax. Sales and use tax revenues are summarized for Fiscal Year (FY) 2014 by county in Table 3.4-10.

Table 3.4-10. Sales and Use Tax Revenues, Fiscal Year 2014

County	Taxable Sales	Use Taxable	Total Taxable	Tax Due
Ada	5,045.6	319.5	5,365.2	322.1
Canyon	931.0	53.4	984.4	59.0
Cassia	170.2	15.6	185.9	11.1
Elmore	110.8	1.8	112.6	6.8
Gooding	38.0	1.5	39.5	2.4
Jerome	119.6	7.7	127.3	7.6
Lincoln	18.8	0.3	19.1	1.1
Owyhee	27.4	0.5	27.9	1.7
Twin Falls	696.8	30.8	727.5	43.6
Idaho	**21,610.4**	**1,055.4**	**22,665.8**	**1,358.6**

1/ Taxable sales, use taxable, total taxable, and tax due figures are shown in millions of dollars.
Source: Idaho State Tax Commission 2013, 2014

Property Taxes

Property taxes in Idaho are based on a property's current market value, and most homes, farms, and businesses are subject to property tax. Property tax values for operating property, including industries engaged in electric generation, transmission, and distribution, are set by the Idaho State Tax Commission. The Idaho State Tax Commission appraises operating property using a unit appraisal approach, which values a group of property items as one entity. The market value of each unit is estimated using cost, income, and/or market approaches to valuation (Idaho State Tax Commission 2003). Property tax revenues are summarized for FY 2014 by potentially affected county in Table 3.4-11.

Table 3.4-11. Property Tax Revenues, Fiscal Year 2014

County	Real and Personal Property Assessed Value (County)[1/,2/,3/]	Operating Property Assessed Value (County)[1/,2/,4/]	Total Assessed Value (County)[1/,2/]	2014 Property Tax Revenue (County)[1/,2/]	2014 Property Tax Revenue (All Taxing Districts)[1/,5/]
Ada	29,965.2	695.8	30,660.9	92.9	464.1
Canyon	8,490.0	224.6	8,714.6	34.3	154.1
Cassia	1,165.0	76.8	1,241.8	4.5	13.3
Elmore	937.4	341.7	1,279.1	6.4	20.3
Gooding	804.6	121.0	925.7	3.3	11.2
Jerome	1,146.5	90.5	1,237.0	6.6	20.2
Lincoln	206.9	92.0	298.8	1.1	3.7
Owyhee	432.7	100.8	533.5	2.3	5.8
Twin Falls	4,295.8	220.6	4,516.4	20.4	76.0
Idaho	**109,635.6**	**5,170.1**	**114,805.7**	**404.3**	**1,552.1**

1/ Assessed values and tax revenues are shown in millions of dollars.
2/ There are multiple taxing districts within each county. Values and revenues identified here as “County” are those assessed and generated by County government only; they do not include other taxing districts within each county.
3/ Real and personal property includes residential, industrial, and commercial property, and farms, timber, and mining.
4/ Operating property includes industries engaged in electric generation, transmission, and distribution.
5/ The total property tax revenues shown here are for all taxing districts within each county, including the county, towns, cities, and special taxing districts.
Source: Idaho State Tax Commission 2015

3.4.2 Direct and Indirect Effects

This section is organized to present the social and economic effects from construction, then operations, followed by decommissioning activities for the proposed Project. The Proposed Action includes measures designed to mitigate and enhance the SRBOP, as required by the enabling statute for the SRBOP and the SRBOP RMP.

EPMs are presented in detail in Chapter 3 of the FEIS. No additional EPMs were identified for this analysis. A comprehensive list of all Project design features and EPMs, as well as the land ownership to which they apply, can be found in Table 2.7-1 of Chapter 2 of the FEIS. The following impact assessment takes these Project design features and EPMs into account when considering the potential impact that the Project could have on environmental resources.

Plan Amendments

Amendments to the BLM RMPs and MFPs are summarized for each alternative in Table 2.3-1 (see Chapter 2 for more details). The BLM plan amendments associated with the SEIS are discussed in detail in Appendices F and G to this document. Amendments are needed to permit the Project to cross various areas of BLM-managed land. Effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved. Amendments that alter land management designations could change future use of these areas. No amendments specific to socioeconomics are proposed for the Project, and no impacts to socioeconomics resulting from approving the amendments beyond the impacts of the Project are anticipated.

3.4.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West and the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of this Project. No Project-related impacts to socioeconomics would occur. Current socioeconomic trends would continue, as would impacts associated with other existing and planned developments within the Analysis Area, including wind farms, mining, agricultural, and other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories.

If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project and the area would have to turn to other proposals to meet the transmission demand. Impacts similar to those described below may occur due to new transmission lines built instead of this Project. In the absence of this or similar projects, existing constraints coupled with projected increases in demand in the Proponents' service areas could result in insufficient supply to meet energy demand and an increase in the potential for supply outages. These potential impacts could have detrimental socioeconomic impacts, with negative impacts to existing businesses and economic activities, as well as businesses and economic activities that might otherwise consider locating in the affected service areas. According to McBride et al. (2008), the lack of construction of transmission lines could result in substantial adverse impacts on

economic growth in the future, including loss of jobs in the Pacific Northwest region, which includes Idaho as well as Washington, Oregon, Montana, and several Canadian provinces.

3.4.2.2 Effects Common to All Routes

The impacts that would occur to socioeconomic resources from construction, operations, and decommissioning of the Gateway West Project were assessed in detail in Section 3.4.2 of the 2013 FEIS. Effects common to all routes are summarized in the following section. Direct and indirect effects by route are assessed below in Section 3.4.2.3; the direct and indirect effects of the alternatives are assessed in Section 3.4.2.4. Proponent-proposed design features and mitigation measures are presented in Sections 3.4.2.5 and 3.4.2.6, which includes an assessment of potential impacts related to the MEP, as well as a list of additional mitigation measures that would be recommended by the BLM related to impacts on the SRBOP.

<u>Population</u>

Construction

The overall Proposed Action evaluated in the 2013 FEIS involved four separate Engineering, Procurement, and Construction (EPC) contracts. Two of these contracts involved the same general geographic area, extending west from the Populus Substation in Bannock County, Idaho, to the Hemingway Substation in Owyhee County. These contracts were combined to form one EPC Analysis Area (EPC 3). Segments 8 and 9 are part of EPC 3, along with Segments 5, 6, 7, and 10. The Analysis Area for EPC 3 includes the nine counties crossed by the Revised Proposed Route for Segments 8 and 9, as well as Oneida and Power Counties.

Estimated construction workforce requirements are summarized by EPC contract in Figures 3.4-1 through 3.4-4 in the 2013 FEIS. These projections were developed for the various Project components by the Proponents' transmission engineering contractor using project planning computer software. These projections were based on estimated workforce requirements and construction timeframes and sequencing. For the purposes of this analysis, preconstruction activities for the Revised Proposed Route for Segments 8 and 9 would begin in 2017, with construction scheduled to be completed by the estimated in-service date of 2020.

The proportion of workers likely to come from outside the Analysis Area would vary by EPC contract and over the construction period since the mix of labor categories or skills will vary. For the purposes of analysis, the Proponents estimated that during peak construction periods 20 percent of the workforce would be local (i.e., normally reside within commuting distance of the job sites), and would likely commute to and from their homes to work each day. The remaining 80 percent of the workforce would temporarily relocate to the affected regions for the duration of their employment or commute to the region on a weekly basis, returning home on weekends. Although considered unlikely, 10 percent of the workers temporarily relocating to the Analysis Area are assumed, for the purposes of analysis, to be accompanied by their families, including school-age children.

Operations

Long-term operations of the proposed transmission line and associated facilities, including Segments 8 and 9, would require an estimated permanent staff of approximately 12 Idaho Power employees, who would be based in Pocatello, Twin Falls, or Boise. These workers would all be expected to be hired locally. This estimate applies to the routes and alternatives evaluated in this SEIS.

Decommissioning

When the Project is decommissioned, a labor force approximately equal to that needed for its construction would be deployed. Impacts to population from decommissioning are expected to be similar to those from construction.

Economy and Employment

Economic Conditions

Construction

Construction of the Project would generate economic activity in the EPC Analysis Areas in the form of Project-related expenditures on materials and supplies. The Project would also employ construction workers who would in turn be expected to spend much of their income within the Analysis Areas and increase output in the sectors that provide consumer goods and services.

The total economic impacts of construction were estimated by EPC Analysis Area in the 2013 FEIS using input-output models developed using IMPLAN modeling and software. Construction in the EPC 3 Analysis Area was expected to take place over three years and support 535, 839, and 190 jobs in years 1 through 3, respectively, as well as $10.2 million, $10.5 million, and $2.4 million in labor income. These estimates include workers directly employed on the project as well as indirect and induced effects that would occur elsewhere in the regional economy.

Operations

Operations of the Project would generate economic activity in the Analysis Area in the form of operations and maintenance-related expenditures on materials and supplies. These impacts are expected to be small, especially when compared to the construction-related impacts. Project operations would be centralized and rely upon the use of communications and automated controls. Local labor may be used when infrequent switching is necessary at the substations. Local expenditures are expected to be limited to occasional expenditures on gas and food by crew members. This would be the case for the routes and alternatives evaluated in this SEIS.

Decommissioning

When the Project is decommissioned, a labor force approximately equal to that needed for its construction would be deployed. Local expenditures on materials and supplies and payments to workers would likely be similar, resulting in broadly similar economic impacts to those from construction.

Agriculture

The majority of the land crossed by Segments 8 and 9 is used for agriculture. Potential impacts to agricultural land are discussed in Section 3.18 – Agriculture, and include the potential impacts to livestock grazing, crop production, and dairy farms and confined animal feeding operations. Impacts addressed include those associated with construction, operations, and decommissioning of the proposed Project.

Viewed in terms of agricultural operations in the potentially affected counties, total estimated construction and operations disturbance represents a very small share of the 11.8 million acres of land in farms in the counties crossed by Segments 8 and 9 and is unlikely to noticeably affect overall agricultural production and employment in any of the affected counties. Impacts could, however, be potentially significant to the individual operations affected, as discussed in Section 3.18 – Agriculture.

Impacts to agriculture were assessed in the 2013 FEIS using information from a separate agricultural economic impact report that was developed at the request of Cassia and Power Counties, Idaho. This report, prepared by Schneider Consulting Services in conjunction with the counties and a task force of local area farmers, is included as Appendix K to the 2013 FEIS.

The following sections address the potential economic impacts of the proposed Project on livestock production and cropland.

<u>Construction and Operations</u>

Livestock Production

The proposed Project could affect the economic value of livestock production in the Analysis Area by increasing ranchers' costs and decreasing available forage. Potential impacts during construction could result from road construction providing increased access and related disturbance to livestock, temporary reductions in available forage, reductions in the palatability of forage due to construction-related dust, and impacts to livestock if fences are cut and gates left open. These issues would be addressed in the Agricultural Construction Mitigation Plan that would be prepared for the Project (see Appendix B to the 2013 FEIS).

The proposed Project could affect net earnings from livestock production in the following ways:

- Decrease forage from land taken out of production.
- Increase management costs associated with controlling additional noxious and invasive vegetation species introduced by Project construction equipment.
- Increase management costs associated with moving livestock around project-related structures and easements.

Total construction- and operations-related disturbance to rangeland and pasture is discussed by route and alternative in Sections 3.18.2.3 and 3.18.2.4, respectively. This analysis evaluates impacts in terms of acres of forage that would be temporarily (construction) or permanently (operations) unavailable for use.

The value of the grazing land that would be affected can be approximated using data compiled by the USDA. The average land value for pasture in Idaho was $1,220 per acre in 2014 (USDA 2014). In 2014, average cash rent paid per acre to landlords for pasture land was $12 in Idaho (USDA 2015). The findings of the agricultural economic impact analysis prepared for Cassia and Power Counties are summarized in the 2013 FEIS.

Cropland

Cropland in the Analysis Area includes irrigated cropland and dryland farming. Irrigation systems used in the area include pivot, wheel and hand line, and flood irrigation systems, and irrigated lands may have surface irrigation ditches and subsurface drainage systems (drain tiles).

The proposed Project could affect net earnings from cropland in the following ways:

- Reduce acreage available for cultivation and use due to the placement of transmission structures, access roads, and other proposed project uses.
- Increase irrigation costs due to limitations placed with respect to pivot irrigation systems.
- Increase costs due to the need to maneuver farming equipment around transmission structures.
- Increase management costs associated with controlling additional noxious and invasive vegetation species introduced by Project construction equipment.
- Reduce productivity as a result of construction-related soil compaction and erosion, and damage to drainage tiles.

Potential impacts to irrigated cropland and dryland farming would vary based on the design and location of the proposed transmission line structures and access roads relative to existing agricultural operations.

Irrigated Cropland

Total construction- and operations-related disturbance to irrigated cropland is discussed by route and alternative in Sections 3.18.2.3 and 3.18.2.4, respectively. This analysis evaluates impacts in terms of acres that would be temporarily (construction) or permanently (operations) unavailable for cultivation.

The value of the irrigated cropland that would be affected can be estimated using data compiled by the USDA. The average land value for irrigated cropland in Idaho was $4,600 per acre in 2014 (USDA 2014). In 2014, average cash rent paid per acre to landlords for irrigated cropland was $197 in Idaho (USDA 2015).

The findings of the agricultural economic impact analysis prepared for Cassia and Power Counties are summarized in the 2013 FEIS. Potential impacts would vary based on the type of transmission structure, structure locations, type of farming, and farming practices. In addition, one-time costs would vary for each crop depending on the time of year that the construction process begins and the operating costs that have been incurred up to that point.

Dryland Farming

Total construction- and operations-related disturbance to dryland farming is discussed by route and alternative in Sections 3.18.2.3 and 3.18.2.4, respectively. This analysis evaluates impacts in terms of acres that would be temporarily (construction) or permanently (operations) unavailable for cultivation. The average land value for non-irrigated cropland in Idaho was $1,320 per acre in 2014 (USDA 2014). In 2014, average cash rent paid per acre to landlords for non-irrigated cropland was $61 in Idaho (USDA 2015).

As noted with respect to irrigated cropland, potential impacts would vary based on the type of transmission structure, structure locations, type of farming, and farming practices, and one-time costs would vary depending on the time of year that the construction process begins.

Decommissioning

Post-operations decommissioning of the transmission line would cause similar disturbance and disruption to agricultural lands and operations as construction. However, once reclamation is complete, areas would be restored to their prior condition.

As discussed in Section 3.18 – Agriculture in the 2013 FEIS, the Proponents would negotiate damage-related issues, such as reductions in the acreage available for cultivation, with affected farmers during the easement acquisition process.

Recreation and Tourism

Impacts to recreation and tourism could potentially occur as a result of Project-related changes in the quantity or distribution of recreational opportunities within the Analysis Area, changes in the quality of recreation opportunities, or changes in recreation access. Potential impacts during construction, operations, and decommissioning of the Project are discussed in the 2013 FEIS. The discussion in the 2013 FEIS concluded that the identified impacts would be unlikely to alter the distribution of recreation-related expenditures and associated jobs and income within the Analysis Area. This is also expected to be the case for the routes and alternatives evaluated in this SEIS.

Construction of the Project would not directly affect the educational classes and programs offered to the public on the SRBOP. However, note that the Proponents have offered mitigation options that may benefit educational programs on the SRBOP (see Section 3.4.2.5).

Housing

Construction

Approximately 80 percent of the projected construction workforce is expected to temporarily relocate to the Analysis Area for the duration of their employment or, in some cases, commute in from their permanent residences on Sunday night and stay in overnight lodging on weekdays, returning home on Fridays. Approximately 10 percent of workers relocating to the Project area are assumed for the purposes of analysis to be accompanied by their families. The remaining 20 percent of the workforce would be local and would likely commute to and from their homes to work each day.

Based on past experience with similar projects, the Proponents' transmission engineering contractor estimated that approximately 35 percent of non-local workers would provide their own housing in the form of RVs or pop-up trailers, with the remaining non-local workers expected to require rental housing (apartments/houses) (25 percent), mobile homes (5 percent), and motel or hotel rooms (35 percent). Construction workers, particularly those working in less populated areas, would be expected to commute long distances to the job site, with commutes of up to 90 minutes each way possible.

Existing housing resources, rental housing, hotels and motels, and RV spaces, tend to be concentrated in and around the larger communities in the Analysis Area. Workers temporarily relocating to the EPC Analysis Areas would generally be expected to reside in or near larger communities, where more housing options and services are available.

The 2013 FEIS compared projected peak housing demand by housing type with the estimated housing resources available by EPC Analysis Area, and found that there are sufficient housing resources to meet projected peak housing demand for the EPC 3 Analysis Area (the area that includes Segments 8 and 9). While there may be sufficient housing resources when viewed from an EPC Analysis Area perspective, some of the counties crossed by the proposed transmission line segments evaluated in the 2013 FEIS have low population densities and parts of the segments cross undeveloped areas that are more than 90 minutes' commute from the closest larger community. This was addressed in the 2013 FEIS in a separate analysis, which evaluated the availability of housing resources based on commuting distances and times to the proposed transmission line segments. This analysis compared projected housing demand by segment and housing type with the estimated available housing resources in communities within daily commuting distance. The analysis assumed that communities within a one-way drive of 90 minutes are within daily commuting distance. The analysis also assumed that only 10 percent of the identified motel and hotel rooms within this commuting distance would normally be vacant and available for rent.

Commuting distances and times were estimated using a GIS analysis that identified the quickest route from the surrounding communities to each segment by segment mile post. This analysis took into account driving distances and road types (e.g., interstate highways, county roads, local unpaved roads) to estimate driving times. Distances and commuting times were estimated to the closest point on the existing road network.

The commuting analysis presented for Segment 8 in Section 3.4.2.2 of the 2013 FEIS found that adequate temporary housing resources exist within 90 minutes' driving time of much of the length of this segment, with most of the workers temporarily relocating to work on this segment expected to reside in Twin Falls, Mountain Home, and Boise.

The commuting analysis presented for Segment 9 in Section 3.4.2.2 of the 2013 FEIS found that while adequate temporary housing resources exist within 90 minutes' driving time of much of the length of this segment, parts of the segment appeared to more than 90 minutes' drive from sufficient housing resources. The analysis indicated that there would be an insufficient supply of available motel rooms (10 percent of the total estimated number) within 90 minutes of parts of this segment (from about MPs 67 to 70 and from about MPs 94 to 130) to accommodate projected demand. Adequate housing

resources were found to exist between 90 minutes' and 2 hours' driving time from these parts of the segment, mainly in Boise, Nampa, and Twin Falls.

As discussed in the 2013 FEIS, for Segment 9, the Proponents would evaluate potential housing mitigation for the parts of Segment 9 with insufficient housing resources. Mitigation in this case would likely involve seeking temporary accommodation for workers in the larger communities located between 90 minutes' and about 2 hours' driving time from the affected parts of the segment, and the provision of transportation, in the form of buses or vans, to ensure that workers are able to travel safely to the site.

Operations

There would be no new expected demand for short- or long-term housing during the operations phase of the Project including Segments 8 and 9 because the estimated permanent staff of 12 Idaho Power employees would be recruited locally, and, therefore, no operations-related impacts to housing resources are expected.

Decommissioning

When the Project is decommissioned, a labor force approximately equal to that needed for its construction would be deployed. Impacts from decommissioning are expected to be similar to those from construction and the Proponents would evaluate potential mitigation for those areas where insufficient housing resources are available within a 90-minute commute.

Property Values

The general property impacts, compensation, and property value impacts described in the Property Values section in the 2013 FEIS would also apply to the routes and alternatives evaluated in this SEIS.

Education

The conclusions presented with respect to education in Section 3.4.2.2 of the 2013 FEIS would also apply to the routes and alternatives evaluated in this SEIS. The projected peak numbers of school children temporarily relocating to the area would be equivalent to very small shares of the existing enrollment in school districts in the EPC 3 Analysis Area and would have no noticeable effect on existing average student/teacher ratios.

Public Services

The conclusions presented with respect to public services in Section 3.4.2.2 of the 2013 FEIS would also apply to the routes and alternatives evaluated in this SEIS. Impacts assessed in the 2013 FEIS include effects to police and fire services, local and regional medical facilities and services, and municipal services.

Tax Revenues

Construction

Construction of the Project would generate sales and use tax revenues through Project expenditures on construction materials, supplies and equipment. Local Project-related expenditures that would generate sales tax are assumed to be mainly for foundation materials, where available, and miscellaneous Project purchases, such as gas, parts,

repairs, tires, and supplies. Based on past experience with similar projects, the Proponents' transmission engineering contractor anticipates that all materials and supplies purchased out of state for use in construction would be subject to use tax, and not taxed at the point of purchase. Estimated expenditures were assigned to counties based on the share of construction activity that would take place in that county.

Sales and tax revenues in Idaho are collected by the state with a small share distributed to local governments, including counties and municipalities, based on population size and other factors. In FY 2010, for example, 11.5 percent of Idaho's sales tax revenues were distributed to local governments, including counties and municipalities (Idaho State Tax Commission 2011).

The tax revenue estimates presented in Sections 3.4.2.3 and 3.4.2.4 provide an approximate indication of the amount of sales and use tax that would be generated by the Project. These estimates are based on a number of simplifying assumptions, as discussed in the 2013 FEIS, and are not intended to be precise forecasts.

The proposed Project is a large capital project that involves substantial investment in those counties where new facilities would be built. In Owyhee County, the total estimated value of materials that would be used for construction in the county (and assumed here to be subject to sales or use tax in that county) is larger than the total sales and use values subject to tax in 2014 under all of the alternatives (see Section 3.4.2.4).

Expenditures by construction workers would also generate sales tax revenues, but the amount of spending and distribution by county is difficult to accurately forecast, and, therefore, sales tax associated with these expenditures was not estimated in the 2013 FEIS. In Idaho, income from in-state employment on the Project and income from in-state employment supported by Project-related expenditures would be subject to state income taxes. These potential revenues are also not estimated in the 2013 FEIS.

Operations

As discussed in the 2013 FEIS, the potential property tax implications associated with the proposed Project are complicated because the State of Idaho limits the amount by which annual revenues from property tax can increase in each county. With some exceptions, this amount is limited to 3 percent based on the highest annual budget from the preceding 3 years. Exceptions include new construction (excluding public utilities), annexation, and previously unlevied funds (Houde 2012). In cases where increases in property tax revenues exceed 3 percent and are not exempt, the increase above 3 percent may provide an opportunity to lower levies for other taxpayers in the affected district.

The estimated tax revenues presented by county in Sections 3.4.2.3 and 3.4.2.4 are based on the projected value of the Proposed Action by county and average property tax rates, and are intended to provide an approximation of potential tax revenues that could be generated as a result of the Project. Estimated revenues for each county are divided into two parts. The first part, equivalent to up to 3 percent of 2014 property tax revenues for each county, is intended to approximate the amount by which tax revenues could increase. The second part, total estimated revenues less 3 percent of existing tax revenues, represents an amount by which property taxes in each county could be

potentially reduced for other property owners. These estimates do not include potential tax revenues for individual municipalities within each affected county.

Operations of the Proposed Action would generate sales and use tax revenues as a result of local operations and maintenance expenditures. These impacts are expected to be small, especially when compared to the construction-related impacts. Project operations would be centralized and rely upon the use of communications and automated controls. Local labor may be used when infrequent switching is necessary at the substations. Local expenditures are expected to be limited to occasional expenditures on gas and food by crew members.

Decommissioning

Decommissioning the Project would involve local expenditures for supplies and services and would likely require the temporary influx of construction workers to remove the project components. This spending would be expected to generate local sales and use tax. It is not possible to estimate approximate values but, adjusted for inflation, tax revenues would likely be generally equivalent to those estimated for construction, other conditions remaining equal. Removal of the Project would reduce the value of the affected property and result in a net reduction in property taxes, generally equivalent to the estimates developed for project operations.

3.4.2.3 Direct and Indirect Effects by Route

Segment 8

Revised Proposed Route

The Revised Proposed Route in Segment 8 is a single-circuit 500-kV transmission line that would extend 129.7 miles and link the Midpoint and Hemingway Substations (see Figure A-1). This route stays north of the Snake River until it crosses just north of Guffey Butte, generally parallel to an existing 500-kV transmission line, before ending at the Hemingway Substation. The Segment 8 Revised Proposed Route is similar to the original proposed route in the 2013 FEIS except that the line would be 250 feet north of the existing 500-kV line rather than 1,500 feet south of the line from the eastern boundary of the SRBOP (MP 99.7) to the Hemingway Substation. The route east of that point is unchanged from the 2013 FEIS Proposed Route.

Population

Table 3.4-12 compares the average and peak numbers of people expected to temporarily relocate during construction of the Revised Proposed Route along Segment 8 with the corresponding 2014 population totals by county. Projected temporary peak increases in population range from 0.1 percent or less of the existing (2014) population (Ada, Canyon, Lincoln, and Owyhee Counties) to about 0.4 percent in Elmore and Gooding Counties (Table 3.4-12). These estimates are based on the miles of transmission line construction that would occur in each county. The Revised Proposed Route does not cross Cassia or Twin Falls Counties.

Table 3.4-12. Projected Temporary Change in Population during Construction by County for the Segment 8 Revised Proposed Route

State/ County	2014 Population[1/]	Average Employment Forecast		Peak Employment Forecast	
		Number of People Temporarily Relocating[2/]	Percent of 2014 Population	Number of People Temporarily Relocating[2/]	Percent of 2014 Population
Ada	426,236	21	0.0	79	0.0
Canyon	203,143	2	0.0	8	0.0
Cassia	23,540	0	0.0	0	0.0
Elmore	26,094	44	0.2	94	0.4
Gooding	15,064	23	0.2	58	0.4
Jerome	22,818	27	0.1	50	0.2
Lincoln	5,316	2	0.0	11	0.2
Owyhee	11,353	5	0.0	8	0.1
Twin Falls	80,914	0	0.0	0	0.0

1/ Population data are from the 2014 estimates prepared by the U.S. Census Bureau (see Table 3.4-3).
2/ The number of people temporarily relocating assumes that 80 percent of the projected construction workforce would temporarily relocate to the county where they would be employed, with 10 percent of that total accompanied by their families (assuming an average family size of two adults and one child).

Economy and Employment

The regional economic impacts associated with the Revised Proposed Route 8 would be very similar to those evaluated for the Effects Common to All Alternatives scenario in the 2013 FEIS (see the Economic Conditions subsection in Section 3.4.2.2 above). Compared to the 2013 scenario, the Revised Proposed Route would reduce the length of the proposed transmission line in the EPC 3 Analysis Area by 1.8 miles, a decrease of less than 1 percent.

Idaho Army National Guard

The Revised Proposed Route in Segment 8 would cross approximately 7.7 miles of the OCTC, including 0.5 mile of the training area (Alpha Sector). The IDANG has indicated that the presence of additional power lines would adversely affect existing ground maneuver and aerial combat training operations within the OCTC (Kelly 2011). The IDANG also indicated that if the Project were built along this route it would adversely affect approximately 3,500 acres of lands in the northern portion of the OCTC by limiting or restricting training near the proposed transmission line. These potential impacts are identified in Section 3.17 – Land Use and Recreation.

The estimated contributions of IDANG operations to the regional economy identified in Section 3.4.1.4 are based on estimated local expenditures. Potential Project-related impacts to OCTC operations could potentially affect the distribution of expenditures in the regional economy and elsewhere, but it is not possible to predict whether this would affect IDANG's contribution to the regional economy or whether these impacts, should they occur, would result in less or more local spending. The area that IDANG believes could be potentially affected (3,500 acres) represents about 2 percent of the total OCTC, which encompasses a total of approximately 143,000 acres.

Housing

The commuting analysis presented for Segment 8 in Section 3.4.2.2 of the 2013 FEIS found that adequate temporary housing resources exist within 90 minutes' driving time of much of the length of this segment, with most of the workers temporarily relocating to

work on Segment 8 expected to reside in Twin Falls, Mountain Home, and Boise. This would also be expected to be the case with the Revised Proposed Route 8.

Property Values

The general property impacts, compensation, and property value impacts described in the Property Values section in the 2013 FEIS would also apply to the Revised Proposed Route 8.

Education

The conclusions presented with respect to education in Section 3.4.2.2 of the 2013 FEIS would also apply to the Segment 8 Revised Proposed Route.

Public Services

The conclusions presented with respect to public services in Section 3.4.2.2 of the 2013 FEIS would also apply to the Segment 8 Revised Proposed Route.

Tax Revenues

Construction

Estimated sales and use tax revenues for Revised Proposed Route in Segment 8 range from less than 1 percent of existing (2014) sales and use tax revenues in Ada and Canyon Counties to 40.8 percent of 2014 sales and use tax revenues in Jerome County (Table 3.4-13). This route does not cross Cassia or Twin Falls Counties.

Table 3.4-13. Estimated Sales and Tax Revenue by County under the Revised Proposed Route in Segment 8

County	Estimated Sales and Use Tax[1/,2/]	2014 Sales and Use Tax Revenues[1/]	Estimated Tax as a Percent of 2014 Total[3/]
Ada	949	322,086	0.3
Canyon	107	58,951	0.2
Cassia	0	11,140	0.0
Elmore	1,728	6,751	25.6
Gooding	905	2,365	38.3
Jerome	3,087	7,560	40.8
Lincoln	81	1,146	7.0
Owyhee	189	1,673	11.3
Twin Falls	0	43,566	0.0

1/ Estimated and actual tax revenues are shown in thousands of dollars.
2/ The estimated Project-related sales and use tax estimates are for the total duration of construction activities in each county. They are not annual estimates and, in most cases, would be generated over a period of several years. Estimated sales and use tax revenues are based on the cost to build the transmission line and substations.
3/ Projected sales and use tax is shown here as a percentage of actual sales and use tax revenues for 2014.

Operations

Estimated property tax revenues for the Revised Proposed Route in Segment 8 range from less than 1 percent of existing (2014) property tax revenues in Ada and Canyon Counties to 6.2 percent of 2014 property tax revenues in Gooding County (Table 3.4-14).

Table 3.4-14. Estimated Property Tax Revenues by County under the Revised Proposed Route in Segment 8

County	Estimated Property Tax[1/2/]	2014 Property Revenues (County)[1/]	Estimated Property Tax Revenues as a Percent of 2014 Property Tax Revenues (County)	Potential Increase in Property Tax Revenues[1/3/]	Potential Reduction in Property Taxes[1/4/]
Ada	208	92,913	0.2	208	0
Canyon	47	34,297	0.1	47	0
Cassia	0	4,522	0.0	0	0
Elmore	368	6,362	5.8	191	177
Gooding	203	3,290	6.2	99	105
Jerome	269	6,633	4.1	199	70
Lincoln	21	1,090	1.9	21	0
Owyhee	35	2,273	1.5	35	0
Twin Falls	0	20,365	0.0	0	0

1/ Estimated Project-related property tax revenues and actual property tax revenues from 2014 are in thousands of dollars.
2/ Property tax estimates are based on the projected value of the proposed improvements, including: transmission line and substation costs, communications fiber, regeneration stations, access, and permits, and county-specific tax rates provided by the Proponents.
3/ Potential increases in property tax revenues are assumed to be equivalent to up to 3 percent of actual property tax revenues for 2014. These estimates are intended to approximate the amount that property tax revenues could increase by county.
4/ Potential reductions are approximated by subtracting estimated potential increases (3 percent of the 2014 county total) from total estimated property tax estimates. These estimates are intended to approximate the amount by which property taxes in each county could be potentially reduced for other property owners.

Route 8G

Route 8G is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows an alignment similar to the ones analyzed for Routes 8A and 9B in the FEIS for approximately 44 miles, although it generally parallels 250 feet north of the existing 500-kV line rather than1,500 feet to the south in order to avoid the Hagerman Fossil Beds National Monument and development near Hagerman (see Figure A-1). The route then parallels 250 feet north of the Segment 9 Proposed Route and 9K for most of the remaining distance into the Hemingway Substation. The route is 146.9 miles long (including a 1.9-mile rebuild of the existing 500-kV line), compared to the 129.7-mile-long Revised Proposed Route.

Population

Table 3.4-15 compares the average and peak numbers of people expected to temporarily relocate during construction of 8G with the corresponding 2014 population totals by county. Projected temporary peak increases in population range from 0.1 percent or less of the existing (2014) population to about 1.1 percent for Owyhee County (Table 3.4-15). These estimates are based on the miles of transmission line construction that would occur in each county. Workers and others temporarily relocating to an area could reside in the directly affected county, but may also reside in adjacent or other nearby counties, depending on the distribution of available housing and commuting distances. This is likely to be the case for Owyhee County, which has limited housing resources (see Table 3.4-13 in the 2013 FEIS).

Table 3.4-15. Projected Temporary Change in Population during Construction by County for Route 8G

State/County	2014 Population[1/]	Average Employment Forecast		Peak Employment Forecast	
		Number of People Temporarily Relocating[2/]	Percent of 2014 Population	Number of People Temporarily Relocating[2/]	Percent of 2014 Population
Ada	426,236	0	0.0	0	0.0
Canyon	203,143	0	0.0	0	0.0
Cassia	23,540	0	0.0	0	0.0
Elmore	26,094	18	0.1	38	0.1
Gooding	15,064	12	0.1	30	0.2
Jerome	22,818	32	0.1	62	0.3
Lincoln	5,316	0	0.0	0	0.0
Owyhee	11,353	74	0.6	127	1.1
Twin Falls	80,914	7	0.0	12	0.0

1/ Population data are from the 2014 estimates prepared by the U.S. Census Bureau (see Table 3.4-3).
2/ The number of people temporarily relocating assumes that 80 percent of the projected construction workforce would temporarily relocate to the county where they would be employed, with 10 percent of that total accompanied by their families (assuming an average family size of two adults and one child).

Economy and Employment

The regional economic impacts associated with Route 8G would be very similar to those evaluated for the Effects Common to All Alternatives scenario in the 2013 FEIS (see the Economic Conditions subsection in Section 3.4.2.2 above). Compared to the 2013 scenario, 8G would add 15.4 miles to the length of the proposed transmission line in the EPC 3 Analysis Area, an increase of 3.1 percent.

Route 8G would not cross the OCTC.

Housing

The commuting analysis presented for Segment 9 in Section 3.4.2.2 of the 2013 FEIS found that while adequate temporary housing resources exist within 90 minutes' driving time of much of the length of this segment, parts of the segment appeared to more than 90 minutes' drive from sufficient housing resources. This would also be the case with parts of 8G, especially those paralleling parts of Segment 9 as evaluated in Section 3.4.2.2 of the 2013 FEIS.

As discussed in the 2013 FEIS, for Segment 9, the Proponents would evaluate potential housing mitigation for the parts of the segment with insufficient housing resources within a 90 minute drive. This would also be the case with Route 8G. Mitigation in this case would likely involve seeking temporary accommodation for workers in the larger communities located between 90 minutes' and about 2 hours' driving time from the affected parts of the segment, and the provision of transportation, in the form of buses or vans, to ensure that workers are able to travel safely to the site.

Property Values

The general property impacts, compensation, and property value impacts described in the Property Values section in the 2013 FEIS would also apply to Route 8G.

Education

The conclusions presented with respect to education in Section 3.4.2.2 of the 2013 FEIS would also apply to Route 8G.

Public Services

The conclusions presented with respect to public services in Section 3.4.2.2 of the 2013 FEIS would also apply to Route 8G.

Tax Revenues

Construction

Estimated sales and use tax revenues for Route 8G range from less than 1 percent of existing (2014) sales and use tax revenues in Twin Falls County to 176.2 percent of 2014 sales and use tax revenues in Owyhee County (Table 3.4-16). This route does not cross Ada, Canyon, or Cassia Counties.

Table 3.4-16. Estimated Sales and Tax Revenue by County under 8G

County	Estimated Sales and Use Tax[1/2/]	2014 Sales and Use Tax Revenues[1/]	Estimated Tax as a Percent of 2014 Total[3/]
Ada	0	322,086	0.0
Canyon	0	58,951	0.0
Cassia	0	11,140	0.0
Elmore	691	6,751	10.2
Gooding	468	2,365	19.8
Jerome	3,205	7,560	42.4
Lincoln	0	1,146	0.0
Owyhee	2,948	1,673	176.2
Twin Falls	285	43,566	0.7

1/ Estimated and actual tax revenues are shown in thousands of dollars.
2/ The estimated Project-related sales and use tax estimates are for the total duration of construction activities in each county. They are not annual estimates and, in most cases, would be generated over a period of several years. Estimated sales and use tax revenues are based on the cost to build the transmission line and substations.
3/ Projected sales and use tax is shown here as a percentage of actual sales and use tax revenues for 2014.

Operations

Estimated property tax revenues for 8G range from less than 1 percent of existing (2014) property tax revenues in Twin Falls County to 23.8 percent of 2014 property tax revenues in Owyhee County (Table 3.4-17).

Table 3.4-17. Estimated Property Tax Revenues by County under Route 8G

County	Estimated Property Tax[1/2/]	2014 Property Revenues (County)[1/]	Estimated Property Tax Revenues as a Percent of 2014 Property Tax Revenues (County)	Potential Increase in Property Tax Revenues[1/3/]	Potential Reduction in Property Taxes[1/4/]
Ada	0	92,913	0.0	0	0
Canyon	0	34,297	0.0	0	0
Cassia	0	4,522	0.0	0	0
Elmore	147	6,362	2.3	147	0
Gooding	105	3,290	3.2	99	6
Jerome	300	6,633	4.5	199	101
Lincoln	0	1,090	0.0	0	0
Owyhee	540	2,273	23.8	68	472
Twin Falls	57	20,365	0.3	57	0

1/ Estimated Project-related property tax revenues and actual property tax revenues from 2014 are in thousands of dollars.
2/ Property tax estimates are based on the projected value of the proposed improvements, including: transmission line and substation costs, communications fiber, regeneration stations, access, and permits, and county-specific tax rates provided by the Proponents.
3/ Potential increases in property tax revenues are assumed to be equivalent to up to 3 percent of actual property tax revenues for 2014. These estimates are intended to approximate the amount that property tax revenues could increase by county.
4/ Potential reductions are approximated by subtracting estimated potential increases (3 percent of the 2014 county total) from total estimated property tax estimates. These estimates are intended to approximate the amount by which property taxes in each county could be potentially reduced for other property owners.

Route 8H

Route 8H is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows a combination of portions of the alignments analyzed for Route 8G and the Revised Proposed Route for Segment 9. The route is 137.5 miles long (including a 1.9-mile rebuild of the existing 500-kV line and a 25.7-mile removal and rebuild of a 138-kV line), compared to the 129.7-mile-long Segment 8 Revised Proposed Route. Approximately 44 miles of the route follow the 8G alignment; the remainder of 8H follows the alignment of the Segment 9 Revised Proposed Route.

Population

Table 3.4-18 compares the average and peak numbers of people expected to temporarily relocate during construction of 8H with the corresponding 2014 population totals by county. Projected temporary peak increases in population range from 0.1 percent or less of the existing (2014) population to about 0.6 percent for Owyhee County (Table 3.4-18).

Table 3.4-18. Projected Temporary Change in Population during Construction by County for Route 8H

State/County	2014 Population[1/]	Average Employment Forecast		Peak Employment Forecast	
		Number of People Temporarily Relocating[2/]	Percent of 2014 Population	Number of People Temporarily Relocating[2/]	Percent of 2014 Population
Ada	426,236	10	0.0	39	0.0
Canyon	203,143	0	0.0	0	0.0
Cassia	23,540	0	0.0	0	0.0
Elmore	26,094	30	0.1	65	0.2
Gooding	15,064	12	0.1	30	0.2
Jerome	22,818	32	0.1	62	0.3
Lincoln	5,316	0	0.0	0	0.0
Owyhee	11,353	42	0.4	72	0.6
Twin Falls	80,914	7	0.0	12	0.0

1/ Population data are from the 2014 estimates prepared by the U.S. Census Bureau (see Table 3.4-3).
2/ The number of people temporarily relocating assumes that 80 percent of the projected construction workforce would temporarily relocate to the county where they would be employed, with 10 percent of that total accompanied by their families (assuming an average family size of two adults and one child).

Economy and Employment

The regional economic impacts associated with 8H would be very similar to those evaluated for the Effects Common to All Alternatives scenario in the 2013 FEIS (see the Economic Conditions subsection in Section 3.4.2.2 above). Compared to the 2013 scenario, Route 8H would add about 6.1 miles to the length of the proposed transmission line in the EPC 3 Analysis Area, an increase of 1.2 percent.

Route 8H would not cross the OCTC.

Housing

The commuting analysis presented for Segment 9 in Section 3.4.2.2 of the 2013 FEIS found that while adequate temporary housing resources exist within 90 minutes' driving time of much of the length of this segment, parts of the segment appeared to more than 90 minutes' drive from sufficient housing resources. This would also be the case with parts of Route 8H, which parallels parts of Segment 9 as evaluated in Section 3.4.2.2 of the 2013 FEIS.

As discussed in the 2013 FEIS and noted above, for Segment 9, the Proponents would evaluate potential housing mitigation for the parts of the segment with insufficient housing resources. The Proponents would also evaluate potential mitigation for the parts of 8H with insufficient resources within a 90-minute drive.

Property Values

The general property impacts, compensation, and property value impacts described in the Property Values section in the 2013 FEIS would also apply to Route 8H.

Education

The conclusions presented with respect to education in Section 3.4.2.2 of the 2013 FEIS would also apply to Route 8H.

Public Services

The conclusions presented with respect to public services in Section 3.4.2.2 of the 2013 FEIS would also apply to Route 8H.

Tax Revenues

Construction

Estimated sales and use tax revenues for 8H range from less than 1 percent of existing (2014) sales and use tax revenues in Ada and Twin Falls Counties to 100.3 percent of 2014 sales and use tax revenues in Owyhee County (Table 3.4-19). This route does not cross Canyon, Cassia, or Lincoln Counties.

Table 3.4-19. Estimated Sales and Tax Revenue by County under Route 8H

County	Estimated Sales and Use Tax[1/2/]	2014 Sales and Use Tax Revenues[1/]	Estimated Tax as a Percent of 2014 Total[3/]
Ada	466	322,086	0.1
Canyon	0	58,951	0.0
Cassia	0	11,140	0.0
Elmore	1,196	6,751	17.7
Gooding	468	2,365	19.8
Jerome	3,205	7,560	42.4
Lincoln	0	1,146	0.0
Owyhee	1,677	1,673	100.3
Twin Falls	285	43,566	0.7

1/ Estimated and actual tax revenues are shown in thousands of dollars.
2/ The estimated Project-related sales and use tax estimates are for the total duration of construction activities in each county. They are not annual estimates and, in most cases, would be generated over a period of several years. Estimated sales and use tax revenues are based on the cost to build the transmission line and substations.
3/ Projected sales and use tax is shown here as a percentage of actual sales and use tax revenues for 2014.

Operations

Estimated property tax revenues for 8H range from less than 1 percent of existing (2014) property tax revenues in Ada and Twin Falls Counties to 13.5 percent of 2014 property tax revenues in Owyhee County (Table 3.4-20).

Table 3.4-20. Estimated Property Tax Revenues by County under 8H

County	Estimated Property Tax[1/2/]	2014 Property Revenues (County)[1/]	Estimated Property Tax Revenues as a Percent of 2014 Property Tax Revenues (County)	Potential Increase in Property Tax Revenues[1/3/]	Potential Reduction in Property Taxes[1/4/]
Ada	102	92,913	0.1	102	0
Canyon	0	34,297	0.0	0	0
Cassia	0	4,522	0.0	0	0
Elmore	255	6,362	4.0	191	64
Gooding	105	3,290	3.2	99	6
Jerome	300	6,633	4.5	199	101
Lincoln	0	1,090	0.0	0	0
Owyhee	307	2,273	13.5	68	239
Twin Falls	57	20,365	0.3	57	0

1/ Estimated Project-related property tax revenues and actual property tax revenues from 2014 are in thousands of dollars.
2/ Property tax estimates are based on the projected value of the proposed improvements, including: transmission line and substation costs, communications fiber, regeneration stations, access, and permits, and county-specific tax rates provided by the Proponents.
3/ Potential increases in property tax revenues are assumed to be equivalent to up to 3 percent of actual property tax revenues for 2014. These estimates are intended to approximate the amount that property tax revenues could increase by county.
4/ Potential reductions are approximated by subtracting estimated potential increases (3 percent of the 2014 county total) from total estimated property tax estimates. These estimates are intended to approximate the amount by which property taxes in each county could be potentially reduced for other property owners.

Segment 9

Revised Proposed Route

The Revised Proposed Route in Segment 9 would link the proposed Cedar Hill and existing Hemingway Substations with a 165.3-mile single-circuit 500-kV transmission line that skirts the Jarbidge and Owyhee Military Operating Areas to the north, then follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering the Hemingway Substation (see Figure A-1). It follows an alignment similar to the 2013 FEIS Route 9D/9G between MP 95.6 and 154.7, except that two portions of the route (totaling 25.7 miles) would be double-circuited with existing 138-kV lines. The first area is 5.2 miles near C.J. Strike Reservoir and the Bruneau Arm (MP 106.2 to 109.3 and 109.9 to 112.1), and the second area is 20.2 miles along the Baja Road (MP 121.0 to 141.2). Several rebuilds totaling approximately 0.6 mile are also required to tie the existing 138-kV lines into the new double-circuit alignments. Except for minor variations, the route is similar to the 2013 FEIS Route 9D/9G between MP 141.2 to 154.7. From MP 154.7 and into the Hemingway Substation, the route is the same as the 2013 FEIS Proposed Route.

Population

Table 3.4-21 compares the average and peak numbers of people expected to temporarily relocate during construction of the Revised Proposed Route with the corresponding 2014 population totals by county. Projected temporary peak increases in population range from 0.1 percent or less of the existing (2014) population to about 0.9 percent for Owyhee County (Table 3.4-21). Workers temporarily employed in Owyhee County may reside in nearby counties where more housing resources are available.

Table 3.4-21. Projected Temporary Change in Population during Construction by County for Revised Proposed Route in Segment 9

State/County	2014 Population[1/]	Average Employment Forecast		Peak Employment Forecast	
		Number of People Temporarily Relocating[2/]	Percent of 2014 Population	Number of People Temporarily Relocating[2/]	Percent of 2014 Population
Ada	426,236	10	0.0	39	0.0
Canyon	203,143	0	0.0	0	0.0
Cassia	23,540	33	0.1	53	0.2
Elmore	26,094	27	0.1	59	0.2
Gooding	15,064	0	0.0	0	0.0
Jerome	22,818	0	0.0	0	0.0
Lincoln	5,316	0	0.0	0	0.0
Owyhee	11,353	56	0.5	97	0.9
Twin Falls	80,914	37	0.0	59	0.1

1/ Population data are from the 2014 estimates prepared by the U.S. Census Bureau (see Table 3.4-3).
2/ The number of people temporarily relocating assumes that 80 percent of the projected construction workforce would temporarily relocate to the county where they would be employed, with 10 percent of that total accompanied by their families (assuming an average family size of two adults and one child).

Economy and Employment

The regional economic impacts associated with the Revised Proposed Route in Segment 9 would be very similar to those evaluated for the Effects Common to All Alternatives scenario in the 2013 FEIS (see the Economic Conditions subsection in Section 3.4.2.2 above). Compared to the 2013 scenario, the Revised Proposed Route 9 would add about 2.9 miles to the length of the proposed transmission line in the EPC 3 Analysis Area, an increase of less than 1 percent.

The Revised Proposed Route for Segment 9 would not cross the OCTC.

Housing

The commuting analysis presented for Segment 9 in Section 3.4.2.2 of the 2013 FEIS found that while adequate temporary housing resources exist within 90 minutes' driving time of much of the length of this segment, parts of the segment appeared to more than 90 minutes' drive from sufficient housing resources. These findings apply to the Revised Proposed Route 9.

As discussed in the 2013 FEIS, for Segment 9, the Proponents would evaluate potential housing mitigation for the parts of the segment with insufficient housing resources. Mitigation in this case would likely involve seeking temporary accommodation for workers in the larger communities located between 90 minutes' and about 2 hours' driving time from the affected parts of the segment, and the provision of transportation, in the form of buses or vans, to ensure that workers are able to travel safely to the site.

Property Values

The general property impacts, compensation, and property value impacts described in the Property Values section in the 2013 FEIS would also apply to the Revised Proposed Route 9.

Education

The conclusions presented with respect to education in Section 3.4.2.2 of the 2013 FEIS would also apply to the Revised Proposed Route for Segment 9.

Public Services

The conclusions presented with respect to public services in Section 3.4.2.2 of the 2013 FEIS would also apply to the Revised Proposed Route for Segment 9.

Tax Revenues

Construction

Estimated sales and use tax revenues for the Revised Proposed Route in Segment 9 range from less than 1 percent of existing (2014) sales and use tax revenues in Ada County to 133.9 percent of 2014 sales and use tax revenues in Owyhee County (Table 3.4-22). This route does not cross Canyon, Gooding, Jerome, or Lincoln Counties.

Table 3.4-22. Estimated Sales and Tax Revenue by County under Revised Proposed Route in Segment 9

County	Estimated Sales and Use Tax[1/2/]	2014 Sales and Use Tax Revenues[1/]	Estimated Tax as a Percent of 2014 Total[3/]
Ada	466	322,086	0.1
Canyon	0	58,951	0.0
Cassia	3,830	11,140	34.4
Elmore	1,085	6,751	16.1
Gooding	0	2,365	0.0
Jerome	0	7,560	0.0
Lincoln	0	1,146	0.0
Owyhee	2,241	1,673	133.9
Twin Falls	1,445	43,566	3.3

1/ Estimated and actual tax revenues are shown in thousands of dollars.
2/ The estimated Project-related sales and use tax estimates are for the total duration of construction activities in each county. They are not annual estimates and, in most cases, would be generated over a period of several years. Estimated sales and use tax revenues are based on the cost to build the transmission line and substations.
3/ Projected sales and use tax is shown here as a percentage of actual sales and use tax revenues for 2014.

Operations

Estimated property tax revenues for the Revised Proposed Route range from less than 1 percent of existing (2014) property tax revenues in Ada County to 18.1 percent of 2014 property tax revenues in Owyhee County (Table 3.4-23).

Table 3.4-23. Estimated Property Tax Revenues by County under Revised Proposed Route in Segment 9

County	Estimated Property Tax[1/2/]	2014 Property Revenues (County)[1/]	Estimated Property Tax Revenues as a Percent of 2014 Property Tax Revenues (County)	Potential Increase in Property Tax Revenues[1/3/]	Potential Reduction in Property Taxes[1/4/]
Ada	102	92,913	0.1	102	0
Canyon	0	34,297	0.0	0	0
Cassia	357	4,522	7.9	136	221
Elmore	231	6,362	3.6	191	40
Gooding	0	3,290	0.0	0	0
Jerome	0	6,633	0.0	0	0
Lincoln	0	1,090	0.0	0	0
Owyhee	411	2,273	18.1	68	343
Twin Falls	290	20,365	1.4	290	0

1/ Estimated Project-related property tax revenues and actual property tax revenues from 2014 are in thousands of dollars.
2/ Property tax estimates are based on the projected value of the proposed improvements, including: transmission line and substation costs, communications fiber, regeneration stations, access, and permits, and county-specific tax rates provided by the Proponents.
3/ Potential increases in property tax revenues are assumed to be equivalent to up to 3 percent of actual property tax revenues for 2014. These estimates are intended to approximate the amount that property tax revenues could increase by county.
4/ Potential reductions are approximated by subtracting estimated potential increases (3 percent of the 2014 county total) from total estimated property tax estimates. These estimates are intended to approximate the amount by which property taxes in each county could be potentially reduced for other property owners.

FEIS Proposed 9

The Proponents originally designed the 162.2-mile-long FEIS Proposed 9 to follow existing utility corridors and avoid the SRBOP and other protected areas where feasible. Approximately 54 miles of the route is within or adjacent to a utility corridor. FEIS Proposed 9 is approximately 3.1 miles shorter than the Revised Proposed Route but it crosses 13.6 miles of the SRBOP compared to 54.2 miles for the Revised Proposed Route. Both the Revised Proposed Route and FEIS Proposed 9 cross the Salmon Falls Creek at Lilly Grade adjacent to an existing single-phase 34.5-kV distribution line just north of the Salmon Falls Creek WSA.

Population

Table 3.4-24 compares the average and peak numbers of people expected to temporarily relocate during construction of the FEIS Proposed 9 with the corresponding 2014 population totals by county. Projected temporary peak increases in population range from 0.1 percent or less of the existing (2014) population to about 1.2 percent for Owyhee County (Table 3.4-24). These estimates are based on the miles of transmission line construction that would occur in each county. Workers temporarily employed in Owyhee County may reside in nearby counties where more housing resources are available.

Table 3.4-24. Projected Temporary Change in Population during Construction by County for FEIS Proposed 9

State/County	2014 Population[1/]	Average Employment Forecast		Peak Employment Forecast	
		Number of People Temporarily Relocating[2/]	Percent of 2014 Population	Number of People Temporarily Relocating[2/]	Percent of 2014 Population
Ada	426,236	0	0.0	0	0.0
Canyon	203,143	0	0.0	0	0.0
Cassia	23,540	33	0.1	53	0.2
Elmore	26,094	15	0.1	32	0.1
Gooding	15,064	0	0.0	0	0.0
Jerome	22,818	0	0.0	0	0.0
Lincoln	5,316	0	0.0	0	0.0
Owyhee	11,353	78	0.7	134	1.2
Twin Falls	80,914	37	0.0	59	0.1

1/ Population data are from the 2014 estimates prepared by the U.S. Census Bureau (see Table 3.4-3).
2/ The number of people temporarily relocating assumes that 80 percent of the projected construction workforce would temporarily relocate to the county where they would be employed, with 10 percent of that total accompanied by their families (assuming an average family size of two adults and one child).

Economy and Employment

The regional economic impacts associated with the FEIS Proposed 9 would be the same as those evaluated for the Effects Common to All Alternatives scenario in the 2013 FEIS (see the Economic Conditions subsection in Section 3.4.2.2 above).

FEIS Proposed 9 would not cross the OCTC.

Housing

The commuting analysis presented for Segment 9 in Section 3.4.2.2 of the 2013 FEIS found that while adequate temporary housing resources exist within 90 minutes' driving time of much of the length of this segment, parts of the segment appeared to more than 90 minutes' drive from sufficient housing resources. As discussed in the 2013 FEIS and noted above, for Segment 9, the Proponents would evaluate potential housing mitigation for the parts of the segment with insufficient housing resources.

Property Values

The general property impacts, compensation, and property value impacts described in the Property Values section in the 2013 FEIS apply to FEIS Proposed 9.

Education

The conclusions presented with respect to education in Section 3.4.2.2 of the 2013 FEIS apply to FEIS Proposed 9.

Public Services

The conclusions presented with respect to public services in Section 3.4.2.2 of the 2013 FEIS apply to FEIS Proposed 9.

Tax Revenues

Construction

Estimated sales and use tax revenues for FEIS Proposed 9 range from 3.3 percent of existing (2014) sales and use tax revenues in Twin Falls County to 186.3 percent of 2014

sales and use tax revenues in Owyhee County (Table 3.4-25). This route does not cross Ada, Canyon, Gooding, Jerome, or Lincoln Counties.

Table 3.4-25. Estimated Sales and Tax Revenue by County under FEIS Proposed 9

County	Estimated Sales and Use Tax[1/2/]	2014 Sales and Use Tax Revenues[1/]	Estimated Tax as a Percent of 2014 Total[3/]
Ada	0	322,086	0.0
Canyon	0	58,951	0.0
Cassia	3,830	11,140	34.4
Elmore	581	6,751	8.6
Gooding	0	2,365	0.0
Jerome	0	7,560	0.0
Lincoln	0	1,146	0.0
Owyhee	3,117	1,673	186.3
Twin Falls	1,445	43,566	3.3

1/ Estimated and actual tax revenues are shown in thousands of dollars.
2/ The estimated Project-related sales and use tax estimates are for the total duration of construction activities in each county. They are not annual estimates and, in most cases, would be generated over a period of several years. Estimated sales and use tax revenues are based on the cost to build the transmission line and substations.
3/ Projected sales and use tax is shown here as a percentage of actual sales and use tax revenues for 2014.

Operations

Estimated property tax revenues for the FEIS Proposed 9 range from 1.4 percent of existing (2014) property tax revenues in Twin Falls County to 25.1 percent of 2014 property tax revenues in Owyhee County (Table 3.4-26).

Table 3.4-26. Estimated Property Tax Revenues by County under FEIS Proposed 9

County	Estimated Property Tax[1/2/]	2014 Property Revenues (County)[1/]	Estimated Property Tax Revenues as a Percent of 2014 Property Tax Revenues (County)	Potential Increase in Property Tax Revenues[1/3/]	Potential Reduction in Property Taxes[1/4/]
Ada	0	92,913	0.0	0	0
Canyon	0	34,297	0.0	0	0
Cassia	357	4,522	7.9	136	221
Elmore	124	6,362	1.9	124	0
Gooding	0	3,290	0.0	0	0
Jerome	0	6,633	0.0	0	0
Lincoln	0	1,090	0.0	0	0
Owyhee	571	2,273	25.1	68	503
Twin Falls	290	20,365	1.4	290	0

1/ Estimated Project-related property tax revenues and actual property tax revenues from 2014 are in thousands of dollars.
2/ Property tax estimates are based on the projected value of the proposed improvements, including: transmission line and substation costs, communications fiber, regeneration stations, access, and permits, and county-specific tax rates provided by the Proponents.
3/ Potential increases in property tax revenues are assumed to be equivalent to up to 3 percent of actual property tax revenues for 2014. These estimates are intended to approximate the amount that property tax revenues could increase by county.
4/ Potential reductions are approximated by subtracting estimated potential increases (3 percent of the 2014 county total) from total estimated property tax estimates. These estimates are intended to approximate the amount by which property taxes in each county could be potentially reduced for other property owners.

Route 9K

Route 9K is being considered by the BLM as a modified version of FEIS Route 9E (the FEIS Preferred Route) to avoid crossing the northwestern portion of the SRBOP and to minimize direct and indirect impacts to priority sage-grouse habitat. The route is approximately 174.6 miles long, compared to the 165.3-mile-long Revised Proposed Route for Segment 9 (see Figure A-1).

Population

Table 3.4-27 compares the average and peak numbers of people expected to temporarily relocate during construction of Route 9K with the corresponding 2014 population totals by county. Projected temporary peak increases in population range from 0.1 percent or less of the existing (2014) population to about 1.3 percent for Owyhee County (Table 3.4-27). These estimates are based on the miles of transmission line construction that would occur in each county. Workers temporarily employed in Owyhee County may reside in nearby counties where more housing resources are available.

Table 3.4-27. Projected Temporary Change in Population during Construction by County for Route 9K

State/County	2014 Population[1/]	Average Employment Forecast		Peak Employment Forecast	
		Number of People Temporarily Relocating[2/]	Percent of 2014 Population	Number of People Temporarily Relocating[2/]	Percent of 2014 Population
Ada	426,236	0	0.0	0	0.0
Canyon	203,143	0	0.0	0	0.0
Cassia	23,540	33	0.1	53	0.2
Elmore	26,094	15	0.1	32	0.1
Gooding	15,064	0	0.0	0	0.0
Jerome	22,818	0	0.0	0	0.0
Lincoln	5,316	0	0.0	0	0.0
Owyhee	11,353	88	0.8	151	1.3
Twin Falls	80,914	37	0.0	59	0.1

1/ Population data are from the 2014 estimates prepared by the U.S. Census Bureau (see Table 3.4-3).
2/ The number of people temporarily relocating assumes that 80 percent of the projected construction workforce would temporarily relocate to the county where they would be employed, with 10 percent of that total accompanied by their families (assuming an average family size of two adults and one child).

Economy and Employment

The regional economic impacts associated with 9K would be very similar to those evaluated for the Effects Common to All Alternatives scenario in the 2013 FEIS (see the Economic Conditions subsection in Section 3.4.2.2 above). Compared to the 2013 scenario, Route 9K would add about 12.3 miles to the length of the proposed transmission line in the EPC 3 Analysis Area, an increase of 2.5 percent.

Route 9K would not cross the OCTC.

Housing

The commuting analysis presented for Segment 9 in Section 3.4.2.2 of the 2013 FEIS found that while adequate temporary housing resources exist within 90 minutes' driving time of much of the length of this segment, parts of the segment appeared to more than 90 minutes' drive from sufficient housing resources. These findings also apply to Rotue 9K. As discussed in the 2013 FEIS for Segment 9 and noted above, the Proponents

would evaluate potential housing mitigation for the parts of the segment with insufficient housing resources.

Property Values

The general property impacts, compensation, and property value impacts described in the Property Values section in the 2013 FEIS would also apply to Route 9K.

Education

The conclusions presented with respect to education in Section 3.4.2.2 of the 2013 FEIS would also apply to Route 9K.

Public Services

The conclusions presented with respect to public services in Section 3.4.2.2 of the 2013 FEIS would also apply to Route 9K.

Tax Revenues

Construction

Estimated sales and use tax revenues for Route 9K range from 3.3 percent of existing (2014) sales and use tax revenues in Twin Falls County to 209.9 percent of 2014 sales and use tax revenues in Owyhee County (Table 3.4-28). This route does not cross Ada, Canyon, Gooding, Jerome, or Lincoln Counties.

Table 3.4-28. Estimated Sales and Tax Revenue by County under Route 9K

County	Estimated Sales and Use Tax[1/2/]	2014 Sales and Use Tax Revenues[1/]	Estimated Tax as a Percent of 2014 Total[3/]
Ada	0	322,086	0.0
Canyon	0	58,951	0.0
Cassia	3,830	11,140	34.4
Elmore	581	6,751	8.6
Gooding	0	2,365	0.0
Jerome	0	7,560	0.0
Lincoln	0	1,146	0.0
Owyhee	3,512	1,673	209.9
Twin Falls	1,445	43,566	3.3

1/ Estimated and actual tax revenues are shown in thousands of dollars.
2/ The estimated Project-related sales and use tax estimates are for the total duration of construction activities in each county. They are not annual estimates and, in most cases, would be generated over a period of several years. Estimated sales and use tax revenues are based on the cost to build the transmission line and substations.
3/ Projected sales and use tax is shown here as a percentage of actual sales and use tax revenues for 2014.

Operations

Estimated property tax revenues for 9K range from 1.4 percent of existing (2014) property tax revenues in Twin Falls County to 28.3 percent of 2014 property tax revenues in Owyhee County (Table 3.4-29).

Table 3.4-29. Estimated Property Tax Revenues by County under 9K

County	Estimated Property Tax[1/,2/]	2014 Property Revenues (County)[1/]	Estimated Property Tax Revenues as a Percent of 2014 Property Tax Revenues (County)	Potential Increase in Property Tax Revenues[1/,3/]	Potential Reduction in Property Taxes[1/,4/]
Ada	0	92,913	0.0	0	0
Canyon	0	34,297	0.0	0	0
Cassia	35717	4,522	7.9	136	221
Elmore	124	6,362	1.9	124	0
Gooding	0	3,290	0.0	0	0
Jerome	0	6,633	0.0	0	0
Lincoln	0	1,090	0.0	0	0
Owyhee	644	2,273	28.3	68	576
Twin Falls	290	20,365	1.4	290	0

1/ Estimated Project-related property tax revenues and actual property tax revenues from 2014 are in thousands of dollars.
2/ Property tax estimates are based on the projected value of the proposed improvements, including: transmission line and substation costs, communications fiber, regeneration stations, access, and permits, and county-specific tax rates provided by the Proponents.
3/ Potential increases in property tax revenues are assumed to be equivalent to up to 3 percent of actual property tax revenues for 2014. These estimates are intended to approximate the amount that property tax revenues could increase by county.
4/ Potential reductions are approximated by subtracting estimated potential increases (3 percent of the 2014 county total) from total estimated property tax estimates. These estimates are intended to approximate the amount by which property taxes in each county could be potentially reduced for other property owners.

The Toana Road Variations

Neither of the Toana Road Variations, if selected, would substantially change the socioeconomic effects for the Segment 9 routes described above. The 8.7-mile-long comparison portion of Revised Proposed Route 9 for the Toana Road Variations would be almost entirely located on rangeland, as would both of the Toana Road Variations (1 and 1-A; Table 3.17-25). The 8.7-mile-long proposed comparison portion is located entirely on BLM-managed land. Variations 1 and 1-A are mainly located on BLM-managed lands, but both cross a section of state land. Variation 1 crosses 0.3 mile of state land and Variation 1-A crosses 1.0 mile (Table 3.17-24). Variation 1 would have less effect on state land because it is shorter and Variation 1-A crosses through the center of the parcel. As discussed in Section 3.18, during Project operations, rangeland and pasture occupied by Project components, including transmission line support structures and access roads would no longer be available for grazing. The presence of a transmission line through the center of a parcel also has the potential to limit other future property uses.

3.4.2.4 Direct and Indirect Effects of the Alternatives

This section discusses the potential impacts of the seven BLM action alternatives. The alternatives are visually displayed in Figures A-2 through A-8.

<u>Alternative 1 – Proposed Action (Revised Proposed Routes for Segments 8 and 9)</u>

Alternative 1 consists of the Revised Proposed Routes for Segments 8 and 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.4.2.3).

Population

Table 3.4-30 provides estimates of the peak numbers of people expected to temporarily relocate during construction of Alternative 1 by county. Table 3.4-31 compares these estimates with the corresponding 2014 population totals. Projected temporary peak increases in population range from 0.1 percent or less of the existing (2014) population (Ada, Canyon, and Twin Falls Counties) to about 1.2 percent in Owyhee County (Table 3.4-31). These estimates are based on the miles of transmission line construction that would occur in each county. Workers and others temporarily relocating to an area could reside in the directly affected county, but may also reside in adjacent or other nearby counties, depending on the distribution of available housing and commuting distances. This is likely to be the case for Owyhee County, which has limited housing resources (see Table 3.4-13 in the 2013 FEIS).

Table 3.4-30. Projected Temporary Change in Population during Construction by County and Alternative

	Peak Number of People Temporarily Relocating[1/]						
County	**Alt 1**	**Alt 2**	**Alt 3**	**Alt 4**	**Alt 5**	**Alt 6**	**Alt 7**
Ada	118	79	79	0	0	39	39
Canyon	8	8	8	0	0	0	0
Cassia	53	53	53	53	53	53	53
Elmore	153	125	125	69	69	97	97
Gooding	58	58	58	30	30	30	30
Jerome	50	50	50	62	62	62	62
Lincoln	11	11	11	0	0	0	0
Owyhee	138	176	193	295	312	240	257
Twin Falls	59	59	59	71	71	71	71

1/ The number of people temporarily relocating assumes that 80 percent of the projected construction workforce would temporarily relocate to the county where they would be employed, with 10 percent of that total accompanied by their families (assuming an average family size of two adults and one child).

Table 3.4-31. Projected Temporary Change in Population during Construction as a Share of 2014 Population by County and Alternative

	2014	Share of 2014 Population (Percent)[2/]						
County	**Population[1/]**	**Alt 1**	**Alt 2**	**Alt 3**	**Alt 4**	**Alt 5**	**Alt 6**	**Alt 7**
Ada	426,236	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Canyon	203,143	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cassia	23,540	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Elmore	26,094	0.6	0.5	0.5	0.3	0.3	0.4	0.4
Gooding	15,064	0.4	0.4	0.4	0.2	0.2	0.2	0.2
Jerome	22,818	0.2	0.2	0.2	0.3	0.3	0.3	0.3
Lincoln	5,316	0.2	0.2	0.2	0.0	0.0	0.0	0.0
Owyhee	11,353	1.2	1.5	1.7	2.6	2.7	2.1	2.3
Twin Falls	80,914	0.1	0.1	0.1	0.1	0.1	0.1	0.1

1/ Population data are from the 2014 estimates prepared by the U.S. Census Bureau (see Table 3.4-3).
2/ Projected peak increases in population presented in Table 3.4-30 are compared to existing (2014) population by county and alternative.

Economy and Employment

The regional economic impacts associated with Alternative 1 would be very similar to those evaluated for the Effects Common to All Alternatives scenario in the 2013 FEIS

(see the Economic Conditions subsection in Section 3.4.2.2 above). Compared to the 2013 scenario, Alternative 1 would add about 1.1 miles to the length of the proposed transmission line in the EPC 3 Analysis Area, an increase of approximately 0.2 percent.

Alternative 1 would cross approximately 7.7 miles of the OCTC, including 0.5 mile of the training area (Alpha Sector). The IDANG has indicated that the presence of additional power lines would adversely affect existing ground maneuver and aerial combat training operations within the OCTC (Kelly 2011). This potential impact is evaluated further in Section 3.4.2.3 in the subsection that addresses the Segment 8 Revised Proposed Route.

Housing

The commuting analysis presented for Segment 8 in Section 3.4.2.2 of the 2013 FEIS found that adequate temporary housing resources exist within 90 minutes' driving time of much of the length of this segment, with most of the workers temporarily relocating to work on this segment expected to reside in Twin Falls, Mountain Home, and Boise. The commuting analysis presented for Segment 9 in Section 3.4.2.2 of the 2013 FEIS found that, while adequate temporary housing resources exist within 90 minutes' driving time of much of the length of this segment, parts of the segment appeared to more than 90 minutes' drive from sufficient housing resources. These findings also apply to Alternative 1.

As discussed in the 2013 FEIS, for Segment 9, the Proponents would evaluate potential housing mitigation for the parts of the segment with insufficient housing resources within a 90 minute drive. Mitigation in this case would likely involve seeking temporary accommodation for workers in the larger communities located between 90 minutes' and about 2 hours' driving time from the affected parts of the segment, and the provision of transportation, in the form of buses or vans, to ensure that workers are able to travel safely to the site.

Property Values

The general property impacts, compensation, and property value impacts described in the Property Values section in the 2013 FEIS would also apply to Alternative 1.

Education

The conclusions presented with respect to education in Section 3.4.2.2 of the 2013 FEIS would also apply to Alternative 1.

Public Services

The conclusions presented with respect to public services in Section 3.4.2.2 of the 2013 FEIS would also apply to Alternative 1.

Tax Revenues

<u>Construction</u>

Estimated sales and use tax revenues are presented by county in Table 3.4-32. These estimates are compared with the corresponding total 2014 sales and use tax revenues by county in Table 3.4-33. Estimated sales and use tax revenues for Alternative 1 range from less than 1 percent of existing (2014) sales and use tax revenues in Ada and Cassia

Counties to 223.2 percent of 2014 sales and use tax revenues in Owyhee County (Table 3.4-33). As noted in Section 3.4.2.2, the proposed Project is a large capital project that involves substantial investment in those counties where new facilities would be built. In Owyhee County, the total estimated value of materials that would be used for construction in the county (and assumed here to be subject to sales or use tax in that county) is larger than the total sales and use values subject to tax in 2014 under all of the alternatives.

Table 3.4-32. Estimated Sales and Use Tax Revenue by County and Alternative

County	Estimated Sales and Use Tax Revenue[1/,2/]						
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Ada	1,415	949	949	0	0	466	466
Canyon	107	107	107	0	0	0	0
Cassia	3,830	3,830	3,830	3,830	3,830	3,830	3,830
Elmore	2,813	2,309	2,309	1,272	1,272	1,777	1,777
Gooding	905	905	905	468	468	468	468
Jerome	3,087	3,087	3,087	3,205	3,205	3,205	3,205
Lincoln	81	81	81	0	0	0	0
Owyhee	3,734	4,610	5,005	7,369	7,764	6,099	6,495
Twin Falls	1,445	1,445	1,445	1,730	1,730	1,730	1,730

1/ Estimated tax revenues are shown in thousands of dollars.
2/ The estimated Project-related sales and use tax estimates are for the total duration of construction activities in each county. They are not annual estimates and, in most cases, would be generated over a period of several years. Estimated sales and use tax revenues are based on the cost to build the transmission line.

Table 3.4-33. Estimated Sales and Use Tax Revenue as a Share of 2014 Sales and Use Tax Revenues by County and Alternative

County	2014 Sales and Use Tax Revenues[1/]	Estimated Tax as a Percent of 2014 Total[2/]						
		Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Ada	322,086	0.4	0.3	0.3	0.0	0.0	0.1	0.1
Canyon	58,951	0.2	0.2	0.2	0.0	0.0	0.0	0.0
Cassia	11,140	34.4	34.4	34.4	34.4	34.4	34.4	34.4
Elmore	6,751	41.7	34.2	34.2	18.8	18.8	26.3	26.3
Gooding	2,365	38.3	38.3	38.3	19.8	19.8	19.8	19.8
Jerome	7,560	40.8	40.8	40.8	42.4	42.4	42.4	42.4
Lincoln	1,146	7.0	7.0	7.0	0.0	0.0	0.0	0.0
Owyhee	1,673	223.2	275.5	299.1	440.5	464.1	364.5	388.1
Twin Falls	43,566	3.3	3.3	3.3	4.0	4.0	4.0	4.0

1/ Tax revenues are shown in thousands of dollars.
2/ Estimated sales and use tax revenues are shown here as a percentage of actual sales and use tax revenues for 2014.

Operations

Estimated property tax revenues are presented by county in Table 3.4-34. These estimates are compared with the corresponding total 2014 property tax revenues by county in Table 3.4-35. Estimated property tax revenues for Alternative 1 range from less than 1 percent of existing (2014) property tax revenues in Ada, Canyon, and Jerome Counties to 22.6 percent of 2014 property tax revenues in Owyhee County (Table 3.4-35).

Table 3.4-34. Estimated Property Tax Revenue by County and Alternative

County	Estimated Property Tax Revenues[1/,2/]						
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Ada	310	208	208	0	0	102	102
Canyon	47	47	47	0	0	0	0
Cassia	357	357	357	357	357	357	357
Elmore	599	491	491	271	271	378	378
Gooding	203	203	203	105	105	105	105
Jerome	52	52	52	83	83	83	83
Lincoln	21	21	21	0	0	0	0
Owyhee	513	673	746	1,179	1,251	946	1,019
Twin Falls	290	290	290	348	348	348	348

1/ Estimated tax revenues are shown in thousands of dollars.
2/ Property tax estimates are based on the projected value of the proposed improvements, including: transmission line and substation costs, communications fiber, regeneration stations, access, and permits, and county-specific tax rates provided by the Proponents.

Table 3.4-35. Estimated Property Tax Revenue as a Share of 2014 Property Tax Revenues by County and Alternative

County	2014 Property Tax Revenues[1/]	Estimated Tax as a Percent of 2014 Total[2/,3/]						
		Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Ada	92,913	0.3	0.2	0.2	0.0	0.0	0.1	0.1
Canyon	34,297	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Cassia	4,522	7.9	7.9	7.9	7.9	7.9	7.9	7.9
Elmore	6,362	9.4	7.7	7.7	4.3	4.3	5.9	5.9
Gooding	3,290	6.2	6.2	6.2	3.2	3.2	3.2	3.2
Jerome	6,633	0.8	0.8	0.8	1.3	1.3	1.3	1.3
Lincoln	1,090	1.9	1.9	1.9	0.0	0.0	0.0	0.0
Owyhee	2,273	22.6	29.6	32.8	51.9	55.1	41.6	44.8
Twin Falls	20,365	1.4	1.4	1.4	1.7	1.7	1.7	1.7

1/ Tax revenues are shown in thousands of dollars.
2/ Estimated property tax revenues are shown here as a percentage of actual property tax revenues for 2014.
3/ The State of Idaho limits the amount by which annual revenues from property tax can increase in each county. With some exceptions, this amount is limited to 3 percent based on the highest annual budget from the preceding 3 years. In cases where increases in property tax revenues exceed 3 percent and are not exempt, the increase above 3 percent may provide an opportunity to lower levies for other taxpayers in the affected district. This is assumed for the purposes of analysis to be the case with the estimates presented in this table.

Alternative 2 – Revised Proposed 8 and FEIS Proposed 9

Alternative 2 consists of the Revised Proposed Route for Segment 8 and FEIS Proposed 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.4.2.3). Alternative 2 is 3 miles shorter than Alternative 1. The total miles are, however, distributed differently by county, with 27 more miles crossing Owyhee County resulting in a total of 103 miles proposed for that county. This relative increase in miles in Owyhee County is offset by relative decreases in Ada and Elmore Counties.

Population

Table 3.4-30 provides estimates of the peak numbers of people expected to temporarily relocate during construction of Alternative 2 by county. Table 3.4-31 compares these estimates with the corresponding 2014 population totals. Projected temporary peak increases in population range from 0.1 percent or less of the existing (2014) population (Ada, Canyon, and Twin Falls Counties) to about 1.5 percent in Owyhee County (Table 3.4-31). Based on the miles of transmission line construction that would occur in each county, Alternative 2 would involve fewer people temporarily relocating to Ada and Elmore Counties than Alternative 1, with more people expected to temporarily relocate to Owyhee County (Table 3.4-30). Workers temporarily employed in Owyhee County may reside in nearby counties where more housing resources are available.

Economy and Employment

The regional economic impacts associated with Alternative 2 would be very similar to those evaluated for the Effects Common to All Alternatives scenario in the 2013 FEIS (see the Economic Conditions subsection in Section 3.4.2.2 above). Compared to the 2013 scenario, Alternative 2 would reduce the length of the proposed transmission line in the EPC 3 Analysis Area by 1.8 miles, a reduction of approximately 0.4 percent.

Alternative 2 would cross approximately 7.7 miles of the OCTC, including 0.5 mile of the training area (Alpha Sector). The IDANG has indicated that the presence of additional power lines would adversely affect existing ground maneuver and aerial combat training operations within the OCTC (Kelly 2011). This potential impact is evaluated further in Section 3.4.2.3 in the subsection that addresses the Segment 8Revised Proposed Route.

Housing

The commuting analysis presented for Segment 8 in Section 3.4.2.2 of the 2013 FEIS found that adequate temporary housing resources exist within 90 minutes' driving time of much of the length of this segment, with most of the workers temporarily relocating to work on Segment 8 expected to reside in Twin Falls, Mountain Home, and Boise. The commuting analysis presented for Segment 9 in Section 3.4.2.2 of the 2013 FEIS found that while adequate temporary housing resources exist within 90 minutes' driving time of much of the length of this segment, parts of Segment 9 appeared to more than 90 minutes' drive from sufficient housing resources. These findings also apply to Alternative 2. As discussed in the 2013 FEIS and noted above for Segment 9, the Proponents would evaluate potential housing mitigation for the parts of the segment with insufficient housing resources within a 90-minute drive.

Property Values

The general property impacts, compensation, and property value impacts described in the Property Values section in the 2013 FEIS would also apply to Alternative 2.

Education

The conclusions presented with respect to education in Section 3.4.2.2 of the 2013 FEIS would also apply to Alternative 2.

Public Services

The conclusions presented with respect to public services in Section 3.4.2.2 of the 2013 FEIS would also apply to Alternative 2.

Tax Revenues

Construction

Estimated sales and use tax revenues are presented by county in Table 3.4-32. These estimates are compared with the corresponding total 2014 sales and use tax revenues by county in Table 3.4-33. Estimated sales and use tax revenues for Alternative 2 range from less than 1 percent of existing (2014) sales and use tax revenues in Ada and Canyon Counties to 275.5 percent of 2014 sales and use tax revenues in Owyhee County (Table 3.4-33).

Operations

Estimated property tax revenues are presented by county in Table 3.4-34. These estimates are compared with the corresponding total 2014 property tax revenues by county in Table 3.4-35. Estimated property tax revenues for Alternative 2 range from less than 1 percent of existing (2014) property tax revenues in Ada, Canyon, and Jerome Counties to 29.6 percent of 2014 property tax revenues in Owyhee County (Table 3.4-35).

Alternative 3 – Revised Proposed 8 and the 9K Route

Alternative 3 consists of the Revised Proposed Route for Segment 8 and 9K; therefore, the impacts associated with this alternative correspond to those described above for the these two routes combined (see Section 3.4.2.3). Alternative 3 is 9 miles longer than Alternative 1. The total miles are, however, distributed differently by county, with 40 more miles crossing Owyhee County resulting in a total of 116 miles proposed for that county. This relative increase in miles in Owyhee County is offset by relative decreases in Ada and Elmore Counties.

Population

Table 3.4-30 provides estimates of the peak numbers of people expected to temporarily relocate during construction of Alternative 3 by county. Table 3.4-31 compares these estimates with the corresponding 2014 population totals. Projected temporary peak increases in population range from 0.1 percent or less of the existing (2014) population (Ada, Canyon, and Twin Falls Counties) to about 1.7 percent in Owyhee County (Table 3.4-31). Based on the miles of transmission line construction that would occur in each county, Alternative 3 would involve fewer people temporarily relocating to Ada and Elmore Counties than Alternative 1, with more people expected to temporarily relocate to Owyhee County (Table 3.4-30). Workers temporarily employed in Owyhee County may reside in nearby counties where more housing resources are available.

Economy and Employment

The regional economic impacts associated with Alternative 3 would be very similar to those evaluated for the Effects Common to All Alternatives scenario in the 2013 FEIS (see the Economic Conditions subsection in Section 3.4.2.2 above). Compared to the

2013 scenario, Alternative 3 would add 10.5 miles to the length of the proposed transmission line in the EPC 3 Analysis Area, an increase of approximately 2.1 percent.

Alternative 3 would cross approximately 7.7 miles of the OCTC, including 0.5 mile of the training area (Alpha Sector). The IDANG has indicated that the presence of additional power lines would adversely affect existing ground maneuver and aerial combat training operations within the OCTC (Kelly 2011). This potential impact is evaluated further in Section 3.4.2.3 in the subsection that addresses the Revised Proposed Route for Segment 8.

Housing

The commuting analysis presented for Segment 8 in Section 3.4.2.2 of the 2013 FEIS found that adequate temporary housing resources exist within 90 minutes' driving time of much of the length of this segment. The commuting analysis presented for Segment 9 in Section 3.4.2.2 of the 2013 FEIS found that while adequate temporary housing resources exist within 90 minutes' driving time of much of the length of this segment, parts of the segment appeared to more than 90 minutes' drive from sufficient housing resources. These findings also apply to Alternative 3. As discussed in the 2013 FEIS and noted above for Segment 9, the Proponents would evaluate potential housing mitigation for the parts of the segment with insufficient housing resources within a 90-minute drive.

Property Values

The general property impacts, compensation, and property value impacts described in the Property Values section in the 2013 FEIS would also apply to Alternative 3.

Education

The conclusions presented with respect to education in Section 3.4.2.2 of the 2013 FEIS would also apply to Alternative 3.

Public Services

The conclusions presented with respect to public services in Section 3.4.2.2 of the 2013 FEIS would also apply to Alternative 3.

Tax Revenues

<u>Construction</u>

Estimated sales and use tax revenues are presented by county in Table 3.4-32. These estimates are compared with the corresponding total 2014 sales and use tax revenues by county in Table 3.4-33. Estimated sales and use tax revenues for Alternative 3 range from less than 1 percent of existing (2014) sales and use tax revenues in Ada and Canyon Counties to 299.1 percent of 2014 sales and use tax revenues in Owyhee County (Table 3.4-33).

<u>Operations</u>

Estimated property tax revenues are presented by county in Table 3.4-34. These estimates are compared with the corresponding total 2014 property tax revenues by county in Table 3.4-35. Estimated property tax revenues for Alternative 3 range from less than 1 percent of existing (2014) property tax revenues in Ada, Canyon, and Jerome

Counties to 32.8 percent of 2014 property tax revenues in Owyhee County (Table 3.4-35).

Alternative 4 – The 8G Route and FEIS Proposed 9

Alternative 4 consists of the 8G and FEIS Proposed 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.4.2.3). Alternative 4 is 14 miles longer than Alternative 1. The total miles are, however, distributed differently by county, with 114 more miles crossing Owyhee County resulting in a total of 189 miles located in that county. This large relative increase in miles in Owyhee County is offset by decreases in miles in other counties, especially Ada and Elmore Counties. The transmission line does not cross Ada, Canyon, or Lincoln Counties under this alternative.

Population

Table 3.4-30 provides estimates of the peak numbers of people expected to temporarily relocate during construction of Alternative 4 by county. Table 3.4-31 compares these estimates with the corresponding 2014 population totals. Based on the miles of transmission line construction that would occur in each county, Alternative 4 would also involve fewer people temporarily relocating to Elmore and Gooding Counties than Alternative 1, with more people expected to temporarily relocate to Owyhee County (Table 3.4-30). The estimated temporary peak increase in population in Owyhee County would be equivalent to about 2.6 percent of the existing (2014) population (Table 3.4-31). Workers temporarily employed in Owyhee County may reside in nearby counties where more housing resources are available.

Economy and Employment

The regional economic impacts associated with Alternative 4 would be very similar to those evaluated for the Effects Common to All Alternatives scenario in the 2013 FEIS (see the Economic Conditions subsection in Section 3.4.2.2 above). Compared to the 2013 scenario, Alternative 4 would add 15.4 miles to the length of the proposed transmission line in the EPC 3 Analysis Area, an increase of approximately 3.1 percent.

Housing

The commuting analysis presented for Segment 9 in Section 3.4.2.2 of the 2013 FEIS found that while adequate temporary housing resources exist within 90 minutes' driving time of much of the length of this segment, parts of the segment appeared to more than 90 minutes' drive from sufficient housing resources. These findings apply to both Route 8G and FEIS Proposed 9 (the routes that make up this alternative). As discussed in the 2013 FEIS for Segment 9, the Proponents would evaluate potential housing mitigation for the parts of the segment with insufficient housing resources within a 90 minute drive. The Proponents would also evaluate potential mitigation for the parts of 8G with insufficient resources within a 90-minute drive.

Property Values

The general property impacts, compensation, and property value impacts described in the Property Values section in the 2013 FEIS would also apply to Alternative 4.

Education

The conclusions presented with respect to education in Section 3.4.2.2 of the 2013 FEIS would also apply to Alternative 4.

Public Services

The conclusions presented with respect to public services in Section 3.4.2.2 of the 2013 FEIS would also apply to Alternative 4.

Tax Revenues

Construction

Estimated sales and use tax revenues are presented by county in Table 3.4-32. These estimates are compared with the corresponding total 2014 sales and use tax revenues by county in Table 3.4-33. Under Alternative 4, the transmission line would not cross Ada, Canyon, or Lincoln Counties. Estimated sales and use tax revenues for Alternative 4 range from 4 percent of existing (2014) sales and use tax revenues in Twin Falls County to 440.5 percent of 2014 sales and use tax revenues in Owyhee County (Table 3.4-33).

Operations

Estimated property tax revenues are presented by county in Table 3.4-34. These estimates are compared with the corresponding total 2014 property tax revenues by county in Table 3.4-35. Estimated property tax revenues for Alternative 4 range from 1.3 percent of existing (2014) property tax revenues in Jerome County to 51.9 percent of 2014 property tax revenues in Owyhee County (Table 3.4-35).

Alternative 5 – The 8G and 9K Routes

Alternative 5 consists of Routes 8G and 9K. The two routes would follow the same alignment, 250 feet apart, from just east of Deadman Creek to the Hemingway Substation, approximately 130 miles. The impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.4.2.3). Alternative 5 is 27 miles longer than Alternative 1 and the longest of the seven alternatives. The total miles are, however, distributed differently by county, with 126 more miles crossing Owyhee County. Both routes follow the same alignment through Owyhee County, resulting in a total of 202 miles located in that county (two lines 250 feet apart, following the same alignment for 101 miles). This large relative increase in miles in Owyhee County is offset by decreases in miles in other counties, especially Ada and Elmore Counties.

Population

Table 3.4-30 provides estimates of the peak numbers of people expected to temporarily relocate during construction of Alternative 5 by county. Table 3.4-31 compares these estimates with the corresponding 2014 population totals. Under Alternative 5, the transmission line would not cross Ada, Canyon, or Lincoln Counties. Based on the miles of transmission line construction that would occur in each county, Alternative 5 would also involve fewer people temporarily relocating to Elmore and Gooding Counties than Alternative 1, with more people expected to temporarily relocate to Owyhee County (Table 3.4-30). The estimated temporary peak increase in population in Owyhee County would be equivalent to about 2.7 percent of the existing (2014) population (Table 3.4-31).

Workers temporarily employed in Owyhee County may reside in nearby counties where more housing resources are available.

Economy and Employment

The regional economic impacts associated with Alternative 5 would be very similar to those evaluated for the Effects Common to All Alternatives scenario in the 2013 FEIS (see the Economic Conditions subsection in Section 3.4.2.2 above). Compared to the 2013 scenario, Alternative 5 would add 27.7 miles to the length of the proposed transmission line in the EPC 3 Analysis Area, an increase of approximately 5.5 percent. Alternative 5 is approximately 26.6 miles longer than Alternative 1 and the longest of the seven alternatives.

Housing

The commuting analysis presented for Segment 9 in Section 3.4.2.2 of the 2013 FEIS found that while adequate temporary housing resources exist within 90 minutes' driving time of much of the length of this segment, parts of the segment appeared to more than 90 minutes' drive from sufficient housing resources. These findings apply to both Route 8G and 9K (the routes that make up this alternative). As discussed in the 2013 FEIS for Segment 9, the Proponents would evaluate potential housing mitigation for the parts of the segment with insufficient housing resources within a 90-minute drive. The Proponents would also evaluate potential mitigation for the parts of Route 8G with insufficient resources within a 90-minute drive.

Property Values

The general property impacts, compensation, and property value impacts described in the Property Values section in the 2013 FEIS would also apply to Alternative 5.

Education

The conclusions presented with respect to education in Section 3.4.2.2 of the 2013 FEIS would also apply to Alternative 5.

Public Services

The conclusions presented with respect to public services in Section 3.4.2.2 of the 2013 FEIS would also apply to Alternative 5.

Tax Revenues

<u>Construction</u>

Estimated sales and use tax revenues are presented by county in Table 3.4-32. These estimates are compared with the corresponding total 2014 sales and use tax revenues by county in Table 3.4-33. Under Alternative 5, the transmission line would not cross Ada, Canyon, or Lincoln Counties. Estimated sales and use tax revenues for Alternative 4 range from 4 percent of existing (2014) sales and use tax revenues in Twin Falls County to 464.1 percent of 2014 sales and use tax revenues in Owyhee County (Table 3.4-33).

<u>Operations</u>

Estimated property tax revenues are presented by county in Table 3.4-34. These estimates are compared with the corresponding total 2014 property tax revenues by county in Table 3.4-35. Estimated property tax revenues for Alternative 5 range from 1.3

percent of existing (2014) property tax revenues in Jerome County to 55.1 percent of 2014 property tax revenues in Owyhee County (Table 3.4-35).

Alternative 6 – The 8H Route and FEIS Proposed 9

Alternative 6 consists of 8H and FEIS Proposed 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.4.2.3). Alternative 6 is just 5 miles longer than Alternative 1. The total miles are, however, distributed differently by county, with 74 more miles crossing Owyhee County, resulting in a total of 150 miles proposed for that county. This increase in miles in Owyhee County is offset by decreases in miles in other counties, especially Ada and Elmore Counties.

Population

Table 3.4-30 provides estimates of the peak numbers of people expected to temporarily relocate during construction of Alternative 6 by county. Table 3.4-31 compares these estimates with the corresponding 2014 population totals. Under Alternative 6, the transmission line would not cross Canyon or Lincoln Counties. Based on the miles of transmission line construction that would occur in each county, Alternative 6 would also involve fewer people temporarily relocating to Ada, Elmore, and Gooding Counties than Alternative 1, with more people expected to temporarily relocate to Owyhee County (Table 3.4-30). The estimated temporary peak increase in population in Owyhee County would be equivalent to about 2.1 percent of the existing (2014) population (Table 3.4-31). Workers temporarily employed in Owyhee County may reside in nearby counties where more housing resources are available.

Economy and Employment

The regional economic impacts associated with Alternative 6 would be very similar to those evaluated for the Effects Common to All Alternatives scenario in the 2013 FEIS (see the Economic Conditions subsection in Section 3.4.2.2 above). Compared to the 2013 scenario, Alternative 6 would add 6 miles to the length of the proposed transmission line in the EPC 3 Analysis Area, an increase of approximately 1.2 percent.

Housing

The commuting analysis presented for Segment 9 in Section 3.4.2.2 of the 2013 FEIS found that while adequate temporary housing resources exist within 90 minutes' driving time of much of the length of this segment, parts of the segment appeared to more than 90 minutes' drive from sufficient housing resources. These findings apply to both 8H and FEIS Proposed 9 (the routes that make up this alternative). As discussed in the 2013 FEIS for Segment 9, the Proponents would evaluate potential housing mitigation for the parts of the segment with insufficient housing resources within a 90-minute drive. The Proponents would also evaluate potential mitigation for the parts of Route 8H with insufficient resources within a 90-minute drive.

Property Values

The general property impacts, compensation, and property value impacts described in the Property Values section in the 2013 FEIS would also apply to Alternative 6.

Education

The conclusions presented with respect to education in Section 3.4.2.2 of the 2013 FEIS would also apply to Alternative 6.

Public Services

The conclusions presented with respect to public services in Section 3.4.2.2 of the 2013 FEIS would also apply to Alternative 6.

Tax Revenues

Construction

Estimated sales and use tax revenues are presented by county in Table 3.4-32. These estimates are compared with the corresponding total 2014 sales and use tax revenues by county in Table 3.4-33. Under Alternative 6, the transmission line would not cross Canyon or Lincoln Counties. Estimated sales and use tax revenues for Alternative 6 range from less than 1 percent of existing (2014) sales and use tax revenues in Ada County to 364.5 percent of 2014 sales and use tax revenues in Owyhee County (Table 3.4-33).

Operations

Estimated property tax revenues are presented by county in Table 3.4-34. These estimates are compared with the corresponding total 2014 property tax revenues by county in Table 3.4-35. Estimated property tax revenues for Alternative 6 range from less than 1 percent of existing (2014) sales and use tax revenues in Ada County to 41.6 percent of 2014 sales and use tax revenues in Owyhee County (Table 3.4-33).

Alternative 7 – The 8H and 9K Routes

Alternative 7 consists of Routes 8H and 9K; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.4.2.3). Alternative 7 is 17 miles longer than Alternative 1. The total miles are, however, distributed differently by county, with 86 more miles crossing Owyhee County, resulting in a total of 162 miles located in that county. This increase in miles in Owyhee County is offset by decreases in miles in other counties, especially Ada and Elmore Counties.

Population

Table 3.4-30 provides estimates of the peak numbers of people expected to temporarily relocate during construction of Alternative 7 by county. Table 3.4-31 compares these estimates with the corresponding 2014 population totals. Under Alternative 7, the transmission line would not cross Canyon or Lincoln Counties. Based on the miles of transmission line construction that would occur in each county, Alternative 7 would also involve fewer people temporarily relocating to Ada, Elmore, and Gooding Counties than Alternative 1, with more people expected to temporarily relocate to Owyhee County (Table 3.4-30). The estimated temporary peak increase in population in Owyhee County would be equivalent to about 2.3 percent of the existing (2014) population (Table 3.4-31). Workers temporarily employed in Owyhee County may reside in nearby counties where more housing resources are available.

Economy and Employment

The regional economic impacts associated with Alternative 7 would be very similar to those evaluated for the Effects Common to All Alternatives scenario in the 2013 FEIS (see the Economic Conditions subsection in Section 3.4.2.2 above). Compared to the 2013 scenario, Alternative 7 would add 18.4 miles to the length of the proposed transmission line in the EPC 3 Analysis Area, an increase of approximately 3.7 percent.

Housing

The commuting analysis presented for Segment 9 in Section 3.4.2.2 of the 2013 FEIS found that while adequate temporary housing resources exist within 90 minutes' driving time of much of the length of this segment, parts of the segment appeared to more than 90 minutes' drive from sufficient housing resources. These findings apply to both Routes 8H and 9K (the routes that make up this alternative). As discussed in the 2013 FEIS for Segment 9, the Proponents would evaluate potential housing mitigation for the parts of the segment with insufficient housing resources within a 90-minute drive. The Proponents would also evaluate potential mitigation for the parts of Route 8H with insufficient resources within a 90-minute drive.

Property Values

The general property impacts, compensation, and property value impacts described in the Property Values section in the 2013 FEIS would also apply to Alternative 7.

Education

The conclusions presented with respect to education in Section 3.4.2.2 of the 2013 FEIS would also apply to Alternative 7.

Public Services

The conclusions presented with respect to public services in Section 3.4.2.2 of the 2013 FEIS would also apply to Alternative 7.

Tax Revenues

<u>Construction</u>

Estimated sales and use tax revenues are presented by county in Table 3.4-32. These estimates are compared with the corresponding total 2014 sales and use tax revenues by county in Table 3.4-33. Under Alternative 7, the transmission line would not cross Canyon or Lincoln Counties. Estimated sales and use tax revenues for Alternative 7 range from less than 1 percent of existing (2014) sales and use tax revenues in Ada County to 388.1 percent of 2014 sales and use tax revenues in Owyhee County (Table 3.4-33).

<u>Operations</u>

Estimated property tax revenues are presented by county in Table 3.4-34. These estimates are compared with the corresponding total 2014 property tax revenues by county in Table 3.4-35. Estimated property tax revenues for Alternative 7 range from less than 1 percent of existing (2014) sales and use tax revenues in Ada County to 44.8 percent of 2014 sales and use tax revenues in Owyhee County (Table 3.4-33).

3.4.2.5 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, additional measures proposed by the Project Proponents specifically for the SRBOP, as well as the existing compensatory mitigation plans (as defined or required in the FEIS or ROD). This section also describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

Environmental Protection Measures

The Proponents have committed to Project design features and EPMs to minimize or avoid impacts on environmental resources. These measures, the areas where they would be applicable (e.g., private, state, or federal-managed lands), as well as the details of each measure are provided in Table 2.7-1 of the FEIS. None of the EPMs assessed in the FEIS directly address socioeconomic conditions.

In addition, the Proponents would evaluate potential housing mitigation for areas where housing may be limited (e.g., from about MPs 67 to 70 and from about MPs 94 to 130 in Segment 9). Mitigation in this case would likely involve seeking temporary accommodation for workers in the larger communities located between 90 minutes' and about 2 hours' driving time from the affected parts of the segment, and the provision of transportation, in the form of buses or vans, to ensure that workers are able to travel safely to the site.

Proponent-Proposed MEP and Potential Effects to the MEP within the SRBOP

The Proponents have developed an MEP to mitigate the effects of Project-related impacts within the SRBOP, as well as comply with the SRBOP's enabling statute (P.L. 103-64) which requires enhancement of resources within the SRBOP. The MEP contains two types of compensation: "mitigation" and "enhancement." For this analysis, mitigation is defined as avoidance, minimization, and compensation measures aimed at offsetting adverse impacts of the Projects; enhancement is defined as measures in addition to mitigation that are required in order to further advance the objectives and values for which the SRBOP was established.

The Proponents' MEP offers a portfolio that contains five types of mitigation/enhancement proposals. The following discusses the benefit and/or impact that these proposed mitigation/enhancement proposals could have socioeconomics.

Habitat Restoration

Based on preliminary estimates of the construction footprint for the Revised Proposed Routes for Segments 8 and 9, the Proponents estimate that they will provide approximately $2.5 million in total direct funding for habitat restoration activities. These direct expenditures would likely make a small but positive contribution to the local economy.

Purchase of Private Inholdings

There are private lands within the SRBOP that could contain important cultural and natural resources. The Proponents have proposed (as part of the MEP) to purchase a

portion of these lands and deed them to the U.S. government, to be managed by the BLM. Selection of the parcels that would be purchased and deeded to the BLM would be determined by the agencies' Oversight Committee. The estimated cost of purchasing this land is unknown but is not expected to exceed $3,000 per acre, including transaction fees. The amount of land to be acquired is also unknown, but the Proponents have proposed to offer a total of $320,000 to the BLM.

Purchasing private inholdings and transferring control of the land to the BLM could result in a change in how the lands are managed. This type of transfer would also remove the affected lands from the local tax base and result in a commensurate reduction in property tax revenues. Although the amount of land to be acquired is unknown, it would represent a very small share of total private lands in the affected county or counties, depending on the location of the transferred parcels. Assuming an average value of $3,000 per acre, for example, a total expenditure of $320,000 would allow the acquisition of approximately 106 acres of inholdings.

Law Enforcement

The Proponents' MEP proposes to provide funding for 1 annual full-time equivalent (FTE) law enforcement officer for the first 10 years following construction and ½ an annual FTE for the following 10 years, with a total estimated cost of $1,750,000 over the 20 year period (see Appendix C). This proposal includes ¼ FTE of law enforcement for the first 10 years to compensate for indirect effects of additional roads for the Revised Proposed Routes. The potential impacts of this proposal on recreation use are discussed in Section 3.17 – Land Use and Recreation.

Visitor Enhancement

The MEP contains a proposal to fund programs intended to enhance the experiences of visitors to the SRBOP, with estimated annual funding of $50,000 per year for 10 years. The Oversight Committee would be responsible for selecting the programs that would be funded. Examples of programs that could be funded include a "Raptor Camp" that would provide an opportunity for the public to learn about the natural resources in the SRBOP, public service announcements, and other uses, including cultural resource education and outreach, visitor education materials such as displays, videos, and brochures, and funding for other ongoing visitor programs. Local expenditures related to visitor enhancement activities would make a small, but positive contribution to the local economy.

Line and Substation Removal

The Proponents have identified portions of two existing transmission lines and an existing substation within the SRBOP that could be removed. Removal would also require some reconstruction of existing lines and a short length of new line (see the Supplemental POD in Appendix B). The Proponents currently estimate that implementation of the proposed removal and reconstruction activities would cost approximately $1.9 million. Like the other components of the Proponents' MEP that involve local expenditures and employment, implementation of these activities would make a small, but positive contribution to the local economy.

3.4.2.6 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

Summary of Remaining Impacts

After implementation of the EPMs and MEP discussed above, some residual Project-related impacts would likely remain. The impact assessment found in Sections 3.4.2.2, 3.4.2.3, and 3.4.2.4 incorporates the avoidance and minimization contributions of the EPMs in the impact analysis; as a result, Sections 3.4.2.2, 3.4.2.3, and 3.4.2.4 take these measures and their impact offsets into consideration. The design features outlined in the Proponents' MEP (discussed above) may reduce the magnitude of impacts to some degree (thereby reducing the need for additional compensatory mitigation); however, the extent of this reduction cannot be fully quantified at this time (as discussed in detail above).

Note that Sections 3.4.2.2, 3.4.2.3, and 3.4.2.4 outline the current extent of known impacts that would occur Project-wide

BLM Compensatory Mitigation Categories

In addition to the design features and EPMs meant to avoid and minimize impacts, mitigation plans were required in the ROD for Segments 1–7 and 10. None of these plans directly address socioeconomics, but spending associated with proposed mitigation activities would likely make a small but positive contribution to the local economy.

The BLM may require additional mitigation for some remaining impacts of the Project on environmental resources (including impacts that occur outside of the SRBOP), per the guidelines found in the BLM Regional Mitigation Manual (BLM 2013c) and DOI Manual 600 DM 6, *Implementing Mitigation at the Landscape-scale* (DOI 2015). Mitigation for residual Project-related impacts that would occur within the SRBOP is discussed below.

The BLM will continue to work with applicable stakeholders to identify the impacts that would remain on the SRBOP after implementation of the EPMs and MEP, as well as the existing compensatory mitigation plans discussed above. The BLM will then design mitigation options that address applicable remaining impacts (see Section 3.0 for a discussion of the BLM's policy regarding mitigation). These options will contain components that will ensure that impacts to resources and values on the SRBOP that require mitigation are compensated for, as well as that enhancement of these resources is provided in order to comply with the enabling statute of the SRBOP. Based on internal and external scoping, the BLM is considering eight mitigation categories (see Section 2.6.2 in Chapter 2). Additional mitigation is not being considered to address remaining impacts to socioeconomic resources within the SRBOP.

3.5 ENVIRONMENTAL JUSTICE

This section addresses potential impacts from the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; and the Toana Road Variations to the Segment 9 Revised Proposed Route. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). This section analyzes the potential for Project activities to have disproportionately high or adverse human health or environmental effects on minority and/or low-income populations in accordance with EO 12898.

Effects associated with the routes analyzed in the 2013 FEIS were disclosed in that document. With the exception of FEIS Proposed 9, those FEIS routes are not being re-analyzed here, as only new information is included in this resource-specific section.

3.5.1 Affected Environment

The Environmental Justice section in the 2013 FEIS discusses those aspects of the environment that could be impacted by the Project. It begins with a discussion of the Analysis Area considered, identifies the issues that have driven the analysis, and characterizes the existing conditions in the area crossed by Project. We reviewed the data and regulatory requirements in the FEIS and concluded that they are still valid for this SEIS.

This section of the SEIS starts with a discussion of the Analysis Area considered, identifies the issues that have driven the analysis, and characterizes the existing conditions along the routes and alternatives.

Morley Nelson Snake River Birds of Prey National Conservation Area

Portions of the Project would cross through the SRBOP. Environmental justice is not one of the environmental resources and values for which the SRBOP was established to manage and protect.

3.5.1.1 Analysis Area

The Analysis Area for environmental justice is the counties crossed or potentially affected by the routes and alternatives for Segments 8 and 9, and their associated facilities. These counties are identified in Section 3.4 – Socioeconomics (Tables 3.4-1 and 3.4-2).

3.5.1.2 Issues Related to Environmental Justice

The following environmental justice–related issues were brought up by the public during public scoping (Tetra Tech 2009) and comments on the DEIS, were raised by federal and state agencies during scoping and agency discussions, or are issues that must be considered as stipulated in law or regulation:

- What the effects would be on minority populations or communities,
- What the effects would be on low-income populations or communities, and
- What the effects would be on Tribes.

We reviewed the scoping comments received for this SEIS and determined that environmental justice-related issues considered in the 2013 FEIS have not changed and are still relevant to this SEIS.

3.5.1.3 Methods

Identifying whether disproportionately high and adverse impacts on minority and/or low-income populations would occur typically involves two steps: first, identifying whether minority and/or low-income communities are present, and then, if these types of communities are present, evaluating whether high and adverse human health or environmental effects would disproportionately affect the identified community or communities.

Data from the U.S. Census Bureau are used to identify minority and/or low-income communities that could be affected by the routes and alternatives for Segments 8 and 9. The results of other resource-specific analyses, including soils, water, air quality, public safety, and noise, conducted for this Project and presented in the other sections of this EIS are used to evaluate the potential for adverse human health or environmental effects.

3.5.1.4 Existing Conditions

Guidelines provided by the CEQ (1997a) and USEPA (1998) indicate 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 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. Further, a minority population exists if there is “more than one minority group present and the minority percentage, as calculated by aggregating all minority persons, meets one of the above-stated thresholds” (CEQ 1997a).

The CEQ and USEPA guidelines indicate that low-income populations should be identified based on the annual statistical poverty thresholds established by the U.S. Census Bureau. Like minority populations, low-income communities may consist of individuals living in geographic proximity to one another, or a geographically dispersed set of individuals who would be similarly affected by the proposed action or program. The U.S. Census Bureau defines a poverty area as a census tract or other area where at least 20 percent of residents are below the poverty level (U.S. Census Bureau 2013a).

The potentially affected counties range from 590 square miles (Canyon County) to 7,678 square miles (Owyhee County) (see Table 3.4-3 in the Section 3.4 – Socioeconomics). Larger and more populated geographic areas may have the effect of “masking” or “diluting” the presence of concentrations of minority and/or low-income populations (CEQ 1997a; USEPA 1998). Data were therefore also reviewed at the census block group level to identify the potential existence of minority and/or low-income communities. A census block group is a subdivision of a census tract and typically contains between 600 and 3,000 people.

The routes and alternatives for Segments 8 and 9 cross 22 census block groups, which range in size from approximately 14 square miles to 2,855 square miles. The large areas included in some of these census block groups reflect the lightly populated and undeveloped nature of much of the Analysis Area.

Race and Ethnicity

Counties

The population of Idaho is predominantly White, with White persons comprising 84 percent of the total populations in 2010, compared to 64 percent in the United States as a whole (Table 3.5-1). In the potentially affected counties, the percent of the population identified as White ranged from 67 percent in Jerome County to 87 percent in Ada County (Table 3.5-1).

Persons of Hispanic or Latino origin are the largest minority group in Idaho, and in all of the potentially affected counties. Hispanic or Latino populations comprised more than 20 percent of the total population in 6 of the 9 potentially affected counties in 2010 (Table 3.5-1).

Table 3.5-1. Race and Ethnicity by County, 2010

Geographic Area	Total Population	Percent of Total Population				
		White[1/]	Hispanic or Latino	American Indian and Alaska Native[1/]	Other Race[1/2/]	Two or More Races[1/]
Ada	392,365	86.5	7.1	0.5	3.8	2.1
Canyon	188,923	72.3	23.9	0.7	1.5	1.7
Cassia	22,952	72.9	24.9	0.5	0.8	0.9
Elmore	27,038	75.1	15.2	0.8	5.9	2.9
Gooding	15,464	69.6	28.1	0.6	0.6	1.2
Jerome	22,374	66.9	31.0	0.7	0.6	0.9
Lincoln	5,208	69.3	28.3	0.6	0.8	1.0
Owyhee	11,526	68.3	25.8	3.7	0.8	1.4
Twin Falls	77,230	82.7	13.7	0.6	1.7	1.4
Idaho	**1,567,582**	**84.0**	**11.2**	**1.1**	**2.0**	**1.7**
United States	308,745,538	63.7	16.3	0.7	17.2	1.9

1/ Non-Hispanic only. The federal government considers race and Hispanic/Latino origin to be two separate and distinct concepts. People identifying Hispanic or Latino origin may be of any race. The data summarized in this table present Hispanic/Latino as a separate category.

2/ The "Other Race" category presented here includes census respondents identifying as "Black or African American," "Asian," "Native Hawaiian and Other Pacific Islander," or "Some Other Race." The relative high percentage of the U.S. population in this category (17.2 percent) reflects the inclusion of the Black or African American population, which comprised 12.2 percent of the national population in 2010, but just 0.8 percent and 0.6 percent in Wyoming and Idaho, respectively.

Source: U.S. Census Bureau 2011a

American Indians and Alaska Natives accounted for 1.1 percent of the total population in Idaho in 2010. Viewed at the county level, American Indians and Alaska Natives accounted for less than 1 percent in all of the potentially affected counties except Owyhee County where they made up 3.7 percent of the total population. The relatively high percentage in Owyhee County, Idaho reflects the presence of the Duck Valley Indian Reservation, which is partially located in the county. This reservation is located in the southern part of the county, more than 60 miles south of the Analysis Area.

Census Block Groups

Race and ethnicity data from the 2010 Census are available at the census block group level. The percent of the population identifying as White alone in the 2010 Census exceeded 50 percent in all of the potentially affected census block groups, and, as a result, the population in these census block groups did 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 (Table 3.5-2).

The minority population in each census block group was also compared with its respective county average in 2010 to identify areas where the minority population is potentially "meaningfully greater" than the minority population in the general population. This comparison identified four census block groups where the Hispanic or Latino share of the population was more than 10 percent higher than the county average (Table 3.5-2).

Table 3.5-2. Race and Ethnicity Census Block Group Comparison

County/Block Group	Percent of Total Population 2010					
	Total Population 2010[1/]	**White[2/]**	**Hispanic or Latino**	**American Indian and Alaska Native[2/]**	**Other Race[2/3/]**	**Two or More Races[2/]**
Elmore County, Idaho	**27,038**	**75.1**	**15.2**	**0.8**	**5.9**	**2.9**
Block Group 2, Census Tract 9601	1,164	69.3	27.2	1.0	0.7	1.7
Block Group 2, Census Tract 9604	1,316	68.5	25.5	1.3	2.7	1.9
Gooding County, Idaho	**15,464**	**69.6**	**28.1**	**0.6**	**0.6**	**1.2**
Block Group 3, Census Tract 9602	1,699	59.4	38.3	0.8	0.5	1.1
Twin Falls County, Idaho	**77,230**	**82.7**	**13.7**	**0.6**	**1.7**	**1.4**
Block Group 1, Census Tract 3	909	73.5	24.9	0.4	0.9	0.3

1/ Data are for 2010.
2/ Non-Hispanic only. The federal government considers race and Hispanic/Latino origin to be two separate and distinct concepts. People identifying Hispanic or Latino origin may be of any race. The data summarized in this table present Hispanic/Latino as a separate category.
3/ The "Other Race" category presented here includes census respondents identifying as "Black or African American," "Asian," "Native Hawaiian and Other Pacific Islander," or "Some Other Race."
Source: U.S. Census Bureau 2011b

Income and Poverty

Counties

Median household income in Idaho was equivalent to 86 percent of the national median in 2011 (Table 3.5-3). Median household income was below the state median in all the potentially affected Idaho counties, with the exception of Ada County (Table 3.5-3).

The percent of the population below the poverty level in Idaho in 2011 was higher than the national average (16.5 percent versus 15.9 percent) (Table 3.5-3). Poverty rates were higher than the state average in 6 of the 9 potentially affected Idaho counties, with the highest rates occurring in Canyon (20.1 percent) and Owyhee (25.1 percent) Counties (Table 3.5-3).

Viewed in terms of households, the estimated percent of households below the poverty level in Idaho in 2011 was lower than the national average (13.4 percent versus 14.6 percent). At the county level, estimated household poverty rates ranged from 10.5 percent (Ada County) to 21.1 percent (Owyhee County) (Table 3.5-3). The household

poverty data summarized in Table 3.5-3 are from the U.S. Census Bureau's American Community Survey, as discussed below for census block groups.

Table 3.5-3. Income and Poverty by State and Affected County

State/County	2010 Median Household Income		Percent of Population Below Poverty, 2011 All Ages	Percent of Households Below Poverty, 2011
	2011 ($)	Percent of U.S./ State Median[1/]		
Ada	50,701	117	13.4	10.5
Canyon	39,132	90	20.1	15.7
Cassia	41,393	95	16.7	17.8
Elmore	43,120	99	12.9	10.7
Gooding	39,670	92	18.5	15.8
Jerome	39,454	91	18.0	16.6
Lincoln	40,460	93	16.1	12.0
Owyhee	33,518	77	25.1	21.1
Twin Falls	41,942	97	17.7	13.7
Idaho	**43,345**	**86**	**16.5**	**13.4**
United States	50,502	NA	15.9	14.6

1/ Statewide median household incomes are presented as a percent of the national median; county medians are shown as a percentage of their respective state medians.
Source: U.S. Census Bureau 2012f, 2013b

Census Block Groups

Household poverty data compiled as part of the U.S. Census Bureau's American Community Survey are presented for 2011 by county and census block group in Table 3.5-4. These data are 12-month estimates based on data compiled from 2007 to 2011. The U.S. Census Bureau defines a poverty area as a census tract or other area where at least 20 percent of residents are below the poverty level (U.S. Census Bureau 2013a). More than 20 percent of households were estimated to be below the poverty level in seven of the affected census block groups (Table 3.5-4).

Table 3.5-4. Poverty Census Block Comparison

County/Block Group[1/]	Number of Households	Percent of Households Below Poverty
Elmore County	**9,532**	**10.7**
Block Group 2, Census Tract 9604	408	28.2
Gooding County	**5,357**	**15.8**
Block Group 2, Census Tract 9601	510	36.3
Block Group 3, Census Tract 9602	606	21.8
Owyhee County	**3,873**	**21.1**
Block Group 1, Census Tract 9502	579	24.9
Block Group 2, Census Tract 9502	276	21.4
Block Group 3, Census Tract 9502	194	31.4
Twin Falls County	**27,940**	**13.7**
Block Group 3, Census Tract 15	106	27.4

1/ Data are only shown for those census block groups with more than 20 percent of households below the poverty level.
Source: U.S. Census Bureau 2013b

3.5.2 Direct and Indirect Effects

This section is organized to present effects to environmental justice from construction, then operations, followed by decommissioning activities for the proposed Project.

A comprehensive list of all project design features and EPMs, as well as the land ownership to which they apply, can be found in Table 2.7-1 of Chapter 2 of the FEIS. The following impact assessment takes these project design features and EPMs into account when considering the potential impact that the Project could have on environmental resources.

Plan Amendments

Amendments to the BLM RMPs and MFPs are summarized for each alternative in Table 2.3-1 (see Chapter 2 for more details). The BLM plan amendments are discussed in detail in Appendices F and G. Amendments are needed to permit the Project to cross various areas of BLM-managed lands. Effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved. Amendments that alter land management designations could change future use of these areas. No amendments specific to environmental justice are proposed for the Project and no impacts to environmental justice resulting from approving the amendments beyond the impacts of the Project are anticipated.

3.5.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West and the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of this Project. No Project-related impacts to environmental justice would occur; however, impacts would continue as a result of natural events (such as fire, drought, and severe weather) as well as from existing developments within the Analysis Area and from other projects , including wind farms, mining, agricultural, or other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project and the area would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, impacts similar to those described below may occur due to new transmission lines built to meet the increasing demand in place of this Project.

3.5.2.2 Effects Common to All Routes

The assessment of effects by route is presented in Section 3.5.2.3. The assessment of potential impacts related to the MEP, as well as a list of additional mitigation measures that would be required by the BLM related to impacts on the SRBOP, is presented in Sections 3.5.2.5 and 3.5.2.6.

Disproportionate High and Adverse Effects on Minority or Low-Income Populations

Construction

Geographic Communities

Construction of the proposed Project is not expected to have high and adverse human health or environmental effects on nearby communities. Adverse construction-related impacts would likely include increases in local traffic and noise, as well as dust, and could result in temporary delays at some highway crossings. These impacts would be temporary and localized, and are not expected to be high. Construction workers temporarily relocating to the Project area would increase demand for local housing resources. Potential impacts on public safety are discussed in Section 3.22 – Public Safety.

Construction-related activities would result in some short-term visual impacts primarily on high-sensitivity viewers with foreground and possibly middleground views. Visual impacts would likely result from the use of cranes, pulling and tensioning equipment, other construction equipment, and temporary lighting, as well as dust from clearing and grading. However, disturbance would be transient and of short duration as construction activities progress along the transmission line route. Visual impacts are discussed in more detail in Section 3.2 – Visual Resources.

Construction could also increase demand for education, health care, and municipal services, as well as potentially increase demand for police and fire protection services. However, these impacts, were they to occur, would be expected to be temporary and would not be expected to measurably affect the quality of services currently received by local communities and residents.

Local construction expenditures for materials and supplies and spending by workers directly employed by the Project are expected to benefit local economies. Construction would also generate state and local tax revenues (see Section 3.4 – Socioeconomics).

Communities of Shared Interest

The term community of shared interest is used here to refer to geographically dispersed individuals who could experience common conditions of environmental effect. The National Agricultural Workers Survey for fiscal years 2001 and 2002 found that 83 percent of crop workers in the United States identified themselves as members of a Hispanic group, and 78 percent of crop workers were born outside the United States, primarily in Mexico (75 percent of all crop workers) (U.S. Department of Labor 2005). This survey also found that 30 percent of all farm workers had total family incomes below federal poverty guidelines.

The potential effects of construction on agricultural production are addressed in Section 3.18 – Agriculture. Potential effects to the agricultural sector and employment are discussed in Section 3.4 – Socioeconomics. Viewed in terms of agricultural operations in the potentially affected counties, total estimated construction disturbance represents a very small share of the 11.8 million acres of land in farms in the counties that would be crossed by the routes and alternatives for Segments 8 and 9 and is unlikely to noticeably affect overall agricultural production and employment in the affected counties. In addition,

the impacts to agricultural production that would occur are not expected to have adverse human health or environmental effects on farm workers.

The Project would benefit service industry occupations that are typically relatively low paid, particularly those associated with accommodation and food service. These benefits would result from increased demand and spending by construction workers temporarily relocating to the Project region, and would be short-term.

Operations

Geographic Communities

Operation of the proposed Project is not expected to have high and adverse human health or environmental effects on nearby communities. Long-term visual impacts would result from the long-term presence of the transmission line structures and overhead conductors. Other long-term visual impacts could include land scarring from grading and other construction activities in semi-arid environments where vegetation recruitment and growth are slow. Vegetation would also remain cleared or partially cleared along some portions of the ROW for the operational life of the Project (see Section 3.2 – Visual Resources). Tall vegetation would be removed, with low-lying vegetation left in place or allowed to grow back following reclamation activities, where possible.

Local operation expenditures for materials and supplies and spending by workers would, however, have beneficial effects on the local economy, and the Project would generate state and local tax revenues (see Section 3.4 – Socioeconomics).

Communities of Shared Interest

Operation of the Proposed Route and Route Alternatives has the potential to negatively affect minority and low-income farm workers. However, as noted above with respect to construction, operation-related impacts to agricultural operations are not expected to noticeably affect overall agricultural production and employment in the affected counties or have adverse human health or environmental effects on farm workers. Potential effects on agricultural production are addressed in Section 3.18 – Agriculture and potential effects to the agricultural sector and employment are discussed in Section 3.4 – Socioeconomics.

Decommissioning

Overall impacts associated with decommissioning the proposed Project are expected to be similar to those that would occur under construction. Decommissioning would not be expected to result in high and adverse human health or environmental effects on nearby communities, workers employed in decommissioning activities, or agricultural workers and these activities would, therefore, have no potential to disproportionately affect minority and low-income communities. There would be visual impacts resulting from the long-term presence of the ROW after the Project has been decommissioned and the structures removed. These impacts would primarily be related to ground disturbance and visible at ground level, and would be expected to diminish over time. Additional details concerning decommissioning are provided in Appendix B of the FEIS.

Public Participation

Construction and Operations

The BLM has considered all input from persons or groups regardless of race, income status, or other social and economic characteristics. Public scoping efforts are described in Chapter 5 in the 2013 FEIS. Scoping efforts for this SEIS are summarized in Section 5.1 of this document.

Native American Consultation

Potentially affected minority populations include American Indian Tribes with an interest in the federal lands that could be affected by the Project. The BLM initiated government-to-government consultation with seven Native American Tribes in the Project area for the overall Project in April 2008. The consultation was conducted to inform the various Tribes of the proposed undertaking and solicit their concerns and/or comments regarding the possible presence of TCPs or places of cultural, traditional, or religious importance to the Tribes in the proposed Project area. The following Tribes have been contacted:

- Northern Arapaho
- Northern Cheyenne
- Eastern Shoshone
- Shoshone-Bannock
- Northern Ute
- Shoshone-Paiute
- Northwest Shoshone Band
- Southern Arapaho
- Southern Cheyenne
- Oglala Sioux

This is discussed further in Section 3.3 – Cultural Resources and a summary of the status of the Native American consultation process is presented in Table 3.3-2 of the 2013 FEIS.

Decommissioning

Decommissioning would be conducted in a manner that would not exclude minority and low-income groups from participation or subject persons to discrimination because of their race, color, or national origin.

3.5.2.3 Direct and Indirect Effects by Route

The analysis of minority and low-income populations by census block group presented in the preceding Affected Environment section suggests the potential presence of minority and low-income communities in the vicinity of the routes. This analysis identified four potential minority census block groups. These block groups and the routes that would cross them are identified in Table 3.5-5.

Table 3.5-5. Potential Minority Populations Crossed by Route

County	Census Tract	Block Group	Percent Minority	Revised Proposed Route 8	Route 8G	Route 8H	Revised Proposed Route 9	FEIS Proposed Route 9	Route 9K
Elmore	9601	2	31	X	X	X	X	X	X
Elmore	9604	2	31			X	X		
Gooding	9602	3	41		X	X			
Twin Falls	3	1	26				X	X	X

Note: X indicates that the census block group is crossed by the identified route.

The low-income analysis identified seven census block groups where 20 percent or more of households were estimated to be below the poverty level in 2011. These block groups and the routes that would cross them are identified in Table 3.5-6.

Table 3.5-6. Potential Low Income Populations Crossed by Route

County	Census Tract	Block Group	Percent Below Poverty Level	Revised Proposed Route 8	Route 8G	Route 8H	Revised Proposed Route 9	FEIS Proposed Route 9	Route 9K
Elmore	9604	2	28			X	X		
Gooding	9601	2	36	X	X	X			
Gooding	9602	3	22		X	X			
Owyhee	9502	1	25		X	X	X	X	X
Owyhee	9502	2	21					X	
Owyhee	9502	3	31				X	X	X
Twin Falls	15	3	27				X	X	X

Note: X indicates that the census block group is crossed by the identified route.

The Owyhee County Board of County Commissioners commented during the 2013 FEIS process that location of a transmission line in Owyhee County rather than adjacent Ada County represents a potential environmental justice issue because Owyhee County has a larger minority population and a larger share of households below the poverty line than Ada County (Tables 3.5-1 and 3.5-3). The potentially affected census block groups in Owyhee County do not meet the definition of a minority community, but three of the seven census block groups with more than 20 percent of households below the poverty level are located in Owyhee County (Table 3.5-6).

As discussed above in Section 3.5.2.2, while the preceding analysis suggests the potential presence of minority and low-income communities in the vicinity of the proposed routes, construction of the proposed Project is not expected to have high and adverse human health or environmental effects on nearby communities. The Project would, however, have high, long-term visual impacts in some locations as discussed in detail in Section 3.2 – Visual Resources. The census block groups identified in Tables 3.5-5 and 3.5-6 are, for the most part, large, sparsely populated areas. Visual impacts have the potential to be high in these areas where the structures and overhead conductors would be visible to private residences. The visual resources analysis found that there would be some areas of high impact where residential areas are located in the vicinity.

While these potential impacts exist, the proposed Project overall does not appear to exhibit systematic bias toward placing the Project in minority or low-income communities. The major factors influencing routing decisions are described by proposed segment in Chapter 2 of the 2013 FEIS.

3.5.2.4 Direct and Indirect Effects of the Alternatives

This section addresses the potential environmental justice effects associated with the seven BLM Action Alternatives. The analysis of minority and low-income populations by census block group presented in the preceding Affected Environment section suggests the potential presence of minority and low-income communities in the vicinity of the routes. These potential minority and low-income populations and the alternatives that would cross them are identified in Tables 3.5-7 and 3.5-8. The alternatives are visually displayed in Figures A-2 through A-8.

Table 3.5-7. Potential Minority Populations Crossed by Alternative

County	Census Tract	Block Group	Alternative						
			1	2	3	4	5	6	7
Elmore	9601	2	X	X	X	X	X	X	X
Elmore	9604	2	X					X	X
Gooding	9602	3				X	X	X	X
Twin Falls	3	1	X	X	X	X	X	X	X

Note: X indicates that the census block group is crossed by the identified alternative.

Table 3.5-8. Potential Low-Income Populations Crossed by Alternative

County	Census Tract	Block Group	Alternative						
			1	2	3	4	5	6	7
Elmore	9604	2	X					X	X
Gooding	9601	2	X	X	X	X	X	X	X
Gooding	9602	3				X	X	X	X
Owyhee	9502	1	X	X	X	X	X	X	X
Owyhee	9502	2		X		X		X	
Owyhee	9502	3	X	X	X	X	X	X	X
Twin Falls	15	3	X	X	X	X	X	X	X

Note: X indicates that the census block group is crossed by the identified alternative.

As discussed above with respect to the proposed routes, while the preceding analysis suggests the potential presence of minority and low-income communities, construction of the proposed Project is not expected to have high and adverse human health or environmental effects on nearby communities.

<u>Alternative 1 – Proposed Action (the Revised Proposed Routes for Segments 8 and 9)</u>

Alternative 1 consists of the Revised Proposed Routes for Segments 8 and 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.5.2.3). Alternative 1 would cross three potential minority census block groups and five potential low-income census block groups (Tables 3.5-7 and 3.5-8).

Alternative 2 – Revised Proposed 8 and FEIS Proposed 9

Alternative 2 consists of the Revised Proposed Route for Segment 8 and FEIS Proposed 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.5.2.3). Alternative 2 would cross two potential minority census block groups and five potential low-income census block groups (Tables 3.5-7 and 3.5-8).

Alternative 3 – Revised Proposed 8 and the 9K Route

Alternative 3 consists of the Revised Proposed Route for Segment 8 and Route 9K; therefore, the impacts associated with this alternative correspond to those described above for the these two routes combined (see Section 3.5.2.3). Alternative 3 would cross two potential minority census block groups and four potential low-income census block groups (Tables 3.5-7 and 3.5-8).

Alternative 4 – The 8G Route and FEIS Proposed 9

Alternative 4 consists of the Route 8G and FEIS Proposed 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.5.2.3). Alternative 4 would cross three potential minority census block groups and six potential low-income census block groups (Tables 3.5-7 and 3.5-8).

Alternative 5 – The 8G and 9K Routes

Alternative 5 consists of Routes 8G and 9K; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.5.2.3). Alternative 5 would cross three potential minority census block groups and five potential low-income census block groups (Tables 3.5-7 and 3.5-8).

Alternative 6 – The 8H Route and FEIS Proposed 9

Alternative 6 consists of Route 8H and FEIS Proposed 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.5.2.3). Alternative 6 would cross four potential minority census block groups and seven potential low-income census block groups (Tables 3.5-7 and 3.5-8).

Alternative 7 – The 8H and 9K Routes

Alternative 7 consists of Routes 8H and 9K; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.5.2.3). Alternative 7 would cross four potential minority census block groups and six potential low-income census block groups (Tables 3.5-7 and 3.5-8).

3.5.2.5 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, as well as additional measures proposed by the Project Proponents specifically for the SRBOP.

Environmental Protection Measures

The Proponents have committed to Project design features and EPMs to minimize or avoid impacts on environmental resources. These measures, the areas where they

would be applicable (e.g., private, state, or federal-managed lands), as well as the details of each measure are provided in Table 2.7-1 of the FEIS. With these design features and EPMs in place, construction of the proposed Project is not expected to have high and adverse human health or environmental effects on nearby communities (see Sections 3.5.2.2, 3.5.23, and 3.5.2.4). EPMs listed in Table 2.7-1 of the FEIS that would help reduce impacts to human health and the environment include those related to public safety, visual resources, water quality, transportation, and noise.

Proponent Proposed MEP and Potential Effects to the MEP within the SRBOP

The Proponents have developed an MEP to mitigate the effects of Project-related impacts within the SRBOP, as well as comply with the SRBOP's enabling statute (P.L. 103-64), which requires enhancement of resources within the region. The proposed mitigation activities, which include habitat restoration, property purchase, law enforcement, visitor enhancement, and line and substation removal activities, are not expected to have high and adverse human health or environmental effects on nearby communities.

3.5.2.6 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

Summary of Remaining Impacts

There are no impacts related to environmental justice that are expected to occur after implementation of all required Project design features.

BLM Compensatory Mitigation Categories

In addition to the above design features and EPMs meant to avoid and minimize impacts, mitigation plans were required by the ROD for Segments 1–7 and 10; however, none of these plans directly address environmental justice. Mitigation plans and requirements outside of the SRBOP are not expected to have high and adverse human health or environmental effects on nearby communities. No additional mitigation measures or plans are anticipated to be needed.

3.6 VEGETATION COMMUNITIES

This section addresses the potential impacts to vegetation communities from the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; and the Toana Road Variations to the Segment 9 Revised Proposed Route. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). Effects associated with the routes analyzed in the 2013 FEIS were disclosed in that document. With the exception of FEIS Proposed 9, those FEIS routes are not being re-analyzed here, as only new information is included in this resource-specific section.

3.6.1 Affected Environment

3.6.1.1 Analysis Area

The Analysis Area used to define and address the existing environment and potential impacts to vegetation is described in detail within the FEIS. The extent of the Analysis Area that was used for this SEIS is restricted to that portion of the Analysis Area crossed by Segments 8 and 9; therefore, not all vegetation communities discussed in the FEIS would be affected by the routes being considered in this SEIS. As a result, vegetation communities not found within the Analysis Area for Segments 8 and 9 (but which may be included in the FEIS for other segments' Analysis Areas) are not discussed or analyzed in this document (see Section 3.6.1.4 for additional details).

Morley Nelson Snake River Birds of Prey National Conservation Area

Portions of the Project would cross through the SRBOP. As a result, this section will discuss specific vegetation resources and potential impacts that would occur on the SRBOP. Vegetation communities, and particularly vegetation communities that serve as habitat for raptor species, are one of the environmental resources and values for which the SRBOP was established to manage and protect.

3.6.1.2 Issues Related to Vegetation Communities

Issues related to special status plants, noxious weeds and invasive plants, and wetlands and riparian areas are discussed in Sections 3.7 – Special Status Plants, 3.8 – Invasive Plant Species, and 3.9 – Wetlands and Riparian Areas, respectively. Effects to agricultural lands and timber production on federal lands are addressed in Sections 3.17 – Land Use and Recreation and 3.4 – Socioeconomics, respectively.

The following vegetation-related issues relevant to Segments 8 and 9 were brought up by the public during public scoping (Tetra Tech 2009) or in comments on the DEIS, were raised by federal and state agencies during scoping and agency discussions, or are issues that must be considered as stipulated by law or regulation:

- How much vegetation would be cleared, and how much would be kept clear or otherwise maintained during operations;
- How quickly the various vegetation communities that are cleared for construction but allowed to regrow during operations would recover from disturbance;
- How much disturbance in sagebrush communities would occur and what the effects would be;

- How much disturbance in native grasslands would occur and what the effects would be; and
- What the effects of construction, operations, and maintenance on fire occurrence, frequency, and severity would be, especially as they relate to important shrub-steppe and forest habitats.

We reviewed the scoping comments received for this SEIS and determined that, with the exception of fire effects on forest habitats, the vegetation-related issues considered in the FEIS are still relevant to the SEIS. In addition, the following issue would be applicable to Segments 8 and 9, but was not specifically raised for the FEIS:

- Impacts to the values for which the SRBOP was established to manage and protect, which includes vegetation resources.

3.6.1.3 Methods

The Vegetation Communities section in the 2013 FEIS discusses those aspects of the environment that could be impacted by the Project, as well as the methods that were used to assess potential Project-related impacts to vegetation resources. We reviewed the data, analysis methods, and regulatory requirements in the FEIS and concluded that they are still valid for this SEIS. No significant new data were identified for vegetation communities in the Analysis Area, with the exception of some new/updated GIS datasets. The following new/updated GIS datasets were used in the SEIS analysis:

- LANDFIRE (USGS 2014)
- ArcGIS World Imagery (ESRI 2011)
- National Agriculture Imagery Program (USDA 2013b)

These new data were incorporated into the analysis and were used as part of the impact assessment methods (methods are described in detail within Section 3.6.1.4 of the FEIS). The most up-to-date vegetation layers will be used to determine mitigation for impacts to vegetation communities. Therefore, there may be differences in the data sets used in the assessment of impacts and to determine mitigation for impacts.

FEIS Proposed 9 is included in three of the BLM action alternatives considered in this SEIS (i.e., Alternatives 2, 4, and 6). The impact values related to the FEIS Proposed Route for Segment 9 have been reanalyzed using the data that has become available since the publication of the FEIS (see the list of new data discussed above). As a result, the impact values reported in the FEIS for the FEIS Proposed 9 route may differ from what is reported in this SEIS in some instances.

3.6.1.4 Existing Conditions

The vegetation communities described in the FEIS that are crossed by Segments 8 and 9, and which are included in this SEIS, include:

- Shrubland (disturbed sagebrush, natural sagebrush, saltbush, greasewood);
- Grassland (both native and semi-natural/disturbed);
- Juniper Woodlands;
- Wetlands, Riparian, and Water;

- Agricultural Land;
- Developed/Disturbed Lands; and
- Miscellaneous other (cliff and canyon, volcanic rock and cinder land, sparsely vegetated large eroding bluffs).

Table 3.6-1 and Section 3.6.1.5 of the FEIS describe the vegetation communities, including common plant species that occur in these communities, in detail. Table D.6-1 in Appendix D presents the number of miles of each vegetation type crossed by the routes considered in this SEIS.

Recently, there have been multiple large fires in the vicinity of the Project. As a result, the vegetation information used in the analysis may be outdated in some areas. Table D.6-7 in Appendix D, lists the large fires that have occurred in the vicinity of the Project, the name and date of each fire, the total acres or estimated acres of the fire, and the acres of the analysis area disturbed by the fire by route.

3.6.2 Direct and Indirect Effects

This section is organized to present effects to vegetation communities from construction, operations, and decommissioning activities for the proposed Project.

The Proposed Action includes many EPMs intended to minimize impacts to biological resources including vegetation communities. A comprehensive list of all Project design features and EPMs, as well as the land ownership to which they apply, can be found in Table 2.7-1 of Chapter 2 of the FEIS. The following impact assessment takes these Project design features and EPMs into account when considering the potential impact that the Project could have on vegetation communities.

Plan Amendments

Amendments to the BLM RMPs and MFPs are summarized for each alternative in Table 2.3-1 (see Chapter 2 for more details). The BLM plan amendments are discussed in detail in Appendices F and G. Amendments are needed to permit the Project to cross various areas of BLM-managed land.

The effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved and amendments that alter land management designations could change future use of these areas. There are several plan amendments listed in Appendix F that would indirectly impact vegetation if implemented. In addition, there is an amendment discussed in Section 3.7 (i.e., Special Status Plants) that could directly impact sensitive plant habitat.

3.6.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West for Segments 8 and 9, and this portion of the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of these segments. No Project-related impacts to vegetation communities would occur in the Analysis Area for these segments; however, impacts would continue as a result of natural events (such as fire, drought, and severe weather) as well as from existing and planned developments within the Analysis Area and from other projects, including wind farms, mining, agricultural, or other competing

land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project and the region would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, impacts similar to those described below may occur due to new transmission lines built to meet the increasing demand in place of this Project.

3.6.2.2 Effects Common to All Routes

Construction and Operations

The general impacts that would occur to vegetation communities from construction and operations of the Gateway West Project were analyzed in detail within Section 3.6.2.2 of the FEIS. These impacts include direct effects (e.g., temporary trampling of herbaceous vegetation, partial removal of above ground plant cover, complete removal of vegetation, changes to species composition and structure of vegetation communities, alteration of soil moisture and temperature, and alteration of nutrient availability), as well as indirect effects (e.g., fragmentation of vegetation communities, increased potential for introduction and spread of invasive plant species, change in composition and diversity of native plants from introduction and spread of invasive plant species, alteration of fire regime and ecosystem processes such as the nitrogen cycle, and increased wind and water erosion resulting in further loss of soil and vegetation). We have reviewed Section 3.6.2.2 of the FEIS and determined that general impacts to vegetation that could potentially occur and the relevant assessment of general impacts to vegetation communities considered in the FEIS have not changed. As a result, these general impacts will not be re-stated in this SEIS (see Section 3.6.2.2 of the FEIS for a description of the general impacts that could occur to vegetation communities as a result of the Project).

The assessment of quantitative impacts specifically related to the routes and alternatives that are included in this SEIS are presented in Sections 3.6.2.3 and 3.6.2.4. The assessment of potential impacts to vegetation communities related to the MEP, as well as a list of additional mitigation measures that may be required by the BLM related to impacts on the SRBOP, are presented in Sections 3.6.2.5 and 3.6.2.6.

Decommissioning

Decommissioning activities would rehabilitate vegetation within the Project footprint. Project facilities would be removed at the end of the operational life of the transmission line. Structures and foundations would be removed to below ground surface. In order to complete decommissioning, impacts similar to the initial construction disturbance would be expected. Roads would be re-widened to accommodate the large cranes and heavy equipment needed to dismantle and remove the steel towers, regeneration stations, and substations. Staging areas would be needed to temporarily store decommissioned materials, and some further disassembly would be expected at the multipurpose yards before the materials were hauled away for recycling or disposal. After towers and conductors were removed from the ROW, heavy equipment would restore contours to the extent feasible. Disturbed areas would be reseeded with a BLM-approved weed-free seed mix. Where feasible and in coordination with the land-managing agency or landowner, roads would be recontoured to match adjacent areas,

and would be ripped to facilitate revegetation where required. Recovery times for vegetation would be similar to those previously described for recovery from temporary construction activities but could be longer depending on the amount of compaction. Decompaction may be necessary for successful reclamation (see Section 3.15 – Soils); however, EPM SOIL-3 provides for this activity prior to reseeding following decommissioning. Additional details concerning decommissioning are provided in Appendix B of the FEIS.

3.6.2.3 Direct and Indirect Effects by Route

This section assesses the quantitative impacts on vegetation communities from the Revised Proposed Routes, the other routes (Routes 8G, 8H, 9K, and FEIS Proposed 9), as well as the Route Variations (this section generally corresponds to Section 3.6.2.3 of the FEIS). Tables D.6-1 through D.6-6 in Appendix D present the results of the quantitative analyses for these routes and route variations.

Segment 8

Revised Proposed Route

The Segment 8 Revised Proposed Route would link the existing Midpoint and Hemingway Substations (see Figure A-1). This 129.7-mile single-circuit 500-kV transmission line would stay north of the Snake River until it crosses just north of Guffey Butte, generally parallel to an existing 500-kV transmission line, before ending at the Hemingway Substation. This route is similar to the original proposed route in the 2013 FEIS except that the line would be 250 feet north of the existing 500-kV line rather than 1,500 feet south of the line from the eastern boundary of the SRBOP (MP 99.7) to the Hemingway Substation. The route east of that point is unchanged from the 2013 FEIS Proposed Route.

Sagebrush (natural and disturbed) and disturbed grasslands are the dominant vegetation communities crossed by the Revised Proposed Route 8 (Appendix D, Table D.6-1). Tables D.6.-2 through D.6-5 in Appendix D list the acres of impacts that would occur to various vegetation communities found along the Segment 8 Revised Proposed Route. The following subsections discuss the quantitative impacts to vegetation communities from construction and operations along the Revised Proposed Route.

Construction

As discussed in detail within Section 3.6.2.2 of the FEIS, direct and indirect impacts to vegetation communities from Project construction could include temporary compaction of herbaceous vegetation, partial removal of aboveground plant cover, complete removal of vegetation, changes to species composition and structure of vegetation communities, alteration of soil moisture and temperature, and nutrient availability, increased potential for invasive plant introduction and spread and wind and water erosion, fragmentation of vegetation communities, and alteration of fire regime and ecosystem processes (e.g., nitrogen cycling).

The impacts from construction of the Revised Proposed Route are presented in Table 3.6-1 below (detailed tables are provided in Appendix D, Tables D.6-2 and D.6-5). Construction of the Revised Proposed Route would directly affect approximately 2,261 acres of vegetation for installation of the transmission line, primarily consisting of shrubland (53 percent) and grassland (35 percent).

During construction along the Revised Proposed Route, approximately 426 acres of vegetation within the SRBOP (regardless of land-ownership/management) would be impacted. On BLM-managed land within the SRBOP, approximately 289 acres of vegetation would be impacted; including 64 acres of impacts to shrubland, 197 acres to grassland, and 28 acres to other cover types (Table 3.6-1).

Construction of the Revised Proposed Route for Segment 8 would also involve the removal of an existing 500-kV line. Impacts associated with this proposed removal are shown in Table 3.6-1; however, a portion of this impact would overlap with the impact resulting from the construction of the new line along Segment 8.

Table 3.6-1. Construction-related Vegetation Impacts (acres) for the Segment 8 Revised Proposed Route

Land Ownership	Shrubland[1/]	Juniper Woodland		Wetland/ Riparian		Grassland	Other Cover Types[3/]	Total [4/]
	Const. Fac. [2/]	Const. Fac.	ROW	Const. Fac.	ROW	Const. Fac.	Const. Fac.	
Revised Proposed Route for Segment 8								
BLM	789 [64]	–	–	1	–	524 [197]	50 [28]	**1,364 [289]**
BOR	56 [36]	–	–	–	–	7 [1]	7 [7]	**70 [44]**
State	128 [11]	–	–	2 [1]	–	54 [13]	10 [5]	**194 [30]**
Private	228 [2]	–	–	3	2 [2]	201 [39]	199 [21]	**633 [64]**
Total [4/]	**1,201 [112]**	**–**	**–**	**6 [1]**	**2 [2]**	**786 [251]**	**267 [61]**	**2,261 [426]**
Revised Proposed Route for Segment 8 – Existing 500-kV Line Removal								
BLM	–	–	–	–	–	3 [3]	<1 [<1]	**3 [3]**
State	–	–	–	–	–	–	–	–
Private	–	–	–	–	–	4 [4]	1 [1]	**5 [5]**
Total [4/]	**–**	**–**	**–**	**–**	**–**	**7 [7]**	**1 [1]**	**8 [8]**

Note that values in "[ ]" correspond to impacts that would occur on the SRBOP.
1/ "Shrublands" includes sagebrush, saltbush, and greasewood.
2/ Const. Fac. = clearing for facilities such as infrastructure, roads, temporary multipurpose yards, and fly yards; ROW = right-of-way clearing
3/ "Other Cover Types" include agriculture, disturbed/developed, water, areas with no vegetation data, and "miscellaneous" (e.g., cliff and canyon, volcanic rock and cinder land, sparsely vegetated large eroding bluffs).
4/ Numbers in table are inexact; columns or rows may not sum exactly due to rounding, including the totals.

Operations

As discussed in detail in Section 3.6.2.2 of the FEIS, ROW maintenance, including vegetation management, would be conducted every 3 to 10 years. Vegetation types that contain tall trees within the ROW (which includes juniper woodlands, forested wetlands, and riparian areas) would undergo vegetation management on a regular cycle, while other vegetation types (e.g., shrubland and grassland) would require minimal vegetation management because the natural or existing managed vegetation does not grow tall enough to present a hazard to the safe operation of the transmission line. The majority of the vegetation communities along the for Segment 8 Revised Proposed Route consist of shrubland and grassland, which would require minimal vegetation management.

Vegetation (grass and shrubs) along access roads would be kept low because maintenance and inspection personnel would need to access the transmission structures periodically during the life of the Project. For normal maintenance, an 8-foot-wide portion would be used and vehicles would drive directly over the vegetation. The

full width of the access road would be used for access by larger vehicles during non-routine maintenance. Other ROW maintenance activities would consist of ground inspections, live line maintenance, and grading or repair of access roads and work areas. These activities could result in increased risk of fire or introduction and spread of noxious weeds. More details regarding these general impacts, as well as the measures that would be implemented to avoid or minimize these impacts, can be found in Section 3.6.2.2 of the FEIS.

The impacts from operations of the Revised Proposed Route 8 are presented in Table 3.6-2 below (detailed tables are provided in Appendix D, Tables D.6-3 and D.6-6). During operations of the Revised Proposed Route, approximately 240 acres of vegetation would be permanently impacted. Much of the vegetation permanently impacted consists of disturbed grasslands and disturbed shrublands (Table D.6-3 in Appendix D). Operation of the Revised Proposed Route along Segment 8 would not affect juniper woodland vegetation, but would impact approximately 3 acres of wetland and riparian vegetation during operations. During operations along the Revised Proposed Route, approximately 43 acres of vegetation would be impacted on lands within the SRBOP (regardless of land-ownership/management), with 28 of these acres occurring on BLM-managed lands on the SRBOP. This includes 5 acres of impacts to shrubland, 11 acres to grassland, and 12 acres of impacts to other vegetation cover types on BLM-managed land within the SRBOP (Table 3.6-2).

Table 3.6-2. Operations-related Vegetation Impacts (acres) for the Revised Proposed Route along Segment 8

Land Ownership	Shrubland[1/]	Juniper Woodland		Wetland/ Riparian		Grassland	Other Cover Types [3/]	Total [4/]
	Op. Fac. [2/]	Op. Fac.	ROW	Op. Fac.	ROW	Op. Fac.	ROW	
BLM	81 [5]	–	–	<1	–	39 [11]	18 [12]	**138 [28]**
BOR	5 [2]	–	–	–	–	1	3 [3]	**9 [5]**
State	15 [1]	–	–	<1	–	6 [1]	2 [1]	**23 [3]**
Private	28 [<1]	–	–	<1	2 [2]	21 [4]	19 [1]	**70 [7]**
Total [4/]	**129 [8]**	**–**	**–**	**1**	**2 [2]**	**67 [16]**	**42 [17]**	**240 [43]**

Note that values in "[ ]" correspond to impacts that would occur on the SRBOP.

1/ "Shrublands" include sagebrush, saltbush, and greasewood.

2/ Op. Fac. = clearing for facilities such as infrastructure, roads, temporary multipurpose yards, and fly yards; ROW = right-of-way clearing

3/ "Other Cover Types" include agriculture, disturbed/developed, water, areas with no vegetation data, and "miscellaneous" (e.g., cliff and canyon, volcanic rock and cinder land, sparsely vegetated large eroding bluffs).

4/ Numbers in table are inexact; columns or rows may not sum exactly due to rounding, including the totals.

Route 8G

Route 8G is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows an alignment similar to the ones analyzed for Route 8A and 9B in the FEIS for approximately 44 miles, although it generally parallels 250 feet north of the existing 500-kV line rather than1,500 feet to the south in order to avoid the Hagerman Fossil Beds National Monument and development near Hagerman (see Figure A-1). The route then parallels 250 feet north of the Segment 9 Revised Proposed Route and Route 9K for most of the remaining distance into the Hemingway Substation. The route is 146.9 miles long (including a 1.9-mile rebuild of the existing 500-kV line), compared to the 129.7-mile-long Segment 8 Revised Proposed Route.

Sagebrush (natural and disturbed) and disturbed grasslands are the dominant vegetation communities crossed by Route 8G (Appendix D, Table D.6-1). The following subsections discuss the quantitative impacts to vegetation communities from construction and operations of Route 8G.

Construction

The impacts from construction of the Project along Route 8G are presented in Table 3.6-3 below (detailed tables are provided in Appendix D, Tables D.6-2 and D.6-5). Construction along Route 8G would directly affect approximately 2,745 acres of vegetation for installation of the transmission line, primarily consisting of shrubland (56 percent) and grassland (32 percent).

Both the Revised Proposed Route and Route 8H would impact less vegetation (approximately 484 and 219 acres less, respectively) than Route 8G (Tables 3.6-1, 3.6-3, and 3.6-5). The Revised Proposed Route 8 would impact less shrubland, juniper woodland, grassland, and other cover types than Route 8G, and would impact the same amount of wetland and riparian vegetation. Route 8H would impact less shrubland, juniper woodland, and other cover types than Route 8G but would impact more wetland and riparian and grassland vegetation.

During construction, Route 8G would impact approximately 212 acres of vegetation within the SRBOP (regardless of land-ownership/management). Impacts to vegetation on BLM-managed land within the SRBOP along Route 8G include 43 acres of impacts to shrubland, less than 1 acre to wetland and riparian, 132 acres to grassland, and 4 acres to other cover types, for a total of 179 acres of vegetation impacted (Table 3.6-3).

Construction of Route 8G would also involve the removal of an existing 500-kV line. Impacts associated with this proposed removal are shown in Table 3.6-3; however, a portion of this impact would overlap with the impact resulting from the construction of the new line along Route 8G.

Table 3.6-3. Construction-related Vegetation Impacts (acres) for Route 8G

Land Ownership	Shrubland[1/]	Juniper Woodland		Wetland/ Riparian		Grassland	Other Cover Types [3/]	Total [4/]
	Const. Fac. [2/]	Const. Fac.	ROW	Const. Fac.	ROW	Const. Fac.	Const. Fac.	
Route 8G								
BLM	1,331 [43]	9	–	1 [<1]	–	703 [132]	90 [4]	**2,134 [179]**
Other Federal[5/]	4	–	–	–	–	3 [<1]	–	**7 [<1]**
State	103 [6]	1	–	–	–	81 [18]	23	**208 [24]**
Private	95 [2]	15	–	<1	1	87 [1]	198 [5]	**396 [8]**
Total [4/]	**1,533 [52]**	**26**	**–**	**2 [<1]**	**1**	**873 [151]**	**311 [9]**	**2,745 [212]**
Route 8G – Existing 500-kV Line Removal								
BLM	2	–	–	–	–	–	<1	2
Private	1	–	–	–	–	<1	6	7
Total [4/]	**3**	**–**	**–**	**–**	**–**	**<1**	**6**	**9**

Note that values in "[ ]" correspond to impacts that would occur on the SRBOP.

1/ "Shrublands" includes sagebrush, saltbush, and greasewood.

2/ Const. Fac. = clearing for facilities such as infrastructure, roads, temporary multipurpose yards, and fly yards; ROW = right-of-way clearing

3/ "Other Cover Types" include agriculture, disturbed/developed, water, areas with no vegetation data, and "miscellaneous" (e.g., cliff and canyon, volcanic rock and cinder land, sparsely vegetated large eroding bluffs).

4/ Numbers in table are inexact; columns or rows may not sum exactly due to rounding, including the totals.

5/ Other Federal land includes: Military, Corps of Engineers, or Department of Energy.

Operations

The impacts from operations along Route 8G are presented in Table 3.6-4 below (a detailed table is provided in Appendix D, Tables D.6-3 and D.6-6). During operations of Route 8G, approximately 326 acres of vegetation would be permanently impacted. Much of the vegetation permanently impacted consists of sagebrush (disturbed and natural) and disturbed grasslands (Table D.6-3 in Appendix D).

Both the Revised Proposed Route and Route 8H would permanently impact less acres (approximately 86 and 68 less acres, respectively) than Route 8G (Tables 3.6-2,3.6-4, and 3.6-6). The Revised Proposed Route would not affect juniper woodland vegetation, while Route 8H would affect approximately 2 acres of juniper woodland, and Route 8G would impact approximately 3 acres of juniper woodland. Route 8G and Route 8H would have minimal effects to wetland and riparian vegetation (approximately 1 acre), whereas the Revised Proposed Route would impact approximately 3 acres of wetland and riparian vegetation during operations. Operation of Route 8G would impact more shrubland and other cover types than either the Revised Proposed Route 8 or Route 8H and more grassland than the Revised Proposed Route, but would impact less grassland than Route 8H.

During operations, approximately 33 acres of vegetation would be permanently impacted within the SRBOP along Route 8G (regardless of land-ownership/management). On BLM-managed lands within the SRBOP, this includes 6 acres of impacts to shrubland, less than 1 acre to wetland and riparian, 21 acres to grassland, and 1 acre to other cover types, for a total of 28 acres of vegetation impacted (Table 3.6-4).

Table 3.6-4. Operations-related Vegetation Impacts (acres) for Route 8G

	Shrubland[1/]	Juniper Woodland		Wetland/ Riparian		Grassland	Other Cover Types [3/]	
Land Ownership	**Op. Fac.** [2/]	**Op. Fac.**	**ROW**	**Op. Fac.**	**ROW**	**Op. Fac.**	**ROW**	**Total** [4/]
BLM	143 [6]	3	–	<1 [<1]	–	89 [21]	23 [1]	**258 [28]**
Other Federal[5/]	1	–	–	–	–	1 [<1]	–	**2 [<1]**
State	11 [<1]	<1	–	–	–	9 [2]	4	**24 [2]**
Private	13 [1]	–	–	–	1	9 [<1]	19 [2]	**42 [3]**
Total [4/]	168 [7]	3	–	<1 [<1]	1	108 [23]	46 [3]	**326 [33]**

Note that values in "[ ]" correspond to impacts that would occur on the SRBOP.

1/ "Shrublands" include sagebrush, saltbush, greasewood, and dwarf shrub.

2/ Op. Fac. = clearing for facilities such as infrastructure, roads, temporary multipurpose yards, and fly yards; ROW = right-of-way clearing

3/ "Other Cover Types" include agriculture, disturbed/developed, water, areas with no vegetation data, and "miscellaneous" (e.g., cliff and canyon, volcanic rock and cinder land, sparsely vegetated large eroding bluffs).

4/ Numbers in table are inexact; columns or rows may not sum exactly due to rounding, including the totals.

5/ Other Federal land includes: Military, Corps of Engineers, or Department of Energy.

Route 8H

Route 8H is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows a combination of portions of the alignments analyzed for Route 8G and the Revised Proposed Route for Segment 9. The route is 137.5 miles long (including a 1.9-mile rebuild of the existing 500-kV line and a 25.7-mile removal and rebuild of a 138-kV line), compared to the 129.7-mile-long Segment 8 Revised Proposed Route. Approximately 44 miles of the route follows the Route 8G alignment;

the remainder of Route 8H follows the alignment of the Segment 9 Revised Proposed Route.

Construction

The impacts from construction of the Project along Route 8H are presented in Table 3.6-5 below (detailed tables are provided in Appendix D, Tables D.6-2 and D.6-5). Construction along Route 8H would directly affect approximately 2,526 acres of vegetation for installation of the transmission line, primarily consisting of grassland (48 percent) and shrubland (40 percent).

The Segment 8 Revised Proposed Route would impact less vegetation (approximately 263 acres less) than Route 8H (Tables 3.6-1 and 3.6-5); whereas Route 8G would impact more vegetation (approximately 219 acres more; Tables 3.6-3 and 3.6-5). The Revised Proposed Route would impact more shrubland and wetland and riparian vegetation than Route 8H, but less juniper woodland, grassland, and other cover types. Route 8G would impact more shrubland, juniper woodland, and other cover types than Route 8H, but less grassland and wetland and riparian vegetation than Route 8H.

During construction, Route 8H would impact approximately 1,160 acres of vegetation within the SRBOP (regardless of land-ownership/management). Impacts to vegetation on BLM-managed land within the SRBOP along Route 8H include 426 acres of impacts to shrubland, 1 acre of impact to juniper woodland, 1 acre to wetland and riparian, 552 acres to grassland, and 27 acres to other cover types, for a total of 1,007 acres of vegetation impacted (Table 3.6-5).

Table 3.6-5. Construction-related Vegetation Impacts (acres) for Route 8H

Land Ownership	Shrubland[1/]	Juniper Woodland		Wetland/ Riparian		Grassland	Other Cover Types [3/]	Total [4/]
	Const. Fac. [2/]	Const. Fac.	ROW	Const. Fac.	ROW	Const. Fac.	Const. Fac.	
Route 8H								
BLM	846 [426]	<1 [<1]	1 [1]	1 [1]	–	1,002 [552]	58 [27]	**1,908 [1,007]**
BOR	–	–	–	–	–	<1 [<1]	t[5/] [t[5/]]	**<1 [<1]**
Other Federal[6/]	4	–	–	–	–	3 [t[5/]]	t[5/]	**7 [**t[5/]]
State	105 [33]	–	–	1[t[5/]]	–	110 [63]	24 [<1]	**240 [97]**
Private	66 [4]	–	–	<1	–	88 [20]	216 [32]	**370 [56]**
Total [4/]	1,021 [463]	<1 [<1]	1 [1]	3 [1]	–	1,204 [635]	297 [59]	**2,526 [1,160]**
Route 8H – Existing 500-kV Line Removal								
BLM	2	–	–	–	–	–	<1	**2**
Private	1	–	–	–	–	<1	6	**8**
Total [4/]	3	–	–	–	–	<1	6	**10**
Route 8H – Existing 138-kV Line Removal								
BLM	14 [13]	–	–	–	–	24 [23]	2 [2]	**39 [38]**
State	4 [4]	–	–	–	–	2 [2]	t[5/] [t[5/]]	**6 [6]**
Private	–	–	–	–	–	<1 [<1]	2 [2]	**3 [2]**
Total [4/]	18 [17]	–	–	–	–	26 [25]	4 [4]	**48 [46]**

Note that values in "[ ]" correspond to impacts that would occur on the SRBOP.
1/ "Shrublands" includes sagebrush, saltbush, and greasewood.
2/ Const. Fac. = clearing for facilities such as infrastructure, roads, temporary multipurpose yards, and fly yards; ROW = right-of-way clearing
3/ "Other Cover Types" include agriculture, disturbed/developed, water, areas with no vegetation data, and "miscellaneous" (e.g., cliff and canyon, volcanic rock and cinder land, sparsely vegetated large eroding bluffs).
4/ Numbers in table are inexact; columns or rows may not sum exactly due to rounding, including the totals.
5/ "t" indicates only a trace amount (<0.1 acre) of impact.
6/ Other Federal land includes: Military, Corps of Engineers, or Department of Energy.

Construction of Route 8H would also involve the removal of existing 138-kV and 500-kV lines. Impacts associated with this proposed removal are shown in Table 3.6-5; however, a portion of this impact would overlap with the impact resulting from the construction of the new line along Route 8H.

Operations

The impacts from operations along Route 8H are presented in Table 3.6-6 below (detailed tables are provided in Appendix D, Tables D.6-3 and D.6-6). During operations of Route 8H, approximately 258 acres of vegetation would be permanently impacted. Much of the vegetation permanently impacted consists of sagebrush (disturbed and natural) and disturbed grasslands (Table D.6-3 in Appendix D).

The Segment 8 Revised Proposed Route would permanently impact approximately 19 less acres (239 acres total) than Route 8H (Tables 3.6-2 and 3.6-6). The Revised Proposed Route would not affect juniper woodland vegetation, whereas Route 8H would impact approximately 2 acres of juniper woodland. Route 8H would have minimal effects to wetland and riparian vegetation (less than 1 acre), whereas the Revised Proposed Route would impact approximately 3 acres of wetland and riparian vegetation during operations. Route 8G would permanently impact approximately 68 more acres (326 acres total) than Route 8H. Route 8G would permanently impact more acres shrubland, grassland and other cover types and slightly more acres of juniper woodland and wetland riparian than Route 8H.

During operations, approximately 99 acres of vegetation would be impacted within the SRBOP along Route 8H (regardless of land-ownership/management). On BLM-managed lands within the SRBOP, this includes 34 acres of impacts to shrubland, 2 acres to juniper woodland, less than 1 acre to wetland and riparian, 47 acres to grassland, and 7 acres to other cover types, for a total of 89 acres of vegetation impacted (Table 3.6-6).

Table 3.6-6. Operations-related Vegetation Impacts (acres) for Route 8H

	Shrubland[1/]	**Juniper Woodland**		**Wetland/ Riparian**		**Grassland**	**Other Cover Types [3/]**	
Land Ownership	**Op. Fac. [2/]**	**Op. Fac.**	**ROW**	**Op. Fac.**	**ROW**	**Op. Fac.**	**ROW**	**Total [4/]**
BLM	76 [34]	–	2 [2]	<1 [<1]	–	99 [47]	15 [7]	**191 [89]**
Other Federal[5/]	1	–	–	–	–	<1 [t[6/]]	–	**2** [t[6/]]
State	8 [1]	–	–	–	–	11 [4]	3 [t[6/]]	**22 [5]**
Private	10 [t[6/]]	–	–	–	–	13 [2]	19 [2]	**42 [4]**
Total [4/]	95 [35]	–	2 [2]	<1 [<1]	–	124 [53]	37 [9]	**258 [99]**

Note that values in "[ ]" correspond to impacts that would occur on the SRBOP.

1/ "Shrublands" include sagebrush, saltbush, greasewood, and dwarf shrub.

2/ Op. Fac. = clearing for facilities such as infrastructure, roads, temporary multipurpose yards, and fly yards; ROW = right-of-way clearing

3/ "Other Cover Types" include agriculture, disturbed/developed, water, areas with no vegetation data, and "miscellaneous" (e.g., cliff and canyon, volcanic rock and cinder land, sparsely vegetated large eroding bluffs).

4/ Numbers in table are inexact; columns or rows may not sum exactly due to rounding, including the totals.

5/ Other Federal land includes: Military, Corps of Engineers, or Department of Energy.

6/ "t" indicates only a trace amount (<0.1 acre) of impact.

Segment 9

Revised Proposed Route

The Revised Proposed Route for Segment 9 would link the proposed Cedar Hill and existing Hemingway Substations with a 165.3-mile single-circuit 500-kV transmission line that skirts the Jarbidge and Owyhee Military Operating Areas to the north, then follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering the Hemingway Substation (see Figure A-1). It follows an alignment similar to the 2013 FEIS Route 9D/9G between MP 95.6 and 154.7, except that two portions of the route (totaling 25.7 miles) would be double-circuited with existing 138-kV lines. The first area is 5.2 miles near C.J. Strike Reservoir and the Bruneau Arm (MP 106.2 to 109.3 and 109.9 to 112.1), and the second area is 20.2 miles along the Baja Road (MP 121.0 to 141.2). Several rebuilds totaling approximately 0.6 mile are also required to tie the existing 138-kV lines into the new double-circuit alignments. Except for minor variations, the route is similar to the 2013 FEIS Route 9D/9G between MP 141.2 to 154.7. From MP 154.7 and into the Hemingway Substation, the route is the same as the 2013 FEIS Proposed Route.

Sagebrush (natural and disturbed) and disturbed grasslands are the dominant vegetation communities crossed by the Revised Proposed Route for Segment 9 (Appendix D, Table D.6-1). The following subsections discuss the quantitative impacts to vegetation communities from construction and operations of the Revised Proposed Route Segment 9.

Construction

The impacts from construction of the Revised Proposed Route along Segment 9 are presented in Table 3.6-7. Construction of the Revised Proposed Route along Segment

Table 3.6-7. Construction-related Vegetation Impacts (acres) for the Revised Proposed Route for Segment 9

Land Ownership	Shrubland[1/]	Juniper Woodland		Wetland/ Riparian		Grassland	Other Cover Types [3/]	Total [4/]
	Const. Fac. [2/]	Const. Fac.	ROW	Const. Fac.	ROW	Const. Fac.	Const. Fac.	
Revised Proposed Route Segment for Segment 9								
BLM	1,162 [419]	1 [1]	2 [1]	2 [1]	–	1,410 [549]	86 [26]	**2,663 [997]**
BOR	–	–	–	–	–	<1 [<1]	–	**<1 [<1]**
Other Federal[5/]	4	–	–	–	–	3 [<1]	–	**7 [<1]**
State	65 [28]	–	–	<1 [<1]	–	64 [62]	4 [<1]	**133 [90]**
Private	90 [4]	–	–	1	–	64 [20]	192 [32]	**347 [56]**
Total [4/]	**1,321 [451]**	**1 [1]**	**2 [1]**	**3 [1]**	**–**	**1,541 [632]**	**281 [59]**	**3,149 [1,145]**
Revised Proposed Route for Segment 9 – Existing 138-kV Line Removal								
BLM	14 [14]	–	–	–	–	24 [23]	2 [2]	**40 [39]**
State	4 [4]	–	–	–	–	2 [2]	<1 [<1]	**6 [6]**
Private	–	–	–	–	–	1 [<1]	2 [2]	**3 [2]**
Total [4/]	**18 [18]**	**–**	**–**	**–**	**–**	**26 [25]**	**4 [4]**	**48 [47]**

Note that values in "[ ]" correspond to impacts that would occur on the SRBOP.

1/ "Shrublands" includes sagebrush, saltbush, and greasewood.

2/ Const. Fac. = clearing for facilities such as infrastructure, roads, temporary multipurpose yards, and fly yards; ROW = right-of-way clearing

3/ "Other Cover Types" include agriculture, disturbed/developed, water, areas with no vegetation data, and "miscellaneous" (e.g., cliff and canyon, volcanic rock and cinder land, sparsely vegetated large eroding bluffs).

4/ Numbers in table are inexact; columns or rows may not sum exactly due to rounding, including the totals.

5/ Other Federal land includes: Military, Corps of Engineers, or Department of Energy.

9 would directly affect approximately 3,149 acres for installation of the transmission line, primarily consisting of grassland (49 percent) and shrubland (42 percent). During construction of the Revised Proposed Route along Segment 9, approximately 1,145 acres of vegetation would be impacted on land within the SRBOP (regardless of land-ownership/management). This includes 419 acres of impacts to shrubland, 2 acres to juniper woodland, 1 acre to wetland and riparian, 549 acres to grassland, and 26 acres to other cover types, for a total of 997 acres of vegetation impacted on BLM-managed lands within the SRBOP (Table 3.6-7).

Construction of the Revised Proposed Route for Segment 9 would also involve the removal of an existing 138-kV line. Impacts associated with this proposed removal are shown in Table 3.6-9; however, a portion of this impact would overlap with the impact resulting from the construction of the new line along Segment 9.

Operations

The impacts from operations of the Revised Proposed Route for Segment 9 are presented in Table 3.6-8 below (detailed tables are provided in Appendix D, Tables D.6-3 and D.6-6). During operations of the Revised Proposed Route along Segment 9, approximately 336 acres of vegetation would be permanently impacted (Table 3.6-8). Much of the vegetation affected consists of disturbed grasslands (43 percent) and disturbed shrublands (24 percent) (Appendix D, Table D.6-3). During operations, approximately 99 acres of vegetation would be impacted within the SRBOP (regardless of land-ownership/management) along the Revised Proposed Route for Segment 9. On BLM-managed land within the SRBOP, this includes 35 acres of impacts to shrubland, 2 acres to juniper woodland, less than 1 acre to wetland and riparian, 46 acres to grassland, and 7 acres to other cover types, for a total of 90 acres of vegetation impacted (Table 3.6-8).

Table 3.6-8. Operations-related Vegetation Impacts (acres) for the Revised Proposed Route for Segment 9

Land Ownership	Shrubland[1/]	Juniper Woodland		Wetland/ Riparian		Grassland	Other Cover Types [3/]	Total [4/]
	Op. Fac.[2/]	Op. Fac.	ROW	Op. Fac.	ROW	Op. Fac.	Op. Fac.	
BLM	126 [35]	<1	3 [2]	<1 [<1]	–	143 [46]	21 [7]	**293 [90]**
Other Federal[5/]	1	–	–	–	–	1 [<1]	–	**2 [<1]**
State	6 [1]	–	–	–	–	5 [4]	<1 [<1]	**11 [5]**
Private	8 [<1]	–	–	–	–	8 [2]	14 [2]	**30 [4]**
Total [4/]	**141 [35]**	**<1**	**3 [2]**	**<1 [<1]**	**–**	**157 [52]**	**35 [9]**	**336 [99]**

Note that values in "[ ]" correspond to impacts that would occur on the SRBOP.

1/ "Shrublands" include sagebrush, saltbush, and greasewood.
2/ Op. Fac. = clearing for operations facilities such as infrastructure and roads; ROW = right-of-way clearing
3/ "Other Cover Types" include agriculture, disturbed/developed, water, areas with no vegetation data, and "miscellaneous" (e.g., cliff and canyon, volcanic rock and cinder land, sparsely vegetated large eroding bluffs).
4/ Numbers in table are inexact; columns or rows may not sum exactly due to rounding, including the totals.
5/ Other Federal land includes: Military, Corps of Engineers, or Department of Energy.

FEIS Proposed 9

The Proponents originally designed the 162.2-mile-long FEIS Proposed 9 to follow existing utility corridors and avoid the SRBOP and other protected areas where feasible. Approximately 54 miles of the route is within or adjacent to a utility corridor. FEIS Proposed 9 is approximately 3.1 miles shorter than the Revised Proposed Route but it crosses 13.6 miles of the SRBOP compared to 54.2 miles for the Revised Proposed

Route. Both the Revised Proposed Route and FEIS Proposed 9 cross the Salmon Falls Creek at Lilly Grade adjacent to an existing single-phase 34.5-kV distribution line just north of the Salmon Falls Creek WSA.

Sagebrush (natural and disturbed) and disturbed grasslands are the dominant vegetation communities crossed by the FEIS Proposed 9 (Appendix D, Table D.6-1). Tables D.6.-2 through D.6-5 in Appendix D list the acres of impacts that would occur to various vegetation communities found along the FEIS Proposed Route 9. The following subsections discuss the quantitative impacts to vegetation communities from construction and operations along the FEIS Proposed 9. The impact values related to the FEIS Proposed 9 have been reanalyzed using the data that has become available since the publication of the FEIS (see the list of new data discussed above in Section 3.6.1.3). As a result, the impact values reported in the FEIS for the FEIS Proposed 9 may differ from what is reported in this SEIS in some instances.

Construction

The impacts from construction of the FEIS Proposed Route 9 are presented in Table 3.6-9. Construction of the FEIS Proposed 9 would directly affect approximately 3,294 acres for installation of the transmission line, primarily consisting of shrubland (46 percent) and grassland (39 percent).

Route 9K would impact more vegetation (approximately 90 acres more) than the FEIS Proposed 9; whereas, the Revised Proposed Route would impact less vegetation (approximately 144 acres less). The FEIS Proposed 9 would impact more shrubland, wetland and riparian, and other cover types than the Revised Proposed Route, but would impact less juniper woodland and grassland. FEIS Proposed 9 would impact more wetland and riparian, grassland, and other cover types than Route 9K, but would impact less shrubland and juniper woodland vegetation.

During construction of the FEIS Proposed 9, approximately 321 acres of vegetation would be impacted on land within the SRBOP (regardless of land-ownership/ management). This includes 101 acres of impacts to shrubland, 1 acre to wetland and

Table 3.6-9. Construction-related Vegetation Impacts (acres) for FEIS Proposed 9

Land Ownership	Shrubland[1/]	Juniper Woodland		Wetland/ Riparian		Grassland	Other Cover Types [3/]	Total [4/]
	Const. Fac. [2/]	Const. Fac.	ROW	Const. Fac.	ROW	Const. Fac.	Const. Fac.	
FEIS Proposed Route Segment 9 – Total Length								
BLM	1,272 [101]	<1	<1	1 [1]	–	1,156 [164]	61 [4]	**2,491 [269]**
Other Federal[5/]	4	–	–	–	–	3 [t[6/]]	t[6/]	**7 [t[6/]]**
State	50 [1]	–	–	–	–	16 [14]	3 [<1]	**69 [15]**
Private	180 [22]	–	–	5 [t[6/]]	t[6/]	112	430 [15]	**727 [37]**
Total [4/]	**1,505 [124]**	**<1**	**<1**	**6 [1]**	**t[6/]**	**1,287 [178]**	**494 [19]**	**3,294 [321]**

Note that values in "[ ]" correspond to impacts that would occur on the SRBOP.
1/ "Shrublands" includes sagebrush, saltbush, and greasewood.
2/ Const. Fac. = clearing for facilities such as infrastructure, roads, temporary multipurpose yards, and fly yards; ROW = right-of-way clearing
3/ "Other Cover Types" include agriculture, disturbed/developed, water, areas with no vegetation data, and "miscellaneous" (e.g., cliff and canyon, volcanic rock and cinder land, sparsely vegetated large eroding bluffs).
4/ Numbers in table are inexact; columns or rows may not sum exactly due to rounding, including the totals.
5/ Other Federal land includes: Military, Corps of Engineers, or Department of Energy.
6/ "t" indicates only a trace amount (<0.1 acre) of impact.

riparian, 164 acres to grassland, and 4 acres to other cover types, for a total of 269 acres of vegetation impacted on BLM-managed lands within the SRBOP (Table 3.6-9).

Operations

The impacts from operations of the FEIS Proposed 9 are presented in Table 3.6-8 below (detailed tables are provided in Appendix D, Tables D.6-3 and D.6-6). During operations of the FEIS Proposed 9, approximately 361 acres of vegetation would be permanently impacted (Table 3.6-10). Much of the vegetation affected consists of disturbed grasslands (36 percent), disturbed sagebrush (20 percent) and natural sagebrush (16 percent) (Appendix D, Table D.6-3).

The FEIS Proposed 9 would permanently impact approximately 25 more acres of vegetation than the Revised Proposed Route, but would impact 52 acres less of vegetation than Route 9K (Tables 3.6-8, 3.6-10, and 3.6-12).

During operations, approximately 34 acres of vegetation would be impacted within the SRBOP along the FEIS Proposed 9 (regardless of land-ownership/management). On BLM-managed land within the SRBOP, this includes 10 acres of impacts to shrubland, less than 1 acre to wetland and riparian and other cover types, and 17 acres to grassland, for a total of 28 acres of vegetation impacted (Table 3.6-10).

Table 3.6-10. Operations-related Vegetation Impacts (acres) for the FEIS Proposed Route for Segment 9

Land Ownership	Shrubland[1/]	Juniper Woodland		Wetland/ Riparian		Grassland	Other Cover Types [3/]	Total [4/]
	Op. Fac.[2/]	Op. Fac.	ROW	Op. Fac.	ROW	Op. Fac.	Op. Fac.	
BLM	148 [10]	t[6/]	1	<1 [<1]	–	128 [17]	10 [<1]	**287 [28]**
Other Federal[5/]	1	–	–	–	–	<1 [t[6/]]	–	**2 [t[6/]]**
State	6 [t[6/]]	–	–	–	–	2 [2]	<1 [t[6/]]	**9 [2]**
Private	17 [3]	–	–	<1 [t[6/]]	t[6/]	8	38 [1]	**63 [4]**
Total [4/]	**172 [13]**	**t[6/]**	**1**	**1 [<1]**	**t[6/]**	**139 [19]**	**47 [2]**	**361 [34]**

Note that values in "[ ]" correspond to impacts that would occur on the SRBOP.

1/ "Shrublands" include sagebrush, saltbush, and greasewood.

2/ Op. Fac. = clearing for operations facilities such as infrastructure and roads; ROW = right-of-way clearing

3/ "Other Cover Types" include agriculture, disturbed/developed, water, areas with no vegetation data, and "miscellaneous" (e.g., cliff and canyon, volcanic rock and cinder land, sparsely vegetated large eroding bluffs).

4/ Numbers in table are inexact; columns or rows may not sum exactly due to rounding, including the totals.

5/ Other Federal land includes: Military, Corps of Engineers, or Department of Energy.

6/ "t" indicates only a trace amount (<0.1 acre) of impact.

Route 9K

Route 9K is being considered by the BLM as a modified version of FEIS Route 9E (the FEIS Preferred Route) to avoid crossing the northwestern portion of the SRBOP and to minimize direct and indirect impacts to priority sage-grouse habitat. The route is approximately 174.6 miles long, compared to the 165.3-mile-long Revised Proposed Route (see Figure A-1).

Sagebrush (natural and disturbed) and disturbed grasslands are the dominant vegetation communities crossed by the Route 9K (Appendix D, Table D.6-1). The following subsections discuss the quantitative impacts to vegetation communities from construction and operations of Route 9K.

Construction

The impacts from construction of Route 9K are presented in Table 3.6-11. Construction of Route 9K would directly affect 3,384 acres for installation of the transmission line, primarily consisting of grassland (35 percent) and shrubland (55 percent).

Table 3.6-11. Construction-related Vegetation Impacts (acres) for Route 9K

Land Ownership	Shrubland[1/]	Juniper Woodland		Wetland/ Riparian		Grassland	Other Cover Types [3/]	Total [4/]
	Const. Fac. [2/]	Const. Fac.	ROW	Const. Fac.	ROW	Const. Fac.	Const. Fac.	
BLM	1,684 [41]	10	<1	1 [<1]	–	1,101 [126]	115 [4]	**2,911 [171]**
Other Federal[5/]	4	–	–	–	–	3	–	**7**
State	49 [1]	1	–	–	–	30 [22]	3	**83 [23]**
Private	124 [2]	15	–	1	1	66 [1]	176 [5]	**383 [8]**
Total [4/]	**1,860 [44]**	**26**	**<1**	**2 [<1]**	**1**	**1,200 [149]**	**294 [9]**	**3,384 [202]**

Note that values in "[ ]" correspond to impacts that would occur on the SRBOP.

1/ "Shrublands" includes sagebrush, saltbush, and greasewood.

2/ Const. Fac. = clearing for facilities such as infrastructure, roads, temporary multipurpose yards, and fly yards; ROW = right-of-way clearing

3/ "Other Cover Types" include agriculture, disturbed/developed, water, areas with no vegetation data, and "miscellaneous" (e.g., cliff and canyon, volcanic rock and cinder land, sparsely vegetated large eroding bluffs).

4/ Numbers in table are inexact; columns or rows may not sum exactly due to rounding, including the totals.

5/ Other Federal land includes: Military, Corps of Engineers, or Department of Energy.

Route 9K would impact slightly more vegetation (approximately 235 and 90 acres more, respectively) than the Segment 9 Revised Proposed Route or FEIS Proposed 9 (Tables 3.6-6, 3.6-9, and 3.6-11). Route 9K would impact less grassland than the Revised Proposed Route, but would impact more shrubland, juniper woodland, and other cover types. Route 9K would impact more shrubland and juniper woodland then FEIS Proposed 9, but less wetland and riparian, grassland, and other cover types.

During construction along Route 9K, approximately 202 acres of vegetation within the SRBOP would be impacted (regardless of land-ownership/management). Impacts to vegetation on BLM-managed land within the SRBOP along Route 9K include 41 acres of impacts to shrubland, less than 1 acre to wetland and riparian, 126 acres to grassland, and 4 acres to other cover types, for a total of 171 acres of vegetation impacted (Table 3.6-11).

Operations

The impacts from operations of Route 9K are presented in Table 3.6-12 below (detailed tables are provided in Appendix D, Tables D.6-3 and D.6-6). During operations along Route 9K, approximately 413 acres of vegetation would be permanently impacted. Much of the vegetation affected consists of disturbed grasslands (33 percent) and disturbed shrublands (20 percent; Appendix D, Table D.6-3).

Both the Revised Proposed Route and FEIS Proposed 9 would permanently impact less acres of vegetation than Route 9K (approximately 77 less acres [336 acres total] and 52 less acres [361 acres total, respectively; Tables 3.6-8, 3.6-10, and 3.6-12).

During operations along Route 9K, approximately 32 acres of vegetation would be impacted within the SRBOP (regardless of land-ownership/management). Impacts to vegetation on BLM-managed land within the SRBOP along Route 9K would include 6

acres of impacts to shrubland, less than 1 acre to wetland and riparian, 20 acres to grassland, and 1 acre to other cover types, for a total of 27 acres of vegetation impacted (Table 3.6-12).

Table 3.6-12. Operations-related Vegetation Impacts (acres) for Route 9K

	Shrubland[1/]	Juniper Woodland		Wetland/ Riparian		Grassland	Other Cover Types [3/]	
Land Ownership	**Op. Fac.[2/]**	**Op. Fac.**	**ROW**	**Op. Fac.**	**ROW**	**Op. Fac.**	**Op. Fac.**	**Total [4/]**
BLM	195 [6]	3	1	<1 [<1]	–	132 [20]	28 [1]	**359 [27]**
Other Federal[5/]	1	–	–	–	–	1	–	**2**
State	9 [<1]	<1	–	–	–	3 [2]	1	**13 [2]**
Private	14 [1]	–	–	–	1	7 [<1]	15 [2]	**37 [3]**
Total [4/]	**219 [7]**	**3**	**1**	**<1 [<1]**	**1**	**143 [22]**	**45 [3]**	**413 [32]**

Note that values in "[ ]" correspond to impacts that would occur on the SRBOP.

1/ "Shrublands" include sagebrush, saltbush, and greasewood.
2/ Op. Fac. = clearing for operations facilities such as infrastructure and roads; ROW = right-of-way clearing
3/ "Other Cover Types" include agriculture, disturbed/developed, water, areas with no vegetation data, and "miscellaneous" (e.g., cliff and canyon, volcanic rock and cinder land, sparsely vegetated large eroding bluffs).
4/ Numbers in table are inexact; columns or rows may not sum exactly due to rounding, including the totals.
5/ Other Federal land includes: Military, Corps of Engineers, or Department of Energy.

Toana Road Variations 1 and 1-A and the Comparison Portion of the Revised Proposed Route

Toana Road Variation 1 to the Segment 9 Revised Proposed Route was recommended by the BLM Jarbidge Field Office archaeologist to avoid paralleling the Toana Freight Wagon Road, an NRHP site. The Segment 9 Revised Proposed Route parallels within 0.25 mile of the Toana Road between MP 38.2 and 40.6, and parallels within 1 mile of the road through Blue Gulch between MP 40.6 and 43.5. Variation 1 is approximately 8.5 miles in length. Approximately 0.3 mile of the route crosses State land, with the remainder on land managed by the BLM. The Toana Road Variation 1-A to the Segment 9 Revised Proposed Route was recommended by the BLM to minimize visual impacts to the Toana Freight Wagon Road, and was also intended to utilize existing roads in order to minimize new road construction in the area. Variation 1-A is approximately 8.9 miles long. Approximately 1 mile of the route crosses State land, with the remainder on land managed by the BLM.

<u>Construction</u>

The Toana Road Variation 1 would impact slightly less vegetation during construction than the comparison portion of the Revised Proposed Route (Table 3.6-13), but would disturb more shrubland (54 acres more). However, 54 percent of the shrubland that would be impacted by the Toana Road Variation 1 is previously disturbed, compared to only 9 percent for the comparison portion of the Revised Proposed Route (Appendix D, Tables D.6-2 and D.6-5).

The Toana Road Variation 1-A would impact approximately 163 total acres of vegetation, slightly less than the Toana Road Variation 1 or the comparison portion of the Revised Proposed Route (168 acres and 177 acres of total impacts, respectively), but would disturb more shrubland than the Toana Road Variation 1 or the comparison portion of the Revised Proposed Route (7 acres and 61 acres more shrubland, respectively). However, 54 percent of the shrubland that would be impacted by the Toana Road Variation 1-A is previously disturbed compared to only 9 percent for the comparison portion of the Revised Proposed Route (Appendix D, Tables D.6-2 and D.6-5).

Table 3.6-13. Comparison of Construction-related Vegetation Impacts (acres) for the Toana Road Variations

Land Ownership	Shrubland[1/]	Juniper Woodland		Wetland/ Riparian		Grassland	Other Cover Types [3/]	Total [4/]
	Const. Fac. [2/]	Const. Fac.	ROW	Const. Fac.	ROW	Const. Fac.	Const. Fac.	
Revised Proposed Route for Segment 9 – Comparison portion for Variations 1/1-A								
BLM	63	<1	<1	–	–	89	13	**167**
Private	<1	–	–	–	–	10	1	**11**
Total [4/]	**63**	**<1**	**<1**	**–**	**–**	**99**	**14**	**177**
Toana Road Variation 1								
BLM	110	–	–	–	–	26	16	**152**
State	6	–	–	–	–	–	–	**6**
Private	–	–	–	–	–	9	1	**10**
Total [4/]	**117**	**–**	**–**	**–**	**–**	**35**	**17**	**168**
Toana Road Variation 1-A								
BLM	107	–	–	–	–	19	10	**136**
State	17	–	–	–	–	–	<1	**17**
Private	–	–	–	–	–	9	1	**10**
Total [4/]	**124**	**–**	**–**	**–**	**–**	**28**	**11**	**163**

1/ "Shrublands" includes sagebrush, saltbush, and greasewood.
2/ Const. Fac. = clearing for facilities such as infrastructure, roads, temporary multipurpose yards, and fly yards; ROW = right-of-way clearing
3/ "Other Cover Types" include agriculture, disturbed/developed, water, areas with no vegetation data, and "miscellaneous" (e.g., cliff and canyon, volcanic rock and cinder land, sparsely vegetated large eroding bluffs).
4/ Numbers in table are inexact; columns or rows may not sum exactly due to rounding, including the totals.

Operations

Operations of the Toana Road Variation 1 and the comparison portion of the Segment 9 Revised Proposed Route would have similar permanent impacts to vegetation (16 acres and 17 acres, respectively). The Toana Road Variation 1-A would have fewer permanent impacts (11 acres) to vegetation than the comparison portion of the Revised Proposed Route or Variation 1. Operations impacts from both Toana Road Variations and the comparison portion of the Revised Proposed Route would primarily affect shrubland and grassland (Table 3.6-14).

Table 3.6-14. Comparison of Operations-related Vegetation Impacts (acres) for the Toana Road Variations

Land Ownership	Shrubland[1/]	Juniper Woodland		Wetland/ Riparian		Grassland	Other Cover Types [3/]	Total [4/]
	Op. Fac.[2/]	Op. Fac.	ROW	Op. Fac.	ROW	Op. Fac.	Op. Fac.	
Revised Proposed Route for Segment 9 – Comparison Portion for Toana Road Variations 1/1-A								
BLM	8	<1	1	–	–	6	2	**17**
Private	<1	–	–	–	–	<1	<1	**<1**
Total [4/]	**8**	**<1**	**1**	**–**	**–**	**6**	**2**	**17**
Toana Road Variation 1								
BLM	11	–	–	–	–	1	3	**15**
State	<1	–	–	–	–	–	–	**<1**
Total [4/]	**11**	**–**	**–**	**–**	**–**	**1**	**3**	**16**
Toana Road Variation 1-A								
BLM	8	–	–	–	–	2	1	**11**
State	<1	–	–	–	–	–	<1	**<1**
Total [4/]	**8**	**–**	**–**	**–**	**–**	**2**	**1**	**11**

1/ "Shrublands" include sagebrush, saltbush, and greasewood.
2/ Op. Fac. = clearing for operations facilities such as infrastructure and roads; ROW = right-of-way clearing
3/ "Other Cover Types" include agriculture, disturbed/developed, water, areas with no vegetation data, and "miscellaneous" (e.g., cliff and canyon, volcanic rock and cinder land, sparsely vegetated large eroding bluffs).
4/ Numbers in table are inexact; columns or rows may not sum exactly due to rounding, including the totals.

3.6.2.4 Direct and Indirect Effects of the Alternatives

This section assesses the quantitative impacts on vegetation communities from the seven BLM action alternatives. Tables 3.6-15 and 3.6-16 list the quantitative impacts that would occur to vegetation communities from construction and operations, respectively, under these action alternatives. The alternatives are visually displayed in Figures A-2 through A-8.

As discussed in Section 3.6.2.3, inclusion of the Toana Road Variation 1 or 1-A would reduce the total construction impacts to vegetation communities slightly (10 acres and 15 acres less total impacts, respectively) under any of the alternatives. Inclusion of the Toana Road Variation 1 or 1-A into any of the alternatives would also reduce the permanent impacts to vegetation communities slightly (1 acre and 6 acres less total impacts, respectively).

Table 3.6-15. Comparison of Construction-related Impacts to Vegetation (acres) from the Seven Action Alternatives

Alternative	Land Ownership/ Management	Shrubland [1/]	Juniper Woodland		Wetland / Riparian		Grassland	Other Cover Types [3/]	Total [4/]
		Const. Fac. [2/]	Const. Fac. [2/]	ROW	Const. Fac. [2/]	ROW	Const. Fac. [2/]	Const [2/]	
1	BLM	1,951 [483]	1 [1]	2 [1]	3 [1]	–	1,934 [746]	136 [54]	**4,027 [1,286]**
	BOR	56 [36]	–	–	–	–	7 [1]	7 [7]	**70 [44]**
	Other Federal [5/]	4	–	–	–	–	3 [<1]	–	**7 [<1]**
	State	193 [39]	–	–	2 [1]	–	118 [75]	14 [5]	**327 [120]**
	Private	318 [6]	–	–	4	2 [2]	265 [59]	391 [53]	**980 [120]**
	Total	***2,522 [563]***	***1 [1]***	***2 [1]***	***9 [2]***	***2 [2]***	***2,327 [883]***	***548 [120]***	***5,410 [1,571]***
2	BLM	2,061 [165]	<1	<1	2 [1]	–	1,680 [361]	111 [32]	**3,855 [558]**
	BOR	56 [36]	–	–	–	–	7 [1]	7 [7]	**70 [44]**
	Other Federal [5/]	4	–	–	–	–	3 [t[6/]]	t[6/]	**7 [t[6/]]**
	State	178 [12]	–	–	2 [1]	–	70 [27]	13 [5]	**263 [45]**
	Private	408 [24]	–	–	8 [t[6/]]	2 [2]	313 [39]	629 [36]	**1,360 [101]**
	Total	***2,706 [236]***	***<1***	***<1***	***12 [2]***	***2 [2]***	***2,073 [429]***	***761 [80]***	***5,555 [747]***
3	BLM	2,473 [105]	10	<1	2 [<1]	–	1,625 [323]	165 [32]	**4,275 [460]**
	BOR	56 [36]	–	–	–	–	7 [1]	7 [7]	**70 [44]**
	Other Federal [5/]	4	–	–	–	–	3	–	**7**
	State	177 [12]	1	–	2 [1]	–	84 [35]	13 [5]	**277 [53]**
	Private	352 [4]	15	–	4	3 [2]	267 [40]	375 [26]	**1,016 [72]**
	Total	***3,061 [156]***	***26***	***<1***	***8 [1]***	***3 [2]***	***1,986 [399]***	***561 [70]***	***5,645 [628]***
4	BLM	2,603 [144]	9	<1	2 [1]	–	1,859 [296]	151 [8]	**4,625 [448]**
	Other Federal [5/]	8	–	–	–	–	6 [<1]	t[6/]	**14 [<1]**
	State	153 [7]	1	–	–	–	97 [32]	26 [<1]	**277 [39]**
	Private	275 [24]	15	–	5 [t[6/]]	1	199 [1]	628 [20]	**1,123 [45]**
	Total	***3,038 [175]***	***26***	***<1***	***8 [1]***	***1***	***2,160 [329]***	***805 [28]***	***6,039 [533]***
5	BLM	3,015 [84]	19	<1	2 [<1]	–	1,804 [258]	205 [8]	**5.045 [350]**
	Other Federal [5/]	8	–	–	–	–	6 [<1]	–	**14 [<1]**
	State	152 [7]	2	–	–	–	111 [40]	26	**291 [47]**
	Private	219 [4]	30	–	1	2	153 [2]	374 [10]	**779 [16]**
	Total	***3,393 [95]***	***52***	***<1***	***4 [<1]***	***2***	***2,073 [300]***	***605 [18]***	***6,129 [414]***

Table 3.6-15. Comparison of Construction-related Impacts to Vegetation (acres) from the Seven Action Alternatives (continued)

Alternative	Land Ownership/ Management	Shrubland [1/]	Juniper Woodland		Wetland / Riparian		Grassland	Other Cover Types [3/]	Total [4/]
		Const. Fac. [2/]	Const. Fac. [2/]	ROW	Const. Fac. [2/]	ROW	Const. Fac. [2/]	Const [2/]	
6	BLM	2,118 [527]	1 [<1]	2 [1]	2 [2]	–	2,158 [716]	119 [31]	**4,399 [1,276]**
	BOR	–	–	–	–	–	<1 [<1]	t[6/][t[6/]]	**<1 [<1]**
	Other Federal [5/]	8	–	–	–	–	6 [t[6/]]	t[6/]	**14 [t[6/]]**
	State	155 [34]	–	–	1	–	126 [77]	27 [1]	**310 [112]**
	Private	246 [26]	–	–	5 [t[6/]]	t[6/]	200 [20]	646 [47]	**1,097 [93]**
	Total	***2,526 [587]***	***1 [<1]***	***2 [1]***	***9 [2]***	***t[6/]***	***2,491 [813]***	***791 [78]***	***5,820 [1,481]***
7	BLM	2,530 [467]	10 [<1]	1 [1]	2 [1]	–	2,103 [678]	173 [31]	**4,818 [1,178]**
	BOR	–	–	–	–	–	<1 [<1]	t[6/][t[6/]]	**<1 [<1]**
	Other Federal [5/]	8	–	–	–	–	6 [t[6/]]	[t[6/]]	**14 [t[6/]]**
	State	154 [34]	1	–	1 [t[6/]]	–	140 [85]	27 [<1]	**324 [120]**
	Private	190 [6]	15	–	1	1	154 [21]	392 [37]	**753 [64]**
	Total	***2,882 [507]***	***26 [<1]***	***1 [1]***	***5 [1]***	***1***	***2,404 [784]***	***591 [68]***	***5,910 [1,362]***

Note that values in "[ ]" correspond to impacts that would occur on the SRBOP.
1/ "Shrublands" includes sagebrush, saltbush, and greasewood.
2/ Const. Fac. = clearing for facilities such as infrastructure, roads, temporary multipurpose yards, and fly yards; ROW = right-of-way clearing
3/ "Other Cover Types" include agriculture, disturbed/developed, water, areas with no vegetation data, and "miscellaneous" (e.g., cliff and canyon, volcanic rock and cinder land, sparsely vegetated large eroding bluffs).
4/ Numbers in table are inexact; columns or rows may not sum exactly due to rounding, including the totals.
5/ Other Federal land includes: Military, Corps of Engineers, or Department of Energy.
6/ "t" indicates only a trace amount (<0.1 acre) of impact.

Table 3.6-16. Comparison of Operations-related Impacts to Vegetation (acres) from the Seven Action Alternatives

Alternative	Land Ownership/ Management	Shrubland [1/]	Juniper Woodland		Wetland / Riparian		Grassland	Other Cover Types [3/]	Total [4/]
		Const. Fac. [2/]	Const. Fac. [2/]	ROW	Const. Fac. [2/]	ROW	Const. Fac. [2/]	Const [2/]	
1	BLM	207 [40]	<1	3 [2]	<1 [<1]	–	182 [57]	39 [19]	**431 [118]**
	BOR	5 [2]	–	–	–	–	1	3 [3]	**9 [5]**
	Other Federal [5/]	1	–	–	–	–	1 [<1]	–	**2 [<1]**
	State	21 [2]	–	–	<1	–	11 [5]	2 [1]	**34 [8]**
	Private	36 [<1]	–	–	<1	2 [2]	29 [6]	33 [3]	**100 [11]**
	Total	***270 [43]***	***<1***	***3 [2]***	***1 [<1]***	***2 [2]***	***224 [68]***	***77 [26]***	***576 [142]***
2	BLM	229 [15]	t[6/]	1	<1 [<1]	–	167 [28]	28 [12]	**425 [56]**
	BOR	5 [2]	–	–	–	–	1	3 [3]	**9 [5]**
	Other Federal [5/]	1	–	–	–	–	<1 [t[6/]]	–	**2 [t[6/]]**
	State	21 [1]	–	–	<1	–	8 [3]	2 [1]	**32 [5]**
	Private	45 [3]	–	–	<1 [t[6/]]	2 [2]	29 [4]	57 [2]	**133 [11]**
	Total	***301 [21]***	***t[6/]***	***1***	***2 [<1]***	***2 [2]***	***206 [35]***	***89 [19]***	***601 [77]***
3	BLM	276 [11]	3	1	<1 [<1]	–	171 [31]	46 [13]	**498 [55]**
	BOR	5 [2]	–	–	–	–	1	3 [3]	**9 [5]**
	Other Federal [5/]	1	–	–	–	–	1	–	**2**
	State	24 [1]	<1	–	<1	–	9 [3]	3 [1]	**37 [5]**
	Private	42 [1]	–	–	<1	3 [2]	28 [4]	34 [3]	**107 [10]**
	Total	***348 [15]***	***3***	***1***	***1 [<1]***	***3 [2]***	***210 [38]***	***86 [20]***	***653 [75]***

Table 3.6-16. Comparison of Operations-related Impacts to Vegetation (acres) from the Seven Action Alternatives (continued)

Alternative	Land Ownership/ Management	Shrubland [1/]	Juniper Woodland		Wetland / Riparian		Grassland	Other Cover Types [3/]	Total [4/]
		Const. Fac. [2/]	Const. Fac. [2/]	ROW	Const. Fac. [2/]	ROW	Const. Fac. [2/]	Const [2/]	
4	BLM	291 [16]	3	1	<1 [<1]	–	217 [38]	33 [1]	**545 [56]**
	Other Federal [5/]	2	–	–	–	–	2 [<1]	–	**4 [<1]**
	State	17 [<1]	<1	–	–	–	11 [4]	4 [t[6]]	**33 [4]**
	Private	30 [4]	–	–	<1 [t[6]]	1	17 [<1]	57 [3]	**105 [7]**
	Total	***340 [20]***	***3***	***1***	***1 [<1]***	***1***	***247 [42]***	***94 [5]***	***687 [67]***
5	BLM	338 [12]	6	1	<1 [<1]	–	221 [41]	51 [2]	**617 [55]**
	Other Federal [5/]	2	–	–	–	–	2 [<1]	–	**4 [<1]**
	State	20 [<1]	<1	–	–	–	12 [4]	5	**37 [4]**
	Private	27 [2]	–	–	–	2	16 [<1]	34 [4]	**79 [6]**
	Total	***387 [14]***	***6***	***1***	***<1 [<1]***	***2***	***251 [45]***	***91 [6]***	***739 [65]***
6	BLM	224 [44]	t[6]	3 [2]	1 [<1]	–	227 [64]	25 [7]	**479 [117]**
	Other Federal [5/]	2	–	–	–	–	1 [t[6/]]	–	**4 [t[6]]**
	State	14 [t[6]]	–	–	–	–	13 [6]	4 [t[6]]	**31 [7]**
	Private	27 [3]	–	–	<1 [t[6/]]	t[6]	21 [2]	57 [3]	**105 [8]**
	Total	***267 [48]***	***t[6]***	***3 [2]***	***1 [<1]***	***t[6]***	***263 [72]***	***85 [11]***	***619 [133]***
7	BLM	271 [40]	3	3 [2]	<1 [<1]	–	231 [67]	43 [8]	**551 [117]**
	Other Federal [5/]	2	–	–	–	–	2 [t[6/]]	–	**4 [t[6]]**
	State	17 [1]	<1	–	–	–	14 [6]	4 [t[6/]]	**35 [7]**
	Private	24 [1]	–	–	–	1	20 [2]	34 [4]	**79 [7]**
	Total	***314 [42]***	***3***	***3 [2]***	***<1 [<1]***	***1***	***267 [75]***	***82 [12]***	***671 [131]***

Note that values in "[ ]" correspond to impacts that would occur on the SRBOP.
1/ "Shrublands" includes sagebrush, saltbush, and greasewood.
2/ Const. Fac. = clearing for facilities such as infrastructure, roads, temporary multipurpose yards, and fly yards; ROW = right-of-way clearing
3/ "Other Cover Types" include agriculture, disturbed/developed, water, areas with no vegetation data, and "miscellaneous" (e.g., cliff and canyon, volcanic rock and cinder land, sparsely vegetated large eroding bluffs).
4/ Numbers in table are inexact; columns or rows may not sum exactly due to rounding, including the totals.
5/ Other Federal land includes: Military, Corps of Engineers, or Department of Energy.
6/ "t" indicates only a trace amount (<0.1 acre) of impact.

Alternative 1 – Proposed Action (the Revised Proposed Routes for Segments 8 and 9)

Alternative 1 consists of the Revised Proposed Routes for Segments 8 and 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.6.2.3). Tables 3.6-15 and 3.6-16 list the impacts that would occur to vegetation communities from construction and operation, respectively, under Alternative 1.

Alternative 2 – Revised Proposed 8 and FEIS Proposed 9

Alternative 2 consists of the Revised Proposed Route for Segment 8 and FEIS Proposed 9. Impacts associated with Alternative 2 correspond to those described above for these two routes combined (see Section 3.6.2.3). As shown in Tables 3.6-15 and 3.6-16, impacts to vegetation communities under Alternative 2 would be slightly greater (approximately 145 and 25 acres more total impacts, respectively) than Alternative 1 (i.e., the Proponent's Proposed Action). During both construction and operation, impacts to grassland and juniper woodlands vegetation communities would be less under Alternative 2 compared to Alternative 1; however, construction impacts to shrubland, wetland and riparian, and other cover types would be greater under

Alternative 2 compared to Alternative 1 (Tables 3.6-15 and 3.16-6). Impacts to vegetation on BLM-managed lands within the SRBOP during construction and operation would be less under Alternative 2 than under Alternative 1 (approximately 728 acres fewer impacts during construction and 65 acres fewer impacts during operation).

Alternative 3 – Revised Proposed 8 and the 9K Route

Alternative 3 consists of the Revised Proposed Route for Segment 8 and Route 9K; therefore, the impacts associated with this alternative correspond to those described above for the these two routes combined (see Section 3.6.2.3). As shown in Tables 3.6-15 and 3.6-16, construction and operation impacts to vegetation communities under Alternative 3 would be slightly greater (approximately 235 and 77 acres more total impacts, respectively) than under Alternative 1. During construction, impacts to grassland and wetland and riparian vegetation communities would be less under Alternative 3 compared to Alternative 1, while construction impacts to shrubland, juniper woodland, and other cover types would be greater under Alternative 3 compared to Alternative 1 (Table 3.6-15). Permanent operations impacts to grassland vegetation communities would be less under Alternative 3 than under Alternative 1; however, impacts to shrubland, juniper woodland, wetland and riparian and other cover types would be greater under Alternative 3 compared to Alternative 1. Impacts to vegetation on BLM-managed lands within the SRBOP during construction and operation would be less under Alternative 3 than under Alternative 1 (approximately 826 acres fewer impacts during construction and 67 acres fewer impacts during operation).

Alternative 4 – The 8G Route and FEIS Proposed 9

Alternative 4 consists of the Route 8G and the FEIS Proposed 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.6.2.3). As shown in Tables 3.6-15 and 3.6-16, construction and operation impacts to vegetation communities under Alternative 4 would be greater (approximately 629 and 111 acres more total impacts, respectively) than Alternative 1. During construction, impacts to grassland and wetland and riparian vegetation communities would be less under Alternative 4 compared to Alternative 1, while construction impacts to shrubland, juniper woodland, and other cover types would be greater under Alternative 4 compared to Alternative 1 (Table 3.6-15). Permanent operations impacts to shrubland, juniper woodland, grassland and other cover types would be greater under Alternative 4 than under Alternative 1, while operations impacts to wetland and riparian vegetation communities would be slightly less under Alternative 4 (Table 3.6-16). Impacts to vegetation on BLM-managed lands within the SRBOP during construction and operation would be less under Alternative 4 than under Alternative 1 (approximately 838 acres fewer impacts during construction and 75 acres fewer impacts during operation).

Alternative 5 – The 8G and 9K Routes

Alternative 5 consists of Routes 8G and 9K; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.6.2.3). As shown in Tables 3.6-15 and 3.6-16, construction and impacts to vegetation communities under Alternative 5 would be greater (approximately 719 and 163 acres more total impacts, respectively) than Alternative 1. During construction, impacts to grasslands, wetlands, and riparian vegetation communities would be less

under Alternative 5 compared to Alternative 1; however, construction impacts to shrubland, juniper woodland, and other cover types would be greater under Alternative 5 compared to Alternative 1 (Table 3.6-15). Permanent operations impacts to wetland and riparian vegetation communities would be slightly less under Alternative 5 than Alternative 1; however, impacts to shrubland, juniper woodland, grassland and other cover types would be greater under Alternative 5 (Table 3.6-16). Impacts to vegetation on BLM-managed lands within the SRBOP during construction and operation would be less under Alternative 5 than under Alternative 1 (approximately 936 acres fewer impacts during construction and 77 acres fewer impacts during operation).

Alternative 6 – The 8H Route and FEIS Proposed 9

Alternative 6 consists of Route 8H and FEIS Proposed 9; therefore, impacts associated with Alternative 6 correspond to those described above for these two routes combined (see Section 3.6.2.3). As shown in Tables 3.6-15 and 3.6-16, construction and operation impacts to vegetation communities under Alternative 6 would be greater (approximately 410 and 43 acres more total impacts, respectively) than Alternative 1. During construction, impacts to wetlands, riparian, and juniper woodland vegetation communities would be slightly less under Alternative 6 compared to Alternative 1; however, construction impacts to shrubland, grassland and other cover types would be greater under Alternative 6 compared to Alternative 1 (Table 3.6-15). Permanent operations impacts to shrubland, juniper woodland, wetlands, and riparian vegetation communities would be slightly less under Alternative 6 compared to Alternative 1, while impacts to grassland and other cover types would be greater under Alternative 6. Impacts to vegetation on BLM-managed lands within the SRBOP during construction and operation would be slightly less under Alternative 6 than under Alternative 1 (approximately 10 acres fewer impacts during construction and 9 acres fewer impacts during operation).

Alternative 7 – The 8H and 9K Routes

Alternative 7 consists of Routes 8H and 9K; therefore, Impacts associated with Alternative 7 correspond to those described above for these two routes combined (see Section 3.6.2.3). As shown in Tables 3.6-15 and 3.6-16, construction and operation impacts to vegetation communities under Alternative 7 would be greater (500 and 95 acres more total impacts, respectively) than Alternative 1 (i.e., the Proponent's proposed action). During construction and operation, impacts to wetland and riparian vegetation communities would be slightly less under Alternative 7 compared to Alternative 1; however, impacts to shrubland, juniper woodland, grassland, and other cover types would be greater under Alternative 7 compared to Alternative 1 (Tables 3.6-15 and 3.6-16). Impacts to vegetation on BLM-managed lands within the SRBOP during construction and operation would be less under Alternative 7 than under Alternative 1 (approximately 108 acres fewer impacts during construction and 11 acres fewer impacts during operation).

3.6.2.5 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, as well as additional measures proposed by the Project Proponents specifically for the SRBOP.

Environmental Protection Measures

The Proponents have committed to Project design features and EPMs to minimize or avoid impacts on environmental resources. These measures, the areas where they would be applicable (e.g., private, state, or federal-managed lands), as well as the details of each measure are provided in Table 2.7-1 of the FEIS. Many of these measures would be either directly or indirectly applicable to vegetation communities (i.e., they would avoid or minimize impact to vegetation communities).

Measures that would indirectly apply to vegetation communities (i.e., measures that were not developed directly to minimize impacts to vegetation communities, but if implemented could avoid or minimize impacts to vegetation communities) include G-1 through G-3; OM-1 through OM-19; OM-21 through OM-22; OM-24 through OM-26; VIS-11; VIS-14; REC-1 through REC-26; TESPL-1 through TESPL-7; WEED-1 through WEED-4; WET-1 through WET-4; SOIL-2 through SOIL-5; WQA-1 through WQA-18; WQA-22 through WQA-25; WQA-27 through WQA-28; FIRE-1 through FIRE-5; and FIRE-7 through FIRE-8 (see Table 2.7-1 in the FEIS).

The following measures, which were identified in Table 2.7-1 of the FEIS, are directly related to vegetation communities and would be applicable to Segments 8 and 9:

WEED-1 The Proponents shall consult with each appropriate local land management agency (Forest Service and BLM) office or landowner to determine appropriate seed mix and commercial seed source for revegetation. The Reclamation, Revegetation, and Weed Management Plan shall specify the approved seed mixes for federal lands. Disturbed soil will not be allowed to support the growth of noxious weeds or invasive weedy species. Prevention of noxious weeds will apply to all phases of the Project.

VEG-1 During construction, blading of native plant communities should be minimized, consistent with safe construction practices. Where feasible, shrubs should be cut at or near ground level to facilitate regrowth after construction. The footprint of construction and operations facilities should be kept to the minimum necessary.

VEG-2 Where feasible, locate new access roads to minimize the number of trees removed during construction. However, new access roads will not be relocated if the change would result in an increase in the overall disturbance (acres); require additional cut and fill activities, or impact other sensitive resources (e.g., sagebrush plant community, sensitive species habitat, and/or cultural resources or viewshed.

VEG-4 Prior to the start of construction and maintenance activities, all contractor vehicles and equipment (including personal protective equipment) shall be cleaned of soil and debris capable of transporting invasive plant seeds or other propagates. All vehicles and equipment shall be inspected by Agency-approved inspectors and certified as weed free by agency-approved personnel, in order to ensure they have been cleaned properly. The final Reclamation, Revegetation, and Weed Management Plan will include the location of all cleaning stations, how materials cleaned from vehicles at these

stations would be either captured or treated so that cleaning station locations would not also become infected, and who would confirm/certify that vehicles leaving cleaning stations and/or entering construction sites are free of invasive plant materials.

VEG-5 The Agency-approved Environmental Construction Inspection Contractor (CIC) will approve weed-free straw or other erosion control materials on federally managed lands prior to application.

These EPMs would avoid or minimize the extent of impacts that could occur to vegetation. These EPMs are a part of the current Project description, and as such, the effects of their implementation are included in the impact discussion found in Sections 3.6.2.2, 3.6.2.3, and 3.6.2.4.

Proponent-Proposed MEP and Potential Effects to the MEP within the SRBOP

The Proponents have developed an MEP that contains design features specific to the SRBOP. This plan was developed to mitigate the effects of Project-related impacts within the SRBOP, as well as comply with the SRBOP's enabling statute (P.L. 103-64), which requires enhancement of resources within the SRBOP. The Proponents' plan contains two forms of mitigation: "compensation mitigation" and "enhancement." For this analysis, mitigation is defined as avoidance, minimization, and compensation measures aimed at offsetting adverse impacts of the Project; enhancement is defined as additional mitigation measures that are required in order to enhance the objectives and values for which the SRBOP was established.

One of the goals of the Proponents' proposal is to return treated areas to their baseline condition, which is defined using the NRCS ESD of the affected area. An ecological site is defined as a distinctive kind of land with specific soil and physical characteristics that differ from other kinds of land in its ability to produce a distinctive kind and amount of vegetation and its ability to respond similarly to management actions and natural disturbances (NRCS 2015a). ESDs are reports that provide detailed information about ecological sites. Ecological sites provide a consistent framework for classifying and describing rangeland and forestland soils and vegetation; thereby delineating land units that share similar capabilities to respond to management activities or disturbance (NRCS 2015b).

The NRCS ESDs have not been defined for 38 percent of Segment 8 and 12 percent of Segment 9. The site descriptions for the unidentified areas would need to be established in order to determine the baseline conditions of the area, which are necessary to define restoration goals. This is because a determination of the adequacy of any proposed mitigation and enhancement cannot be made unless the baseline conditions for all areas impacted as well as those proposed for mitigation/enhancement are known in order to fully calculate both the debit (i.e., Project impact) and mitigation/enhancement credit. As a result, more information is required from the Proponents to fully assess the proposed MEP.

The Proponents' proposal offers a portfolio that contains five types of mitigation/enhancement proposals. The following discusses the benefit and/or impact

that these proposed mitigation/enhancement proposals could have to vegetation resources.

Habitat Restoration

The MEP states that the goal for the Proponents' habitat restoration proposal is to convert "non-native grasslands to native perennial plant communities" as well as to conduct "noxious weed control." This proposal, in general, is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute (e.g., P.L.103-64), which established the SRBOP in part for the "…conservation, protection, and enhancement of raptor populations and habitats and the natural and environmental resources and values associated therewith." However, there are some factors within the Proponents' habitat enhancement proposal that may reduce its ability to enhance resources within the SRBOP.

The Proponents' proposal for habitat restoration includes separate proposals for "mitigation" and for "enhancement." Under the Proponents' proposal:

- Mitigation would be conducted at a 1:1 ratio for every acre of the Project's "long-term occupancy," regardless of the condition of the area prior to disturbance.
- Enhancement would be conducted at various ratios depending on the condition of the site as well as its location in relation to designated utility corridors. For areas within designated corridors, enhancement would be conducted at a 1:1 ratio for "presently undisturbed ecological sites" and at a 0.5:1 for "presently disturbed ecological sites." For areas outside of designated corridors, enhancement would be conducted at a 2:1 ratio for "presently undisturbed ecological sites" and at a 1:1 for "presently disturbed ecological sites."

Although the ratios in the Proponents' proposal depend on whether an affected area is a "presently disturbed ecological site" or an "undisturbed" site, the proposal does not adequately define or delineate these areas. For example, the MEP states that disturbed vegetation consist of "sagebrush and grassland habitat invaded by cheatgrass." This definition is too broad to clearly delineate what areas the Proponents would apply their various mitigation ratios to. More information would be required from the Proponents in order to fully assess what areas the Proponents are considering "presently undisturbed ecological sites" or "presently disturbed ecological sites," or how these areas relate to the BLM Management Areas as defined in the SRBOP RMP. The following describes the SRBOP Management Areas:

- Not all areas of the SRBOP have the potential to achieve the desired future conditions (DFC) in the same manner and timeframe; therefore, the RMP has divided the SRBOP into three management areas that reflect differences in soils, precipitation, fire history, seeding history, current vegetation, and site potential (i.e., Management Areas 1, 2, and 3).
  - Management Area 1 encompasses approximately 31 percent of the SRBOP and is located in the western portion of the SRBOP north of the Snake River. Area 1 has sustained the fewest wildfires (35 percent has burned), and supports the highest percentage of shrub cover (approximately 53 percent of the area supports a cover of native shrubs).

- Management Area 2 comprises 43 percent of the SRBOP and encompasses the eastern portion of the SRBOP and the portion south of the Snake River. The shrub component has been reduced to approximately 34 percent of the overall vegetative cover in this area.
- Management Area 3 encompasses the remaining 26 percent of the SRBOP and is generally located in the center of the SRBOP, north of the Snake River. Approximately 21 percent, of Area 3 supports shrub cover.

Because the Proponents' habitat restoration proposal is based on ratios and an average cost of restoration per acre (which they have estimated to be $1,800 an acre), it is not dependent on a specific route proposal, but can be scaled and modified to match various routes. Although this proposal can be scaled to various routes during the initial assessment and development, its design is not directly tied to any monitored or achieved on-the-ground success criteria (e.g., it relies on a fixed and finite dollar amount based on the extent of area impacted and "expected" success criteria, as opposed to the actual monitored success during implementation). As a result, the average cost estimated for this proposal per acre likely underestimates the true cost of restoration in the SRBOP (discussed in more detail below).

There are multiple factors that the Proponents' habitat restoration proposal does not take into consideration, such as: the past and on-going disturbance regimes of the area; the composition of the landscape and vegetation communities; the composition of adjacent areas; and the realization that restoration treatment options need to be adapted to respond to site specific conditions within the landscape as opposed to a one-type-fits-all approach. For example, the SRBOP has experienced frequent wildfires as well as other past disturbances, which have converted over 65 percent of the landscape to early successional plant communities, much of which is dominated by cheatgrass (*Bromus tectorum*). Cheatgrass is an invasive species that can proliferate rapidly in disturbed arid and semi-arid sagebrush grasslands, and can increase the rate and severity of fires, thereby creating a cycle of disturbance that ultimately increases the rate of cheatgrass establishment and spread (Cox and Anderson 2004). As a result, restoration efforts in cheatgrass dominated areas that have experienced an increased fire frequency are often unsuccessful because: 1) cheatgrass in adjacent areas can rapidly spread into the restored/treated areas, and 2) fires that originate in the adjacent cheatgrass dominated areas can spread into the restored/treated areas thereby increasing the rate of disturbance in the area and killing off the native plants that were restored in the treated areas.

The Proponents' habitat restoration proposal does not take into account the variability in site-specific conditions or past and ongoing disturbance regimes in the area. The conditions within the SRBOP vary widely by region, with specific and unique disturbance regimes, conditions, and challenges that would be faced during restoration efforts. Because the Proponents' proposal specifies neither where these restoration and enhancement efforts would be conducted within the SRBOP nor what methods would be used during restoration efforts, the plan cannot be considered a complete proposal and the success or validity of the Proponents' proposed plan cannot be accurately assessed. Furthermore, the Proponents' proposal does not take into consideration the current drought conditions or the increasing fire frequencies that have

been recorded within this region, both of which would have to be considered when implementing a restoration effort in this area. Instead, the Proponents' proposal assumes that restoration and enhancement within the SRBOP would have an 80 percent success rate (without regard to the differences between varying habitat conditions or regions within the SRBOP), and that the cost of restoration per acre is based on this assumption of an 80 percent success rate (i.e., it assumes that only 20 percent of the treatments would require additional measures or follow-up treatments). The Proponents' proposal does not explain how they derived this assumption of an 80 percent success rate; however, the BLM assumes that it was derived from one restoration site in the SRBOP (i.e., the Dedication Point) where after 2 years post-planting the survivorship for Wyoming big sagebrush container stock (grown from locally sourced seed) was 80 percent. As this was one site in the SRBOP, involved container stock plants, and relates to a single species, the results of this site cannot be applied to the entire SRBOP. Therefore, the 80 percent success rate assumption is not valid for this Project or the Proponents' habitat restoration proposal.

The DOI has developed a Technical Guide that defines adaptive management and describes the conditions for its implementation (Williams et al. 2009); however, the Proponents' habitat restoration proposal does not take the guidelines or recommendations in this Technical Guide into consideration in its habitat restoration plan. Also, the Proponents' proposal does not include measures to reduce or control fires, which contribute to the spread of non-native plants in this area. As a result, a large portion of the habitat restoration efforts proposed in the MEP may have lower success rates than those assumed in the Proponents' proposal and the treated area would likely return to pre-treated conditions without extensive follow-up treatments.

Because the Proponents' habitat restoration proposal 1) does not take into consideration the disturbance legacy of affected or proposed treatment areas; 2) does not provide sufficient information regarding the baseline conditions or the methods that would be implemented to restore target areas; and 3) overestimates the potential success rate that would likely be achieved in these areas, it is not likely that the habitat restoration efforts proposed in the MEP would result in enhancement of the SRBOP.

The efforts necessary to treat areas dominated by invasive plant species (e.g., clearing of vegetation, and mechanical or chemical treatment of weeds) would have a potential short-term adverse effect on vegetation communities (e.g., disturbance and temporary loss of low quality vegetation, and the potential of herbicide drift into adjacent vegetation communities). If the restoration efforts were successful, they would have long-term beneficial effects (e.g., restoration of native habitats and a possible localized reduction of fire risk); however, as discussed above, restoration success is likely to be low or very limited in extent without implementation of adequate fire protection/reduction efforts coupled with an adaptive management approach to the success criteria (i.e., as opposed to tying the financial support to an assumption of an 80 percent success rate; see Williams et al. 2009). Therefore, the proposed habitat restoration efforts in the Proponents' proposal would likely have a short-term adverse impact to vegetation, but may have few to no long-term effects (adverse or beneficial).

Purchase of Private Inholdings

There are private lands within the SRBOP that could contain important cultural and natural resources. The Proponents have proposed (within the MEP) to purchase a portion of these lands and deed them to the U.S. government, to be managed by the BLM. The Proponents have indicated that the selection of the parcels that would be purchased and deeded to the BLM would be determined by the agencies' Oversight Committee. However, the composition and exact membership of the individuals and agencies within the proposed Oversight Committee have not been identified to date. Therefore, the effectiveness of the Oversight Committee cannot be determined until the individuals and agencies that will be included in the committee are identified, and the process that will be used by the committee to make its final decisions is determined. The Proponents' proposal makes a preliminary estimate of $3,000 an acre for the cost of purchasing lands and transferring them to the BLM for management; however, it acknowledges that the exact price is uncertain until the parcels are identified by the Oversight Committee and purchase negotiations begin.

This proposal is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute (e.g., P.L. 103-64 states that "The Secretary is authorized to acquire lands and interests therein within the boundaries of the conservation area by donation, purchase with donated or appropriated funds, exchange, or transfer from another Federal agency, except that such lands or interests owned by the State of Idaho or a political subdivision thereof may be acquired only by donation or exchange").

The Proponents have indicated that all efforts proposed in regard to the purchasing of private inholdings are intended to apply to enhancement of the SRBOP (with no mitigation component).

Purchasing private inholdings and transferring control of the land to the BLM would likely result in a change in how the lands are managed as well as the entities responsible for the areas proper management. The BLM would manage the lands in accordance with the BLM's RMP as well as the SRBOP's enabling statute, which in part, emphasizes management, protection, and rehabilitation of natural habitats. However, the current condition or management of the private lands cannot be determined at this time because no specific parcels or willing landowners have been identified to date. Therefore, although this proposal may result in the long-term enhancement of the area and its resources, depending on how the land was being managed under private ownership (e.g., much of the existing private lands in the area are used for agricultural purposes as opposed to conservation or protection of natural habitats), a determination of this proposal's ability to enhance the objects and values for which the SRBOP was established cannot be made until the specific parcels are identified by the Oversight Committee.

Law Enforcement

The Proponents' proposal contains a proposal for the funding of increased law enforcement within the SRBOP for a period of 10 years. The goal of this increased funding is to change adverse behaviors in the SRBOP by aiding law enforcement in their coverage and ability to manage public induced damage to resource. This proposal

is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute.

Under the Proponents' proposal, approximately 17 percent of the funding would go to mitigation, while the remaining funding would go to enhancement; however, the Proponents' proposal does not provide the rationale for this financial breakdown (i.e., why 17 percent would apply to mitigation and 83 percent to enhancement). The Proponents' stated intent for the mitigation funding is to prevent an increase in illegal behavior that could occur as a result of the presence of new Project-related roads in the area. Although the Proponents' intent for the enhancement funding is to "permanently reduce illegal behaviors in the SRBOP thereby further protecting the objects and values for which the SRBOP was established," the Proponents' proposal only offers this funding for a period of 10 years, which would neither constitute a permanent fund nor last for the life of the Project.

If illegal or inappropriate activities were conducted in the SRBOP, they could have adverse impacts to vegetation communities. For example, the use of roads by unauthorized vehicles could result in direct disturbance to vegetation communities. In addition, the dumping of trash in the SRBOP could result in introduction or increased rate of spread by invasive plants species. These activities could also increase the risk of wildfires occurring in the SRBOP, which would impact vegetation communities. As a result, the increase in law enforcement funding meant to limit or prevent these activities may result in the enhancement of vegetation communities in the SRBOP, depending on the extent that these activities currently occur in the area. However, it is not certain if these activities actually occur in the SRBOP, or if they do occur, at what frequency. As a result, because the current baseline conditions of the area (i.e., if these activities occur or how often they occur) cannot be identified at this time, a determination of this proposal's ability to enhance the objects and values for which the SRBOP was established cannot be made.

Visitor Enhancement

The Proponents' proposal contains a proposal to fund programs meant to enhance the experiences of visitors to the SRBOP. The Oversight Committee (which has not been established or identified to date; see previous discussion above) would be responsible for selecting the programs that would be funded; however, the Proponents' proposal offers the following as examples of programs that could be funded include:

- The "Raptor Camp," which provides an opportunity for the public to learn the values of natural resources in the SRBOP;
- Public service announcements and educational materials that educate the public and promote responsible use of the SRBOP; or
- Cultural resource education programs.

This proposal is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute.

The Proponents have indicated that all efforts proposed under this program are intended to apply to enhancement of the SRBOP (with no mitigation component).

Enhancement of the visitor experience is an important component of the SRBOP, and the visitor experience is called out specifically in the SRBOP's enabling statute (see Section 4 of P.L. 103-64 "Management and Use"). However, it would not have a direct impact to vegetation communities. Visitor enhancement programs that contain an educational component aimed at the importance of natural resources in the area could have indirect long-term beneficial impacts by promoting the public's interest in protecting vegetation resources. Because the exact programs that would be funded have not been identified to date, a determination of this proposal's ability to enhance the objects and values for which the SRBOP was established cannot be made.

Line and Substation Removal

The Proponents have proposed to remove some existing infrastructure within the SRBOP. This includes:

- Removing approximately 7 miles of existing 46-kV line on BLM-managed lands, from the Bowmont Substation to Gage Substation;
- Constructing an approximately 1-mile-long section on private land to connect the remaining portion of the line to the Idaho Power system;
- Reconstructing 3.9 miles of existing 12.5-kV lines, including 0.25 mile on BLM-managed lands;
- Converting approximately 4 miles of the existing 46-kV line on BLM-managed lands between the Gage and Ferry substations to a 12.5-kV distribution line; and
- Removing the existing Gage Substation and associated equipment/apparatus, which are on BLM-managed land.

Although not specifically addressed or called-out in the SRBOP's enabling statute, this proposal does not contradict the objectives and goals of the BLM's RMP or the SRBOP's enabling statute.

The Proponents have indicated that all efforts proposed as part of the line and substation removal effort are intended to apply to enhancement of the SRBOP (with no mitigation component).

The work necessary to remove the existing line and substation, as well as reconstruct or reconnect the existing lines, would result in short-term disturbances to vegetation, including disturbance to sagebrush (primarily disturbed sagebrush), grassland (primarily disturbed grassland), as well as small amounts of greasewood shrubland, developed/disturbed areas, and agriculture land (Appendix D, Tables D.6-2 and D.6-5). Minor amounts (less than 3 acres total impacts) of long-term disturbance would occur to disturbed sagebrush, disturbed/developed, and agricultural vegetation communities from reconstruction of existing 12.5-kV lines and conversion of an existing 46-kV line to a 12.5-kV line. The short-term effects of this effort would be similar to the effects that would occur during the construction of the Project (see Section 3.6.2.2) as similar construction equipment and personnel would likely be used. All BMPs and EPMs (see Table 2.7-1 of the FEIS) implemented during construction would also need to be applied during the removal of these existing lines and substations in order to minimize the impacts that could occur to vegetation communities.

The removal of these existing lines and substations could enhance vegetation communities in the area, by removing the disturbance footprint of these structures from the SRBOP, as long as sufficient BMPs (e.g., revegetation) and weed control methods are implemented (as described for construction of the Project).

3.6.2.6 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

Summary of Remaining Impacts

After implementation of the EPMs and MEP discussed above, some Project-related impacts would likely remain. The impact assessment found in Sections 3.6.2.2, 3.6.2.3, and 3.6.2.4 incorporates the avoidance and minimization contributions of the EPMs in the impact analysis; as a result, Sections 3.6.2.2, 3.6.2.3, and 3.6.2.4 take these measures and their impact offsets into consideration. The design features outlined in the Proponents' proposal (discussed above) may reduce the magnitude of impacts to some degree (thereby reducing the need for additional compensatory mitigation); however, the extent of this reduction cannot be fully quantified at this time (as discussed in detail above).

Note that Sections 3.6.2.2, 3.6.2.3, and 3.6.2.4 outline the current extent of known impacts that would occur Project-wide, as well as those that would be unique to the SRBOP.

BLM Compensatory Mitigation Categories

In addition to the design features and EPMs meant to avoid and minimize impacts to vegetation communities (as described above in Section 3.6.2.5 and as listed in Table 2.7-1 of the FEIS), the Framework for Compensatory Mitigation for and Monitoring of Unavoidable Impacts to Waters of the U.S. (Appendix C-2 of the FEIS) was required by the ROD for Segments 1–7 and 10 to compensate and mitigate for impacts to wetland and riparian areas that would remain once the avoidance and minimization measures were fully implemented. This plan would be applicable to Segments 8 and 9, if approved. This plan is discussed in detail within Section 3.9 of this SEIS, and is available to the public in the planning record. Below is a brief summary of this plan.

- The Framework for Compensatory Mitigation for and Monitoring of Unavoidable Impacts to Waters of the U.S. Plan outlined: 1) the regulations and statues that govern wetlands and waters of the U.S.; 2) the avoidance and minimization measures that would be implemented to reduce the total impacts to wetlands and waters of the U.S.; 3) a preliminary estimation of impacts to waters of the U.S.; 5) and the framework for how unavoidable impacts to wetlands would be compensated for. The types of mitigation projects and efforts that would be implemented as part of this plan include: 1) providing funding to a mitigation bank; 2) providing funding to an in-lieu fee program; or 3) the Proponents would conduct their own wetland restoration and mitigation projects.

The compensatory wetland mitigation, as required by the Section 404 process and regulated by the USACE, would ensure that all permanent impacts to wetlands under the jurisdiction of the USACE would be fully compensated for. As a result, although the exact components and features of the wetland mitigation plan have not been finalized, the final plan would be required to fully compensate for all impacts to jurisdictional wetlands and waters of the U.S.

The BLM may require additional mitigation for some remaining impacts of the Project on environmental resources (including impacts that occur outside of the SRBOP), per the guidelines found in the BLM Regional Mitigation Manual (BLM 2013c) and DOI Manual 600 DM 6, *Implementing Mitigation at the Landscape-scale* (DOI 2015). Mitigation for residual Project-related impacts that would occur within the SRBOP is discussed below.

The BLM will continue to work with applicable stakeholders to identify the impacts that would remain on the SRBOP after implementation of the EPMs and MEP, as well as the existing compensatory mitigation plans discussed above. The BLM will then design a mitigation plan that addresses these applicable remaining impacts (see Section 3.0 for a discussion of the BLM's policy regarding mitigation). This plan will contain components that will ensure that impacts to resources and values on the SRBOP that require mitigation are fully compensated for, as well as that enhancement of these resources is provided in order to comply with the enabling statue of the SRBOP. Based on internal and external scoping, the BLM is considering eight mitigation categories (see Section 2.6.2 in Chapter 2). The following mitigation categories are being considered to address remaining impacts to vegetation resources within the SRBOP:

- Implement habitat/vegetation restoration efforts;
- Evaluate, maintain, enhance, or expand fuels management/fuel breaks;
- Increase wildfire preparedness and suppression;
- Increase applied research and monitoring to inform adaptive management; and
- Acquire private lands as deemed appropriate by the Authorizing Officer.

Appendix K contains a Conceptual Mitigation Model that the BLM may follow when calculating habitat restoration treatment–related mitigation requirements.

3.7 SPECIAL STATUS PLANTS

This section addresses the potential impacts to special status plant species from the Segment 8 and 9 Revised Proposed Routes; FEIS Proposed Route 9; Routes 8G, 8H, and 9K; and the Toana Road Variations to the Segment 9 Revised Proposed Route. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). These species include threatened, endangered, and candidate species designated under the ESA, those listed by the BLM as Sensitive, and Idaho Natural Heritage Program species of concern. For discussion purposes where appropriate, these various groups will be referred to collectively as threatened, endangered, and sensitive (TES) plant species or as special status plant species. Effects associated with the routes analyzed in the 2013 FEIS were disclosed in that document. With the exception of FEIS Proposed 9, those FEIS routes are not being re-analyzed here, as only new information is included in this resource-specific section.

TES wildlife and fish species are discussed in Section 3.11 – Special Status Wildlife and Fish Species.

3.7.1 Affected Environment

3.7.1.1 Analysis Area

The Analysis Area used to define and address the existing environment and potential impact area is described in detail within the FEIS. The extent of the Analysis Area that was used for this SEIS is restricted to that portion of the Analysis Area crossed by Segments 8 and 9; therefore, not all TES plant species discussed in the FEIS would be affected by the routes being considered in this SEIS. As a result, TES plant species not found within the Analysis Area for Segments 8 and 9 (but which may be included in the FEIS for other segments' Analysis Areas) are not be discussed or analyzed in this document (see Section 3.7.1.4 for additional details).

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Portions of the Project would cross through the SRBOP. As a result, this section will discuss TES plant species and potential impacts to TES plant species that would occur on the SRBOP. TES plant species are one of the environmental resources and values for which the SRBOP was established to manage and protect.

3.7.1.2 Issues Related to Special Status Plants

Issues related to vegetation communities, noxious weeds and invasive plants, and Special Status Wildlife Species are discussed in Sections 3.6 – Vegetation Communities, 3.8 – Invasive Plant Species, and 3.11 – Special Status Wildlife and Fish Species, respectively.

The following special status plant species-related issues were brought up by the public during public scoping (Tetra Tech 2009) or in comments on the DEIS, raised by federal and state agencies during scoping and agency discussions, or are issues that must be considered as stipulated in law or regulation:

- The effects to endangered and threatened species, both individuals and populations;

- The effects from changes in habitat for TES plants;
- The effect of the potential spread of noxious weeds on special status plants; and
- Whether hydrology would be altered in occupied habitat for TES species associated with wetlands and what effect the alteration would have on those species.

We reviewed the scoping comments received for this SEIS and determined that the special status plant-related issues considered in the FEIS are still relevant to the SEIS. In addition, the following special status plant species issues, which were raised during SEIS scoping, is applicable to Segments 8 and 9:

- The effects to slickspot peppergrass populations and habitat within the SRBOP.
- Impacts to the values for which the SRBOP was established to manage and protect, which includes TES plant species.

3.7.1.3 Methods

The Special Status Plants section in the 2013 FEIS discusses the existing environmental conditions, in relation to special status plant species that could be impacted by the Project, as well as the methods that were used to assess potential Project related impacts to special status plant species. We reviewed the data, analysis methods, and regulatory requirements in the FEIS and concluded that they are still valid for this SEIS. No significant new data were identified for TES plant species in the Analysis Area, with the exception of some new/updated datasets. The following new/updated GIS datasets were used in the SEIS analysis:

- Idaho Fish and Wildlife Information System (IDFG 2014)
- Idaho Fish and Wildlife Office – Official Idaho Species List (USFWS 2015a)
- USFWS Critical Habitat Portal (USFWS 2015b)
- BLM Databases (BLM 2014)

These new data were incorporated into the analysis and were used as part of the impact assessment methods (methods are described in detail within Section 3.7.1.4 of the FEIS).

The FEIS Proposed 9 route is included in three of the BLM action alternatives considered in this SEIS (i.e., Alternatives 2, 4, and 6). The impact values related to FEIS Proposed 9 have been reanalyzed using the data that has become available since the publication of the FEIS (see the list of new data above). As a result, the impact values reported in the FEIS for FEIS Proposed 9 may differ from what is reported in this SEIS in some instances.

3.7.1.4 Existing Conditions

This section discusses the TES plant species that could potentially be present within the Analysis Area for Segments 8 and 9.The TES plant species described in the FEIS that could potentially be present in the Analysis Area for Segments 8 and 9, and which are included in this SEIS, are listed below.

ESA-listed and Candidate Plant Species

There are no threatened, endangered, and candidate plant species listed under the ESA that could potentially occur within or in close proximity (within 5 miles) of the Analysis Area. However, slickspot peppergrass (*Lepidium papilliferum*), which the USFWS proposes to reinstate threatened status for, could potentially occur in the Analysis Area.

Slickspot peppergrass was listed as threatened under the ESA on October 8, 2009 (74 *Federal Register* 52014). On August 8, 2012, the Idaho District Court vacated and remanded the USFWS decision to list slickspot peppergrass. On February 12, 2014, the USFWS proposed to reinstate threatened status for slickspot peppergrass under the ESA (79 *Federal Register* 8416-8428). On April 21, 2014, the USFWS reopened the public comment period on the reconsideration of the final rule to list slickspot peppergrass as threatened (79 *Federal Register* 22076-22077). Until further notice, the BLM will continue to conference with the USFWS and will treat slickspot peppergrass as a species proposed for listing.

On May 10, 2011, the USFWS published a proposed rule in the Federal Register for designation of critical habitat for slickspot peppergrass (76 *Federal Register* 27184-27215). On February 12, 2014, the USFWS amended the proposal to designate critical habitat for slickspot peppergrass and expand critical habitat for the plant by 4,261 acres (79 *Federal Register* 8402-8413). The 61,301 acres of habitat would be located in Idaho's Ada, Elmore, Gem, Owyhee and Payette Counties. On April 21, 2014, the USFWS reopened the public comment period on the revised proposed rule to designate critical habitat for slickspot peppergrass (79 *Federal Register* 22077).

This species occurs in semi-arid, sagebrush-steppe habitats of the Snake River Plain and adjacent foothills in southwestern Idaho and the Owyhee Plateau in south-central Idaho. It occurs only in slickspot microsites, which have soils much higher in clay content and significantly higher in sodium than adjacent areas. These areas have frequent ponding during winter and early spring, and stay moist a few weeks longer than surrounding soils (Fisher et al. 1996; Meyer and Allen 2005; Palazzo et al. 2008).

In addition to tracking known occurrences of the species, the BLM defines three habitat categories for slickspot peppergrass: potential habitat, occupied habitat, and slickspot peppergrass habitat. These categories are defined in Section 3.7.2.2 of the FEIS.

The Revised Proposed Route for Segment 8 would cross approximately 0.3 mile of known occurrences, 7.5 miles of occupied habitat, 31.1 miles of slickspot peppergrass habitat, 18.7 miles of potential habitat, and 0.8 mile of proposed critical habitat (Table 3.7-1). Routes 8G and 8H would cross approximately 0.8 and 0.4 mile, respectively, of potential habitat for slickspot peppergrass. The Revised Proposed Route and the FEIS Proposed Route for Segment 9 would each cross approximately 0.4 mile of potential habitat for slickspot peppergrass and Route 9K would cross approximately 0.8 mile of potential habitat for slickspot peppergrass. Neither of the Toana Road Variations, or the comparison portion of Segment 9, would cross slickspot peppergrass occupied habitat, potential habitat, or critical habitat.

Table 3.7-1. Miles of Slickspot Peppergrass Occurrences and Habitat along the Revised Proposed Routes[1/]

Proposed Route[1/]	Known Occurrence (Miles)[2/]	Occupied Habitat (Miles)	Slickspot Peppergrass Habitat (Miles)	Potential Habitat (Miles)	Proposed Critical Habitat (Miles)
Revised Proposed Route Segment 8	0.3[3/]	7.5[4/]	31.1	18.7	0.8
Revised Proposed Route Segment 8 - 500-kV Line Removal	–	–	–	0.2	–
Route 8G	–	–	–	0.8	–
Route 8H [5/]	–	–	–	0.4	–
Revised Proposed Route Segment 9 [5/]	–	–	–	0.4	–
FEIS Proposed Route Segment 9	–	–	–	0.4	–
Route 9K	–	–	–	0.8	–

1/ Neither Toana Road Variation or the comparison portion of Segment 9 for the Toana Road Variations would cross slickspot peppergrass habitat.
2/ Only acres of impacts to extant occurrences included; extirpated occurrences not included.
3/ Known occurrences along proposed route include approximately 0.3 mile of an element occurrence with a “C” ranking (50-399 detectable genets; fair viability) and less than 0.1 mile of an element occurrence with an “F” ranking (failed to find).
4/ Occupied habitat includes areas of known occurrences.
5/ The 138-kV and 500-kV line removal along routes 8G, 8H and the Revised Proposed Route for Segment 9 would not cross slickspot peppergrass habitat.

Maps showing slickspot peppergrass occupied habitat, potential habitat, and proposed critical habitat are provided in Appendix E, Figures E.7-1 and E.7-2.

Other Special Status Plant Species

There are a number of other special status plant species that could occur within or near the Analysis Area for Segments 8 and 9. These include BLM Special Status Plants (Types 1-4), as well as species of concern listed by the Idaho Natural Heritage Program, and Idaho Native Plant Society. Table 3.7-2 lists the species with known occurrences or modeled occurrences (based on agency data; see Section 3.7.1) located within 5 miles of the Analysis Area for the Segments 8 and 9. As discussed in Section 3.7.1.5 of the FEIS, in some cases known occurrences may represent historic locations where the species are no longer present; furthermore, additional special status plant species may be present within the Analysis Area but are currently undiscovered and would, therefore, not be included in known occurrence data used for this assessment. Pre-construction surveys may discover other special status plant species within the Analysis Area in addition to those listed in Table 3.7-2.

Table 3.7-2. Other Special Status Plant Species Known to Occur Within 5 Miles of the Analysis Area

Species	Status[2/]		General Habitat	Segments with Nearby Known Occurrence or Habitat[1/]	
	BLM[3/]	State Heritage Programs[4/]		Within 0.5 Mile of the Analysis Area	Within 5 Miles of the Analysis Area
Twinleaf onion, Kellogg's onion, Two-headed onion *(Allium anceps)*	4	SC	Low sagebrush	Mapped: 9	Mapped: 9
Mourning milkvetch (*Astragalus atratus* var. *inseptus)*	4	SC	Sagebrush	Mapped: 8	Mapped: 8
Stiff milkvetch *(Astragalus conjunctus)*	4	SC	Sagebrush	None	Mapped: 8, 9
Mulford's milkvetch (*Astragalus mulfordiae)*	2	SC	Sagebrush, saltbush	Mapped: 8, 9	Mapped: 8, 9
Newberry's milkvetch (*Astragalus newberryi* var. *castoreus)*	4	SC	Sagebrush	Mapped: 8, 9	Mapped: 8, 9
Picabo milkvetch (*Astragalus oniciformis*)	3	SC	Sagebrush	None	Mapped: 8
Snake River milkvetch *(Astragalus purshii* var. *ophiogenes)*	4	SC	Sands and gravelly sands	Mapped: 8, 9	Mapped: 8, 9
King's desertgrass (*Blepharidachne kingii*)	3	SC	Rocky basin floors; Saltbush	None	Mapped: 8, 9
Compact earth lichen (*Catapyrenium [Heteroplacidium] congestum*)	4	SC	Saltbush	Mapped: None	Mapped: 8, 9
Desert pincushion (*Chaenactis stevioides*)	4	SC	Sagebrush	Mapped: 8, 9	Mapped: 8, 9
Alkali cleomella (*Cleomella plocasperma*)	3	SC-historic	Greasewood	Mapped: 8, 9	Mapped: 8, 9
Greeley's wavewing (*Cymopterus acaulis* var. *greeleyorum*)	3	SC	Sagebrush	Mapped: 8, 9	Mapped: 8, 9
Shining flatsedge (*Cyperus bipartitus*)	4	SC	Wetlands, shores	Mapped: 8, 9	Mapped: 8, 9
Howell dimersia (*Dimeresia howellii*)	3	SC	Dry rocky soil of foothills and low mountains	None	Mapped: 8, 9
White eatonella (*Eatonella nivea*)	4	SC	Sagebrush, saltbush	Mapped: 8, 9	Mapped: 8, 9
Giant helleborine (*Epipactis gigantea*)	3	SC	Riparian, wetlands	Mapped: 8, 9	Mapped: 8, 9
Calcareous buckwheat (*Eriogonum ochrocephalum* var. *calcareum*)	3	SC	Saltbush	Mapped: 8, 9	Mapped: 8, 9
Packard's buckwheat (*Eriogonum shockleyi* var. *packardiae*)	4	SC	Sagebrush, saltbush	Mapped: 8, 9	Mapped: 8, 9

Table 3.7-2. Other Special Status Plant Species Known to Occur Within 5 Miles of the Analysis Area (continued)

Species	Status[2]		General Habitat	Segments with Nearby Known Occurrence or Habitat[1]	
	BLM[3]	State Heritage Programs[4]		Within 0.5 Mile of the Analysis Area	Within 5 Miles of the Analysis Area
Matted cowpie buckwheat (*Eriogonum shockleyi* var. *shockleyi*)	4	SC	Sagebrush, saltbush	Mapped: 8, 9	Mapped: 8, 9
White-margined wax plant (*Glyptopleura marginata*)	4	SC	Saltbush, greasewood	Mapped: 8, 9	Mapped: 8, 9
Spreading gilia (*Ipomopsis polycladon*)	3	SC	Sagebrush,	Mapped: 8, 9	Mapped:8, 9
Davis' peppergrass (*Lepidium davisii)*	3	SC	Playas, sagebrush	Mapped: 9	Mapped: 9
Slickspot peppergrass *(Lepidium papilliferum)*	2	SC	Slickspots in semi-arid sagebrush-steppe	Mapped: 8	Mapped: 8, 9
Bruneau River prickly phlox *(Linanthus* [*Leptodactylon*] *glabrum)*	3	SC	Cliffs	Mapped: 8, 9	Mapped: 8, 9
Packard's desert-parsley (*Lomatium packardiae*)	2	SC	Sagebrush	Mapped: 8	Mapped: 8
Rigid threadbush (*Nemacladus rigidus*)	4	SC	Shadscale, sagebrush	Mapped: 8, 9	Mapped: 8, 9
Simpson's hedgehog cactus (*Pediocactus simpsonii*)	4	SC	Dry or rocky soils	Mapped: 8, 9	Mapped; 8, 9
Janish's penstemon (*Penstemon janishiae*)	3	SC	Low sagebrush	Mapped: 8, 9	Mapped: 8, 9
Spine-noded milkvetch *(Peteria thompsoniae*)	4	SC	Saltbush; Sagebrush Volcanic substrates	Mapped: 8, 9	Mapped: 8, 9
Malheur yellow phacelia (*Phacelia lutea* var. *calva*)	3	SC	Volcanic substrates	Mapped: 8, 9	Mapped: 8, 9
Annual brittlebrush (*Psathyrotes annua*)	3	SC	Saltbush	Mapped: 8, 9	Mapped: 8, 9
King's snapdragon (*Sairocarpus [Antirrhinum] kingii*)	3	SC	Pinyon-juniper woodland; washes in sagebrush and saltbush	Mapped: 8, 9	Mapped: 8, 9
Malheur prince's plume (*Stanleya confertiflora*)	2	SC	Saltbush	None	Mapped: 8, 9
American wood sage *(Teucrium canadense* var. *occidentale)*	4	SC	Riparian/ wetland	Mapped: 8, 9	Mapped: 8, 9

Table 3.7-2. Other Special Status Plant Species Known to Occur Within 5 Miles of the Analysis Area (continued)

Species	Status[2/]		General Habitat	Segments with Nearby Known Occurrence or Habitat[1/]	
	BLM[3/]	State Heritage Programs[4/]		Within 0.5 Mile of the Analysis Area	Within 5 Miles of the Analysis Area
Wovenspore lichen (*Texosporium sancti-jacobi*)	2	SC	Sagebrush, disturbed sagebrush	Mapped: 8	Mapped: 8, 9

1/ Source for distribution: GIS data from Idaho Conservation Data Center (CDC) (IDFG 2014).
2/ Source of status: BLM 2015c; IDFG 2014.
3/ BLM Definitions:
Type 1-Federally listed Threatened or Endangered Species and Designated Critical Habitat
Type 2- Rangewide/Globally Imperiled Species-High Endangerment - These are species that have a high likelihood of being listed in the foreseeable future due to their global rarity and significant endangerment factors. Species also include; USFWS Proposed and Candidate species, ESA species delisted during the past 5 years, ESA Experimental Non-essential species, and ESA Proposed Critical Habitat.
Type 3 - Range-wide or State-wide Imperiled - Moderate Endangerment - These are species that are globally rare or very rare in Idaho, with moderate endangerment factors. Their global or state rarity and the inherent risks associated with rarity make them imperiled species.
Type 4- Species of Concern - These are species generally rare in Idaho with small populations or localized distribution and currently have low threat levels. However, due to the small populations and habitat area, certain future land uses in close proximity could significantly jeopardize these species.
4/ SC = species of concern tracked by Idaho CDC.

3.7.2 Direct and Indirect Effects

This section is organized to present effects to TES plant species from construction, operations, and decommissioning activities for the proposed Project.

The Proposed Action includes many EPMs intended to minimize impacts to biological resources including TES plants. A comprehensive list of all Project design features and EPMs, as well as the land ownership to which they apply, can be found in Table 2.7-1 of Chapter 2 of the FEIS. The following impact assessment takes these Project design features and EPMs into account when considering the potential impact that the Project could have on TES plant species.

Plan Amendments

Amendments are needed to permit the Project to cross various areas of BLM-managed land. Amendments to the BLM RMPs and MFPs are summarized for each alternative in Table 2.3-1 (see Chapter 2 for more details). BLM plan amendments are discussed in detail in Appendices F and G. The effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved. Amendments that alter land management designations could change future use of these areas.

The Segments 8 and 9 Revised Proposed Routes, FEIS Proposed 9, as well as Routes 8G, 8H, and 9K would cross potential slickspot peppergrass habitat. While implementation of the EPMs identified in Table 2.7-1 of the FEIS and described in Section 3.7.2.2 of the FEIS would avoid or minimize adverse impacts to slickspot peppergrass, the SRBOP's RMP requires that "surface disturbing activities be located at least 0.5 mile from occupied sensitive plant habitat." Therefore, an amendment is proposed to allow the project within 0.5 mile of occupied sensitive plant habitat (SEIS-15). This amendment would apply to all alternatives within the SRBOP.

3.7.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West for Segments 8 and 9 and this portion of the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of these segments. No Project-related impacts to TES plant species would occur in the Analysis Area for these segments; however, impacts would continue as a result of natural events (such as fire, drought, and severe weather) as well as from existing and planned developments within the Analysis Area and from other projects, including wind farms, mining, agricultural, or other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project and the region would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, impacts similar to those described below may occur due to new transmission lines built to meet the increasing demand in place of this Project.

3.7.2.2 Effects Common to All Routes

Construction and Operations

The general impacts that would occur to TES plant species from construction and operations of the Gateway West Project were analyzed in detail within Section 3.7.2.2 of the FEIS. These impacts include direct effects (e.g., crushing or removal of plants, and direct loss of habitat), as well as indirect effects (e.g., fragmentation of suitable habitat; alteration of fire regimes; increased competition from early successional plant species; increased competition by herbivores in newly disturbed areas; introduction or spread of invasive exotic species; isolation of subpopulations due to physical separation by access roads or transmission infrastructure; increased erosion; and alteration of habitat microclimates or hydrology).

We have reviewed Section 3.7.2.2 of the FEIS and determined that general impacts to TES plant species that could potentially occur, as well as the relevant assessment of general impacts to TES plant species considered in the FEIS, have not changed. As a result, these general impacts will not be re-stated in this SEIS (see Section 3.7.2.2 of the FEIS for a description of the general impacts that could occur to TES plant species as a result of the Project).

The assessment of quantitative impacts specifically related to the routes and alternatives that are included in this SEIS is presented in Sections 3.7.2.3 and 3.7.2.4. The assessment of potential impacts to TES plant species related to the MEP, as well as a list of additional mitigation measures that may be required by the BLM related to impacts on the SRBOP, are presented in Section 3.7.2.5 and 3.7.2.6.

Impacts on Federally Managed Lands

Federal land management agencies have established goals and objectives related to the protection and enhancement of TES plant populations and their habitat. The assessment of potential Project-related impacts to TES plants under the routes and alternatives that are included in this SEIS and listed below is based on the current state

of knowledge regarding the distribution of TES plant species and the preliminary Project design, which is likely to change as a result of refinements made to the location of facilities during final design and new information on occurrences of these species. Pre-construction surveys (EPM TESPL-3) would focus on areas with known populations of TES plant species and areas of suitable habitat. This would ensure that the Project is in compliance with the ESA and with BLM-specific policies regarding avoiding and minimizing effects to TES plant species.

Based on the results of these pre-construction surveys, the ROW route would either be modified to avoid suitable habitat of TES plant species, or additional agency-approved conservation measures would be identified as necessary to minimize impacts in areas where suitable habitat cannot be completely avoided (see the Framework Plant and Wildlife Conservation Measures Plan in Appendix B of the FEIS). Surface disturbance would be allowed in suitable habitat where species-specific surveys (conducted on all lands for ESA-listed and candidate species and federal lands for other special status species) have determined that no populations of TES plants are present. Indirect impacts could occur to all populations and habitat especially through degradation of habitat by invasive plant species; however, these impacts would be minimized through the Project's Framework Reclamation Plan (see Appendix B of the FEIS), which would include pre-construction, construction, and post-construction weed control measures.

Slickspot peppergrass is the only species proposed for federal listing known to occur within the Analysis Area for the Segment 8 and 9 Revised Proposed Routes, other routes (8G, 8H, and FEIS Proposed 9, 9K), as well as the Toana Road Variations. The determinations of effect for slickspot peppergrass, assuming implementation of avoidance and mitigation measures, are summarized in Table 3.7-3. The Proponents are currently conferencing with the USFWS under Section 7 of the ESA regarding slickspot peppergrass and proposed designated critical habitat for slickspot peppergrass. The Biological Assessment (BA), prepared for the Project, includes a more detailed discussion of impacts to slickspot peppergrass from Project construction and operation (Tetra Tech 2013). For BLM sensitive species, with implementation of EPMs, the Project could affect individuals but is not likely to contribute towards a trend toward federal listing or loss of viability.

Table 3.7-3. Impacts to Slickspot Peppergrass from the Segment 8 and 9 Revised Proposed Routes, Other Routes, and Route Variations

Segment Number	Route or Variation	Effect Determination
8	Revised Proposed Route	May affect, likely to adversely affect
	Revised Proposed Route – Existing 500-kV Removal	May affect, not likely to adversely affect
	Route 8G	No effect
	Route 8H	No effect
9	Revised Proposed Route	No effect
	Revised Proposed Route– Existing 138-kV Removal	No effect
	FEIS Proposed Route	No effect
	Route 9K	No effect
	Revised Proposed Route – Comparison portion for Toana Road Variations 1/1-A	No effect
	Toana Road Variation 1	No effect
	Toana Road Variation 1-A	No effect

Decommissioning

Project facilities would be removed at the end of the operational life of the transmission line. Structures and foundations would be removed to below the ground surface level. Removal of Project structures following decommissioning may result in temporary impacts to ESA-listed and candidate species, if present in close proximity to the facilities being removed. Re-initiation of consultation with the USFWS would be needed if any ESA-listed or candidate species, including any newly listed or delisted species, is located near a facility proposed for decommissioning. To determine the location of any such plant species near Project components and to limit potential impacts to these species, the EPMs identified in the construction and operations phases would be applied prior to decommissioning. Additional details concerning decommissioning are provided in Appendix B of the FEIS.

3.7.2.3 Direct and Indirect Effects by Route

This section assesses the impacts to TES plant species from Project construction and operations of the Revised Proposed Routes, the other routes (8G, 8H, FEIS Proposed 9, and 9K), as well as the Route Variations (this section generally corresponds to Section 3.7.2.3 of the FEIS). As identified in EPM TESPL-3, Agency botanists may evaluate individual sites based on site-specific conditions and documentation of the evaluation of avoidance of impacts to sensitive and globally rare plants must be provided to the agencies prior to construction. For these reasons, the discussion below should be interpreted as highlighting potential effects of the Project, indicating where surveys and other pre-construction Agency coordination efforts would be focused.

Segment 8

Revised Proposed Route

The Segment 8 Revised Proposed Route would link the existing Midpoint and Hemingway Substations (see Figure A-1). This 129.7-mile single-circuit 500-kV transmission line would stay north of the Snake River until it crosses just north of Guffey Butte, generally parallel to an existing 500-kV transmission line, before ending at the Hemingway Substation. This route is similar to the original proposed route in the 2013 FEIS except that the line would be 250 feet north of the existing 500-kV line rather than 1,500 feet south of the line from the eastern boundary of the SRBOP (MP 99.7) to the Hemingway Substation. The first 91.4 miles of the route is unchanged from the 2013 FEIS Proposed Route along Segment 8.

ESA-Proposed Species

The Segment 8 Revised Proposed Route, as indicatively sited, would directly impact a total of approximately 5 acres of known occurrences of slickspot peppergrass during construction and less than 1 acre during operations (Table 3.7-4). Occupied habitat for slickspot peppergrass would also be directly affected during construction and operations under the Segment 8 Revised Proposed Route (149 acres during construction, of which 16 acres would be impacted during operations). Additionally, the Segment 8 Revised Proposed Route would also impact slickspot peppergrass habitat (512 acres during construction, of which 54 acres would be impacted during operations), and potential

habitat (355 acres during construction, of which 40 acres would be impacted during operations).

Table 3.7-4. Potential Impacts to Slickspot Peppergrass Occurrences and Habitat along Segment 8

Route or Activity	Acres Known Occurrence[1/]		Acres Occupied Habitat[2/]		Acres Slickspot Peppergrass Habitat		Acres Potential Habitat		Acres Proposed Critical Habitat	
	Const	Op[3/]	Const	Op[3/]	Const	Op[3/]	Const	Op[3/]	Const	Op[3/]
Segment 8 Revised Proposed Route	5 [3][4/]	<1 [<1][4/]	149 [30]	16 [4]	512 [146]	54 [14]	355 [34]	40 [3]	17 [10]	4 [2]
Segment 8 Revised Proposed Route - 500-kV Line Removal	–	–	–	–	–	–	1 [1]	–	–	–
Route 8G[5/]	–	–	–	–	–	–	9	1	–	–
Route 8H[5/]	–	–	–	–	–	–	7 [7]	<1 [<1]	–	–

Note that values in "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP.

1/ Only acres of impacts to extant occurrences included; extirpated occurrences not included.

2/ Occupied habitat includes areas of known occurrences.

3/ The acres of construction impacts include the areas where impacts from operations would occur; therefore, to avoid double counting, acres of impacts from construction and operation listed in the table should not be added together.

4/ Impacts to known occurrences include:

- 3 acres to element occurrences with a "C" ranking (50-399 detectable genets; fair viability)
- Less than 1 acre to element occurrences with a "B" ranking (400-999 detectable genets; good estimated viability)
- Less than 1 acre to element occurrences with an "F" ranking (failed to find).

5/ There are no potential impacts to slickspot peppergrass from the 138-kV or 500-kV Line Removals along Route 8G or 8H; therefore, they are not included in the table.

Impacts to slickspot peppergrass on BLM-managed land within the SRBOP along the Segment 8 Revised Proposed Route include impacts to known occurrences (3 acres during construction, of which less than 1 acre would be impacted during operations); impacts to occupied habitat (30 acres during construction, of which 4 acres would be impacted during operations); impact to slickspot peppergrass habitat (146 acres during construction, of which 14 acres would be impacted during operations); impacts to potential habitat (34 acres during construction, of which 3 acres would be impacted during operations); and impacts to proposed critical habitat (10 acres during construction, of which 2 acres would be impacted during operations). Impacts to known occurrences of slickspot peppergrass include less than 1 acre of impacts to element occurrences ranked as F (failed to find) and B (good estimated viability) and 3 acres of impacts to element occurrences ranked as C (fair viability).

Construction standards and practices consistent with the Candidate Conservation Agreement between the BLM and the State of Idaho would be implemented on BLM-managed lands along Segment 8 that cross the slickspot peppergrass element occurrences, including the 3 acres of impacts on BLM-managed lands within the SRBOP along the Revised Proposed Route. This would be accomplished through implementation of EPMs TESPL-3 and TESPL-4.

As noted above, impact acreages are based on the preliminary Project design. Pre-construction clearance surveys would be conducted for slickspot peppergrass consistent with established protocols to microsite Project facilities to avoid or minimize impacts to plants or habitat. Additionally, as described in EPM TESPL-4, environmental

monitors will survey for and mark slickspots and aboveground populations of slickspot peppergrass within 50 feet of the construction area prior to ground disturbance (including roads) in potential or occupied slickspot peppergrass habitat. Further, under EPM TESPL-4, no construction shall occur within 50 feet of any slickspot peppergrass plants or slickspots located by the environmental monitor or within 50 feet of known occurrences of slickspot peppergrass (based on BLM and Idaho Natural Heritage data) even if aboveground plants are not observed during the surveys.

Construction and operations of the Segment 8 Revised Proposed Route could result in indirect impacts to slickspot peppergrass due to the introduction and spread of noxious weeds or invasive plant species. However, these effects would be minimized through implementation of the Project's Framework Reclamation Plan (Appendix B of the FEIS), which would include measures such as reseeding of disturbed areas outside of slickspots and post-construction monitoring of revegetated areas to ensure establishment of seeded plants. Additionally, under EPM TESPL-4, seeding during reclamation in areas of suitable habitat will use methods that minimize soil disturbance, reclamation will use certified weed-free native seed, and excess soils will not be stored or spread on slickspots.

Despite these measures, a single pre-construction survey could miss slickspot peppergrass populations, and slickspots that do not currently exhibit aboveground plants could still contain this species. Three years of surveys are required in order to determine that habitat is unoccupied by slickspot peppergrass (BLM 2010). However, it is unlikely that these survey requirements could be met in all areas of potential slickspot peppergrass habitat prior to construction. In addition, the Project would not be able to avoid impacting all slickspots or occupied slickspot peppergrass habitat, or the associated native shrub-steppe ecosystem necessary to support sufficient pollinators for this plant (see the Project's BA for additional discussion including avoidance and minimization of impacts to the primary constituent elements of proposed critical habitat). Therefore, construction and operations of the Segment 8 Revised Proposed Route *may affect, and are likely to adversely affect*, slickspot peppergrass.

Proposed critical habitat for slickspot peppergrass would be impacted by the Segment 8 Revised Proposed Route. The Project may also affect proposed critical habitat due to the spread of invasive plants, removal of native vegetation near slickspots, destruction or alteration of slickspots, and impacts to undisturbed suitable habitat for native pollinators. The Proponents are currently conferencing with the USFWS under Section 7 of the ESA, and would continue to do so should critical habitat become designated. Pre-construction surveys would be conducted in all areas of critical habitat (should it become designated) that would be crossed by the Project to avoid and minimize impacts to slickspot peppergrass populations. EPM TESPL-4 and other measures contained in Appendix B of the FEIS would be implemented in all areas of proposed critical habitat, which would minimize Project-related effects.

<u>Other Special Status Plant Species</u>

Construction and operations of the Segment 8 Revised Proposed Route have the potential to directly affect known occurrences of eight other special status plant species (Table 3.7-5). Shining flatsedge would have the greatest number of acres impacted by

the Segment 8 Revised Proposed Route during construction and operations. Pre-construction clearance surveys along the Revised Proposed Route would ensure that these species would be identified and impacts avoided and minimized during construction and operations.

Portions of the Segment 8 Revised Proposed Route would cross the SRBOP. Impacts to four special status plant species (i.e., shining flatsedge, Snake River milkvetch, white-margined wax plant, and wovenspore lichen) would occur on BLM-managed land within the SRBOP during construction and operations of the Segment 8 Revised Proposed Route (Table 3.7-5). The SRBOP's RMP requires that "surface disturbing activities be located at least 0.5 mile from occupied sensitive plant habitat." Therefore, an amendment to the RMP would be required for the Revised Proposed Route to be in conformance with the RMP (see Chapter 2, Section 2.3.5). With the implementation of EPMs related to conducting pre-construction clearance surveys (e.g., TESPL-3), as well as weed control, and reclamation, the Project would avoid or minimize adverse impacts to special status plant populations (including slickspot peppergrass).

Table 3.7-5. Potential Impacts to Other Special Status Plant Species along Segment 8 Revised Proposed Route

Route[2/]	Acres [1/]									
	American Wood Sage		Mourning Milkvetch		Mulford's Milkvetch		Shining Flatsedge		Snake River Milkvetch	
	Const	Op[3/]	Const	Op[3/]	Const	Op[3/]	Const	Op[3/]	Const	Op[3/]
Segment 8 Revised Proposed Route	37	3	6	1	49	3	136 [86]	11 [8]	16 [1]	1 [<1]

Revised Proposed Route or Activity	Acres [1/]					
	White Eatonella		White-margined Wax Plant		Wovenspore Lichen	
	Const	Op[3/]	Const	Op[3/]	Const	Op[3/]
Segment 8 Revised Proposed Route	36	6	5 [5]	<1 [<1]	3 [3]	<1 [<1]

Note that values in "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP.

1/ Data are based on mapped occurrences.

2/ There are no potential impacts to other special status plant species from the 500-kV Line Removal; therefore, it is not included in table.

3/ The acres of construction impacts include the areas where impacts from operations would occur; therefore, to avoid double counting, acres of impacts from construction and operation listed in the table should not be added together.

Route 8G

Route 8G is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows an alignment similar to the ones analyzed for Routes 8A and 9B in the FEIS for approximately 44 miles, although it parallels 250 feet north of the existing 500-kV transmission line rather than1,500 feet to the south in order to avoid the Hagerman Fossil Beds National Monument and development near Hagerman. The route then parallels 250 feet north of the Segment 9 Revised Proposed Route and Route 9K for most of the remaining distance into the Hemingway Substation. The route is 146.9 miles long (including a 1.9-mile rebuild of the existing 500-kV line), compared to the 129.7-mile-long Segment 8 Revised Proposed Route.

ESA-Proposed Species

There are no ESA-listed or candidate species within the Analysis Area for Route 8G; however, Route 8G crosses potential slickspot peppergrass habitat. Route 8G would directly impact approximately 9 acres of potential habitat during construction, of which less than 1 acre would be impacted during operations (Table 3.7-4). There would be no impacts to potential slickspot peppergrass habitat on BLM-managed lands within the SRBOP under Route 8G.

Construction and operations of Route 8G could result in indirect impacts to slickspot peppergrass potential habitat due to the introduction and spread of noxious weeds or invasive plant species; however, these effects would be minimized through implementation of the Project's Framework Reclamation Plan (Appendix B of the FEIS), which would include measures such as reseeding of disturbed areas outside of slickspots and post-construction monitoring of revegetated areas to ensure establishment of seeded plants.

As noted above, impact acreages are based on the preliminary Project design. Pre-construction clearance surveys would be conducted for slickspot peppergrass consistent with established protocols to microsite Project facilities to avoid or minimize impacts to plants or habitat if plants are found during surveys. Additionally, as described in EPM TESPL-4, environmental monitors will survey for and mark slickspots and aboveground populations of slickspot peppergrass within 50 feet of the construction area prior to ground disturbance (including access roads) in potential or occupied slickspot peppergrass habitat. Further, under EPM TESPL-4, no construction shall occur within 50 feet of any slickspot peppergrass plants or slickspots located by the environmental monitor or within 50 feet of known occurrences of slickspot peppergrass (based on BLM and Idaho Natural Heritage data) even if aboveground plants are not observed during the surveys. See the discussion under the Segment 8 Revised Proposed Route for additional details on construction standards and practices and impacts and limitations of pre-construction surveys. Because no known occurrences of slickspot peppergrass would be impacted by construction or operations and with implementation of EPMs TESPL-3 and TESPL-4, construction and operations of Route 8G would have no effect on slickspot peppergrass.

Other Special Status Plant Species

Construction and operations of Route 8G have the potential to directly affect known occurrences of 11 other special status plant species (Table 3.7-6). Construction and operations of Route 8G would have the greatest impacts on white-margined wax plant (133 acres of impacts during construction, of which 17 acres would be impacted during operations). Some of the impacts to three of the special status plant species (i.e., matted cowpie buckwheat, Snake River milkvetch, and white-margined wax plant) would occur on BLM-managed land within the SRBOP during construction and operations of Route 8G (Table 3.7-6).

Table 3.7-6. Potential Impacts to Other Special Status Plant Species along Route 8G

Route[2/]	Acres [1/]											
	Alkali Cleomella		Bruneau River Prickly Phlox		Desert Pincushion		Janish's Penstemon		Matted Cowpie Buckwheat		Mulford's Milkvetch	
	Const	Op[3/]	Const	Op[3/]	Const	Op[3/]	Const	Op[3/]	Const	Op[3/]	Const	Op[3/]
Route 8G	61	7	23	4	9	1	63	9	5 [3]	1 [1]	44	3

Route	Acres [1/]									
	Packard's Buckwheat		Snake River Milkvetch		Spine-noded Milkvetch		White Eatonella		White-margined Wax Plant	
	Const	Op[3/]	Const	Op[3/]	Const	Op[3]	Const	Op[3/]	Const	Op[3/]
Route 8G	16	3	92 [5]	12 [2]	<1	<1	1	<1	133 [2]	17 [<1]

Note that values in "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP.

1/ Data are based on mapped occurrences.

2/ There are no potential impacts to other special status plant species from the 500-kV Line Removal; therefore, it is not included in table.

3/ The acres of construction impacts include the areas where impacts from operations would occur; therefore, to avoid double counting, acres of impacts from construction and operation listed in the table should not be added together.

The SRBOP's RMP requires that "surface disturbing activities be located at least 0.5 mile from occupied sensitive plant habitat." Therefore, an amendment to the RMP would be required for Route 8G to be in conformance with the RMP (Table 2.3-1 in Chapter 2). Pre-construction clearance surveys along Route 8G would ensure that these species would be identified and impacts avoided and minimized during construction and operations. With the implementation of EPMs related to conducting pre-construction clearance surveys (e.g., TESPL-3), as well as weed control, and reclamation, the Project would avoid or minimize adverse impacts to special status plant populations. Therefore, the Project would not preclude the BLM from meeting the SRBOP's goal of emphasizing maintenance, protection, and enhancement of sensitive plant habitats (BLM 2008a, p. 2-7).

Route 8H

Route 8H is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows a combination of portions of the alignments analyzed for Route 8G and the Segment 9 Revised Proposed Route. The route is 137.5 miles long (including a 1.9-mile rebuild of the existing 500-kV line and a 25.7-mile removal and rebuild of a 138-kV line), compared to the 129.7-mile-long Segment 8 Revised Proposed Route. Approximately 44 miles of the route follows the Route 8G alignment; the remainder of Route 8H follows the alignment of the Segment 9 Revised Proposed Route.

<u>ESA-Proposed Species</u>

There are no ESA-listed or candidate species within the Analysis Area for Route 8H; however, Route 8H crosses potential slickspot peppergrass habitat. Route 8H would directly impact approximately 7 acres of potential habitat during construction, of which less than 1 acre would be impacted during operations (Table 3.7-4). All of the impacts to potential slickspot peppergrass habitat would occur on BLM-managed lands within the SRBOP (Table 3.7-4).

Construction and operations of Route 8H could result in indirect impacts to slickspot peppergrass potential habitat due to the introduction and spread of noxious weeds or invasive plant species; however, these effects would be minimized through implementation of the Project's Framework Reclamation Plan (Appendix B of the FEIS), which would include measures such as reseeding of disturbed areas outside of slickspots and post-construction monitoring of revegetated areas to ensure establishment of seeded plants.

As noted above, impact acreages are based on the preliminary Project design. Pre-construction clearance surveys would be conducted for slickspot peppergrass consistent with established protocols to microsite Project facilities to avoid or minimize impacts to plants or habitat if plants are found during surveys. Additionally, as described in EPM TESPL-4, environmental monitors will survey for and mark slickspots and aboveground populations of slickspot peppergrass within 50 feet of the construction area prior to ground disturbance (including access roads) in potential or occupied slickspot peppergrass habitat. Further, under EPM TESPL-4, no construction shall occur within 50 feet of any slickspot peppergrass plants or slickspots located by the environmental monitor or within 50 feet of known occurrences of slickspot peppergrass (based on BLM and Idaho Natural Heritage data) even if aboveground plants are not observed during the surveys. See the discussion under the Segment 8 Revised Proposed Route for additional details on construction standards and practices and impacts and limitations of pre-construction surveys. Because no known occurrences of slickspot peppergrass would be impacted by construction or operations and with implementation of EPMs TESPL-3 and TESPL-4, construction and operations of Route 8H would have no effect on slickspot peppergrass.

Other Special Status Plant Species

Construction and operations of Route 8H have the potential to directly affect known occurrences of nine other special status plant species (Table 3.7-7). Construction and operations of Route 8H would have the greatest impacts on Packard's buckwheat (204 acres of impacts during construction, of which 17 acres would be impacted during operations). The 138-kV line removal would have the potential to directly affect known occurrences of two special status plant species (desert pincushion and Packard's buckwheat); however, much of this impact is associated with areas that would also be disturbed due to construction of the new line.

Some of the impacts to seven of the special status plant species (i.e., desert pincushion, Janish's penstemon, matted cowpie buckwheat, Packard's buckwheat, spreading gilia, white eatonella, and white-margined wax plant) would occur on BLM-managed land within the SRBOP during construction and operations of Route 8H (Table 3.7-7). The SRBOP's RMP requires that "surface disturbing activities be located at least 0.5 mile from occupied sensitive plant habitat." Therefore, an amendment to the RMP would be required for Route 8H to be in conformance with the RMP (see Chapter 2, Section 2.3.5). Pre-construction clearance surveys along Route 8H would ensure that these species would be identified and impacts avoided and minimized during construction and operations. With the implementation of EPMs related to conducting pre-construction clearance surveys (e.g., TESPL-3), as well as weed control and reclamation, the Project would avoid or minimize adverse impacts to special status plant populations. Therefore, the Project would not preclude the BLM from meeting the

SRBOP's goal of emphasizing maintenance, protection, and enhancement of sensitive plant habitats (BLM 2008a, p. 2-7).

Table 3.7-7. Potential Impacts to Other Special Status Plant Species along Route 8H

Route[2/]	Acres [1/]									
	Desert Pincushion		Janish's Penstemon		Matted Cowpie Buckwheat		Mulford's Milkvetch		Packard's Buckwheat	
	Const	Op[3/]	Const	Op[3/]	Const	Op[3/]	Const	Op[3/]	Const	Op[3/]
Route 8H	3 [2]	<1 [<1]	t[4] [t[4]]	t[4] [t[4]]	5 [3]	1 [1]	44	3	204 [200]	17 [16]
138-kV Line Removal	<1 [<1]	–	–	–	–	–	–	–	5 [5]	–

Route	Acres [1/]							
	Snake River Milkvetch		Spreading Gilia		White Eatonella		White-margined Wax Plant	
	Const	Op[3/]	Const	Op[3/]	Const	Op[3/]	Const	Op[3/]
Route 8H	<1	t[4]	2 [<1]	<1 [<1]	19 [19]	2 [2]	8 [7]	1 [1]
138-kV Line Removal	–	–	–	–	–	–	–	–

Note that values in "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP.

1/ Data are based on mapped occurrences.

2/ There are no potential impacts to other special status plant species from the 500-kV Line Removal; therefore, it is not included in table.

3/ The acres of construction impacts include the areas where impacts from operations would occur; therefore, to avoid double counting, acres of impacts from construction and operation listed in the table should not be added together.

4/ "t" indicates only a trace amount (<0.1 acre) of impact.

Segment 9

Revised Proposed Route

The Segment 9 Revised Proposed Route would link the proposed Cedar Hill and existing Hemingway Substations with a 165.3-mile single-circuit 500-kV transmission line that skirts the Jarbidge and Owyhee Military Operating Areas to the north, then follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering the Hemingway Substation (see Figure A-1). The Segment 9 Revised Proposed Route follows the same alignment as the 2013 FEIS Proposed Route for 95.6 miles, and then follows an alignment similar to the 2013 FEIS Route 9D/9G from MP 95.6 and 154.7, except that two portions of the route (totaling 25.7 miles) would be double-circuited with existing 138-kV lines within the SRBOP: the first, near C.J. Strike Reservoir and the Bruneau Arm (MP 106.2 to 109.3 and 109.9 to 112.1), and the other along Baja Road (MP 121 to 141.2). Several rebuilds totaling approximately 0.6 mile are also required to tie the existing 138-kV lines into the new double-circuit alignments. Except for minor variations, the route is unchanged from the 2013 FEIS Route 9D/9G between MP 141.2 to 154.7. From MP 154.7 and into the Hemingway Substation, the route is the same as the 2013 FEIS Proposed Route.

ESA-Proposed Species

There are no ESA-listed or candidate species within the Analysis Area for the Segment 9 Revised Proposed Route. However, the Revised Proposed Route crosses potential slickspot peppergrass habitat. Approximately 5 acres of potential slickspot peppergrass habitat would be impacted by construction, of which less than 1 acre would be impacted during operation of the Revised Proposed Route along Segment 9 (Table 3.7-8). There

would be no impacts to potential slickspot peppergrass habitat on BLM-managed lands within the SRBOP under the Revised Proposed Route along Segment 9.

Construction and operations of the Segment 9 Revised Proposed Route could result in indirect impacts to slickspot peppergrass potential habitat due to the introduction and spread of noxious weeds or invasive plant species. However, these effects would be minimized through implementation of the Project's Framework Reclamation Plan (Appendix B of the FEIS), which would include measures such as reseeding of disturbed areas outside of slickspots and post-construction monitoring of revegetated areas to ensure establishment of seeded plants. Additionally, under EPM TESPL-4, seeding during reclamation in areas of suitable habitat will use methods that minimize soil disturbance, reclamation will use certified weed-free native seed, and excess soils will not be stored or spread on slickspots.

Table 3.7-8. Potential Impacts to Slickspot Peppergrass Occurrences and Habitat along Segment 9

Route [2/]	Acres Known Occurrence[1/]		Acres Occupied Habitat		Acres Slickspot Peppergrass Habitat		Acres Potential Habitat		Acres Proposed Critical Habitat	
	Const	Op[4/]	Const	Op[4/]	Const	Op[4/]	Const	Op[4/]	Const	Op[4/]
Segment 9 Revised Proposed Route[3/]	–	–	–	–	–	–	5	<1	–	–
Segment 9 FEIS Proposed Route	–	–	–	–	–	–	2 [2]	<1 [<1]	–	–
Route 9K [3/]	–	–	–	–	–	–	8	<1	–	–

Note that values in "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP.

1/ Only acres of impacts to extant occurrences included; extirpated occurrences not included.

2/ There are no impacts to slickspot peppergrass occurrences or habitat from the 138-kV Line Removal, Toana Road Variations or comparison portion for Toana Road Variations.

3/ There would be no impacts to slickspot peppergrass habitat within the SRBOP along the Segment 9 Revised Proposed Route and Route 9K.

4/ The acres of construction impacts include the areas where impacts from operations would occur; therefore, to avoid double counting, acres of impacts from construction and operation listed in the table should not be added together.

As noted above, impact acreages are based on the preliminary Project design. Pre-construction clearance surveys would be conducted for slickspot peppergrass consistent with established protocols to microsite Project facilities to avoid or minimize impacts to plants or habitat if plants are found during surveys. Additionally, as described in EPM TESPL-4, environmental monitors will survey for and mark slickspots and aboveground populations of slickspot peppergrass within 50 feet of the construction area prior to ground disturbance (including roads) in potential or occupied slickspot peppergrass habitat. Further, under EPM TESPL-4, no construction shall occur within 50 feet of any slickspot peppergrass plants or slickspots located by the environmental monitor or within 50 feet of known occurrences of slickspot peppergrass (based on BLM and Idaho Natural Heritage data) even if aboveground plants are not observed during the surveys. See the discussion under the Segment 8 Revised Proposed Route for additional details on construction standards and practices and impacts and limitations of pre-construction surveys. Because no known occurrences of slickspot peppergrass would be impacted by construction or operations, and with implementation of EPMs TESPL-3 and TESPL-4, construction and operations of the Segment 9 Revised Proposed Route would have no effect on slickspot peppergrass.

Other Special Status Plant Species

There are nine other special status plant species that would be impacted by construction and operations of the Segment 9 Revised Proposed Route (Table 3.7-9). The greatest impacts from construction and operations would be to Packard's buckwheat and Mulford's milkvetch.

Removal of the existing 138-kV transmission line along the Segment 9 Revised Proposed Route would have minor impacts to two other special status plant species (i.e., desert pincushion and Packard's buckwheat; see Table 3.7-9); however, some of these impacts would overlap with the impacts associated with construction of the new line.

The SRBOP would be crossed by the Segment 9 Revised Proposed Route. Some of the impacts to special status plant species (i.e., Packard's buckwheat, desert pincushion, matted cowpie buckwheat, spreading gilia, white eatonella, and white-margined wax plant) would occur on BLM-managed land within the SRBOP during construction of the Segment 9 Revised Proposed Route (Table 3.7-9). The SRBOP RMP (BLM 2008a) requires that "surface disturbing activities be located at least 0.5 mile from occupied sensitive plant habitat." Therefore, an amendment to the RMP would be required for the Segment 9 Revised Proposed Route to be in conformance with the RMP (see Chapter 2, Section 2.3.5). With the implementation of EPMs related to conducting pre-construction clearance surveys (e.g., TESPL-3), as well as weed control and reclamation, the Project would avoid or minimize adverse impacts to special status plant populations (including slickspot peppergrass). Therefore, the Project would not preclude the BLM from meeting the SRBOP's goal of emphasizing maintenance, protection, and enhancement of sensitive habitats (BLM 2008a, p. 2-7).

Table 3.7-9. Potential Impacts to Other Special Status Plant Species along Segment 9 Revised Proposed Route and Toana Road Variations[1/]

Route or Activity [1/]	Acres [2/]									
	Desert Pincushion		Janish's Penstemon		Matted Cowpie Buckwheat		Mulford's Milkvetch		Packard's Buckwheat	
	Const	Op[3/]	Const	Op[3/]	Const	Op[3/]	Const	Op[3/]	Const	Op[3/]
Segment 9 Revised Proposed Route	4 [2]	<1 [<1]	t[4/]	t[4/]	4 [4]	1 [1]	73	5	204 [187]	17 [16]
Segment 9 Revised Proposed Route – Existing 138-kV Removal	<1 [<1]	–	–	–	–	–	–	–	5 [5]	–

Route or Activity [1/]	Acres [2/]							
	Snake River Milkvetch		Spreading Gilia		White Eatonella		White-margined Wax Plant	
	Const	Op[3/]	Const	Op[3/]	Const	Op[3/]	Const	Op[3/]
Segment 9 Revised Proposed Route	<1	T[4/]	2 [<1]	<1 [<1]	19 [19]	2 [2]	8 [7]	1 [1]
Segment 9 Revised Proposed Route – Existing 138-kV Removal	–	–	–	–	–	–	–	–

Note that values in "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP.

1/ No potential impacts to other special status plants species are expected from the Toana Road Variations or comparison portion for the Toana Road Variations; therefore, they are not included in the table.

2/ Data are based on mapped occurrences.

3/ The acres of construction impacts include the areas where impacts from operations would occur; therefore, to avoid double counting, acres of impacts from construction and operation listed in the table should not be added together.

4/ Value is less than 0.1 acre.

FEIS Proposed 9

The Proponents originally designed the 162.2-mile-long FEIS Proposed 9 to follow existing utility corridors and avoid the SRBOP and other protected areas where feasible. Approximately 54 miles of the route is within or adjacent to a utility corridor. FEIS Proposed 9 is approximately 3.1 miles shorter than the Revised Proposed Route for Segment 9 but it crosses 13.6 miles of the SRBOP compared to 54.2 miles for the Revised Proposed Route. Both the Revised Proposed Route and FEIS Proposed 9 cross the Salmon Falls Creek at Lilly Grade adjacent to an existing single-phase 34.5-kV distribution line just north of the Salmon Falls Creek WSA.

ESA-Proposed Species

There are no ESA-listed or candidate species within the Analysis Area for FEIS Proposed 9; however, the route crosses potential slickspot peppergrass habitat. Approximately 2 acres of potential slickspot peppergrass habitat would be impacted by construction, of which less than 1 acre would be impacted during operations of FEIS Proposed 9 (Table 3.7-8). All of the impacts to potential slickspot peppergrass habitat would occur on BLM-managed lands within the SRBOP. Both the Revised Proposed Route and Route 9K would impact more potential habitat for slickspot peppergrass (approximately 5 acres and 8 acres, respectively) during construction (Table 3.7-7).

Construction and operations of FEIS Proposed 9 could result in indirect impacts to slickspot peppergrass potential habitat due to the introduction and spread of noxious weeds or invasive plant species. However, these effects would be minimized through implementation of the Project's Framework Reclamation Plan (Appendix B of the FEIS), which would include measures such as reseeding of disturbed areas outside of slickspots and post-construction monitoring of revegetated areas to ensure establishment of seeded plants. Additionally, under EPM TESPL-4, seeding during reclamation in areas of suitable habitat will use methods that minimize soil disturbance, reclamation will use certified weed-free native seed, and excess soils will not be stored or spread on slickspots.

As noted above, impact acreages are based on the preliminary Project design. Pre-construction clearance surveys would be conducted for slickspot peppergrass consistent with established protocols to microsite Project facilities to avoid or minimize impacts to plants or habitat if plants are found during surveys. Additionally, as described in EPM TESPL-4, environmental monitors will survey for and mark slickspots and aboveground populations of slickspot peppergrass within 50 feet of the construction area prior to ground disturbance (including roads) in potential or occupied slickspot peppergrass habitat. Further, under EPM TESPL-4, no construction shall occur within 50 feet of any slickspot peppergrass plants or slickspots located by the environmental monitor, or within 50 feet of known occurrences of slickspot peppergrass (based on BLM and Idaho Natural Heritage data) even if aboveground plants are not observed during the surveys. See the discussion under the Segment 8 Revised Proposed Route for additional details on construction standards and practices and impacts and limitations of pre-construction surveys. Because no known occurrences of slickspot peppergrass would be impacted by construction or operations, and with implementation of EPMs TESPL-3 and TESPL-4, construction and operations of FEIS Proposed 9 would have no effect on slickspot peppergrass.

Other Special Status Plant Species

There are eight other special status plant species that would be impacted by construction and operations along the FEIS Proposed 9 (Table 3.7-10). The greatest impacts would be to white-margined wax plant, Janish's penstemon, and Snake River milkvetch. Some of the impacts to six special status plant species (i.e., desert pinchushion, matted cowpie buckwheat, rigid threadbush, Snake River milkvetch, white eatonella, and white-margined wax plant) would occur on BLM-managed land within the SRBOP during construction of FEIS Proposed 9 (Table 3.7-10). The SRBOP's RMP requires that "surface disturbing activities be located at least 0.5 mile from occupied sensitive plant habitat." Therefore, an amendment to the RMP would be required for the FEIS Proposed 9 to be in conformance with the RMP (see Chapter 2, Section 2.3.5).

Table 3.7-10. Potential Impacts to Other Special Status Plant Species along the Segment 9 FEIS Proposed Route

Route	Acres 1/							
	Desert Pincushion		Janish's Penstemon		Matted Cowpie Buckwheat		Mulford's Milkvetch	
	Const	Op2/	Const	Op2/	Const	Op2/	Const	Op2/
FEIS Proposed Route 9	<1 [<1]	<1 [<1]	175	22	4 [3]	1 [1]	53	3

Route	Acres 1/							
	Rigid Threadbush		Snake River Milkvetch		White Eatonella		White-margined Wax Plant	
	Const	Op2/	Const	Op2/	Const	Op2/	Const	Op2/
FEIS Proposed Route 9	3 [2]	1 [1]	105 [40]	10 [3]	5 [2]	1 [<1]	245 [3]	25 [1]

Note that values in "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP.
1/ Data are based on mapped occurrences.
2/ The acres of construction impacts include the areas where impacts from operations would occur; therefore, to avoid double counting, acres of impacts from construction and operation listed in the table should not be added together.

With the implementation of EPMs related to conducting pre-construction clearance surveys (e.g., TESPL-3), as well as weed control, and reclamation, the Project would avoid or minimize adverse impacts to special status plant populations (including slickspot peppergrass). Therefore, the Project would not preclude the BLM from meeting the SRBOP's goal of emphasizing maintenance, protection, and enhancement of sensitive habitats (BLM 2008a, p. 2-7). Additionally, pre-construction clearance surveys along FEIS Proposed 9 would ensure that special status plants would be identified and impacts avoided and minimized during construction and operations.

Route 9K

Route 9K is being considered by the BLM as a modified version of FEIS Route 9E (i.e., the FEIS Preferred Route) to avoid crossing the northwestern portion of the SRBOP and to minimize direct and indirect impacts to priority sage-grouse habitat. The route is approximately 174.6 miles long, compared to the 165.3-mile-long Revised Proposed Route.

ESA-Proposed Species

There are no ESA-listed or candidate species within the Analysis Area for Route 9K; however, Route 9K crosses potential slickspot peppergrass habitat. Approximately 8 acres of potential slickspot peppergrass habitat would be impacted by construction, of

which less than 1 acre would be impacted during operations of Route 9K (Table 3.7-8). There would be no impacts to potential slickspot peppergrass habitat on BLM-managed lands within the SRBOP along Route 9K. Both the Revised Proposed Route and the FEIS Proposed 9 route would impacts less potential habitat for slickspot peppergrass (approximately 5 acres and 2 acres, respectively) during construction (Table 3.7-8).

Construction and operations of Route 9K could result in indirect impacts to slickspot peppergrass potential habitat due to the introduction and spread of noxious weeds or invasive plant species. However, these effects would be minimized through implementation of the Project's Framework Reclamation Plan (Appendix B of the FEIS), which would include measures such as reseeding of disturbed areas outside of slickspots and post-construction monitoring of revegetated areas to ensure establishment of seeded plants. Additionally, under EPM TESPL-4, seeding during reclamation in areas of suitable habitat will use methods that minimize soil disturbance, reclamation will use certified weed-free native seed, and excess soils will not be stored or spread on slickspots.

As noted above, impact acreages are based on the preliminary Project design. Pre-construction clearance surveys would be conducted for slickspot peppergrass consistent with established protocols to microsite Project facilities to avoid or minimize impacts to plants or habitat if plants are found during surveys. Additionally, as described in EPM TESPL-4, environmental monitors will survey for and mark slickspots and aboveground populations of slickspot peppergrass within 50 feet of the construction area prior to ground disturbance (including roads) in potential or occupied slickspot peppergrass habitat. Further, under EPM TESPL-4, no construction shall occur within 50 feet of any slickspot peppergrass plants or slickspots located by the environmental monitor, or within 50 feet of known occurrences of slickspot peppergrass (based on BLM and Idaho Natural Heritage data) even if aboveground plants are not observed during the surveys. See the discussion under the Segment 8 Revised Proposed Route for additional details on construction standards and practices and impacts and limitations of pre-construction surveys. Because no known occurrences of slickspot peppergrass would be impacted by construction or operations, and with implementation of EPMs TESPL-3 and TESPL-4, construction and operations of Route 9K would have no effect on slickspot peppergrass.

Other Special Status Plant Species

There are 11 other special status plant species that would be impacted by construction and operations along Route 9K (Table 3.7-11). The greatest impacts would be to white-margined wax plant and Snake River milkvetch. Some of the impacts to three special status plant species (i.e., matted cowpie buckwheat, Snake River milkvetch, and white-margined wax plant) would occur on BLM-managed land within the SRBOP during construction of Route 9K (Table 3.7-11). The SRBOP's RMP requires that "surface disturbing activities be located at least 0.5 mile from occupied sensitive plant habitat." Therefore, an amendment to the RMP would be required for Route 9K to be in conformance with the RMP (see Chapter 2, Section 2.3.5).

Table 3.7-11. Potential Impacts to Other Special Status Plant Species along Route 9K

Route	Acres 1/											
	Alkali Cleomella		Bruneau River Prickly Phlox		Desert Pincushion		Janish's Penstemon		Matted Cowpie Buckwheat		Mulford's Milkvetch	
	Const	Op 2/	Const	Op 2/	Const	Op 2/	Const	Op 2/	Const	Op 2/	Const	Op 2/
Route 9K	62	7	24	4	6	1	64	9	4 [4]	1 [<1]	73	5

Route	Acres 1/									
	Packard's Buckwheat		Snake River Milkvetch		Spine-noded Milkvetch		White Eatonella		White-margined Wax Plant	
	Const	Op 2/	Const	Op 2/	Const	Op 2/	Const	Op 2/	Const	Op 2/
Route 9K	17	3	91 [5]	11 [1]	1	<1	2	<1	128 [2]	17 [<1]

Note that values in "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP.
1/ Data are based on mapped occurrences.
2/ The acres of construction impacts include the areas where impacts from operations would occur; therefore, to avoid double counting, acres of impacts from construction and operation listed in the table should not be added together.

With the implementation of EPMs related to conducting pre-construction clearance surveys (e.g., TESPL-3), as well as weed control, and reclamation, the Project would avoid or minimize adverse impacts to special status plant populations (including slickspot peppergrass). Therefore, the Project would not preclude the BLM from meeting the SRBOP's goal of emphasizing maintenance, protection, and enhancement of sensitive habitats (BLM 2008a, p. 2-7). Additionally, pre-construction clearance surveys along Route 9K would ensure that special status plants would be identified and impacts avoided and minimized during construction and operations.

Toana Road Variations 1 and 1-A and the Comparison Portion of the Revised Proposed Route

Toana Road Variation 1 to the Segment 9 Revised Proposed Route was recommended by the BLM Jarbidge Field Office archaeologist to avoid paralleling the Toana Freight Wagon Road, an NRHP site. The Segment 9 Revised Proposed Route parallels within 0.25 mile of the Toana Road between MP 38.2 and 40.6, and parallels within 1 mile of the road through Blue Gulch between MP 40.6 and 43.5. Variation 1 is approximately 8.5 miles in length. Approximately 0.3 mile of the route crosses state land, with the remainder on land managed by the BLM. The Toana Road Variation 1-A to the Segment 9 Revised Proposed Route was recommended by the BLM to minimize visual impacts to the Toana Freight Wagon Road, and was also intended to utilize existing roads in order to minimize new road construction in the area. Variation 1-A is approximately 8.9 miles long. Approximately 1 mile of the route crosses state land, with the remainder on land managed by the BLM.

Neither of the Toana Road Variations or the comparison portion of Segment 9 would impact habitat for slickspot peppergrass. Additionally, no other special status plant species would be directly affected by either Toana Road Variation or the comparison portion of the Segment 9 Revised Proposed Route for the Toana Road Variations.

3.7.2.4 Direct and Indirect Effects of the Alternatives

This section assesses the quantitative impacts on TES plants from the seven BLM Action Alternatives. Tables 3.7-12 and Table 3.7-13 list the quantitative impacts to

ESA-listed and candidate species and other special status plant species, respectively, that would occur from construction and operations, under these action alternatives. The alternatives are visually displayed in Figures A-2 through A-8.

As discussed in Section 3.7.2.3, neither of the Toana Road Variations or the comparison portion of Segment 9 would impact occurrences of or habitat for slickspot peppergrass. Additionally, no special status plant species would be directly affected by either Toana Road Variation or the comparison portion of Segment 9. Therefore, inclusion of either Toana Road Variation into any of the alternatives would not change the impacts that would result to TES plant species under any alternative.

Table 3.7-12. Comparison of Potential Impacts to Slickspot Peppergrass Occurrences and Habitat from the Seven Action Alternatives

Alternative	Acres Known Occurrence[1/]		Acres Occupied Habitat		Acres Slickspot Peppergrass Habitat		Acres Potential Habitat		Acres Proposed Critical Habitat	
	Const	Op[2/]	Const	Op[2/]	Const	Op[2/]	Const	Op[2/]	Const	Op[2/]
1	5 [3][3/]	<1 [<1][3/]	149 [30]	16 [4]	512 [146]	54 [14]	360 [34]	40 [3]	17 [10]	4 [2]
2	5 [3][3/]	<1 [<1][3/]	149 [30]	16 [4]	512 [146]	54 [14]	357 [36]	40 [3]	17 [10]	4 [2]
3	5 [3][3/]	<1 [<1][3/]	149 [30]	16 [4]	512 [146]	54 [14]	363 [34]	40 [3]	17 [10]	4 [2]
4	–	–	–	–	–	–	11 [2]	1 [<1]	–	–
5	–	–	–	–	–	–	17	1	–	–
6	–	–	–	–	–	–	9 [9]	<1 [<1]	–	–
7	–	–	–	–	–	–	15 [7]	1 [<1]	–	–

Note that values in "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP.

1/ Only acres of impacts to extant occurrences included; extirpated occurrences not included.

2/ The acres of construction impacts include the areas where impacts from operations would occur; therefore, to avoid double counting, acres of impacts from construction and operation listed in the table should not be added together.

3/ Impacts to known occurrences include:

- 3 acres to element occurrences with a "C" ranking (50-399 detectable genets; fair viability)
- Less than 1 acre to element occurrences with a "B" ranking (400-999 detectable genets; good estimated viability)
- Less than 1 acre to element occurrences with an "F" ranking (failed to find).

Table 3.7-13. Comparison of Potential Impacts (acres[1/]) to Other Special Status Plant Species from the Seven Action Alternatives

Species	Phase	Alternative						
		1	2	3	4	5	6	7
Alkali cleomella	Const	–	–	62	61	123	–	62
	Op[2/]	–	–	7	7	14	–	7
American wood sage	Const	37	37	37	–	–	–	–
	Op[2/]	3	3	3	–	–	–	–
Bruneau River prickly phlox	Const	-	-	24	23	47	–	24
	Op[2/]	-	-	4	4	8	–	4
Desert pincushion	Const	4 [2]	<1 [<1]	6	9	15 [<1]	3 [2]	9 [2]
	Op[2/]	<1 [<1]	<1 [<1]	1	1	2 [<1]	<1 [<1]	1 [<1]
Janish's penstemon	Const	t[3]	175	64	238	127	175	64
	Op[2/]	t[3]	22	9	31	18	22	9
Matted cowpie buckwheat	Const	4 [4]	4 [3]	4 [4]	9 [6]	9 [7]	9 [6]	9 [7]
	Op[2/]	1 [1]	1 [1]	1 [1]	2 [2]	2 [1]	2 [2]	2 [2]

Table 3.7-13. Comparison of Potential Impacts (acres[1/]) to Other Special Status Plant Species from the Seven Action Alternatives (continued)

Species	Phase	Alternative						
		1	2	3	4	5	6	7
Mourning milkvetch	Const	6	6	6	–	–	–	–
	Op[2/]	1	1	1	–	–	–	–
Mulford's milkvetch	Const	122	102	122	97	117	97	117
	Op[2/]	8	6	8	6	8	6	8
Packard's buckwheat	Const	204 [187]	–	17	16	33	204 [187]	221 [187]
	Op[2/]	17 [16]	–	3	3	6	17 [16]	20 [16]
Rigid threadbush	Const	–	3	-	3	–	33	–
	Op[2/]	–	1	-	1	–	11	–
Shining flatsedge	Const	136 [86]	136	136 [86]	–	–	–	–
	Op[2/]	11 [8]	11	11 [8]	–	–	–	–
Snake River milkvetch	Const	16 [1]	121	107 [41]	197 [45]	183 [10]	105 [40]	91 [5]
	Op[2/]	1 [<1]	11	12 [3]	22 [5]	23 [3]	10 [3]	11 [1]
Spine-noded milkvetch	Const	–	–	1	<1	1	–	1
	Op[2/]	–	–	<1	<1	<1	–	<1
Spreading gilia	Const	2 [<1]	–	–	–	–	2 [<1]	2 [<1]
	Op[2/]	<1 [<1]	–	–	–	–	<1 [<1]	<1 [<1]
White eatonella	Const	55 [19]	41	38 [2]	6 [2]	3	24 [21]	21 [19]
	Op[2/]	8 [2]	7	6 [<1]	1 [<1]	1	3 [2]	2 [2]
White-margined wax plant	Const	13 [12]	250	133 [7]	378 [4]	261 [4]	253 [9]	136 [9]
	Op[2/]	1 [1]	25	17 [1]	42 [1]	34 [<1]	26 [2]	18 [1]
Wovenspore lichen	Const	3 [3]	3	3 [3]	–	–	–	–
	Op[2/]	<1 [<1]	<1	<1 [<1]	–	–	–	–
Total Impacts[4]	**Const**	**602 [314]**	**875 [142]**	**760 [106]**	**1,035 [57]**	**919 [21]**	**873 [266]**	**757 [229]**
	Op[2/]	**52 [28]**	**88 [14]**	**83 [10]**	**119 [9]**	**115 [5]**	**87 [26]**	**83 [22]**

Note that values in "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP.

1/ Data are based on mapped occurrences.

2/ The acres of construction impacts include the areas where impacts from operations would occur; therefore, to avoid double counting, acres of impacts from construction and operation listed in the table should not be added together.

3/ "t" indicates only a trace amount (<0.1 acre) of impact.

4/ Numbers in table are inexact; columns or rows may not sum exactly due to rounding, including the totals.

Alternative 1 – Proposed Action (the Revised Proposed Routes for Segments 8 and 9)

Alternative 1 consists of the Revised Proposed Routes for Segments 8 and 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.7.2.3). Tables 3.7-12 and 3.7-13 list the impacts that would occur to slickspot peppergrass and other special status plant species, respectively, under Alternative 1.

Alternative 2 – Revised Proposed 8 and FEIS Proposed 9

Alternative 2 consists of the Revised Proposed Route for Segment 8 and FEIS Proposed 9. Impacts associated with Alternative 2 correspond to those described above for these two routes combined (see Section 3.7.2.3).

As shown in Table 3.7-12, impacts to known occurrences of slickspot peppergrass, as well as occupied habitat, slickspot peppergrass habitat, and critical habitat for slickspot peppergrass would be the same under Alternative 2 as Alternative 1 (i.e., the Proposed

Action). Impacts to potential habitat for slickspot peppergrass during construction would be slightly less (approximately 3 acres less) under Alternative 2 than under Alternative 1. Impacts to slickspot peppergrass on BLM-managed land within the SRBOP would be the same during both construction and operation under Alternative 2 as under Alternative 1, with the exception that Alternative 2 would impact approximately 2 more acres of potential slickspot peppergrass habitat than Alternative 1 (Table 3.7-12).

As shown in Table 3.7-13, Alternative 2 would impact known occurrences of 12 other special status plant species (beyond slickspot peppergrass); whereas, Alternative 1 would impact known occurrences of 13 other special status plant species. Total impacts to other special status plant species under Alternative 2 would be greater than under Alternative 1 during both construction and operation (approximately 273 and 36 acres more total impacts during construction and operation, respectively). However, total impacts to other special status plant species on BLM-managed land within the SRBOP would be greater under Alternative 1 (approximately 172 acres more impacts during construction and 14 acres more impacts during operation) than under Alternative 2 (Table 3.7-13).

Alternative 3 – Revised Proposed 8 and the 9K Route

Alternative 3 consists of the Revised Proposed Route for Segment 8 and Route 9K; therefore, the impacts associated with this alternative correspond to those described above for the these two routes combined (see Section 3.7.2.3).

As shown in Table 3.7-12, impacts to known occurrences of slickspot peppergrass, as well as occupied habitat, slickspot peppergrass habitat, and critical habitat for slickspot peppergrass, would be the same under Alternative 3 as Alternative 1. Impacts to potential habitat for slickspot peppergrass during construction would be slightly greater (approximately 3 acres more impacts) under Alternative 3 than under Alternative 1. Impacts to slickspot peppergrass on BLM-managed land within the SRBOP would be the same during both construction and operation under Alternative 3 as under Alternative 1 (Table 3.7-12).

Alternative 3 would impact known occurrences of 15 other special status plant species, whereas Alternative 1 would impact known occurrences of 13 other special status plant species. As shown in Table 3.7-13, total impacts to other special status plant species under Alternative 3 would be greater than under Alternative 1 during both construction and operation (approximately 158 and 31 acres more total impacts during construction and operation, respectively). However, total impacts to other special status plant species on BLM-managed land within the SRBOP would be greater under Alternative 1 (approximately 208 acres more impacts during construction and 18 acres more impacts during operation) than under Alternative 3 (Table 3.7-13).

Alternative 4 – The 8G Route and FEIS Proposed 9

Alternative 4 consists of the Route 8G and FEIS Proposed 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.7.2.3).

As shown in Table 3.7-12, there would be no impacts to known occurrences, occupied habitat, slickspot peppergrass habitat, or proposed critical habitat for slickspot

peppergrass during construction or operation under Alternative 4. In contrast, during construction and operation Alternative 1 would result in approximately 5 acres and less than 1 acre, respectively, of impacts to known occurrences; 149 and 16 acres, respectively, of impacts to occupied habitat; 512 and 54 acres, respectively, of impacts to slickspot peppergrass habitat; and 17 and 4 acres, respectively, of impacts to proposed critical habitat for slickspot peppergrass. Additionally, Alternative 1 would result in greater impacts to potential habitat for slickspot peppergrass during construction and operation (approximately 349 acres and 39 acres more impacts, respectively) than Alternative 4. In contrast to Alternative 1, there would be no impacts to known occurrences, occupied habitat, slickspot peppergrass habitat or proposed critical habitat for slickspot peppergrass on BLM-managed land within the SRBOP under Alternative 4. Additionally, impacts to potential habitat for slickspot peppergrass on BLM-managed land within the SRBOP would be greater under Alternative 1 during both construction and operation (32 and 2 acres more total impacts during construction and operation, respectively) than under Alternative 4 (Table 3.7-12).

As shown in Table 3.7-13, Alternative 4 would impact known occurrences of 12 other special status plant species, whereas Alternative 1 would impact known occurrences of 13 other special status plant species. However, total impacts to other special status plant species under Alternative 4 would be greater than under Alternative 1 during both construction and operation (approximately 433 and 67 acres more total impacts during construction and operation, respectively). Total impacts to other special status plant species on BLM-managed land within the SRBOP would be greater (257 acres more impacts during construction and 19 acres more impacts during operation) under Alternative 1 than under Alternative 3 (Table 3.7-13).

Alternative 5 – The 8G and 9K Routes

Alternative 5 consists of Routes 8G and 9K; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.7.2.3).

As shown in Table 3.7-12, there would be no impacts to known occurrences of slickspot peppergrass, or occupied habitat, slickspot peppergrass habitat, and critical habitat for slickspot peppergrass during construction or operation under Alternative 5. In contrast, during construction and operation Alternative 1 would result in approximately 5 acres and less than 1 acre, respectively, of impacts to known occurrences; 149 and 16 acres, respectively, of impacts to occupied habitat; 512 and 54 acres, respectively, of impacts to slickspot peppergrass habitat; and 17 and 4 acres, respectively, of impacts to proposed critical habitat for slickspot peppergrass. Alternative 1 would also result in greater impacts to potential habitat for slickspot peppergrass during construction and operation (approximately 343 acres and 39 acres more impacts, respectively) than Alternative 5. There would be no impacts to slickspot peppergrass on BLM-managed land within the SRBOP during construction or operation under Alternative 5, whereas Alternative 1 would result in impacts to known occurrences, occupied habitat, slickspot peppergrass habitat, potential habitat and proposed critical habitat for slickspot peppergrass on BLM-managed lands within the SRBOP (Table 3.7-12).

As shown in Table 3.7-13, Alternative 5 would impact known occurrences of 11 other special status plant species whereas Alternative 1 would impact known occurrences of 13 other special status plant species. However, total impacts to other special status plant species under Alternative 5 would be greater than under Alternative 1 during both construction and operation (approximately 317 and 63 acres more total impacts during construction and 63 acres more impacts during operation). Alternative 1 would result in greater total impacts to other special status plant species on BLM-managed land within the SRBOP during construction and operation than Alternative 5 (approximately 293 and 23 acres more total impacts during construction and operation, respectively).

Alternative 6 – The 8H Route and FEIS Proposed 9

Alternative 6 consists of Route 8H and FEIS Proposed 9; therefore, impacts associated with Alternative 6 correspond to those described above for these two routes combined (see Section 3.7.2.3).

As shown in Table 3.7-12, there would be no impacts to known occurrences of slickspot peppergrass, or occupied habitat, slickspot peppergrass habitat, and critical habitat for slickspot peppergrass during construction or operation under Alternative 6. In contrast, during construction and operation Alternative 1 would result in approximately 5 acres and less than 1 acre, respectively, of impacts to known occurrences; 149 and 16 acres, respectively, of impacts to occupied habitat; 512 and 54 acres, respectively, of impacts to slickspot peppergrass habitat; and 17 and 4 acres, respectively, of impacts to proposed critical habitat for slickspot peppergrass. Alternative 1 would also result in greater impacts to potential habitat for slickspot peppergrass during construction and operation (approximately 351 acres and 40 acres more impacts, respectively) than Alternative 6. In contrast to Alternative 1, there would be no impacts to known occurrences, occupied habitat, slickspot peppergrass habitat or proposed critical habitat for slickspot peppergrass on BLM-managed land within the SRBOP under Alternative 6. Additionally, impacts to potential habitat for slickspot peppergrass on BLM-managed land within the SRBOP would be greater under Alternative 1 during both construction and operation (25 and 2 acres more total impacts during construction and operation, respectively) than under Alternative 6 (Table 3.7-12).

As shown in Table 3.7-13, Alternative 6 would impact known occurrences of 10 other special status plant species whereas Alternative 1 would impact known occurrences of 13 other special status plant species. However, total impacts to other special status plant species under Alternative 6 would be greater than under Alternative 1 during both construction and operation (approximately 271 and 35 acres more total impacts during construction and operation, respectively). Total impacts to other special status plant species on BLM-managed land within the SRBOP would be greater (48 acres more impacts during construction and 2 acres more impacts during operation) under Alternative 1 than under Alternative 6 (Table 3.7-13).

Alternative 7 – The 8H and 9K Routes

Alternative 7 consists of Route 8H and 9K; therefore, impacts associated with Alternative 7 correspond to those described above for these two routes combined (see Section 3.7.2.3).

As shown in Table 3.7-12, there would be no impacts to known occurrences of slickspot peppergrass, or occupied habitat, slickspot peppergrass habitat, and critical habitat for slickspot peppergrass during construction or operation under Alternative 7. In contrast, during construction and operation Alternative 1 would result in approximately 5 acres and less than 1 acre, respectively, of impacts to known occurrences; 149 and 16 acres, respectively, of impacts to occupied habitat; 512 and 54 acres, respectively, of impacts to slickspot peppergrass habitat; and 17 and 4 acres, respectively, of impacts to proposed critical habitat for slickspot peppergrass. Alternative 1 would also result in greater impacts to potential habitat for slickspot peppergrass during construction and operation (approximately 345 and 39 acres more impacts, respectively) than Alternative 7. In contrast to Alternative 1, there would be no impacts to known occurrences, occupied habitat, slickspot peppergrass habitat or proposed critical habitat for slickspot peppergrass on BLM-managed land within the SRBOP under Alternative 7. Additionally, impacts to potential habitat for slickspot peppergrass on BLM-managed land within the SRBOP would be greater under Alternative 1 during both construction and operation (27 and 2 acres more total impacts during construction and operation, respectively) than under Alternative 7 (Table 3.7-12).

As shown in Table 3.7-13, Alternative 7 would impact known occurrences of 12 other special status plant species; whereas, Alternative 1 would impact known occurrences of 13 other special status plant species. However, total impacts to other special status plant species under Alternative 7 would be greater than under Alternative 1 during both construction and operation (approximately 155 and 31 acres more total impacts during construction and operation, respectively). Total impacts to other special status plant species on BLM-managed land within the SRBOP would be greater (85 acres more impacts during construction and 6 acres more impacts during operation) under Alternative 1 than under Alternative 7 (Table 3.7-13).

3.7.2.5 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, as well as additional measures proposed by the Project Proponents specifically for the SRBOP.

Environmental Protection Measures

The Proponents have committed to Project design features and EPMs to minimize or avoid impacts on environmental resources. These measures, the areas where they would be applicable (e.g., private, state, or federal-managed lands), as well as the details of each measure are provided in Table 2.7-1 of the FEIS. Many of these measures would be either directly or indirectly applicable to TES plants (i.e., they would avoid or minimize impacts to TES plants).

Measures that would indirectly apply to TES plants (i.e., measures that were not developed directly to minimize impacts to TES plants, but if implemented could avoid or minimize impacts to TES plants) include G-1 through G-4; OM-1 through OM-6; OM-13 through OM-15; OM-17; OM-21 through OM-22; OM-24 through OM-25; VIS-11; VIS-14; REC-1 through REC-26; VEG-1 through VEG-9; WEED-1 through WEED-4; WET-1; SOIL-2 through SOIL-5; WQA-1 through WQA-18; WQA-23 through WQA-25; WQA-27

through WQA-28; FIRE-1 through FIRE-5; and FIRE-7 through FIRE-8 (see Table 2.7-1 in the FEIS).

The following measures, which were identified in Table 2.7-1 of the FEIS, are directly related to TES plants and would be applicable to Segments 8 and 9:

TESPL-3 Qualified botanists shall conduct pre-construction surveys during a season when target species are readily identifiable for special status or globally rare species. Where feasible, micrositing of project facilities shall avoid direct impacts to identified populations. Survey reports documenting the surveys, their results, and recommendations must be provided to land management agency for approval prior to construction. Agency botanists may evaluate individual sites based on site-specific conditions. Documentation of the evaluation of avoidance of impacts to sensitive and globally rare plants must be provided to the Agencies prior to construction.

TESPL-4 Slickspot Peppergrass – Environmental monitors will survey for and mark slickspots and aboveground populations of slickspot peppergrass within 50 feet of the construction area prior to ground disturbance (including roads) in potential or occupied slickspot peppergrass habitat. No construction shall occur within 50 feet of any slickspot peppergrass plants or slickspots found by the environmental monitor. Also, construction shall not occur within 50 feet of previously known occupied slickspot peppergrass areas, based on Idaho CDC data, even if aboveground plants are not observed by the environmental monitor. Within proposed critical habitat, impacts to Primary Constituent Elements, such as native sagebrush/forb vegetation, will be avoided to the extent practicable. Seeding during reclamation in areas of suitable habitat will use methods that minimize soil disturbance such as no-till drills or rangeland drills with depth bands. Reclamation will use certified weed-free native seed. Excess soils will not be stored or spread on slickspots.

These EPMs would avoid or minimize the extent of impacts that could occur to TES plants. These EPMs are a part of the current Project description, and as such, the effects of their implementation are included in the impact discussion found in Sections 3.7.2.2, 3.7.2.3, and 3.7.2.4.

Proponent-Proposed MEP and Potential Effects to the MEP within the SRBOP

The Proponents have developed an MEP that contains design features specific to the SRBOP. This plan was developed to mitigate the effects of Project-related impacts within the SRBOP, as well as comply with the SRBOP's enabling statute (P.L. 103-64) which requires enhancement of resources within the SRBOP. The Proponents' plan contains two forms of mitigation: "compensation mitigation" and "enhancement." For this analysis, mitigation is defined as avoidance, minimization, and compensation measures aimed at offsetting adverse impacts of the Project; enhancement is defined as additional mitigation measures that are required in order to enhance the objectives and values for which the SRBOP was established.

One of the goals of the Proponents' proposal is to return treated areas to their baseline condition, which is defined using the NRCS ESD of the affected area (see Section 3.6 – Vegetation Communities, for how ESDs are defined). However, the NRCS ESDs have not currently been defined for 38 percent of Segment 8 and 12 percent of Segment 9. The site descriptions for the unidentified areas would need to be established in order to determine the baseline conditions, which are necessary to define restoration goals. This is because a determination of the adequacy of any proposed mitigation and enhancement cannot be made unless the baseline conditions for all areas impacted as well as those proposed for mitigation/enhancement are known in order to fully calculate both the debit (i.e., Project impact) and mitigation/enhancement credit. As a result, more information is required from the Proponents to fully assess the proposed MEP.

The Proponents' proposal offers a portfolio that contains five types of mitigation/enhancement proposals: 1) Habitat Restoration; 2) Property Purchase; 3) Law Enforcement; 4) Visitor Enhancement; and 5) Line and Substation Removal.

Although the Proponents' proposal contains measures that would benefit TES plant species in general (e.g., the successful restoration of disturbed habitats would benefit a wide range of species, including TES species), it contains only one measure/program that is specifically targeted at a TES plant species (i.e., the removal of existing infrastructure). In addition, the exact location where the programs outlined in the Proponents' proposal would be implemented has only been identified for one of the proposed measures (i.e., the removal of existing infrastructure). Therefore, determining the exact TES occupied habitat that would be affected is not possible for most of the proposals. As a result, the effects of the Proponents' proposal on TES plant species would not differ from what is described in detail within the general vegetation section of the SEIS for all of the Proponents' proposal except for the proposal to remove existing lines and a substation (see Section 3.6.2.4).

For the remaining measures other than the line and substation removal, the Proponents have indicated that the exact location, methods, or programs that would be funded and implemented would be determined by the Oversight Committee. However, the composition and exact membership of the individuals and agencies within the Oversight Committee have not been identified to date. Therefore, the effectiveness of the Oversight Committee cannot be determined until the individuals and agencies that will be included in the committee are identified, and the process that will be used by the committee to make its final decisions is determined.

The following assesses the benefit and/or impact that the proposed enhancement/ mitigation proposals could have to TES plant species.

Habitat Restoration

The MEP states that the goal for the Proponents' habitat restoration proposal is to convert "non-native grasslands to native perennial plant communities" as well as to conduct "noxious weed control." This proposal, in general, is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute (e.g., P.L.103-64 established the SRBOP in part for the "…conservation, protection, and enhancement of raptor populations and habitats and the natural and environmental

resources and values associated therewith." However, there are some factors within the Proponents' habitat enhancement proposal that may reduce its ability to enhance resources within the SRBOP.

The Proponents' proposal for habitat restoration includes separate proposals for "mitigation" and for "enhancement." Under the Proponents' proposal:

- Mitigation would be conducted at a 1:1 ratio for every acre of the Project's "long-term occupancy," regardless of the condition of the area prior to disturbance.
- Enhancement would be conducted at various ratios depending on the condition of the site as well as its location in relation to designated utility corridors. For areas within designated corridors, enhancement would be conducted at a 1:1 ratio for "presently undisturbed ecological sites" and at a 0.5:1 for "presently disturbed ecological sites." For areas outside of designated corridors, enhancement would be conducted at a 2:1 ratio for "presently undisturbed ecological sites" and at a 1:1 for "presently disturbed ecological sites."

Although the ratios in the Proponents' proposal depend on whether an affected area is a "presently disturbed ecological site" or an "undisturbed" site, the Proponents' proposal does not adequately define or delineate these areas. For example, the Proponents' proposal states that disturbed vegetation consists of "sagebrush and grassland habitat invaded by cheatgrass." This definition is too broad to clearly delineate what areas the Proponents would apply their various mitigation ratios to. More information is required from the Proponents in order to fully assess what areas the Proponents are considering "presently undisturbed ecological sites" or "presently disturbed ecological sites," or how these areas relate to the BLM Management Areas as defined in the SRBOP RMP. The following describes the SRBOP Management Areas:

- Not all areas of the SRBOP have the potential to achieve the DFCs in the same manner and timeframe; therefore, the RMP has divided the SRBOP into three management areas that reflect differences in soils, precipitation, fire history, seeding history, current vegetation, and site potential (i.e., Management Areas 1, 2, and 3).
  - Management Area 1 encompasses approximately 31 percent of the SRBOP and is located in the western portion of the SRBOP north of the Snake River. Area 1 has sustained the fewest wildfires (35 percent has burned), and supports the highest percentage of shrub cover (approximately 53 percent of the area supports a cover of native shrubs).
  - Management Area 2 comprises 43 percent of the SRBOP and encompasses the eastern portion of the SRBOP and the portion south of the Snake River. The shrub component has been reduced to approximately 34 percent of the overall vegetative cover in this area.
  - Management Area 3 encompasses the remaining 26 percent of the SRBOP and is generally located in the center of the SRBOP, north of the Snake River. Approximately 21 percent, of Area 3 supports shrub cover.

Because the Proponents' habitat restoration proposal is based on ratios and an average cost of restoration per acre (which they have estimated to be $1,800 an acre), it is not

dependent on a specific route proposal, but can be scaled and modified to match various routes. Although this proposal can be to scaled to various routes during the initial assessment and development, its design is not directly tied to any monitored or achieved on-the-ground success criteria (e.g., it relies on a fixed and finite dollar amount based on the extent of area impacted and "expected" success criteria, as opposed to the actual monitored success during implementation). As a result, the average cost estimated for this proposal per acre likely underestimates the true cost of restoration in the SRBOP (discussed in more detail below).

There are multiple factors that the Proponents' habitat restoration proposal does not take into consideration, such as: the past and on-going disturbance regimes of the area; the composition of the landscape and vegetation communities; the composition of adjacent areas; and the realization that restoration treatment options need to be adapted to respond to site specific conditions within the landscape as opposed to a one-type-fits-all approach. For example, the SRBOP has experienced frequent wildfires as well as other past disturbances, which have converted over 65 percent of the landscape to early successional plant communities, much of which is dominated by cheatgrass (*Bromus tectorum*). Cheatgrass is an invasive species that can proliferate rapidly in disturbed arid and semi-arid sagebrush grasslands, and can increase the rate and severity of fires, thereby creating a cycle of disturbance that ultimately increases the rate of cheatgrass establishment and spread (Cox and Anderson 2004). As a result, restoration efforts in cheatgrass dominated areas that have experienced an increased fire frequency are often unsuccessful because: 1) cheatgrass in adjacent areas can rapidly spread into the restored/treated areas, and 2) fires that originate in the adjacent cheatgrass dominated areas can spread into the restored/treated areas thereby increasing the rate of disturbance in the area and killing off the native plants that were restored in the treated areas.

The current Proponents' proposal does not take into account the variability in site-specific conditions or past and ongoing disturbance regimes in the area. The conditions within the SRBOP vary widely by region, with specific and unique disturbance regimes, conditions, and challenges that would be faced during restoration efforts. Because the Proponents' proposal specifies neither where these restoration and enhancement efforts would be conducted within the SRBOP nor what methods would be used during restoration efforts, the plan cannot be considered a complete proposal and the success or validity of the Proponents' proposal cannot be accurately assessed. Furthermore, the Proponents' proposal does not take into consideration the current drought conditions or the increasing fire frequencies that have been recorded within this region, both of which would have to be considered when implementing a restoration effort in this area. Instead, the Proponents' proposal assumes that restoration and enhancement within the SRBOP would have an 80 percent success rate (without regard to the differences between varying habitat conditions or regions within the SRBOP), and that the cost of restoration per acre is based on this assumption of an 80 percent success rate (i.e., it assumes that only 20 percent of the treatments would require additional measures or follow-up treatments). The Proponents' proposal does not explain how they derived this assumption of an 80 percent success rate; however, the BLM assumes that it was derived from one restoration site in the SRBOP (i.e., the

Dedication Point) where after 2 years post-planting the survivorship for Wyoming big sagebrush container stock (grown from locally sourced seed) was 80 percent. As this was one site in the SRBOP, involved container stock plants, and relates to a single species, the results of this site cannot be applied to the entire SRBOP. Therefore, the 80 percent success rate assumption is not valid for this Project or the Proponents' habitat restoration proposal.

The DOI has developed a Technical Guide that defines adaptive management and describes the conditions for its implementation (Williams et al. 2009); however, the Proponents' proposal does not take the guidelines or recommendations in this Technical Guide into consideration in its habitat restoration plan. Also, the Proponents' proposal does not include any efforts to reduce or control fires, which contribute to the spread of non-native plants in this area. As a result, a large portion of the habitat restoration efforts proposed in the Proponents' proposal may have lower success rates than those assumed in the Proponents' proposal and the treated area would likely return to pre-treated conditions without extensive follow-up treatments.

Because the Proponents' proposal 1) does not take into consideration the disturbance legacy of affected or proposed treatment areas; 2) does not provide sufficient information regarding the baseline conditions or the methods that would be implemented to restore target areas; and 3) overestimates the potential success rate that would likely be achieved in these areas, it is not likely that the habitat restoration efforts proposed in the MEP would result in enhancement of the SRBOP.

The efforts necessary to treat areas dominated by invasive plant species (e.g., clearing of vegetation, and mechanical or chemical treatment of weeds) have the potential to impact individuals of TES plant species (if present) and habitat (e.g., potential of herbicide drift into adjacent vegetation communities). If the restoration efforts were successful, they would potentially have long-term beneficial effects (e.g., restoration of TES plant habitat and a possible localized reduction of fire risk); however, as discussed above, restoration success is likely to be low or very limited in extent without implementation of adequate fire protection/reduction efforts coupled with an adaptive management approach to the success criteria (i.e., as opposed to tying the financial support to an assumption of an 80 percent success rate; see Williams et al. 2009). Therefore, the proposed habitat restoration efforts in the Proponents' proposal would potentially have short-term adverse impacts to TES plant species and habitat, but may have few to no long-term effects (adverse or beneficial).

Purchase of Private Inholdings

The effects of this proposal to TES plant species would not differ from the assessment presented for vegetation communities (see Section 3.6.2.4).

Law Enforcement

The effects of this proposal to TES plant species would not differ from the assessment presented for vegetation communities (see Section 3.6.2.4).

Visitor Enhancement

The effects of this proposal to TES plant species would not differ from the assessment presented for vegetation communities (see Section 3.6.2.4).

Line and Substation Removal

The Proponents have proposed to remove some existing infrastructure within the SRBOP. This includes:

- Removing approximately 7 miles of existing 46-kV line on BLM-managed lands from the Bowmont Substation to Gage Substation;
- Constructing an approximately 1-mile-long section on private land to connect the remaining portion of the line to the Idaho Power system;
- Reconstructing 3.9 miles of existing 12.5-kV lines, including 0.25 mile on BLM-managed lands;
- Converting approximately 4 miles of the existing 46-kV line on BLM-managed lands between the Gage and Ferry substations to a 12.5-kV distribution line; and
- Removing the existing Gage Substation and associated equipment/apparatus, which are on BLM-managed land.

Although not specifically addressed in the SRBOP's enabling statute, this proposal does not contradict the objectives and goals of the BLM's RMP or the SRBOP's enabling statute.

The Proponents have indicated that all efforts proposed as part of the line and substation removal effort are intended to apply to enhancement of the SRBOP (with no mitigation component).

Unlike the other proposals presented in the MEP, the location of the existing line and substation that would be removed is known at this time. Therefore, the impact that this action could have on TES species (beyond the general impacts discussed in Section 3.6.2.4) can be determined at this time. The work necessary to remove the existing line and substation, as well as reconstruct or re-connect the existing lines, would result in short-term disturbances to vegetation, including disturbance to known occurrences of slickspot peppergrass and slickspot peppergrass habitat. Additionally, approximately 3 acres of known occurrences of slickspot peppergrass would be disturbed during line and substation removal activities. Additionally, approximately 28 acres of occupied habitat, 13 acres of slickspot peppergrass habitat, 16 acres of proposed critical habitat, and less than 1 acre of potential habitat for slickspot peppergrass would be impacted.

The short-term effects of this effort would be similar to the effects that would occur during the construction of the Project (see Section 3.7.2.2) as similar construction equipment and personnel would likely be used. All BMPs and EPMs (see Table 2.7-1 of the FEIS) implemented during construction would also need to be applied during the removal of these existing lines and substations in order to minimize the impacts that could occur to TES plant species, including slickspot peppergrass.

3.7.2.6 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

Summary of Remaining Impacts

After implementation of the EPMs and MEP discussed above, some Project-related impacts would likely remain. The impact assessment found in Sections 3.7.2.2, 3.7.2.3, and 3.7.2.4 incorporates the avoidance and minimization contributions of the EPMs in the impact analysis; as a result, Sections 3.7.2.2, 3.7.2.3, and 3.7.2.4 take these measures and their impact offsets into consideration. The design features outlined in the Proponents' proposal (discussed above) may reduce the magnitude of impacts to some degree (thereby reducing the need for additional compensatory mitigation); however, the extent of this reduction cannot be fully quantified at this time (as discussed in detail above).

Note that Sections 3.7.2.2, 3.7.2.3, and 3.7.2.4 outline the current extent of known impacts that would occur Project-wide, as well as those that would be unique to the SRBOP.

Additional BLM Mitigation Categories

In addition to the design features and EPMs meant to avoid and minimize impacts to TES plants (as described above and as listed in Table 2.7-1 of the FEIS), several mitigation plans were required by the ROD for Segments 1–7 and 10 to compensate and mitigate for the remaining impacts to biological resources once the avoidance and minimization measures were fully implemented; however, none of these plans are specifically related to TES plants.

The BLM may require additional mitigation for some remaining impacts of the Project on environmental resources (including impacts that occur outside of the SRBOP), per the guidelines found in the BLM Regional Mitigation Manual (BLM 2013c) and DOI Manual 600 DM 6, *Implementing Mitigation at the Landscape-scale* (DOI 2015). Mitigation for Project-related impacts that would occur within the SRBOP is discussed below.

The BLM will continue to work with applicable stakeholders to identify the impacts that would remain on the SRBOP after implementation of the EPMs and MEP, as well as the existing compensatory mitigation plans discussed above. The BLM will then design mitigation options that address applicable remaining impacts (see Section 3.0 for a discussion of the BLM's policy regarding mitigation). These options will contain components that will ensure that all impacts to resources and values on the SRBOP that require mitigation are compensated for, as well as that enhancement of these resources is provided in order to comply with the enabling statute of the SRBOP. Based on internal and external scoping, the BLM is considering eight mitigation categories (see Section 2.6.2 in Chapter 2). The following mitigation categories are being considered to address remaining impacts to Special Status Plants within the SRBOP:

- Implement habitat/vegetation restoration efforts;
- Evaluate, maintain, enhance, or expand fuels management/fuel breaks;
- Increase wildfire preparedness and suppression;

- Increase applied research and monitoring to inform adaptive management; and
- Acquire private lands as deemed appropriate by the Authorizing Officer.

Appendix K contains a Conceptual Mitigation Model that the BLM may follow when calculating habitat restoration treatment–related mitigation requirements.

3.8 INVASIVE PLANT SPECIES

This section addresses the potential impacts of invasive plant species from the Segment 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; and the Toana Road Variations to the Segment 9 Revised Proposed Route. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). Effects associated with the routes analyzed in the 2013 FEIS were disclosed in that document. With the exception of the FEIS Proposed 9, those FEIS routes are not being re-analyzed here, as only new information is included in this resource-specific section.

Two terms are used in this section: "invasive plant species" and "noxious weeds."

- Invasive plant species consist of non-native plants[1] that have spread beyond their natural range of dispersal by human activities. Invasive plants are typically adaptable, aggressive, and have a high reproductive capacity. Their introduction causes or is likely to cause economic or environmental harm, or harm to human health (National Invasive Species Information Center 2008). Invasive plants are of concern because they can spread to new areas rapidly, threaten the genetic integrity of native flora through hybridization, typically flourish in disturbed areas resulting in the exclusion of native vegetation, and can change the structure and function of ecosystems through alterations of geochemical and geophysical processes.
- "Noxious weed" is a legal term for any invasive plant species that has been officially designated by a federal, state, or local agency as injurious to public health, agriculture, recreation, wildlife, or property (Sheley and Petroff 1999). Noxious weeds are a concern for federal, state, and county governments because of their potential to degrade wildlife habitat, reduce plant diversity, adversely affect agricultural production, and impact management of both natural and agricultural systems.

3.8.1 Affected Environment

3.8.1.1 Analysis Area

The Analysis Area used to define and address the existing environment and potential impacts of invasive plant species is described in detail within Section 3.8 of the FEIS. The extent of the Analysis Area that was used for this SEIS is restricted to that portion described in the FEIS that corresponds to Segments 8 and 9. Therefore, not all invasive plant species and issues relating to invasive species discussed in the FEIS would be affected by the routes being considered in this SEIS. As a result, invasive plant species not found within the Analysis Area for Segments 8 and 9 (but which may be included in the FEIS or other segments' Analysis Areas) are not discussed in this document.

[1] Not all non-native plant species are considered invasive plants, or are detrimental to economic or environmental conditions (e.g., some non-native horticultural landscaping species have low dispersal rates or are unable to survive outside of maintained landscaped areas).

Morley Nelson Snake River Birds of Prey National Conservation Area

Portions of the Project would cross through the SRBOP. As a result, this section will discuss potential impacts in relation to invasive plant species that would occur on the SRBOP. Project-related spread of invasive plant species could affect the environmental resources and values for which the SRBOP was established to manage and protect.

3.8.1.2 Issues Related to Invasive Plant Species

Issues related to vegetation communities and special status plants discussed in Sections 3.6 – Vegetation Communities and Sections 3.7 – Special Status Plants, respectively.

The following invasive plant species-related issues relevant to Segments 8 and 9 were brought up by the public during public scoping (Tetra Tech 2009) or in comments on the DEIS, were raised by federal and state agencies during scoping and agency discussions, or are issues that must be considered as stipulated in law or regulation:

- Whether noxious weeds would be introduced or spread into the ROW and adjacent areas,
- How the presence of the Project would impact efforts to control existing noxious weeds, and
- Whether a noxious weed prevention and abatement plan would be developed in conjunction with the appropriate agencies.

We reviewed the scoping comments received for this SEIS and determined that invasive plant issues considered in the FEIS are still relevant to the SEIS. No additional issues were identified. In addition, the following issue would be applicable to Segments 8 and 9, but was not specifically raised for the FEIS:

- Impacts to the values for which the SRBOP was established to manage and protect, which include invasive plant species.

3.8.1.3 Methods

The Invasive Plant Species section in the FEIS discusses the existing environmental conditions that could be impacted by the Project, as well as the methods that were used to assess potential Project-related impacts in relation to invasive plant species. We reviewed the data and methods in the FEIS and concluded that they are still valid for this SEIS. No significant new data were identified regarding invasive plants in the Analysis Area, with the exception of some new/updated data. The following new/updated datasets were used in the SEIS analysis:

- State of Idaho Department of Agriculture Noxious Weed List (ISDA 2015)
- Invaders Database System (University of Montana-Missoula 2015)
- PLANTS Database (NRCS 2015c)

These new data were incorporated into the analysis and were used as part of the impact assessment methods (see Section 3.8.1.4 of the FEIS for more details regarding the methods used).

The FEIS Proposed 9 route is included in three of the BLM Alternatives considered in this SEIS (i.e., Alternatives 2, 4, and 6). The impacts related to FEIS Proposed 9 have been re-analyzed using the new data that have become available since the publication of the FEIS (see the list of new data discussed above). As a result, the impact values reported in the FEIS for FEIS Proposed 9 may differ slightly from what is reported in this SEIS in some instances.

3.8.1.4 Existing Conditions

Idaho designated noxious weed species known or suspected to occur within the Analysis Area for Segments 8 and 9 are shown in Table D.8-1 of Appendix D. Note that Table D.8-1 contains only designated noxious weed species known or expected to occur within the Analysis Area; however, additional invasive species, not listed in Table D.8-1, likely occur within the Analysis Area. These species would also need to be considered if encountered during Project construction and operations, because the introduction or spread of other invasive species not listed in Table D.8-1, may need to be minimized to comply with federal, state, and county requirements.

3.8.2 Direct and Indirect Effects

This section is organized to present the effects of Project construction, operations, and decommissioning activities on the spread and/or introduction of invasive plant species. The Proposed Action includes many EPMs intended to minimize Project impacts to biological resources. These EPMs include measures to minimize the impacts of invasive plant species. A comprehensive list of all Project design features and EPMs, as well as the land ownership to which they apply, can be found in Table 2.7-1 of Chapter 2 in the FEIS. The following impact assessment takes these Project design features and EPMs into account when considering the potential impact the Project could have in relation to invasive plant species.

Plan Amendments

Amendments to the BLM RMPs and MFPs are summarized for each alternative in Table 2.3-1 (see Chapter 2 for more details). The BLM plan amendments are discussed in detail in Appendices F and G. Amendments are needed to permit the Project to cross various areas of BLM-managed land.

The effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved and amendments that alter land management designations could change future use of these areas. However, no amendments specific to invasive plant species are proposed for the Project and no impacts to invasive plant species resulting from approving the amendments, beyond those described for the general impacts of the Project, are anticipated.

3.8.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West for Segments 8 and 9 and this portion of the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of these segments. No Project-related impacts from invasive plant species would occur in the Analysis Area for these segments; however, impacts would continue as a result of natural events (such as fire or drought)

as well as from existing developments within the Analysis Area or from other projects, including wind farms, mining, agricultural, or other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project and the region would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, impacts similar to those described below may occur due to new transmission lines that may be built to meet the increasing demand in place of this Project.

3.8.2.2 Effects Common to All Routes

Construction and Operations

The general effects of construction and operations activities of the Project on the spread and/or introduction of invasive plant species were analyzed in detail within Section 3.8.2.2 of the FEIS. These effects include the increased risk for the spread and establishment of invasive plant species as a result of vegetation removal and soil disturbance during construction and operations which can create optimal conditions for weed spread/establishment. The impacts related to the potential risk of new or expanded extents of invasive species include displacement/replacement of native plant species, degradation of vegetation communities and habitat, changes in fire regime, alteration of soil nutrients and nutrient cycling, increased soil erosion, alteration of the composition and diversity of vegetation communities, and reduction in the value of forage or crops.

As stated in the FEIS, vegetation removal and soil disturbance during Project construction could create optimal conditions for the establishment of invasive plant species. Vehicles and construction equipment traveling from areas that contain invasive species into "weed-free areas" could disperse invasive plant seeds and propagates, resulting in their establishment in previously undisturbed areas that may not have contained invasive species, as well as increasing the distribution or abundance of existing populations in previously disturbed areas. Furthermore, disturbed areas may be seeded by airborne seeds originating from plants within adjacent areas; therefore, direct contact between infected areas and construction equipment is not required for invasive plant species to spread to new areas. In addition, the transportation of materials into areas disturbed by construction (e.g., borrow materials, mulch, gravel, as well as seed mixtures and/or saplings used during revegetation efforts) may contribute to the spread of invasive plant species.

We have reviewed Section 3.8.2.2 of the FEIS and determined that general effects of the Project on the spread and/or introduction of invasive plants, as well as the mitigation measures to reduce impacts, considered in the FEIS have not changed. As a result, these general effects are not re-stated in this SEIS (see Section 3.8.2.2 of the FEIS for a description of the effects of the Project on the introduction and/or spread of invasive species, the impacts of invasive species within the Project area, and the mitigation measures to reduce the effects of invasive species as a result of the Project).

The assessment of quantitative impacts specifically related to the routes and alternatives that are included in this SEIS are presented in Sections 3.8.2.3 and 3.8.2.4. The assessment of potential impacts of introduction and spread of invasive plant species related to the MEP, as well as a list of additional mitigation measures that would be required by the BLM related to impacts on the SRBOP, are presented in Sections 3.8.2.5 and 3.8.2.6.

Decommissioning

Impacts from decommissioning would be similar to those described for construction. Removal of structures and vehicles travel along the ROW could result in the spread or introduction of invasive plant species. No EPMs are specifically provided to address decommissioning; however, the EPMs proposed for construction would be applicable during decommissioning, and should be effective at reducing the potential to spread or introduce invasive plant species. Additional details concerning decommissioning are provided in Appendix B of the FEIS.

3.8.2.3 Direct and Indirect Effects by Route

This section assesses the potential impacts of invasive plant species from the Revised Proposed Routes, the other routes (8G, 8H, 9K, and FEIS Proposed 9), as well as the Route Variations (this section generally corresponds to Section 3.8.2.3 of the FEIS). Invasive plant species generally increase in abundance and distribution with increased soil and biological crust disturbance, removal of vegetation canopy, and opportunities for transport into new areas. All of the routes would increase these conditions and would likely have direct and indirect effects on invasive plant species abundances and distributions. The extent of effects would depend on the level of disturbance, the current distribution of invasive species, and the vectors that are available for distribution. The discussion below focuses on the first two factors, as it is assumed that the vectors available for distribution, such as Project vehicle traffic, equipment activity, or wind dispersal, would be comparable for all routes and route variations.

Implementation of the EPMs, in combination with the reclamation of disturbed areas, is likely to be effective at reducing the risk of introduction and spread of invasive plant species. However, as the amount of ground disturbance that would likely occur during construction differs, some areas could be more susceptible to infestations than others. In addition, some portions of each route involve disturbance within previously disturbed or altered vegetation types, where invasive species are likely already present. These include agriculture areas, disturbed/developed areas, and disturbed sagebrush and grassland areas identified during the remote sensing effort (these areas are referred to below as “previously disturbed areas”; undisturbed areas are referred to as “previously undisturbed areas”). Although continued disturbances in previously disturbed areas could alter the distribution of existing infestations as well as create opportunities for new infestations, it is assumed that areas characterized by a higher level of cultivation and development would likely have fewer native species and “weed-free areas” than previously undisturbed areas. Therefore, construction and operations in previously disturbed areas would likely result in fewer effects on the spread or establishment of invasive species than in previously undisturbed areas. Construction and operations of the Project in previously undisturbed areas could result in new infestations within areas

that previously contained few if any infestations, which would reduce the quality of native vegetation and would likely have a greater ecological effect than impacts to previously disturbed areas.

A general comparison of the routes and route variations is provided below, based on the total acres of ground disturbance during construction as well as the acreage of disturbance that would occur to previously undisturbed areas (i.e., disturbance to "natural vegetation"; see Table D.6-2 in Appendix D). These two factors provide an estimate of the potential for invasive plant species spread and establishment.

Segment 8

Revised Proposed Route

The Segment 8 Revised Proposed Route would link the existing Midpoint and Hemingway Substations (see Figure A-1). This 129.7-mile single-circuit 500-kV transmission line would stay north of the Snake River until it crosses just north of Guffey Butte, generally parallel to an existing 500-kV transmission line, before ending at the Hemingway Substation. This route is similar to the original proposed route in the 2013 FEIS except that the line would be 250 feet north of the existing 500-kV line rather than 1,500 feet south of the line from the eastern boundary of the SRBOP (MP 99.7) to the Hemingway Substation. The route east of that point is unchanged from the 2013 FEIS Proposed Route.

The Revised Proposed Route for Segment 8 primarily crosses disturbed, developed, or agricultural lands (approximately 70 percent of the total length; Appendix D, Table D.6-1). Furthermore, given that it parallels an existing ROW and crosses primarily through disturbed or developed lands, there are likely established invasive plant species present in this area. Construction of the Revised Proposed Route along Segment 8 would result in about 2,261 acres of total ground disturbance, of which 666 acres would correspond to disturbances to previously undisturbed areas (Table D.6-2).

Construction of the Revised Proposed Route for Segment 8 would also involve the removal of an existing 500-kV line. Removal of this existing line would impact approximately 8 acres of vegetation, all of which would be disturbed vegetation or developed areas; however, much of this impact is associated with areas that would also be disturbed due to construction of the new line.

Impacts on the SRBOP

Of the 2,261 acres of ground disturbance along this route, approximately 289 acres would occur on BLM-managed lands within the SRBOP. Only approximately 4 percent (13 acres) of the disturbance on BLM-managed lands within the SRBOP would occur to previously undisturbed areas (Table D.6-2).

Approximately 3 acres of the disturbance associated with the proposed line removal would occur on BLM-managed lands on the SRBOP.

Route 8G

Route 8G is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows an alignment similar to the ones analyzed for Routes 8A and

9B in the FEIS for approximately 44 miles, although it parallels 250 feet north of the existing 500-kV transmission line rather than 1,500 feet to the south in order to avoid the Hagerman Fossil Beds National Monument and development near Hagerman (see Figure A-1). The route then parallels 250 feet north of the Segment 9 Proposed Route and Route 9K for most of the remaining distance into the Hemingway Substation. The route is 146.9 miles long (including a 1.9-mile rebuild of the existing 500-kV line), compared to the 129.7-mile-long Revised Proposed Route for Segment 8.

Route 8G primarily crosses disturbed or agricultural lands (approximately 60 percent of the total length; Appendix D, Table D.6-1). Given that Route 8G parallels an existing ROW and crosses primarily through disturbed, developed, or agricultural lands, there are likely established invasive plant species present in this area. Construction of Route 8G would result in about 2,745 acres of total ground disturbance, of which 1,049 acres would correspond to disturbances to previously undisturbed areas (Appendix D, Table D.6-2).

Construction of Route 8G would also involve the removal of an existing 500-kV line. Removal of this existing line would impact approximately 9 acres of vegetation, all of which would consist of disturbed vegetation or disturbed areas (Appendix D, Table D.6-2); however, much of this impact is associated with areas that would also be disturbed due to construction of the new line.

Both the Segment 8 Revised Proposed Route and Route 8H would impact less total area (about 2,261 acres and 2,526 acres, respectively) and less natural vegetation (666 and 343 acres, respectively, of previously undisturbed areas) than Route 8G (Appendix D, Table D.6-2). As a result, Route 8G would likely have a greater risk for the introduction, establishment, or spread of invasive plant species than the Revised Proposed Route or Route 8H.

Impacts on the SRBOP

Of the 2,745 acres of ground disturbance along the route, approximately 179 acres would occur on BLM-managed lands within the SRBOP. Only approximately 27 acres of the disturbance on BLM-managed lands within the SRBOP would occur to previously undisturbed areas (Table D.6-2).

None of the impacts associated with the line removal would occur on BLM-managed lands within the SRBOP.

Route 8H

Route 8H is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows a combination of portions of the alignments analyzed for Route 8G and the Segment 9 Revised Proposed Route. The route is 137.5 miles long (including a 1.9-mile rebuild of the existing 500-kV line and a 25.7-mile removal and rebuild of a 138-kV line), compared to the 129.7-mile-long Segment 8 Revised Proposed Route. Approximately 44 miles of the route follows the Route 8G alignment; the remainder of Route 8H follows the alignment of the Segment 9 Revised Proposed Route.

Route 8H primarily crosses disturbed or agricultural lands (approximately 85 percent of the total length; Appendix D, Table D.6-1). Given that Route 8H crosses primarily through disturbed, developed, or agricultural lands and portions of the route parallel an existing transmission line, there are likely established invasive plant species present in this area. Construction of Route 8H would result in about 2,526 acres of total ground disturbance, of which 343 acres would correspond to disturbances to previously undisturbed areas (Appendix D, Table D.6-2).

Construction of Route 8H would also involve the removal of existing 500-kV and 138-kV lines. Removal of these existing lines would impact approximately 58 acres of vegetation, 57 acres of which would consist of disturbed vegetation or disturbed areas (Appendix D, Table D.6-2). Additionally, much of the line removal impacts are associated with areas that would also be disturbed due to construction of the new line.

The Revised Proposed Route would impact less total area (about 2,261 total acres impacted) than Route 8H; however, it would impact more natural vegetation (666 total acres of impact to natural vegetation) than Route 8H (Appendix D, Table D.6-2). Route 8G would impact more total area (about 2,745 total acres) and more natural vegetation (1,049 total acres) than Route 8H. As a result, Route 8H would likely have less risk of introduction, or establishment and spread of invasive plant species than the Revised Proposed Route 8 or Route 8G.

Impacts on the SRBOP

Of the 2,526 acres of ground disturbance along the route, approximately 1,007 acres would occur on BLM-managed lands within the SRBOP. Approximately 152 acres of the disturbance on BLM-managed lands within the SRBOP would occur to previously undisturbed areas (Table D.6-2).

None of the impacts of the 500-kV line removal would occur on land within the SRBOP. Approximately 38 acres of impacts from the 138-kV line removal would occur on BLM-managed land within the SRBOP.

Segment 9

Revised Proposed Route

The Segment 9 Revised Proposed Route would link the proposed Cedar Hill and existing Hemingway Substations with a 165.3-mile single-circuit 500-kV transmission line that skirts the Jarbidge and Owyhee Military Operating Areas to the north, then follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering the Hemingway Substation (see Figure A-1). It follows an alignment similar to the 2013 FEIS Route 9D/9G between MP 95.6 and 154.7, except that two portions of the route (totaling 25.7 miles) would be double-circuited with existing 138-kV lines. The first area is 5.2 miles near C.J. Strike Reservoir and the Bruneau Arm (MP 106.2 to 109.3 and 109.9 to 112.1), and the second area is 20.2 miles along the Baja Road (MP 121.0 to 141.2). Several rebuilds totaling approximately 0.6 mile are also required to tie the existing 138-kV lines into the new double-circuit alignments. Except for minor variations, the route is similar to the 2013 FEIS Route 9D/9G between MPs 141.2 and 154.7. From MP 154.7 and into the Hemingway Substation, the route is the same as the 2013 FEIS Proposed Route. The

Segment 9 Revised Proposed Route is 3.1 miles longer than the 2013 FEIS Proposed Route.

The Revised Proposed Route along Segment 9 primarily crosses previously disturbed, developed, or agricultural lands (79 percent of the total length; Appendix D, Table D.6-1). Construction of the Revised Proposed Route along Segment 9 would result in about 3,149 acres of total ground disturbance, of which 643 acres would correspond to disturbances to previously undisturbed areas (Appendix D, Table D.6-2).

Construction of the Revised Proposed Route for Segment 9 would also involve the removal of an existing 138-kV line. Removal of this existing line would impact approximately 48 acres of vegetation, 47 acres of which consists of disturbed vegetation, agricultural land, or developed areas (Appendix D, Table D.6-2). Much of the impact from the line removal, however, is associated with areas that would also be disturbed due to construction of the new line.

Impacts on the SRBOP

Of the 3,149 acres of ground disturbance along the route, 997 acres would occur on BLM-managed lands within the SRBOP; however, only approximately 145 acres of the disturbance on BLM-managed lands within the SRBOP would occur to previously undisturbed areas (Table D.6-2).

Of the 48 acres of total impact associated with the proposed line removal, approximately 39 acres of impact would occur on BLM-managed lands within the SRBOP.

FEIS Proposed Route 9

The Proponents originally designed the 162.2-mile-long FEIS Proposed 9 to follow existing utility corridors and avoid the SRBOP and other protected areas where feasible. Approximately 54 miles of the route is within or adjacent to a utility corridor. FEIS Proposed 9 is approximately 3.1 miles shorter than the Revised Proposed Route but it crosses 13.6 miles of the SRBOP compared to 54.2 miles for the Revised Proposed Route. Both the Revised Proposed Route and FEIS Proposed 9 cross the Salmon Falls Creek at Lilly Grade adjacent to an existing single-phase 34.5-kV distribution line just north of the Salmon Falls Creek wilderness study area.

FEIS Proposed 9 primarily crosses previously disturbed, developed, or agricultural lands (62 percent of the total length; Appendix D, Table D.6-1). Construction of FEIS Proposed 9 would result in about 3,294 acres of total ground disturbance, of which 1,084 acres would correspond to disturbances to previously undisturbed areas (Appendix D, Table D.6-2).

FEIS Proposed 9 would impact more total area (approximately 145 more total acres) and more natural vegetation (approximately 441 acres more natural vegetation) than the Revised Proposed 9 Route (Appendix D, Table D.6-2). FEIS Proposed 9 would impact less total area (approximately 90 acres less) and less natural vegetation (approximately 255 acres less of impacts to previously undisturbed areas) than Route 9K. As a result, FEIS Proposed 9 would likely have a greater risk for the establishment and spread of invasive plant species than the Revised Proposed Route, but less risk s than Route 9K.

Impacts on the SRBOP

Of the 3,294 acres of ground disturbance along the route, approximately 269 acres would occur on BLM-managed lands within the SRBOP. Approximately 88 acres of the disturbance on BLM-managed lands within the SRBOP would occur to previously undisturbed areas (Table D.6-2).

Route 9K

Route 9K is being considered by the BLM as a modified version of FEIS Route 9E (i.e., the FEIS Preferred Route) to avoid crossing the northwestern portion of the SRBOP and to minimize direct and indirect impacts to priority sage-grouse habitat. The route is approximately 174.6 miles long, compared to the 165.3-mile-long Revised Proposed Route 9 (see Figure A-1).

Route 9K is 9.3 miles longer than the Revised Proposed Route for Segment 9. Route 9K primarily crosses previously disturbed, developed, or agricultural lands (59 percent of the total length; Appendix D, Table D.6-1). Construction of Route 9K would result in approximately 3,384 acres of total ground disturbance, of which 1,339 acres would correspond to disturbances to previously undisturbed areas (Appendix D, Table D.6-2).

Both the Revised Proposed Route and the FEIS Proposed Route along Segment 9 would impact slightly less total area (235 and 90 total acres less impact, respectively) and less natural vegetation than Route 9K (approximately 696 and 255 fewer acres of impacts to previously undisturbed areas; Appendix D, Table D.6-2). As a result, Route 9K would likely have a slightly greater risk for the establishment and spread of invasive plant species than the Segment 9 Revised Proposed Route.

Impacts on the SRBOP

Of the 3,384 acres of ground disturbance along the route, 171 acres would occur on BLM-managed lands within the SRBOP; however, only approximately 25 acres of the disturbance on BLM-managed lands within the SRBOP would occur to previously undisturbed areas (Table D.6-2).

Toana Road Variations 1 and 1-A and the Comparison Portion of the Revised Proposed Route 9

Toana Road Variation 1 to the Segment 9 Revised Proposed Route was recommended by the BLM Jarbidge Field Office archaeologist to avoid paralleling the Toana Freight Wagon Road, an NRHP site. The Segment 9 Revised Proposed Route parallels within 0.25 mile of the Toana Road between MP 38.2 and 40.6, and parallels within 1 mile of the road through Blue Gulch between MP 40.6 and 43.5. Variation 1 is approximately 8.5 miles in length. Approximately 0.3 mile of the route crosses state land, with the remainder on land managed by the BLM. The Toana Road Variation 1-A to the Segment 9 Revised Proposed Route was recommended by the BLM to minimize visual impacts to the Toana Freight Wagon Road, and was also intended to utilize existing roads in order to minimize new road construction in the area. Variation 1-A is approximately 8.9 miles long. Approximately 1 mile of the route crosses state land, with the remainder of the route variation on land managed by the BLM.

Approximately 67 percent of the total length of the Toana Road Variation 1 crosses previously disturbed, developed, or agricultural lands, while 67 percent of the total

length of the Toana Road Variation 1-A and 61 percent of the comparison portion of the Revised Proposed Route cross previously disturbed, developed, or agricultural lands (Appendix D, Table D.6-1). Construction of the Toana Road Variation 1 would result in about 168 acres of total ground disturbance, of which 54 acres (32 percent) would correspond to disturbances to previously undisturbed areas (Appendix D, Table D.6-2). Construction of the Toana Road Variation 1-A would result in approximately 163 acres of total ground disturbance, of which 57 acres (35 percent) would correspond to previously undisturbed areas. The comparison portion of the Segment 9 Revised Proposed Route would impact more total vegetation (177 acres of total ground disturbance) and more natural vegetation (65 acres) than either the Toana Road Variation 1 or the Toana Road Variation 1-A. Therefore, the comparison portion of the Revised Proposed Route would likely have a greater potential for the spread or introduction of invasive plant species than either Toana Road Variation.

Impacts on the SRBOP

Neither of the two Toana Road Variations or the comparison portion of the Revised Proposed Route for Segment 9 would cross through the SRBOP. As a result, these route variations would not impact the SRBOP.

3.8.2.4 Direct and Indirect Effects of the Alternatives

This section assesses the quantitative impacts in relation to invasive plant species from the seven BLM action alternatives. Table 3.8-1 lists the quantitative impacts that would occur to natural and disturbed vegetation communities from construction under these action alternatives. The alternatives are visually displayed in Figures A-2 through A-8.

Table 3.8-1. Comparison of Construction-related Ground Disturbance (acres) and Impacts to Natural and Disturbed Vegetation (acres) from the Seven Action Alternatives

Alternative	Total Ground Disturbance[1/]	Total Natural Vegetation[1/]			Total Disturbed and Semi-natural Vegetation[1/]	Total Other Cover Types[1/,3/]
		Const.Fac.[2/]	ROW	Total Impacts	Const. Fac.[2/]	Const. Fac. [2/]
1	5,410 [1,286]	1,305 [157]	4 [1]	1,309 [158]	4,058 [1,127]	13 [1]
2	5,555 [558]	1,747 [101]	2	1,750 [101]	3,793 [456]	12
3	5,645 [460]	2,001 [38]	3	2,005 [38]	3,631 [422]	9
4	6,039 [448]	2,131 [115]	1	2,133 [115]	3,900 [332]	6
5	6,129 [350]	2,385 [52]	1	2,388 [52]	3,738 [298]	3
6	5,820 [1,276]	1,425 [239]	1 [1]	1,427 [240]	4,381 [1,033]	13 [3]
7	5,910 [1,178]	1,678 [175]	3 [1]	1,682 [177]	4,218 [999]	10 [3]

Note that values in "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP.
1/ Numbers in table are inexact; columns or rows may not sum exactly due to rounding, including the totals.
2/ Const. Fac. = clearing for facilities such as infrastructure, roads, temporary multipurpose yards, and fly yards; ROW = right-of-way clearing
3/ "Other Cover Types" include agriculture, disturbed/developed, water, areas with no vegetation data, and "miscellaneous" (e.g., cliff and canyon, volcanic rock and cinder land, sparsely vegetated large eroding bluffs).

As discussed in Section 3.8.2.3, inclusion of the Toana Road Variation 1 or 1-A into any of the Alternatives would reduce the total ground disturbance slightly (10 acres and 15 acres less total impacts, respectively). Inclusion of either Toana Road Variation would

also slightly reduce the acres of impacts to natural vegetation (11 acres and 8 acres less, respectively).

Alternative 1 – Proposed Action (the Revised Proposed Routes for Segments 8 and 9)

Alternative 1 consists of the Revised Proposed Routes for Segments 8 and 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.8.2.3). Construction of Alternative 1 would result in approximately 5,410 acres of total ground disturbance, of which 1,309 acres would correspond to disturbances to previously undisturbed areas (Table 3.8-1). Of the 5,410 acres of ground disturbance, 1,286 acres would occur on BLM-managed land within the SRBOP. Only approximately 158 acres of the disturbance on BLM-managed lands within the SRBOP would occur to previously undisturbed areas (Table 3.8-1). Alternative 1 would have the highest potential for introducing invasive plant species within the SRBOP of all the action alternatives because more of the alignment would be within the NCA.

Alternative 2 – Revised Proposed 8 and FEIS Proposed 9

Alternative 2 consists of the Revised Proposed Route for Segment 8 and the FEIS Proposed Route for Segment 9. Impacts associated with Alternative 2 correspond to those described above for these two routes combined (see Section 3.8.2.3). Construction of Alternative 2 would result in approximately 5,555 acres of total ground disturbance, of which 1,750 acres would correspond to disturbances to previously undisturbed areas (Table 3.8-1). As shown in Table 3.8-1, total ground disturbance, as well as impacts to previously undisturbed areas under Alternative 2 would both be slightly greater than Alternative 1 (approximately 145 and 441 acres more impacts, respectively). Of the 5,555 acres of ground disturbance, 558 acres would occur on BLM-managed land within the SRBOP. Approximately 101 of the disturbance on BLM-managed lands within the SRBOP would occur to previously undisturbed areas (Table 3.8-1).

Alternative 3 – Revised Proposed 8 and the 9K Route

Alternative 3 consists of the Revised Proposed Route for Segment 8 and Route 9K; therefore, the impacts associated with this alternative correspond to those described above for the these two routes combined (see Section 3.8.2.3). Construction of Alternative 3 would result in approximately 5,645 acres of total ground disturbance, of which 2,005 acres would correspond to disturbances to previously undisturbed areas (Table 3.8-1). As shown in Table 3.8-1 total ground disturbance, as well as impacts to previously undisturbed areas under Alternative 3 would both be greater than Alternative 1 (approximately 235 and 696 acres more impacts, respectively). Of the 5,645 acres of ground disturbance, 460 acres would occur on BLM-managed land within the SRBOP. Only approximately, 38 acres of the disturbance on BLM-managed lands within the SRBOP would occur to previously undisturbed areas (Table 3.8-1).

Alternative 4 – The 8G Route and FEIS Proposed 9

Alternative 4 consists of the Route 8G and the FEIS Proposed Route for Segment 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.8.2.3). Construction of Alternative

4 would result in approximately 6,039 acres of total ground disturbance, of which 2,133 acres would correspond to disturbances to previously undisturbed areas (Table 3.8-1). As shown in Table 3.8-1, total ground disturbance, as well as impacts to previously undisturbed areas under Alternative 4, would both be greater than Alternative 1 (approximately 629 and 824 acres more impacts, respectively). Of the 6,039 acres of ground disturbance, 448 acres would occur on BLM-managed land within the SRBOP. Approximately 115 acres of the disturbance on BLM-managed lands within the SRBOP would occur to previously undisturbed areas (Table 3.8-1). However, Alternative 4 would have the least potential for introducing invasive plant species within the SRBOP of all the action alternatives other than Alternative 5 because the alignment largely avoids crossing the NCA.

Alternative 5 – The 8G and 9K Routes

Alternative 5 consists of Routes 8G and 9K; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.8.2.3). Construction of Alternative 5 would result in approximately 6,129 acres of total ground disturbance, of which 2,388 acres would correspond to disturbances to previously undisturbed areas (Table 3.8-1). As shown in Table 3.8-1, total ground disturbance, as well as impacts to previously undisturbed areas, under Alternative 5 would both be greater than Alternative 1 (approximately 719 and 1,079 acres more impacts, respectively). Of the 6,129 acres of ground disturbance, 350 acres would occur on BLM-managed land within the SRBOP. Only approximately 52 acres of the disturbance on BLM-managed lands within the SRBOP would occur to previously undisturbed areas (Table 3.8-1). Alternative 5 would have the least potential for introducing invasive plant species within the SRBOP of any of the action alternatives because the alignment largely avoids crossing the NCA.

Alternative 6 – The 8H Route and FEIS Proposed 9

Alternative 6 consists of Route 8H and the FEIS Proposed Route for Segment 9; therefore, impacts associated with Alternative 6 correspond to those described above for these two routes combined (see Section 3.8.2.3). Construction of Alternative 6 would result in approximately 5,820 acres of total ground disturbance, of which 1,427 acres would correspond to disturbances to previously undisturbed areas (Table 3.8-1). As shown in Table 3.8-1, total ground disturbance, as well as impacts to previously undisturbed areas, under Alternative 6 would both be greater than Alternative 1 (approximately 410 and 118 acres more impacts, respectively). Of the 5,820 acres of ground disturbance, 1,276 acres would occur on BLM-managed land within the SRBOP. Only approximately 240 acres of the disturbance on BLM-managed lands within the SRBOP would occur to previously undisturbed areas (Table 3.8-1).

Alternative 7 – The 8H and 9K Routes

Alternative 7 consists of Route 8H and 9K; therefore, impacts associated with Alternative 7 correspond to those described above for these two routes combined (see Section 3.8.2.3). Construction of Alternative 7 would result in approximately 5,910 acres of total ground disturbance, of which 1,682 acres would correspond to disturbances to previously undisturbed areas (Table 3.8-1). As shown in Table 3.8-1, total ground disturbance, as well as impacts to previously undisturbed areas, under Alternative 7 would both be greater than Alternative 1 (approximately 500 and 373 acres

more impacts, respectively). Of the 5,910 acres of ground disturbance, 1,178 acres would occur on BLM-managed land within the SRBOP. Only approximately 177 acres of the disturbance on BLM-managed lands within the SRBOP, however, would occur to previously undisturbed areas (Table 3.8-1).

3.8.2.5 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, as well as additional measures proposed by the Project Proponents specifically for the SRBOP.

Environmental Protection Measures

The Proponents have committed to Project design features and EPMs to minimize or avoid impacts on environmental resources. These measures, the areas where they would be applicable (e.g., private, state, or federal-managed lands), as well as the details of each measure are provided in Table 2.7-1 of the FEIS. Many of these measures would be either directly or indirectly applicable to invasive plant species (i.e., they would minimize the potential Project-related introduction and spread of invasive plants species).

Measures that would indirectly apply to invasive plants (i.e., measures that were not developed directly to minimize impacts of invasive plants, but if implemented could avoid or minimize impacts of invasive plants) include G-1; G-2; OM-5; OM-6; OM-13; OM-14; OM-18; OM-24; VEG-1 through VEG-8; TESPL-4; WILD-2; TESWL-14; and TRANS-14 (see Table 2.7-1 in the FEIS).

The following measures, which were identified in Table 2.7-1 of the FEIS, are directly related to invasive plant species and would be applicable to Segments 8 and 9:

WEED-1 The Proponents shall consult with each appropriate local land management agency (Forest Service and BLM) office or landowner to determine appropriate seed mix and commercial seed source for revegetation. The Reclamation, Revegetation, and Weed Management Plan shall specify the approved seed mixes for federal lands. Disturbed soil will not be allowed to support the growth of noxious weeds or invasive weedy species. Prevention of noxious weeds will apply to all phases of the Project.

WEED-2 Weed control and prevention measures shall adhere to all agency standards and guidelines. These measures shall be developed in consultation with local, state, and federal weed agencies; all implemented measures would follow the principle of integrated weed management.

WEED-3 Soil stockpiles in areas containing noxious weeds and invasive plant species shall be kept separate from soil removed from areas that are free of noxious weed and invasive plant species, and the soil will be replaced in or near the original excavation. If requested by the applicable land-management agency, soil stockpiles shall be covered with plastic if the soil stockpile will be in place for two weeks or more and is not being actively used. On lands managed by the Forest Service or per private landowner request, stockpiles will not be covered with plastic.

WEED-4 Gravel and other materials used for road construction on federally managed lands shall come from certified weed-free sources.

OM-15 To help limit the spread and establishment of noxious weed species in disturbed areas, desired vegetation needs to be established promptly after disturbance. The Proponents will rehabilitate significantly disturbed areas as soon as possible after ground-disturbing activities and during the optimal period. Seed and mulch will be certified "noxious weed free" and seed mix will be agreed to in advance by the landowner or land managing agency.

REC-1 Proponent personnel and their contractors will be trained on noxious and invasive weed identification to facilitate avoidance of infestations where possible or identification of new infestations.

REC-2 Pre-construction weed treatment would be conducted prior to the start of ground-disturbing activities and at the time most appropriate for the target species.

REC-3 Pre-construction weed treatment would be limited to the areas that are expected to have surface-disturbing activities. The final Reclamation Plan will include a schedule showing the phased in-service dates for different segments. Pre-construction weed treatment will be scheduled accordingly.

REC-4 Pre-construction treatment may use mechanical control, hand spraying, grazing, or herbicides. The final Reclamation Plan will discuss those options, as applicable.

REC-5 All herbicide applications would comply with label restrictions, federal, state and/or county regulation, the Proponents' specifications and landowner agreements. No spraying would occur prior to notification of the applicable land management agency. On federal or state controlled lands, a herbicide use plan will be submitted prior to any herbicide application as recommended in the BLM herbicide EIS (http://www.blm.gov/wo/st/en/prog/more/veg_eis.html). The herbicide use plan will include the dates and locations of application, target species, herbicide, adjuvants, and application rates and methods (e.g., spot spray vs. boom spray). No herbicide would be applied to any private property without written approval of the landowner. The final Reclamation Plan will contain a list of herbicides that may be used, target species, best time for application, application rates, and if they are approved for use on BLM-managed and NFS lands.

REC-6 Herbicides may be applied using a broadcast applicator mounted on a truck or ATV, backpack sprayers, or with hand sprayers as conditions dictate. Herbicide applications would be conducted only by licensed operators or under the supervision of a licensed operator. Where allowed, a broadcast applicator would likely be used. In areas where noxious weeds are more isolated and interspersed with desirable vegetation, noxious and invasive weeds would be targeted, thereby avoiding other

plants. Pre-construction herbicide applications would not occur adjacent to known special status species or near water bodies.

REC-7 All areas treated would be documented using GPS technologies and included in the annual report.

REC-8 Areas of existing noxious weeds and invasive species will be avoided where possible.

REC-9 Project vehicles will arrive at the job site clean of all soil and herbaceous material.

REC-10 When the contractors demobilize from the job site where identified infestations of noxious weeds are present, they will use appropriate decontamination measures as defined in the final Reclamation Plan..

REC-11 Soil stockpiles from areas that did not have noxious weeds or invasive species present, will not be placed adjacent to populations of noxious weeds or invasive species, where practicable.

REC-12 Areas disturbed by Project activities are susceptible to the establishment and spread of noxious weeds. Erosion control measures identified in the Stormwater Pollution Prevention Plan(s) (SWPPP) would also assist in preventing the establishment of weeds on exposed soils.

REC-13 Project-related storage and staging yards, fly yards, and other areas that are subject to regular long-term disturbance will be kept weed-free through regular site inspections and herbicide applications, subject to the consent of the land owner.

REC-14 Where pre-construction surveys have identified noxious or invasive weed species infestations, topsoil and other soils will be placed next to the infested area and clearly identified as coming from an infested area. Topsoil would be returned to the area it was taken from and will not be spread in adjacent areas. If the topsoil is not suitable for backfill, then it will be spread in another previously disturbed area and clearly identified for future weed treatments as applicable.

REC-15 Straw or hay that may be used as a BMP to control erosion and sedimentation must be certified weed free. If certified weed-free materials are not available, then alternative BMPs will be used. The use of alternative BMPs will be coordinated with the construction storm water inspector.

REC-17 Certified weed-free straw, mulch, gravel, and other BMPs as appropriate, will be used as described in the SWPPP to stabilize the stockpile and limit erosion and standing water, control dust, and control the establishment of noxious or invasive weeds in stockpiled soils.

These EPMs would avoid or minimize the extent of impacts that could occur as a result in invasive plant species. These EPMs are a part of the current Project description, and

as such, the effects of their implementation are included in the impact discussion found in Sections 3.8.2.2 and 3.8.2.3.

Proponent-Proposed MEP and Potential Effects of the MEP within the SRBOP

The Proponents have developed an MEP that contains design features specific to the SRBOP. This plan was developed to mitigate the effects of Project-related impacts within the SRBOP, as well as comply with the SRBOP's enabling statute (P.L. 103-64) which requires enhancement of resources within the SRBOP. The Proponents' plan contains two forms of mitigation: "compensation mitigation" and "enhancement." For this analysis, mitigation is defined as avoidance, minimization, and compensation measures aimed at offsetting adverse impacts of the Project; enhancement is defined as additional mitigation measures that are required in order to enhance the objectives and values for which the SRBOP was established.

One of the goals of the Proponents' MEP proposal is to return treated areas to their baseline condition, which is defined using the NRCS ESD of the affected area (see Section 3.6 – Vegetation Communities, for a definition of ESDs). The site descriptions for the unidentified areas would need to be established in order to determine the baseline conditions of the area, which are necessary to define restoration goals. This is because a determination of the adequacy of any proposed mitigation and enhancement cannot be made unless the baseline conditions for all areas impacted as well as those proposed for mitigation/enhancement are known in order to fully calculate both the debit (i.e., Project impact) and mitigation/enhancement credit. As a result, more information is required from the Proponents to fully assess the proposed MEP.

The Proponents' MEP offers a portfolio that contains five types of mitigation/ enhancement proposals. The following discusses the benefit and/or impact that these proposed mitigation/enhancement proposals could have on the introduction and spread of invasive plant species.

Habitat Restoration

The MEP states that the goal for the Proponents' habitat restoration proposal is to convert "non-native grasslands to native perennial plant communities" as well as to conduct "noxious weed control." This proposal, in general, is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute (e.g., P.L. 103-64), which established the SRBOP in part for the "conservation, protection, and enhancement of raptor populations and habitats and the natural and environmental resources and values associated therewith." However, there are some factors within the Proponents' habitat enhancement proposal that may reduce its ability to enhance resources within the SRBOP.

The Proponents' proposal for habitat restoration includes separate proposals for "mitigation" and for "enhancement." Under the Proponents' proposal:

- Mitigation would be conducted at a 1:1 ratio for every acre of the Project's "long-term occupancy," regardless of the condition of the area prior to disturbance.

- Enhancement would be conducted at various ratios depending on the condition of the site as well as its location in relation to designated utility corridors. For areas within designated corridors, enhancement would be conducted at a 1:1 ratio for "presently undisturbed ecological sites" and at a 0.5:1 for "presently disturbed ecological sites." For areas outside of designated corridors, enhancement would be conducted at a 2:1 ratio for "presently undisturbed ecological sites" and at a 1:1 for "presently disturbed ecological sites."

Although the ratios in the Proponents' proposal depend on whether an affected area is a "presently disturbed ecological site" or an "undisturbed" site, the proposal does not adequately define or delineate these areas. For example, the MEP states that disturbed vegetation consist of "sagebrush and grassland habitat invaded by cheatgrass." This definition is too broad to clearly delineate what areas the Proponents would apply their various mitigation ratios to. More information is required from the Proponents in order to fully assess what areas the Proponents are considering "presently undisturbed ecological sites" or "presently disturbed ecological sites," or how these areas relate to the BLM Management Areas as defined in the SRBOP RMP. The following describes the SRBOP Management Areas:

- Not all areas of the SRBOP have the potential to achieve the DFC in the same manner and time-frame; therefore, the RMP has divided the SRBOP into three management areas that reflect differences in soils, precipitation, fire history, seeding history, current vegetation, and site potential (i.e., Areas 1, 2, and 3).
  - Management Area 1 encompasses approximately 31 percent of the SRBOP and is located in the western portion of the SRBOP north of the Snake River. Area 1 has sustained the fewest wildfires (35 percent has burned), and supports the highest percentage of shrub cover (approximately 53 percent of the area supports a cover of native shrubs).
  - Management Area 2 comprises 43 percent of the SRBOP and encompasses the eastern portion of the SRBOP and the portion south of the Snake River. The shrub component has been reduced to approximately 34 percent of the overall vegetative cover in this area.
  - Management Area 3 encompasses the remaining 26 percent of the SRBOP and is generally located in the center of the SRBOP, north of the Snake River. Approximately 21 percent of Area 3 supports shrub cover.

Because the Proponents' habitat restoration proposal is based on ratios and an average cost of restoration per acre (which they have estimated to be $1,800 an acre), it is not dependent on a specific route proposal, but can be scaled and modified to match various routes. Although this proposal can be to scaled to various routes during the initial assessment and development, its design is not directly tied to any monitored or achieved on-the-ground success criteria (e.g., it relies on a fixed and finite dollar amount based on the extent of area impacted and "expected" success criteria, as opposed to the actual monitored success during implementation). As a result, the average cost estimated for this proposal per acre likely underestimates the true cost of restoration in the SRBOP (discussed in more detail below).

There are multiple factors that the Proponents' habitat restoration proposal does not take into consideration, such as the past and ongoing disturbance regimes of the area; the composition of the landscape and vegetation communities; the composition of adjacent areas; and the realization that restoration treatment options need to be adapted to respond to site specific conditions within the landscape as opposed to a one-type-fits-all approach. For example, the SRBOP has experienced frequent wildfires as well as other past disturbances, which have converted over 65 percent of the landscape to early successional plant communities, much of which is dominated by cheatgrass. Cheatgrass is an invasive plant species that can proliferate rapidly in disturbed arid and semi-arid sagebrush grasslands, and can increase the rate and severity of fires, thereby creating a cycle of disturbance that ultimately increases the rate of cheatgrass establishment and spread (Cox and Anderson 2004). As a result, restoration efforts in cheatgrass-dominated areas that have experienced an increased fire frequency are often unsuccessful because: 1) cheatgrass in adjacent areas can rapidly spread into the restored/treated areas, and 2) fires that originate in the adjacent cheatgrass dominated areas can spread into the restored/treated areas thereby increasing the rate of disturbance in the area and killing off the native plants that were restored in the treated areas. Additionally, traditional control methods such as herbicides, grazing, and burning have not proven very successful at preventing establishment and spread of cheatgrass and seed mixes used for restoration often consist of slow growing native perennial grasses that are less robust in disturbed areas and provide little competition against cheatgrass (Stube 2012). This combination of competitive advantage and alteration of fire regime make it extremely difficult to establish native species in cheatgrass dominated areas (Cox and Anderson 2004).

The Proponents' habitat restoration proposal does not take into account the variability in site-specific conditions or past and ongoing disturbance regimes in the area. The conditions within the SRBOP vary widely by region, with specific and unique disturbance regimes, conditions, and challenges that would be faced during restoration efforts. Because the Proponents' proposal neither specifies where these restoration and enhancement efforts would be conducted within the SRBOP nor what methods would be used during restoration efforts, the plan cannot be considered a complete proposal and the success or validity of the proposed plan cannot be accurately assessed. Furthermore, the Proponents' proposal does not take into consideration the current drought conditions or the increasing fire frequencies that have been recorded within this region, both of which would have to be considered when implementing a restoration effort in this area. Instead, the Proponents' proposal simply assumes that restoration and enhancement within the SRBOP would have an 80 percent success rate (without regard to the differences between varying habitat conditions or regions within the SRBOP), and that the cost restoration per acre is based on this assumption of an 80 percent success rate (i.e., it assumes that only 20 percent of the treatments would require additional measures or follow-up treatments). The Proponents' proposal does not explain how they derived this assumption of an 80 percent success rate; however, the BLM assumes that it was derived from one restoration site in the SRBOP (i.e., the Dedication Point) where after 2 years post-planting the survivorship for Wyoming big sagebrush container stock (grown from locally sourced seed) was 80 percent. As this was one site in the SRBOP, involved container stock plants, and relates to a single

species, the results of this site cannot be applied to the entire SRBOP. Therefore, the 80 percent success rate assumption is not valid for this Project or the Proponents' habitat restoration proposal.

The DOI has developed a Technical Guide that defines adaptive management and describes the conditions for its implementation (Williams et al. 2009); however, the Proponents' habitat restoration proposal does not take the guidelines or recommendations in this Technical Guide into consideration in its habitat restoration plan. Also, the Proponents' proposal does not include measures to reduce or control fires, which contribute to the spread of non-native plants in this area. As a result, a large portion of the habitat restoration efforts proposed in the MEP may have lower success rates than those assumed in the Proponents' proposal and the treated area would likely return to pre-treated conditions without extensive follow-up treatments.

Because the Proponents' habitat restoration proposal 1) does not take into consideration the disturbance legacy of affected or proposed treatment areas; 2) does not provide sufficient information regarding the baseline conditions or the methods that would be implemented to restore target areas; and 3) overestimates the potential success rate that would likely be achieved in these areas, it is not likely that the habitat restoration efforts proposed in the MEP would result in enhancement of the SRBOP.

The efforts necessary to treat areas dominated by invasive plant species (e.g., clearing of vegetation, and mechanical or chemical treatment of weeds) would have a potential short-term beneficial effect on the spread of invasive species (i.e., reduce the risk). Furthermore, if the restoration efforts were successful, they would have long-term beneficial effects (e.g., reduction in spread of invasive species, restoration of native habitats, and a possible localized reduction of fire risk); however, as discussed above, restoration success is likely to be low or very limited in extent without implementation of adequate fire protection/reduction efforts coupled with an adaptive management approach to the success criteria (i.e., as opposed to tying the financial support to an assumption of an 80 percent success rate; see Williams et al. 2009). Therefore, the proposed habitat restoration efforts in the Proponents' proposal would likely have a short-term beneficial impact on the spread of invasive species, but may have few to no long-term effects (adverse or beneficial). Furthermore, as some restoration efforts contain a disturbance component (e.g., during the clearing of existing vegetation), the restoration efforts, if not implemented correctly or successfully, could increase the rate of invasive plant spread due to the increased ground disturbance involved; however, this is uncertain as the Proponents have yet to identify what methods would be used during their proposed restoration mitigation/enhancement.

Purchase of Private Inholdings

There are private lands within the SRBOP that could contain important cultural and natural resources. The Proponents have proposed (within the MEP) to purchase a portion of these lands and deed them to the U.S. government, to be managed by the BLM. The Proponents have indicated that the selection of the parcels that would be purchased and deeded to the BLM would be determined by the agencies' Oversight Committee. However, the composition and exact membership of the individuals and agencies within the proposed Oversight Committee have not been identified to date.

Therefore, the effectiveness of the Oversight Committee cannot be determined until the individuals and agencies that will be included in the committee are identified, and the process that will be used by the committee to make its final decisions is determined. The MEP makes a preliminary estimate of $3,000 an acre for the cost of purchasing lands and transferring them to the BLM for management; however, it acknowledges that the exact price is uncertain until the parcels are identified by the Oversight Committee and purchase negotiations begin.

This proposal is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute (e.g., P.L. 103-64 states that "The Secretary is authorized to acquire lands and interests therein within the boundaries of the conservation area by donation, purchase with donated or appropriated funds, exchange, or transfer from another Federal agency, except that such lands or interests owned by the State of Idaho or a political subdivision thereof may be acquired only by donation or exchange").

The Proponents have indicated that all efforts proposed in regard to the purchasing of private inholdings are intended to apply to enhancement of the SRBOP (with no mitigation component).

Purchasing private inholdings and transferring control of the land to the BLM would likely result in a change in how the lands are managed as well as the entities responsible for the areas' proper management. The BLM would be required to manage the invasive plant species on these newly acquired lands in compliance with Federal Executive Order 13112, the Federal Noxious Weed Act of 1974, the Carson-Foley Act of 1968, the BLM's RMP, and the SRBOP's enabling statute. Because these once privately owned areas may currently contain extensive invasive plant communities, the addition of these areas to the SRBOP may add to the extent of invasive plant infestations that the BLM is required to manage and treat. Therefore, from an invasive plant resource perspective, this MEP proposal may add additional areas that require active treatments without providing the BLM with additional resources necessary to treat these infestations. Furthermore, because the current condition or management of the private lands that would be purchased cannot be determined at this time as no specific parcels or willing landowners have been identified to date, a final determination of this proposals' ability to enhance the objectives and values for which the SRBOP was established cannot be made.

Law Enforcement

The Proponents' MEP contains a proposal for the funding of increased law enforcement within the SRBOP for a period of 10 years. The goal of this increased funding is to change adverse behaviors in the SRBOP by aiding law enforcement in their coverage and ability to manage public induced damage to resource. This proposal is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute.

Under the Proponents' proposal, approximately 17 percent of the funding would go to mitigation, while the remaining funding would go to enhancement; however, the MEP does not provide the rational for this financial breakdown (i.e., why 17 percent would

apply to mitigation and 83 percent to enhancement). The Proponents' stated intent for the mitigation funding is to prevent an increase in illegal behavior that could occur as a result of the presence of new Project-related roads in the area. Although the Proponents' intent for the enhancement funding, is to "permanently reduce illegal behaviors in the SRBOP thereby further protecting the objectives and values for which the SRBOP was established," the MEP only offers this funding for a period of 10 years, which would not constitute a permanent fund nor would this funding last for the life of the Project.

If illegal or inappropriate activities were conducted in the SRBOP, they could have adverse impacts including facilitating the introduction and spread of invasive plant species. For example, the use of roads by unauthorized vehicles could result in direct disturbance to vegetation communities creating conditions for colonization of invasive species. The vehicles themselves could also act as vectors for the spread of invasive plant species. In addition, the dumping of trash in the SRBOP could result in introduction or increased rate of spread by invasive plants species if seeds or propagules of these species are contained within. These activities could also increase the risk of wildfires occurring in the SRBOP, which could increase the proliferation of invasive plant species such as cheatgrass. As a result, the increase in law enforcement funding meant to limit or prevent these activities may result in a decrease of the spread of invasive species in the SRBOP, depending on the extent that these activities currently occur in the area and the effect they currently have on the introduction and spread of invasive plant species. However, it is not certain if these activities actually occur in the SRBOP, or if they do occur, at what frequency. As a result, because the current baseline conditions of the area (i.e., if these activities occur or how often they occur) cannot be identified at this time, a determination of this proposals' ability to enhance the objectives and values for which the SRBOP was established cannot be made.

Visitor Enhancement

The MEP contains a proposal to fund programs meant to enhance the experiences of visitors to the SRBOP. The Oversight Committee (which has not been established or identified to date; see previous discussion above) would be responsible for selecting the programs that would be funded; however, the Proponents' MEP offers the following as examples of programs that could be funded include:

- The "Raptor Camp," which provides an opportunity for the public to learn the values of natural resources in the SRBOP;
- Public service announcements and educational materials that educate the public and promote responsible use of the SRBOP; or
- Cultural resource education programs.

This proposal is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute.

The Proponents have indicated that all efforts proposed under this program are intended to apply to enhancement of the SRBOP (with no mitigation component).

Enhancement of the visitors experience is an important component of the SRBOP, and the visitors' experience is called out specifically in the SRBOP's enabling legislation (see Section 4 of P.L. 103-64 "Management and Use"). However, it would not have a direct impact on the introduction or spread of invasive plant species. Visitor enhancement programs that contain an educational component aimed at the importance of natural resources in the area could have indirect long-term beneficial impacts by promoting the public's interest in protecting vegetation resources, including learning about the need to control the spread and introduction of invasive plant species. Because the exact programs that would be funded have not been identified to date, a determination of this proposals' ability to enhance the objectives and values for which the SRBOP was established cannot be made.

Line and Substation Removal

The Proponents have proposed to remove some existing infrastructure within the SRBOP. This includes:

- Removing approximately 7 miles of existing 46-kV line on BLM-managed lands, from the Bowmont Substation to Gage Substation.
- Constructing an approximately 1-mile-long section on private land to connect the remaining portion of the line to the Idaho Power system.
- Reconstructing 3.9 miles of existing 12.5-kV lines, including 0.25 mile on BLM-managed lands.
- Converting approximately 4 miles of the existing 46-kV line on BLM-managed lands between the Gage and Ferry Substations to a 12.5-kV distribution line.
- Removing the existing Gage Substation and associated equipment/apparatus, which are on BLM-managed land.

Although not specifically addressed or called out in the SRBOP's enabling statute, this proposal does not contradict the objectives and goals of the BLM's RMP or the SRBOP's enabling statute.

The Proponents have indicated that all efforts proposed as part of the line and substation removal effort are intended to apply to enhancement of the SRBOP (with no mitigation component).

The work necessary to remove the existing line and substation, as well as reconstruct or re-connect the existing lines, would result in approximately 62 acres of total ground disturbance (see Table D.6-2). The effects that this would have on the introduction and/or spread of invasive species would be similar to the effects that would occur during the construction of the Project (see Section 3.8.2.2) as similar construction equipment and personnel would likely be used. All BMPs and EPMs implemented during construction would also need to be applied during the removal of these existing lines and substation in order to minimize the effects of these activities on the introduction and/or spread of invasive plant species. Because of the increase in ground disturbance, this proposal would result in an increase in the risk of invasive plants becoming established or spreading. As a result, this proposal would not contribute to the enhancement of the SRBOP in regard to invasive plant species.

3.8.2.6 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

Summary of Remaining Impacts

After implementation of the EPMs and MEP discussed above, some Project-related impacts would likely remain. The impact assessment found in Sections 3.8.2.2, 3.8.2.3, and 3.8.2.4 incorporates the avoidance and minimization contributions of the EPMs in the impact analysis; as a result, Sections 3.8.2.2, 3.8.2.3, and 3.8.2.4 take these measures and their impact offsets into consideration. The design features outlined in the Proponents' MEP (discussed above) may reduce the magnitude of these impacts to some degree (thereby reducing the need for additional compensatory mitigation); however, the extent of this reduction cannot be fully quantified at this time (as discussed in detail above).

Note that Sections 3.8.2.2, 3.8.2.3, and 3.8.2.4 outline the current extent of known impacts that would occur Project-wide, as well as those that would be unique to the SRBOP.

BLM Compensatory Mitigation Categories

In addition to the design features and EPMs meant to avoid and minimize impacts of invasive plant species (as described above in Section 3.8.2.5), several mitigation plans were required by the Segments 1–7 and 10 ROD to compensate and mitigate for the remaining impacts to biological resources once the avoidance and minimization measures were fully implemented; however, none of these plans are specifically related to invasive plants.

The BLM may require additional mitigation for some remaining impacts of the Project on environmental resources (including impacts that occur outside of the SRBOP), per the guidelines found in the BLM Regional Mitigation Manual (BLM 2013c) and DOI Manual 600 DM 6, *Implementing Mitigation at the Landscape-scale* (DOI 2015). Mitigation for Project-related impacts that would occur within the SRBOP is discussed below.

The BLM will continue to work with applicable stakeholders to identify the impacts that would remain on the SRBOP after implementation of the EPMs and MEP, as well as the existing compensatory mitigation plans discussed above. The BLM will then design mitigation options that address applicable remaining impacts (see Section 3.0 for a discussion of the BLM's policy regarding mitigation). These options will contain components that will ensure that impacts to resources and values on the SRBOP that require mitigation are compensated for, as well as that enhancement of these resources is provided in order to comply with the enabling statute of the SRBOP. Based on internal and external scoping, the BLM is considering eight mitigation categories (see Section 2.6.2 in Chapter 2). The following mitigation categories are being considered to address remaining impacts of invasive plant species within the SRBOP:

- Implement habitat/vegetation restoration efforts;

- Evaluate, maintain, enhance, or expand fuels management/fuel breaks;
- Increase wildfire preparedness and suppression;
- Increase applied research and monitoring to inform adaptive management; and
- Acquire private lands as deemed appropriate by the Authorizing Officer.

Appendix K contains a Conceptual Mitigation Model that the BLM may follow when calculating habitat restoration treatment–related mitigation requirements.

3.9 WETLANDS AND RIPARIAN AREAS

This section addresses potential impacts to wetlands and riparian areas from the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; and the Toana Road Variations to the Segment 9 Revised Proposed Route. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). The primary reason to define impacts to wetlands and riparian areas is to reduce, minimize, or mitigate effects to wetlands and riparian areas from all phases of the Project. Effects associated with the routes analyzed in the 2013 FEIS were disclosed in that document. With the exception of FEIS Proposed 9, those routes are not being re-analyzed here, as only new information is included in this resource-specific section.

Wetlands are defined for regulatory purposes as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR Part 328.3, 40 CFR Part 230.3). Wetlands are important ecological resources that perform many functions including groundwater recharge, flood flow attenuation and conveyance, erosion control, and water quality improvement. They also provide habitat for many plants and animals, including threatened or endangered species (see Sections 3.7 – Special Status Plants and 3.11 – Special Status Wildlife and Fish Species).

Riparian areas are unique vegetation communities that occur adjacent to waterways and wetlands, and provide habitat for numerous plant and animal species. They generally occupy transitional areas between aquatic and upland habitats, and may function as vegetative buffers for aquatic resources. Although riparian habitats are often combined with wetlands (as a result of their intimate relationship to the hydrological regime), riparian areas differ from wetlands in that they are generally linear, more terrestrial (i.e., less hydric), and are often dependent on a natural disturbance regime relating to flooding and stream dynamics (Naiman et al. 2005).

3.9.1 Affected Environment

The Wetland and Riparian Areas section in the 2013 FEIS discusses those aspects of the environment that could be impacted by the Project. It begins with a discussion of the Analysis Area considered, identifies the issues that have driven the analysis, and characterizes the existing conditions in the area crossed by Project. We reviewed the data and regulatory requirements in the FEIS and concluded that they are still valid for this SEIS. No significant new data were identified for the wetlands and riparian areas in the Analysis Area.

3.9.1.1 Analysis Area

The Analysis Area for this SEIS is restricted to the area crossed by Segments 8 and 9, with the same analysis buffers/distances that were utilized in the FEIS (see Section 3.9.1.1 of the FEIS). Not all riparian and wetland areas discussed in the FEIS would be affected by the routes considered in this SEIS during construction, operations, and decommissioning. As a result, the riparian and wetland types or areas not found within

the Analysis Area for Segments 8 and 9 (but which may be included in the FEIS for the other segments' Analysis Areas) are not discussed or analyzed in this document.

The Analysis Area for assessing impacts to wetlands and riparian areas encompasses approximately 25,193 acres, of which 50 acres (0.2 percent) were mapped as wetland or riparian areas. Most of the wetland and riparian areas within the Analysis Area are on private land, followed by BLM-managed lands, and then state lands. State Trust Lands include the beds of navigable rivers, streams, and lakes (as adjudicated by a court with federal jurisdiction). All other lands owned by the state are considered State Endowment Lands. The Snake River, which would be crossed by both the Revised Proposed Routes for Segments 8 and 9, and Routes 8G, 8H and 9K, is considered State Trust Land. GIS datasets utilized for land status includes areas described as "State", which are considered State Endowment Land, while areas called out as "Water" are considered State Trust Land. Impact acreage is described by land status for each route in Section 3.9.2.3. The most common wetland and riparian types present in the Analysis Area are herbaceous wetland and herbaceous, shrub, and mixed riparian areas.

Morley Nelson Snake River Birds of Prey National Conservation Area

Portions of the Project would cross through the SRBOP. As a result, this section will discuss specific wetland and riparian resources and potential impacts that would occur on the SRBOP. Wetlands and riparian areas are important habitat for wildlife, which are one of the environmental resources and values for which the SRBOP was established to manage and protect.

3.9.1.2 Issues Related to Wetlands and Riparian Areas

The following wetland/riparian issues relevant to Segments 8 and 9 were brought up by the public during public scoping (Tetra Tech 2009) or in comments on the DEIS, raised by federal and state agencies during scoping and agency discussions, or are issues that must be considered as stipulated in law or regulation:

- What the effects on permanent and seasonal wetlands would be;
- Whether riparian areas would be affected; and
- Whether equipment staging and/or refueling areas can be kept away from wetlands and riparian areas.

We reviewed the scoping comments received for this SEIS and determined that the wetland/riparian related issues considered in the FEIS are still relevant to the SEIS. In addition, the following issues would be applicable to Segments 8 and 9, but were not specifically raised for the FEIS:

- How will the In-Lieu-Fee program for mitigation of unavoidable aquatic resource impacts be structured and managed?
- What are the impacts to beds of navigable lakes and streams on State Endowment Lands and Public Trust Lands along the new routes?

- What are the impacts to the values for which the SRBOP was established to manage and protect, which include wetland habitats?

3.9.1.3 Methods

The Wetland and Riparian Area section in the 2013 FEIS (i.e., Section 3.9) discusses those aspects of the environment that could be impacted by the Project, as well as the methods that were used to assess potential Project-related impacts to these resources. We reviewed the data, analysis methods, and regulatory requirements in the FEIS and concluded that they are still valid for this SEIS, and that no significant new data were identified for wetlands in the analysis area. The wetlands assessment for this SEIS was conducted using the same methods described in Section 3.9.1.4 of the FEIS.

3.9.1.4 Existing Conditions

The identification of areas as wetlands or riparian areas was preliminary based on photo interpretation. The actual area of wetlands and the type of wetlands that occur within the Analysis Area would be determined during wetland delineations that would be required prior to construction. The wetland and riparian area mapping study was intended to be conservative and include all potential areas of wetlands and riparian vegetation. Four types of wetlands were mapped in the Analysis Area, including herbaceous wetlands, shrub wetlands, forested wetlands, and mixed wetlands. Additionally, four types of riparian areas were mapped, including herbaceous riparian, shrub riparian, forested riparian, and mixed riparian, as described in Section 3.9.1.5 of the FEIS.

3.9.2 Direct and Indirect Effects

This section is organized to present effects to wetlands and riparian areas from construction, then operations, followed by decommissioning activities for the proposed Project. The Proposed Action includes measures designed to mitigate and enhance the SRBOP, as required by the enabling statute for the SRBOP and the SRBOP RMP. Effects of implementing the MEP are analyzed in detail in Section 3.9.2.4.

In May 2011 (revised December 2012), the Proponents submitted a *Framework for Compensatory Mitigation for and Monitoring of Unavoidable Impacts to Waters of the U.S.* (Appendix C-2 of the FEIS). EPMs were presented in detail in the 2013 FEIS within the Wetlands and Riparian Areas Section (Section 3.9). A comprehensive list of all design features and EPMs, as well as the land ownership to which they apply, can be found in Table 2.7-1 of Chapter 2 of the FEIS. There are no new wetland and riparian areas EPMs proposed for this SEIS. EPMs that directly and indirectly relate to wetlands and riparian areas, along with mitigation, are discussed further below in Section 3.9.2.4. The following impact assessment takes these project design features and EPMs into account when considering the potential impact that the Project could have on wetlands and riparian areas.

<u>Plan Amendments</u>

Amendments to the BLM RMPs and MFPs are summarized for each alternative in Table 2.3-1 (see Chapter 2 for more details). The BLM plan amendments are discussed

in detail in Appendices F and G of the 2013 FEIS. Amendments are needed to permit the Project to cross various areas of BLM-managed lands.

The effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved. Amendments that alter land management designations could change future use of these areas. However, no amendments specific to wetlands and riparian areas are proposed for the Project, and no impacts to wetlands and riparian areas resulting from approving the amendments beyond the impacts of the Project are anticipated.

3.9.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West for Segments 8 and 9 and this portion of the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of this Project. No Project-related impacts to wetland or riparian areas would occur in the Analysis Area; however, existing conditions would continue to be affected by natural events (such as fire, drought, and severe weather) as well as from existing and planned developments within the Analysis Area and from other projects, including wind farms, mining, agricultural, or other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project and the area would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, impacts similar to those described below may occur due to new transmission lines that may be built to meet the increasing demand in place of this Project.

3.9.2.2 Effects Common to All Routes

Construction and Operations

The primary impacts to wetland and riparian areas would result from the clearing of vegetation, as discussed in the 2013 FEIS. Removal of vegetation could alter various functions provided by these areas, including their ability to serve as wildlife habitat (see Sections 3.10 – General Wildlife and Fish and 3.11 – Special Status Wildlife and Fish Species), as well as their ability to trap sediment and nutrients. Soil disturbances and removal of vegetation within a wetland or riparian area could alter the area's ability to moderate flood flow, control sediments, or facilitate surface water flow. Removal of vegetation could also increase water and soil temperatures, and alter the species composition within these areas.

The acres of the direct impacts (i.e., vegetation removal and soil disturbances) by wetland and riparian type that would result from construction of the Project are provided in Table D.9-1 of Appendix D. Table D.9-2 of Appendix D lists the impacts that would occur during operations. Summaries of impacts to wetlands and riparian areas from construction and operations are included by Segment and Route in Section 3.9.2.3.

Increased soil disturbances can lead to invasions by exotic plant species, which can alter the composition and function of wetlands and riparian areas. Any blasting that may occur within or adjacent to a wetland could fracture the bedrock and alter the hydrology of a perched water table, thereby leading to drier conditions and impairment of revegetation efforts. Withdrawal of water for use during construction may have temporary effects on wetlands adjacent to streams, by reducing the water input that they would receive. Failure to restore disturbed areas to their preconstruction conditions (contours, hydrology, segregation and restoration of topsoil), could impede the re-establishment of wetland and riparian vegetation during revegetation efforts.

Despite the Proponents' commitment to avoid wetland and riparian areas to the maximum extent practicable, as described in the FEIS, impacts to some areas are expected from the Project's construction as well as operations and maintenance. These unavoidable impacts to wetlands and riparian areas would include permanent fill to support transmission structures, permanent 8-foot-wide roads to each structure, and safety vegetation maintenance in the ROW, including removal of trees that could interfere with the conductors or use of the roads.

Although some Project-related disturbances would be temporary and confined to the construction phase, impacts would continue through the operations phase in areas where construction sites are located within forested wetlands or riparian areas, because of the time required to restore forested habitats. Temporary construction impacts in forested wetlands and forested riparian areas where restoration would occur following construction disturbance would generally involve a conversion to a different wetland type (i.e., a change to shrub or herbaceous type), rather than a loss of wetland or riparian acreage. It is likely that recovery would be fairly rapid in herbaceous and shrub wetlands, and construction in these wetland types is not likely to cause a conversion to a different type. Impacts to wetlands and riparian areas could also result from soil compaction or alteration of surface or subsurface water movement in these areas. Permanent impacts could also result if areas that once contained wetlands or riparian areas (prior to construction) become occupied by Project facilities (such as tower pads, substations, and access roads).

The Proponents propose to utilize the same combination of methods for road construction in wetlands as described in the 2013 FEIS, as follows:

- **Construction of Permanent Above-Grade Roads that would be Utilized During Construction, Operations, And Maintenance:** This method will typically entail placement of permanent fill in wetlands that would cause the travel surface to be higher in elevation than the ordinary high water level. The construction of above-grade access roads allows for the use of the types of equipment described above and the most flexibility for construction, operations, maintenance, and expedited access for emergency restoration throughout the year.
- **Construction or use of Temporary Roads during Construction, Followed by Restoration of the Disturbance after Construction:** Under this method, construction equipment may travel overland (where feasible) if the area is dry. If

construction occurs when the ground is solidly frozen, ice roads could be constructed.

Where temporary access roads are used, road areas would be rehabilitated after construction. Operational inspections and repairs would be scheduled for times when the ground is dry or frozen, and access would be overland along the road alignment by all-terrain-vehicles. For emergency repairs requiring heavy equipment, access to the damaged area would be made using matting if necessary. After emergency repairs are completed, matting would be removed and the wetland areas allowed to restore naturally. Maintenance of the access roads and work areas (blading of roads to restore surface conditions, and weed management conducted near permanent structures) could result in minor direct and indirect impacts to wetlands or riparian areas. Vehicle traffic in wetlands and riparian areas has the potential to permanently alter soil characteristics and drainage patterns unless proper precautions are taken. Indirect impacts during maintenance may include compaction of soils, alteration of drainage patterns, erosion, and sedimentation. Erosion control and sedimentation measures such as water bars, culverts, sediments basins, or perimeter control would be installed as required to minimize erosion.

The Proponents would do vegetation maintenance on the ROW to reduce the risk of fire and maintain safe access to the line and associated facilities. In general, this would involve removing or trimming tall-growing trees so that they do not come into contact with the line. Impacts to wetlands and riparian areas would occur where trees are cut to meet wire clearance requirements (see Section 3.6.2.2). Removal of trees would result in conversion of forested wetland or forested riparian areas to shrub or herbaceous types. This vegetation management would be initiated during construction and would continue during the operations phase of the Project.

All waterbody and wetland disturbances would be completed under the terms of a U.S. Army Corps of Engineers (USACE) CWA Section 404 permit, the National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit (CWA 402), and State 401 water quality certification requirements that govern activities within any waters of the U.S., as described in the 2013 FEIS. In Idaho, there is an additional requirement for a stream channel alteration permit for activities in stream beds. See also Appendix C-2 of the 2013 FEIS for the Proponents' mitigation framework.

To further minimize the impacts that could occur to wetlands and other habitats, the Proponents have proposed a Reclamation, Revegetation, and Weed Management Plan and are developing a Stormwater Pollution Prevention Plan (SWPPP) as well as a Spill Prevention, Containment, and Countermeasures (SPCC) Plan. These plans would include measures to ensure that disturbed areas are revegetated and restored to preconstruction conditions, and that toxic substances or increased sedimentation does not affect waterbodies. These plans are discussed in more detail in Section 3.9.2 of the FEIS and the preliminary measures that would be included in these plans are provided in Appendix B of the FEIS. The plans would have not changed since publication of the FEIS, and still apply to this SEIS.

Permitting and Mitigation Requirements

Permitting and mitigation requirements are described in the FEIS and are not repeated again in this document because these items have not changed for the Revised Proposed Routes, the other routes (8G, 8H, 9K, and FEIS Proposed 9), and the Toana Road Variations. Potential compensatory mitigation options and the Proponents' EPMs designed to further protect wetlands and riparian areas during construction are also described in Section 3.9.2 of the FEIS and apply to this analysis as well. There have not been any updates or changes to mitigation efforts for the Revised Proposed Routes, the other routes (8G, 8H, 9K, and FEIS Proposed 9), and the Toana Road Variations related to wetlands. Mechanisms that the USACE recognizes for compensatory mitigation, which are presented in the FEIS, include mitigation banks, in-lieu fee programs, and permittee-responsible compensatory mitigation. Coordination efforts with the USACE have taken place for the segments analyzed in the FEIS, particularly for the largest area of impacted wetlands. Details concerning which mechanism would be utilized for compensatory mitigation would be determined during subsequent coordination efforts with USACE. Wetland and riparian area impacts are expected to be minimal within the segments considered for this SEIS because these wetland and riparian areas are relatively sparse and uncommon on the landscape and are generally avoided by the Project. Details for mitigation beyond those described in the FEIS have not yet been determined for these routes.

Decommissioning

Decommissioning of the Project could result in impacts to wetlands and riparian areas. These impacts would include increased sedimentation, erosion, soil compaction, and limited direct removal of vegetation (if some vegetation areas needed to be cleared to remove structures from the site). Impacts from decommissioning would be similar to those described for construction (discussed in Section 3.9.2.3 of the FEIS) and are not discussed separately below. Project facilities would be removed at the end of the operational life of the transmission line. Structures and foundations would be removed to below the ground surface level. They would not be removed in their entirety due to the large ground disturbance this would create. Soil and plants would be restored over the top of these underground foundation structures. If any structures and foundations are constructed in wetland and riparian areas, it is unlikely that wetlands and riparian areas would recover to pre-construction conditions since soil and hydrology would be disrupted. Wetlands require a combination of soils, hydrology, and vegetation. Impacts to wetlands would be subject to 404 regulation and require mitigation of impacts, as summarized in Permitting and Mitigation Requirements above. Additional details concerning decommissioning are provided in Appendix B of the FEIS.

3.9.2.3 Direct and Indirect Effects by Route

This section describes the effects to wetlands and riparian areas from Project construction and operations. Tables D.9-1 (Construction Impacts) and D.9-2 (Operations Impacts) in Appendix D provide details of impacts to wetlands and riparian areas by ecological type for the Revised Proposed Routes as well as a comparison between the Segment 8 and 9 routes and variations. The quantitative analysis of

impacts is based on the same conservative assumptions as described in the FEIS and below:

- Wetland impacts may be overstated due to the uncertainty in distribution related to the accuracy of remote sensing.
- Impacts are assessed based on preliminary design and do not include the avoidance and minimization of impacts that would occur as part of final design.

Table 3.9-1 provides a general summary of the impacts that would occur to wetlands and riparian areas during construction and operations as reported in the Appendix D tables.

Table 3.9-1. Summary of Construction- and Operations-Related Impacts to Wetland/Riparian Areas

Route	Construction Impacts (acres)[1/]		Operation Impacts (acres)[1/]			
			Wetlands		Riparian Areas	
	Wetlands[2/]	Riparian Areas[2/]	Due to Operation Facilities	Due to ROW Maintenance in Forests[3/]	Due to Operation Facilities	Due to ROW Maintenance in Forests[3/]
Segment 8 Revised Proposed	3.2	2.8	0.4	–	0.2	1.6
Existing 500-kV Removal	–	–	–	–	–	–
Route 8G	0.6 [0.3]	0.9	0.1 [0.1]	–	0.1	1.0
Existing 500-kV Removal	–	–	–	–	–	–
Route 8H	0.8 [0.5]	1.9 [0.2]	0.1 [0.1]	–	T [t]	
Existing 138-kV Removal	–	–	–	–	–	–
Existing 500-kV Removal	–	–	–	–	–	–
Segment 9 Revised Proposed	0.9 [0.6]	2.3 [0.2]	0.1 [0.1]	–	0.1 [0.1]	–
Existing 138-kV Removal	–	–	–	–	–	–
FEIS Proposed 9	1.7 [0.7]	4.3 [0.1]	0.3 [0.2]	–	0.7 [t]	t
Route 9K	0.7 [0.3]	1.4	0.1 [0.1]	–	0.1	1.4
Segment 9 Comparison portion for the Toana Road Variations	–	–	–	–	–	–
Toana Road Variation 1	–	–	–	–	–	–
Toana Road Variation 1-A	–	–	–	–	–	–

1/ Numbers reported in brackets are on BLM-managed land within the SRBOP.
"t" indicates only a trace amount (<0.1 acre).
2/ Construction = clearing for facilities such as infrastructure, roads, temporary multipurpose yards, and fly yards. This does not include ROW clearing, which is recorded under operation impacts.
3/ ROW = right-of-way maintenance. ROW values for "Wetland/Riparian" include only forested.

Segment 8

Revised Proposed Route

The Segment 8 Revised Proposed Route would link the Midpoint and Hemingway Substations (see Figure A-1). This 129.7-mile single-circuit 500-kV transmission line

would stay north of the Snake River until it crosses just north of Guffey Butte, generally parallel to an existing 500-kV transmission line, before ending at the Hemingway Substation. This route is similar to the original proposed route in the 2013 FEIS except that the line would be 250 feet north of the existing 500-kV line rather than 1,500 feet south of the line from the eastern boundary of the SRBOP (MP 99.7) to the Hemingway Substation. The route east of that point is unchanged from the 2013 FEIS Proposed Route. The Segment 8 Revised Proposed Route is 1.8 miles shorter than the 2013 FEIS Proposed Route.

Construction

Approximately 3.2 acres of wetlands and 4.4 acres of riparian areas would be disturbed during construction and ROW clearing of the Revised Proposed Route for Segment 8. Most of the wetland impacts from construction facilities (vegetation removal and soil disturbance as well as potential bedrock fracturing and water withdrawal) would occur in herbaceous wetlands, and most of the riparian impacts would occur in mixed riparian areas. Construction would not affect any forested wetlands but the Revised Proposed Route would affect about 1.6 acres of forested riparian areas for ROW clearing. Of the 7.6 total acres of wetland and riparian impacts from construction and ROW clearing, approximately 4.7 acres would be on private land, 1.0 acre would be on BLM-managed land, and another 0.9 acre on State Endowment Land. Approximately 1.1 acres would be considered State Trust Lands along the Snake River. There would be no wetland or riparian impacts on BLM-managed land within the SRBOP. There are no anticipated impacts to wetlands or riparian areas from removal of the existing 500-kV line.

Operations

Approximately 0.4 acre of wetland and 1.8 acres of riparian would be occupied by operations facilities (permanent fill and riparian loss) and ROW clearing and maintenance. Operations facilities affecting wetlands and riparian areas would primarily include new roads and structure pads. Most of the impacts (permanent fill and wetland and riparian loss) would occur in herbaceous wetlands, with some impacts in mixed and shrub riparian areas. ROW maintenance would convert 1.6 acres of forested riparian areas to herbaceous or shrub riparian areas along the Revised Proposed Route. Of the 2.2 total acres of wetland and riparian impacts from operations facilities and ROW clearing, approximately 2.0 acres would be on private land, 0.1 acre would be on State Endowment Land, and 0.1 acre would be on BLM-managed land. There would be no wetland or riparian impacts on BLM-managed land within the SRBOP. There are no anticipated impacts to wetlands or riparian areas from removal of the existing 500-kV line.

Route 8G

Route 8G is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows an alignment similar to the ones analyzed for Routes 8A and 9B in the FEIS for approximately 44 miles, although it generally parallels 250 feet north of the existing 500-kV line rather than1,500 feet to the south in order to avoid the Hagerman Fossil Beds National Monument and development near Hagerman (see Figure A-1). The route then parallels 250 feet north of the Segment 9 Proposed Route and Route 9K for most of the remaining distance into the Hemingway Substation. The

route is 146.9 miles long (including a 1.9-mile rebuild of the existing 500-kV line), compared to the 129.7-mile-long Revised Proposed Route.

Construction

Approximately 0.6 acre of wetlands and 1.9 acres of riparian areas would be disturbed during construction and ROW clearing of Route 8G, which would result in vegetation removal and soil disturbance, as well as potential bedrock fracturing and water withdrawal. This is approximately 2.6 fewer acres of wetland and 2.1 fewer acres of riparian areas than the Revised Proposed Route for Segment 8. For both the Revised Proposed Route for Segment 8 and Route 8G, construction and ROW clearing would not affect any forested wetlands, but would result in a type conversion of about 1.0 acre of forested riparian areas during ROW clearing for Route 8G, which is approximately 0.6 fewer acre than the Segment 8 Revised Proposed Route. Mixed riparian areas would have the greatest impact resulting from construction, followed by shrub and herbaceous wetland and shrub riparian areas. Of the approximately 2.5 total acres of wetland and riparian construction impacts, 1.3 acres would be on BLM-managed land and 1.2 acres would be on private land. There would be approximately 0.3 acre of wetlands impacted on BLM-managed land within the SRBOP. There are no anticipated impacts to wetlands or riparian areas from removal of the existing 500-kV line.

Operations

Approximately 0.1 acre of wetlands and an additional 1.1 acre of riparian areas would be occupied by operations facilities as well as ROW clearing and maintenance along Route 8G, which is 0.3 acre fewer than the Segment 8 Revised Proposed Route for wetlands and 0.7 acre fewer for riparian areas. For both Route 8G and the Revised Proposed Route, ROW maintenance would affect about 1.0 acre of forested riparian areas for Route 8G and 1.6 acre for the Revised Proposed Route.

Impacts from operations facilities (permanent fill and wetland and riparian loss) would occur in herbaceous wetland and mixed riparian areas. Of the 1.2 total acres of wetland and riparian impacts from operations facilities and ROW maintenance, 1.0 acre would be on private land and 0.1 acre would be on BLM-managed land. There would be approximately 0.1 acre of wetland impacted on BLM-managed land within the SRBOP. There are no anticipated impacts to wetlands or riparian areas from removal of the existing 500-kV line.

Route 8H

Route 8H is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows a combination of portions of the alignments analyzed for 8G and the Revised Proposed Route for Segment 9. The route is 137.5 miles long (including a 1.9-mile rebuild of the existing 500-kV line and a 25.7-mile removal and rebuild of a 138-kV line), compared to the 129.7-mile-long Segment 8 Revised Proposed Route. Approximately 44 miles of the route follows the 8G alignment; the remainder of 8H follows the alignment of the Segment 9 Revised Proposed Route.

Construction

Approximately 0.8 acre of wetlands and 1.9 acres of riparian areas would be disturbed during construction and ROW clearing of Route 8H, which would result in vegetation

removal and soil disturbance, as well as potential bedrock fracturing and water withdrawal. This is approximately 2.4 fewer acres of wetland and 2.5 fewer acres of riparian areas than the Revised Proposed Route for Segment 8. For both the Revised Proposed Route for Segment 8 and Route 8H, construction and ROW clearing would not affect any forested wetlands. No forested riparian areas would be converted during ROW clearing for Route 8H, whereas 1.6 acres of forested riparian would be converted during ROW clearing for the Segment 8 Revised Proposed Route. Shrub riparian areas would have the greatest impact resulting from construction, followed by shrub and herbaceous wetland and mixed riparian areas. Of the approximately 2.7 total acres of wetland and riparian construction impacts, 1.1 acres would be on BLM-managed land and 0.4 acre would be on private land. There would be approximately 0.5 acre of wetlands and 0.2 acre of riparian areas impacted on BLM-managed land within the SRBOP. There are no anticipated impacts to wetlands or riparian areas from removal of the existing 138-kV or 500-kV line.

Operations

Approximately 0.1 acre of wetland and an additional 0.1 acre of riparian area would be occupied by operations facilities along Route 8H, which is 0.3 acre fewer than the Segment 8 Revised Proposed Route for wetlands and 1.7 acres fewer for riparian areas. For both Route 8H and the Revised Proposed Route, operations would not affect any forested wetlands and ROW maintenance would not affect any forested riparian areas for Route 8H, though it would affect 1.0 acre for the Revised Proposed Route.

Impacts from operations facilities (permanent fill and wetland and riparian loss) would occur in herbaceous wetland as well as a trace amount in other types. All of the 0.2 total acre of wetland and riparian impacts from operations facilities and ROW maintenance would occur on BLM-managed land. There would be approximately 0.1 acre of wetland and 0.1 acre of riparian areas impacted on BLM-managed land within the SRBOP. There are no anticipated impacts to wetlands or riparian areas from removal of the existing 138-kV or 500-kV line.

Segment 9

Revised Proposed Route

The Segment 9 Revised Proposed Route would link the proposed Cedar Hill and existing Hemingway Substations with a 165.3-mile single-circuit 500-kV transmission line that skirts the Jarbidge and Owyhee Military Operating Areas to the north, then follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering the Hemingway Substation (see Figure A-1). It follows an alignment similar to the FEIS Route 9D/9G between MP 95.6 and 154.7, except that two portions of the route (totaling 25.7 miles) would be double-circuited with existing 138-kV lines. The first area is 5.2 miles near C.J. Strike Reservoir and the Bruneau Arm (MP 106.2 to 109.3 and 109.9 to 112.1), and the second area is 20.2 miles along the Baja Road (MP 121.0 to 141.2). Several rebuilds totaling approximately 0.6 mile are also required to tie the existing 138-kV lines into the new double-circuit alignments. Except for minor variations, the route is similar to the 2013 Route 9D/9G between MP 141.2 to 154.7. From MP 154.7 and into the Hemingway Substation, the

route is the same as the 2013 FEIS Proposed Route. The Segment 9 Revised Proposed Route is 3.1 miles longer than the 2013 FEIS Proposed Route.

During the EIS process, the USFWS expressed concerns regarding Project impacts from FEIS Proposed 9 on the Bruneau River Ranch Partners for Wildlife wetland project funded by the USFWS and other partners to promote the conservation of migratory birds. The Revised Proposed Route for Segment 9 does not cross the Bruneau River Ranch Partners for Wildlife wetland, so there would not be any impacts to this wetland along the Revised Proposed Route.

Construction

Approximately 0.9 acre of wetlands and 2.3 acres of riparian areas would be disturbed during construction and ROW clearing of the Revised Proposed Route for Segment 9. Most of the impacts (e.g., vegetation removal and soil disturbance as well as potential bedrock fracturing and water withdrawal) would occur from construction of dead-end pulling devices; however, some impacts would occur from structure pads, and improvements to existing roads, and minimal impacts are expected from new roads and pulling-tensioning devices. Most of the wetland impacts would occur in herbaceous wetlands, with some additional impacts in mixed wetlands. Most of the riparian impacts would occur in shrub and herbaceous riparian areas, with some additional impacts in mixed riparian areas. For the Segment 9 Revised Proposed Route, construction and ROW clearing would not affect any forested wetlands or riparian areas. Of the 3.2 total acres of wetland and riparian construction impacts, 1.1 acres would be on private land, 1 acre on BLM-managed land, 1.2 acres would be considered State Trust Lands along the Snake River, and less than 0.1 acre of mixed riparian areas would be on State Endowment Land. There would be approximately 0.6 acre of wetlands and 0.2 acre of riparian areas impacted on BLM-managed land within the SRBOP. There are no anticipated impacts to wetlands or riparian areas from removal of the existing 138-kV line.

Operations

Approximately 0.1 acre of wetland and 0.1 acre of riparian areas would be impacted (i.e., permanent fill and wetland and riparian loss) during operations by the Revised Proposed Route. Operations facilities affecting wetlands and riparian areas would primarily include improved access roads, with minimal impacts from new roads. Impacts would occur in herbaceous wetlands and shrub riparian areas, with trace impacts in mixed wetlands and herbaceous riparian. Impacts would occur on BLM-managed lands, and no impacts are anticipated in wetland or riparian areas from operations facilities on State Endowment Land. There would be approximately 0.1 acre of wetland and 0.1 acre of riparian impacted on BLM-managed land within the SRBOP. There are no anticipated impacts to wetlands or riparian areas from removal of the existing 138-kV line.

FEIS Proposed 9

The Proponents originally designed the 162.2-mile-long FEIS Proposed 9 to follow existing utility corridors and avoid the SRBOP and other protected areas where feasible. Approximately 54 miles of the route is within or adjacent to a utility corridor. FEIS Proposed 9 is approximately 3.1 miles shorter than the Revised Proposed Route but it crosses 13.6 miles of the SRBOP compared to 54.2 miles for the Revised Proposed

Route. FEIS Proposed 9 crosses an IP Wetlands Conservation Area and the Ducks Unlimited Bruneau Conservation Area in the Bruneau Valley. Both the Revised Proposed Route and FEIS Proposed 9 cross the Salmon Falls Creek at Lilly Grade adjacent to an existing single-phase 34.5-kV distribution line just north of the Salmon Falls Creek WSA.

Construction

Approximately 1.7 acre of wetlands and 4.3 acres of riparian areas would be disturbed during construction and ROW clearing of FEIS Proposed 9. This is approximately 0.8 acre more of wetland and 2 acres more of riparian areas than the Revised Proposed Route for Segment 9. Most of the impacts (e.g., vegetation removal and soil disturbance as well as potential bedrock fracturing and water withdrawal) would occur from construction structure pads and access roads. Most of the impacts would occur in shrub and mixed riparian areas as well as herbaceous wetlands. For both the FEIS Proposed 9 and the Revised Proposed Route for Segment 9, construction and ROW clearing would not affect any forested wetlands. A trace amount of forested riparian area would be converted due to ROW clearing, while the Revised Proposed Route would not convert any forested riparian areas due to ROW clearing or maintenance. Of the 6.0 total acres of wetland and riparian impacts from construction and operations, 1.2 acre would be on BLM-managed land and 4.8 acres would be on private land. There would be approximately 0.7 acre of wetlands and trace amount of riparian areas impacted on BLM-managed land within the SRBOP.

Operations

Approximately 0.3 acre of wetland and 0.7 acre of riparian areas would be impacted (e.g., permanent fill and wetland and riparian loss) during operations, including ROW clearing and maintenance, by FEIS Proposed 9, which is 0.2 and 0.6 acre more, respectively, than the Revised Proposed Route for Segment 9. Most of the impacts from FEIS Proposed 9 would be from structure pads and new and existing, improved access roads. Impacts would occur in shrub riparian, mixed riparian, and shrub wetlands, with trace amounts in herbaceous wetlands for FEIS Proposed 9, where impacts would occur in both herbaceous wetlands and riparian and shrub riparian with the Revised Proposed Route for Segment 9. Neither the FEIS Proposed 9 route nor the Revised Proposed Route for Segment 9 would have impacts on forested wetlands areas. Trace amounts of forested riparian areas would be cleared for the FEIS Proposed 9's ROW, whereas none would be cleared for the Revised Proposed Route for Segment 9. Impacts would occur on private land (0.7 acre) and BLM-managed lands (0.3 acre), but no impacts are anticipated in wetland or riparian areas from operations on State Endowment Land. There would be approximately 0.2 acre of wetland and trace amount of riparian impacted on BLM-managed land within the SRBOP.

Route 9K

Route 9K is being considered by the BLM as a modified version of FEIS Route 9E (i.e., the FEIS Preferred Route) to avoid crossing the northwestern portion of the SRBOP and to minimize direct and indirect impacts to priority sage-grouse habitat. The route is approximately 174.6 miles long, compared to the 165.3-mile-long Segment 9 Revised Proposed Route (see Figure A-1).

Construction

Approximately 0.7 acre of wetlands and 2.8 acres of riparian areas would be disturbed during construction and ROW clearing of Route 9K, which would result in vegetation removal and soil disturbance as well as potential bedrock fracturing and water withdrawal. This is approximately 0.2 fewer acre of wetland than the Segment 9 Revised Proposed Route and 0.5 more acre of riparian areas. For both the Segment 9 Revised Proposed Route and Route 9K, construction and ROW clearing would not affect any forested wetlands, but would affect about 1.4 acres of forested riparian areas during ROW clearing for Route 9K. Forest riparian areas are not anticipated to be impacted from ROW clearing for the Segment 9 Revised Proposed Route. Herbaceous wetlands would be impacted from construction facilities, along with herbaceous, shrub, and mixed riparian areas. Of the 3.5 total acres of wetland and riparian impacts from construction and ROW clearing, 2.3 acres would be on private land and 1.1 acres on BLM-managed land. There would be approximately 0.3 acre of wetlands, but no riparian areas, impacted on BLM-managed land within the SRBOP.

Operations

Approximately 0.1 acre of wetland and an additional 1.5 acres of riparian areas would be occupied by operations facilities along Route 9K (e.g., permanent fill and riparian loss) and ROW clearing, which is the same number of acres of wetlands impacted as for the Segment 9 Revised Proposed Route and 1.4 more acres of riparian areas. For both Route 9K and the Segment 9 Revised Proposed Route, construction would not affect any forested wetlands, but ROW maintenance would affect about 1.4 acres of forested riparian areas for Route 9K. No forested riparian areas are anticipated to be maintained during ROW clearing for the Segment 9 Revised Proposed Route. Impacts from operations facilities would occur in herbaceous wetlands and mixed riparian areas. Of the 1.5 total acres of wetland and riparian impacts from operations facilities and ROW maintenance, the 1.4 acres of ROW maintenance would be private land while the remaining 0.2 acre of operations facilities would be on BLM-managed land. There would be approximately 0.1 acre of wetland but no riparian areas impacted on BLM-managed land within the SRBOP.

Toana Road Variations 1 and 1-A and the Comparison Portion for the Revised Proposed Route

Toana Road Variation 1 to the Segment 9 Revised Proposed Route was recommended by the BLM Jarbidge Field Office archaeologist to avoid paralleling the Toana Freight Wagon Road, an NRHP site. The Segment 9 Revised Proposed Route parallels within 0.25 mile of the Toana Road between MP 38.2 and 40.6, and parallels within 1 mile of the road through Blue Gulch between MP 40.6 and 43.5. Variation 1 is approximately 8.5 miles in length. Approximately 0.3 mile of the route crosses state land, with the remainder on land managed by the BLM. The Toana Road Variation 1-A to the Segment 9 Revised Proposed Route was recommended by the BLM to minimize visual impacts to the Toana Freight Wagon Road, and was intended to utilize existing roads in order to minimize new road construction in the area. Variation 1-A is approximately 8.9 miles long. Approximately 1 mile of the route crosses state land, with the remainder on land managed by the BLM.

Construction and Operations

There are no anticipated impacts to wetland or riparian areas from either of the Toana Road Variations. The equivalent portion of the Segment 9 Revised Proposed Route would not have any wetland or riparian areas impacts either.

3.9.2.4 Direct and Indirect Effects of the Alternatives

A total of seven action alternatives are considered in this SEIS. This section assesses the impact to wetland and riparian areas from the seven BLM action alternatives. Alternatives consist of a combination of two routes, one from each segment; therefore, the impacts associated with the alternative correspond to those described above in Section 3.9.2.3. Table 3.9-2 lists the quantitative impacts that would occur to wetland and riparian areas under these action alternatives. The number of acres of disturbance from each route for each alternative were combined to compare the impacts. In some cases, particularly for Alternative 5, these impacts may overlap and thus the impacts may be overstated. The alternatives are visually displayed in Figures A-2 through A-8.

Table 3.9-2. Comparison of Impacts to Wetland/Riparian Areas from Construction and Operation of the Seven Action Alternatives

Alternative	Construction Impacts (acres) 1/		Operation Impacts (acres) 1/			
			Wetlands		Riparian Areas	
	Wetlands 2/	Riparian Areas 2/	Due to Operation Facilities	Due to ROW Maintenance in Forests 3/	Due to Operation Facilities	Due to ROW Maintenance in Forests 3/
Alternative 1	4.1 [0.6]	5.1 [0.2]	0.5 [0.1]	–	0.3 [0.1]	1.6
Alternative 2	4.9 [0.7]	7.1 [0.1]	0.7 [0.2]	–	0.9 [t]	1.6
Alternative 3	3.9 [0.3]	4.2 [0]	0.5 [0.1]	–	0.3	3
Alternative 4	2.3 [1.0]	5.2 [0.1]	0.4 [0.3]	–	0.8 [t]	1 [t]
Alternative 5	1.3 [0.6]	2.3 [0]	0.2 [0.2]	–	0.2	2.4
Alternative 6	2.5 [1.2]	6.2 [0.3]	0.4 [0.3]	–	0.7 [t]	T [t]
Alternative 7	1.5 [0.8]	3.3 [0.2]	0.2 [0.2]	–	0.1 [t]	1.4

1/ Numbers reported in brackets are on BLM-managed land within the SRBOP.
"t" indicates only a trace amount (<0.1 acre).
Number of acres of disturbance from each route for each alternative were combined to compare the impacts. In some cases, particularly for Alternative 5, these impacts may overlap and thus the impacts may be overstated.
2/ Construction = clearing for facilities such as infrastructure, roads, temporary multipurpose yards, and fly yards
3/ ROW = right-of-way maintenance. ROW values for "Wetland/Riparian" include only forested.
This does not include ROW clearing, which is recorded under operation impacts.

Alternative 1 – Proposed Action (the Revised Proposed Routes for Segments 8 and 9)

Table 3.9-2 above lists the construction and operation impacts that would occur to wetlands and riparian areas under Alternative 1. As shown in Table 3.9-2, approximately 4.1 acres of wetlands (0.6 in the SRPOB) and 5.1 acres of riparian areas (0.2 in the SBOP) would be impacted from construction (e.g., vegetation removal and soil disturbance as well as potential bedrock fracturing and water withdrawal), with an additional 1.6 acres of forested riparian areas converted from ROW clearing. Approximately 0.5 acre of wetland and 0.3 acre of riparian areas would be permanently lost due to fill for operation facilities. ROW maintenance would convert 1.6 acres of forested riparian areas to herbaceous or shrub riparian.

Selection of either the Toana Road Variation 1 or 1-A would also not affect wetland and riparian areas. This is true for all action alternatives. Therefore, for wetland and riparian areas, the Toana Road Variations are not further discussed.

Alternative 2 – Revised Proposed 8 and FEIS Proposed 9

Approximately 4.9 acres of wetlands (0.7 in the SRPOB) and 7.1 acres of riparian areas (0.1 in the SRPOB) would be cleared for construction, with an additional 1.6 acres of forested riparian converted for ROW clearing and maintenance under Alternative 2. Approximately 0.7 acre of wetlands and 0.9 acres of riparian areas would be permanently filled for operations facilities. When compared to Alternative 1 (i.e., the Proponents' Proposed Action), there would be 0.8 more acre of impacts to wetlands and 2 more acres of riparian areas under Alternative 2 (Table 3.9-2). In fact, acres of impacts to wetland and riparian areas would be more under Alternative 2 than any other Alternative.

Alternative 3 – Revised Proposed 8 and the 9K Route

As shown in Table 3.9-2, impacts to wetlands under Alternative 3 would be slightly less (0.2 fewer acre) and impacts to riparian areas would be approximately 0.9 fewer acre than under Alternative 1. Alternative 3 would affect the least effect on wetland and riparian areas of any action alternative (Table 3.9-2).. Nearly twice the number of acres of forested riparian would be converted for ROW clearing and maintenance for Alternative 3, but the acres of impacts from operations would be the same for both Alternative 3 and Alternative 1.

Alternative 4 – The 8G Route and FEIS Proposed 9

As shown in Table 3.9-2, there would be 1.8 fewer acres of impacts to wetlands under Alternative 4 than Alternative 1, and riparian areas would have 0.1 more acre of construction impact than Alternative 1. Alternative 4 would have 1 acre of forested riparian converted due to ROW clearing and maintenance, which is 0.6 fewer acre than Alternative 1. Construction would affect 0.4 acre more wetland area than Alternative 1 and 0.1 acre of riparian area within the SRBOP. Operations facilities would result in a permanent loss of 0.4 acre of wetlands and 0.1 acre less riparian areas, which is 0.1 acre fewer wetland than Alternative 1, but 0.5 acre more riparian than Alternative 1.

Alternative 5 – The 8G and 9K Routes

As shown in Table 3.9-2, Alternative 5 would have the fewest acres of impacts to wetland and riparian areas from construction, though it would have the more forested riparian areas converted for ROW clearing and maintenance than Alternative 1. Impacts would include 1.3 acres of wetlands (0.6 acres within the SRBOP) and 2.3 acres riparian areas (none of which would be within the SRBOP), which are 2.8 fewer acres of wetland and 2.8 fewer acres of riparian impacts than Alternative 1. An additional 2.4 acres of forested riparian areas would be converted for ROW clearing and maintenance, which is 0.8 acre more than Alternative 1. Operation facilities would permanently fill 0.2 acre of wetlands and 0.2 acre riparian areas, which is 0.3 fewer acre of wetland and 0.1 fewer acre of riparian area than Alternative 1.

Alternative 6 – The 8H Route and FEIS Proposed 9

As shown in Table 3.9-2, impacts to wetlands would include 2.5 acres, which is 1.6 fewer acres than Alternative 1. Approximately 6.2 acres of riparian areas (1.2 in the SRBOP) would be impacted (e.g., vegetation removal and soil disturbance as well as potential bedrock fracturing and water withdrawal), which is 1.1 more acres than under Alternative 1. Only trace amount of forested riparian would be converted due to ROW clearing and maintenance, which is approximately 1.6 fewer acres than Alternative 1. Approximately 0.4 acre of wetland and 0.7 acre of riparian areas would be permanently lost due to operation facilities, which is 0.1 fewer acre of wetland and 0.4 acre more riparian areas than Alternative 1.

Alternative 7 – The 8H and 9K Routes

As shown in Table 3.9-2, impacts to wetlands would be approximately 1.5 acres (which is 2.6 fewer acres than Alternative 1) and 3.3 acres of riparian areas (which is 1.8 fewer acres than Alternative 1). There would be 0.2 acres more wetland area affected within the SRBOP than under Alternative 1 but the same amount of riparian area. Additionally, 1.4 acres of forested riparian would be converted due to ROW clearing and maintenance, which is 0.2 fewer acre than Alternative 1. Approximately 0.2 acre of wetland and 0.1 acre of riparian areas would be permanently lost due to operation facilities, which is 0.3 fewer acre of wetland and 0.2 fewer acres of riparian areas than Alternative 1.

3.9.2.5 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, as well as additional measures proposed by the Project Proponents specifically for the SRBOP.

Environmental Protection Measures

The Proponents have committed to Project design features and EPMs to minimize or avoid impacts on environmental resources. These measures, the areas where they would be applicable (e.g., private, state, or federally managed lands), as well as the details of each measure are provided in Table 2.7-1 of the FEIS. Many of these measures would be either directly or indirectly applicable to wetland and riparian areas (i.e., they would avoid or minimize impact to wetland and riparian areas).

Measures that would indirectly apply to wetland and riparian areas (i.e., measures that were not developed directly to benefit wetlands and riparian areas, but if implemented could avoid or minimize impacts to wetlands and riparian areas) include G-1, G-2, OM-1 through OM-24, VIS-6, VIS-8, VIS-11, REC-1 through REC-24, VEG-1, VEG-4 through VEG-6, VEG-8, WEED-1 through WEED-4, FISH-3, TESWL-14, SOIL-2 through SOIL-4, WQA-1, WQA-4 through WQA-11, and WQA-28 (see Table 2.7-1 in the FEIS).

The following measures, which were identified in Table 2.7-1 of the FEIS, are directly related to wetlands and riparian areas and would be applicable to Segments 8 and 9:

WET-1 Impacts on wetland and riparian areas will be avoided unless physically or economically infeasible. Land management agencies' plans (RMPs, MFPs, and Forest Plans) that have standards, guidelines, stipulations, or

avoidance buffers will be adhered to. Where these do not exist, Inland Fish Strategy (INFISH) buffers will be followed.

WET-2 Wetland delineations will be performed prior to construction to support CWA Section 404 permitting and to minimize Project impacts. The delineation will identify both wetland and non-wetland waters of the U.S that would be affected by the Project.

WET-3 Where impacts on wetlands are not avoidable, site-specific crossing plans and measures to mitigate impacts will be submitted to the appropriate regulatory agency, as well as the land managing agency. The Proponents will obtain all necessary permits prior to discharging dredged or fill material to waters of the U.S. and state.

WET-4 To meet USACE requirements for CWA 404 permitting, the Proponents will submit a mitigation plan that is accepted by the USACE. The framework for this plan is included in the FEIS.

These EPMs would avoid or minimize the extent of impacts that could occur to wetlands and riparian areas. These EPMs are a part of the current Project description, and as such, the effects of their implementation are included in the impact discussion found in Sections 3.9.2.2, 3.9.2.3, and 3.9.2.4.

Proponent-Proposed MEP and Potential Effects of the MEP within the SRBOP

The Proponents have developed an MEP that contains design features specific to the SRBOP. This plan was developed to mitigate the effects of Project-related impacts within the SRBOP, as well as comply with the SRBOP's enabling statute (P.L. 103-64) which requires enhancement of resources within the SRBOP. The Proponents' plan contains two forms of mitigation: "compensation mitigation" and "enhancement." For this analysis, mitigation is defined as avoidance, minimization, and compensation measures aimed at offsetting adverse impacts of the Project; enhancement is defined as additional mitigation measures that are required in order to enhance the objectives and values for which the SRBOP was established.

One of the goals of the Proponents' MEP proposal is to return treated areas to their baseline condition, which is defined using the NRCS ESD of the affected area (see Section 3.6 – Vegetation Communities, for a definition of ESDs). However, the NRCS ESDs have not been defined for 38 percent of Segment 8 and 12 percent of Segment 9. The site descriptions for the unidentified areas would need to be established in order to determine the baseline conditions of the area, which are necessary to define restoration goals. This is because a determination of the adequacy of any proposed mitigation and enhancement cannot be made unless the baseline conditions for all areas impacted as well as those proposed for mitigation/enhancement are known to fully calculate both the debit (i.e., Project impact) and mitigation/enhancement credit. As a result, more information is required from the Proponents to fully assess the proposed MEP.

The Proponents' MEP offers a portfolio that contains five types of mitigation/enhancement proposals. The following discusses the benefit and/or impact

that these proposed mitigation/enhancement proposals could have to wetlands and riparian areas.

Habitat Restoration

The MEP states that the goal for the Proponents' habitat restoration proposal is to convert "non-native grasslands to native perennial plant communities" as well as to conduct "noxious weed control." This proposal, in general, is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute (e.g., P.L. 103-64 established the SRBOP in part for the "….conservation, protection and enhancement of raptor populations and habitats"). In fact, recovery of native vegetation structure and diversity in the SRBOP is critical to protecting and increasing the population size of raptor prey base species, providing more diverse pollinator habitat for rare plant species, reducing fire frequencies, and increasing the areas resilience to climate change. However, there are some factors within the MEP's habitat enhancement proposal that may reduce its ability to enhance resources within the SRBOP (as discussed in detail in the following text).

The MEP proposal for habitat restoration includes separate proposals for "mitigation" and for "enhancement." Under the Proponents' proposal:

- Mitigation would be conducted at a 1:1 ratio for every acre of the Project's "long-term occupancy," regardless of the condition of the habitat prior to disturbance.
- Enhancement would be conducted at various ratios depending on the condition of the site as well as its location in relation to designated utility corridors. For areas within designated corridors, enhancement would be conducted at a 1:1 ratio for "*presently undisturbed ecological sites*" and at a 0.5:1 for "presently disturbed ecological sites." For areas outside of designated corridors, enhancement would be conducted at a 2:1 ratio for "presently undisturbed ecological sites" and at a 1:1 for "presently disturbed ecological sites."

Although the ratios in the Proponents' MEP depend on whether an affected area is a "presently disturbed ecological site" or an "undisturbed" site, the MEP does not adequately define or delineate these areas. For example, the MEP states that disturbed vegetation consists of "sagebrush and grassland habitat invaded by cheatgrass." This definition is too broad to clearly delineate what areas the Proponents would apply their various mitigation ratios too. More information is required from the Proponents in order to fully assess what areas the Proponents are considering "presently undisturbed ecological sites" or "presently disturbed ecological sites," or how these areas relate to the BLM Management Areas as defined in the SRBOP RMP. The following describes the SRBOP Management Areas:

- Not all areas of the SRBOP have the potential to achieve the DFC in the same manner and time-frame; therefore, the RMP has divided the SRBOP into three management areas which reflect differences in soils, precipitation, fire history, seeding history, current vegetation, and site potential (i.e., Areas 1, 2, and 3).
    - Management Area 1 encompasses approximately 31 percent of the SRBOP and is located in the western portion of the SRBOP north of the Snake River.

Area 1 has sustained the fewest wildfires (35 percent has burned), and supports the highest percentage of shrub cover (approximately 53 percent of the area supports a cover of native shrubs).

- Management Area 2 comprises 43 percent of the SRBOP and encompasses the eastern portion of the SRBOP and the portion south of the Snake River. The shrub component has been reduced to approximately 34 percent of the overall vegetative cover in this area.
- Management Area 3 encompasses the remaining 26 percent of the SRBOP and is generally located in the center of the SRBOP north of the Snake River. Approximately 21 percent of Area 3 supports shrub cover.

Because the Proponents' habitat restoration proposal is based on ratios and an average cost of restoration per acre (which they have estimated to be $1,800 an acre), it is not dependent on a specific route proposal, but can be scaled and modified to match various routes or alternatives. Although this proposal can be scaled to various routes during the initial assessment and development, its design is not directly tied to any monitored or achieved on-the-ground success criteria (e.g., it relies on a fixed and finite dollar amount based on the extent of area impacted and "expected" success criteria, as opposed to the actual monitored success during implementation). As a result, the average cost estimated for this proposal per acre likely underestimates the true cost of restoration in the SRBOP (discussed in more detail below).

There are multiple factors that the Proponents' habitat restoration proposal does not take into consideration, such as the past and ongoing disturbance regimes of the area; the composition of the landscape and vegetation communities; the composition of adjacent areas; and the realization that restoration treatment options need to be adapted to respond to site specific conditions within the landscape as opposed to a one-type-fits-all approach. For example, the SRBOP has experienced frequent wildfires as well as other past disturbances, which have converted over 65 percent of the landscape to early successional plant communities, much of which is dominated by cheatgrass. Cheatgrass is an invasive species that can proliferate rapidly in disturbed arid and semi-arid sagebrush grasslands, and can increase the rate and severity of fires, thereby creating a cycle of disturbance that ultimately increases the rate of cheatgrass establishment and spread (Cox and Anderson 2004). As a result, restoration efforts in cheatgrass dominated areas that have experienced an increased fire frequency are often unsuccessful because: 1) cheatgrass in adjacent areas can rapidly spread into the restored/treated areas, and 2) fires that originate in the adjacent cheatgrass dominated areas can spread into the restored/treated areas thereby increasing the rate of disturbance in the area and killing off the native plants that were restored in the treated areas.

The current MEP proposal does not take into account the variability in site-specific conditions or past and ongoing disturbance regimes in the area. Instead, it assumes that restoration and enhancement within the SRBOP would have an 80 percent success rate (without regard to the differences between habitat types or regions within the SRBOP), and that the cost of habitat restoration per acre is based on this assumption of an 80 percent success rate (i.e., it assumes that only 20 percent of the treatments

would require additional measures or follow-up treatments). The Proponents' MEP does not explain how they derived this assumption of an 80 percent success rate; however, the BLM assumes that it was derived from one restoration site in the SRBOP (i.e., the Dedication Point) where after 2 years post-planting the survivorship for Wyoming big sagebrush container stock (grown from locally sourced seed) was 80 percent. As this was one site in the SRBOP, involved container stock plants, and relates to a single species, the results of this site cannot be applied to the entire SRBOP. Therefore, the 80 percent success rate assumption is not valid for this Project or proposed MEP.

The U.S. Department of the Interior has developed a Technical Guide that defines adaptive management and describes the conditions for its implementation (Williams et al. 2009); however, the MEP does not take the guidelines or recommendations in this Technical Guide into consideration in its habitat restoration plan. Also, the Proponents' proposal does not include measures to reduce or control fires, which contribute to the spread of non-native plants in this area. As a result, a large portion of the habitat restoration efforts proposed in the MEP may have lower success rates than those assumed in the Proponents' proposal, and the treated area would likely return to pre-treated conditions without extensive follow-up treatments.

Because the MEP 1) does not take into consideration the disturbance legacy of affected or proposed treatment areas; 2) does not provide sufficient information regarding the baseline conditions or the methods that would be implemented to restore target areas; and 3) overestimates the potential success rate that would likely be achieved in these areas, it is not likely that the habitat restoration efforts proposed in the MEP would result in enhancement of the SRBOP.

The efforts necessary to treat areas dominated by invasive plant species (e.g., clearing of vegetation, and mechanical or chemical treatment of weeds), could have a short-term adverse indirect effect on wetlands and riparian areas from potential of herbicide drift into the wetlands and riparian areas. If the restoration efforts were successful, they could have long-term beneficial effects to upland habitats. The beneficial effects on adjacent uplands could indirectly benefit wetlands and riparian areas through an increase in habitat structure and diversity of native habitats and a possible localized reduction of fire risk. Therefore, the proposed habitat restoration efforts in the MEP could have minor short-term adverse indirect impacts to wetlands and riparian areas and minor indirect long-term beneficial effects.

Purchase of Private Inholdings

There are private lands within the SRBOP that could contain important cultural and natural resources. The Proponents have proposed (as part of the MEP) to purchase a portion of these lands and deed them to the U.S. government, to be managed by the BLM. The Proponents have indicated that the selection of the parcels that would be purchased and deeded to the BLM would be determined by the Oversight Committee. However, the composition and exact membership of the individuals and agencies within the proposed Oversight Committee has not been identified to date. Therefore, the effectiveness of the Oversight Committee cannot be determined until the individuals and agencies that will be included in the committee are identified, and the process that will

be used by the committee to make its final decisions is determined. The MEP makes a preliminary estimate of $3,000 an acre for the cost of purchasing lands and transferring them to the BLM for management; however, it acknowledges that the exact price is uncertain until the parcels are identified by the Oversight Committee and purchase negotiations begin.

This proposal is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute (e.g., P.L. 103-64 states that "The Secretary is authorized to acquire lands and interests therein within the boundaries of the conservation area by donation, purchase with donated or appropriated funds, exchange, or transfer from another Federal agency, except that such lands or interests owned by the State of Idaho or a political subdivision thereof may be acquired only by donation or exchange").

The Proponents have indicated that all efforts proposed in regard to the purchasing of private inholdings are intended to apply to enhancement of the SRBOP (with no mitigation component).

Purchasing private inholdings and transferring control of the land to the BLM would likely result in a change in how the lands are managed. The BLM would manage the lands in accordance with the BLM's RMP as well as the SRBOP's enabling statute, which, in part, emphasizes management, protection, and rehabilitation of habitat for raptor and other resources and values in the area. However, the current condition or management of the private lands cannot be determined at this time because no specific parcels or willing landowners have been identified to date. Therefore, although this proposal may result in the long-term enhancement of the area and its resources, depending on how the land was being managed under private ownership (e.g., much of the existing private lands in the area are used for agricultural purposes as opposed to conservation), a determination of this proposal's ability to enhance the objectives and values for which the SRBOP was established cannot be fully made until the specific parcels are identified by the Oversight Committee.

Law Enforcement

The Proponents' MEP contains a proposal for the funding of increased law enforcement within the SRBOP for a period of 10 years. The goal of this increased funding is to change adverse behaviors in the SRBOP by aiding law enforcement in their coverage and ability to manage public induced damage to resource. This proposal is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute.

Under the Proponents' proposal, approximately 17 percent of the funding would go to mitigation, while the remaining funding would go to enhancement; however, the MEP does not provide the rationale for this financial breakdown (i.e., why 17 percent would apply to mitigation and 83 percent to enhancement). The Proponents' stated intent for the mitigation funding is to prevent an increase in illegal behavior that could occur as a result of the presence of new Project related roads in the area. Although the Proponents' intent for the enhancement funding, is to "permanently reduce illegal behaviors in the SRBOP thereby further protecting the objectives and values for which

the SRBOP was established," the MEP only offers this funding for a period of 10 years, which would neither constitute a permanent fund nor last for the life of the Project.

If illegal or inappropriate activities were conducted in the SRBOP, they could have adverse impacts to wetlands and riparian areas. For example, the use of roads by unauthorized vehicles could result in disturbance to wetland and riparian areas. In addition, the dumping of trash in the SRBOP could result in increased disturbance of habitats, and increase the rate of spread by invasive plants species in all habitats, both upland and riparian. These activities could also increase the risk of wildfires occurring in the SRBOP, which could disturb wetlands and riparian areas. As a result, the increase in law enforcement funding meant to limit or prevent these activities may result in a minor enhancement of wetland and riparian area resources in the SRBOP, depending on the extent that these activities currently occur in the area. However, it is not certain if these activities actually occur in the SRBOP, or if they do occur, at what frequency. As a result, because the current baseline conditions of the area (i.e., if these activities occur or how often they occur) cannot be identified at this time, a determination of this proposal's ability to enhance the objectives and values for which the SRBOP was established cannot be made.

Visitor Enhancement

The MEP contains a proposal to fund programs meant to enhance the experiences of visitors to the SRBOP. The Oversight Committee (which has not been established or identified to date; see previous discussion above) would be responsible for selecting the programs that would be funded; however, the Proponents' MEP offers the following as examples of programs that could be funded:

- The "Raptor Camp," which provides an opportunity for the public to learn the values of natural resource in the SRBOP;
- Public service announcements and educational materials that educate the public and promote responsible use of the SRBOP; or
- Cultural resource education programs.

This proposal is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute.

The Proponents have indicated that all efforts proposed under this program are intended to apply to enhancement of the SRBOP (with no mitigation component).

Enhancement of the visitors' experience is an important component of the SRBOP, and the visitors experience is called out specifically in the SRBOP's enabling statute (see Section 4 of P.L. 103-64 "Management and Use"). It is, therefore, an important part of the mitigation/enhancement package; however, it would not have a direct impact to wetlands or riparian areas. Visitor enhancement programs that contain an educational component aimed at the importance of wetlands and riparian areas in the area could, however, have indirect long-term beneficial impacts by promoting the public's interest in protecting wetlands and riparian areas. However, because the exact programs that would be funded have not been identified to date, a determination of this proposal's

ability to enhance the objectives and values for which the SRBOP was established cannot be made.

Line and Substation Removal

The Proponents have proposed to remove some existing infrastructure within the SRBOP. This includes:

- Removing approximately 7 miles of existing 46-kV line on BLM-managed lands, from the Bowmont Substation to Gage Substation;
- Constructing an approximately 1-mile-long section on private land to connect the remaining portion of the line to the Idaho Power system;
- Reconstructing 3.9 miles of existing 12.5 kilovolt lines, including 0.25 mile on BLM-managed lands;
- Converting approximately 4 miles of the existing 46-kV line on BLM-managed lands between the Gage and Ferry substations to a 12.5-kV distribution line; and
- Removing the existing Gage Substation and associated equipment/apparatus, which are on BLM-managed land.

Although not specifically addressed or called out in the SRBOP's enabling statute, this proposal does not contradict the objectives and goals of the BLM's RMP or the SRBOP's enabling statute.

The Proponents have indicated that all efforts proposed as part of the line and substation removal effort are intended to apply to enhancement of the SRBOP (with no mitigation component).

The work necessary to remove the existing line and substation, as well as reconstruct or reconnect the existing lines, is not anticipated to directly impact any wetlands or riparian areas as there are no mapped wetlands or riparian areas in those work areas. Minor indirect impacts, such increased sedimentation, could occur if work was conducted adjacent to wetlands and riparian areas.

3.9.2.6 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

<u>Summary of Remaining Impacts</u>

After implementation of the EPMs and MEP discussed above, some Project-related impacts would likely remain. However, per the requirements of Section 404 of the Clean Water Act, all permanent impacts to wetlands regulated by the USACE would be compensated for per the compensatory wetland mitigation plan (discussed in more detail below). Additionally, design features and EPMs would avoid or minimize the extent of impacts that could occur to wetlands and riparian areas. As a result, no remaining impacts to wetlands are anticipated, though minimal impacts to riparian areas

could remain if operations facilities cannot completely avoid riparian areas and ROW clearing and maintenance occurs in forested riparian areas.

BLM Compensatory Mitigation Categories

In addition to the design features and EPMs meant to avoid and minimize impacts to wetlands and riparian areas (as described above), the Framework for Compensatory Mitigation for and Monitoring of Unavoidable Impacts to Waters of the U.S. (Appendix C-2 of the FEIS) was required by the ROD for Segments 1–7 and 10 in order to compensate and mitigate for the impacts to wetlands and riparian areas that would remain once the avoidance and minimization measures were fully implemented. This plan would be applicable to Segments 8 and 9, if approved, and is available to the public in the planning record. Below is a brief summary of this plan.

- The Framework for Compensatory Mitigation for and Monitoring of Unavoidable Impacts to Waters of the U.S. Plan outlined: 1) the regulations and statutes that govern wetlands and waters of the U.S.; 2) the avoidance and minimization measures that would be implemented to reduce the total impacts to wetlands and waters of the U.S.; 3) a preliminary estimation of impacts to waters of the U.S.; 5) and the framework for how unavoidable impacts to wetlands would be compensated for. The types of mitigation projects and efforts that would be implemented as part of this plan include: 1) providing funding to a mitigation bank; 2) providing funding to an in-lieu fee program; or 3) the Proponents would conduct their own wetland restoration and mitigation projects.

Waters of the United States, including wetlands, are regulated by the USACE under Section 404 of the CWA. Section 404 requires that USACE ensure that all permanent impacts to wetlands be fully compensated for to assure no net loss of area or function of waters of the United States. The compensatory wetland mitigation discussed above would ensure that all permanent impacts to wetlands would be fully compensated for. As a result, although the exact components and features of the wetland mitigation plan have not been finalized, the final plan would be required to fully compensate for all impacts to wetlands and waters of the U.S.

In addition, Appendix K contains a Conceptual Mitigation Model that the BLM may follow when calculating habitat restoration treatment related mitigation requirements. These habitat restoration treatments may have additional indirect benefits to wetlands in the area by restoring or improving the condition of vegetation communities and habitats within the affected watershed.

3.10 GENERAL WILDLIFE AND FISH

This section addresses the potential impacts to general wildlife and fish species as well as their habitats from the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; and the Toana Road Variations to the Segment 9 Revised Proposed Route. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). Effects associated with the various routes analyzed in the 2013 FEIS were disclosed in that document. With the exception of FEIS Proposed 9, those FEIS routes are not being re-analyzed here, as only new information is included in this resource-specific section.

3.10.1 Affected Environment

3.10.1.1 Analysis Area

The Analysis Area used to define and address the existing environment and potential impact area is described in detail within the FEIS. The extent of the Analysis Area that was used for this SEIS is restricted to that portion described in the FEIS that corresponds to Segments 8 and 9. Therefore, not all habitat types and species discussed in the FEIS would be affected by the routes being considered in this SEIS. As a result, species and habitats not found within the Analysis Area for Segments 8 and 9 (but which may be included in the FEIS for the other segments' Analysis Areas) are not discussed or analyzed in this document (see Section 3.10.1.4 for additional details).

Morley Nelson Snake River Birds of Prey National Conservation Area

Portions of the Project would cross through the SRBOP. As a result, this section will discuss specific wildlife resources and potential impacts that would occur on the SRBOP. Wildlife and their habitats (specifically raptors and their prey species) are one of the environmental resources and values for which the SRBOP was established to manage and protect.

3.10.1.2 Issues Related to Wildlife and Fish

The following wildlife and fish issues relevant to Segments 8 and 9 were brought up by the public during public scoping (Tetra Tech 2009) or in comments on the DEIS, raised by federal and state agencies during scoping and agency discussions, or are issues that must be considered as stipulated in law or regulation:

- What the effects of Project construction and operations would be on general, non-special-status wildlife, including birds, reptiles and amphibians, and large and small mammals;
- When routing the Project, whether key wildlife habitats would be avoided;
- What the effects would be on migratory bird species;
- Whether there would be a loss or fragmentation of wildlife habitat, especially for sagebrush-obligate and forest-dependent species;
- What wildlife mortality would occur during construction;

- Whether there would be a potential for disruption of breeding and reproductive activities of raptors;
- What the effects would be on big game migration;
- What the effects would be on big game and crucial big game winter range-habitat removal and disturbance during seasonal occupancy;
- What the effects would be on big game parturition areas from habitat removal and disturbance during seasonal occupancy;
- What the potential would be for avian collision during operations and what measures would be taken to minimize this risk;
- Whether noise created during transmission line operations would affect wildlife;
- What best management practices would be used during construction and operations to protect fish resources;
- How disturbed instream habitats would be protected and restored;
- What the potential would be for electrocution of large birds during operations; and
- What the impacts would be on wildlife or wildlife habitat within an NWR, State Park, State Wildlife Management Area, Special Management Area, or other NLCS land on federal lands specifically managed for one or more species of wildlife.

We reviewed the scoping comments received for this SEIS and determined that the general wildlife/fish-related issues considered in the FEIS are still relevant to the SEIS. In addition, the following issue would be applicable to Segments 8 and 9, but was not specifically raised for the FEIS:

- What the impacts would be to the values for which the SRBOP was established to manage and protect, which include general wildlife species (including raptors and their prey species).

3.10.1.3 Methods

The General Wildlife and Fish Section in the 2013 FEIS discusses those aspects of the environment that could be impacted by the Project, as well as the methods that were used to assess potential Project-related impacts to these resources. We reviewed the data, analysis methods, and regulatory requirements in the FEIS and concluded that they are still valid for this SEIS, and that no significant new data were identified for the wildlife/fish in the analysis area, with the exception of some new/updated GIS datasets. The following new/updated GIS datasets were used in the SEIS analysis:

- Raptors: Idaho Fish and Wildlife Information System (IFWIS) Species Diversity Database, Idaho Department of Fish and Game (IDFG), July 2014
- Existing Transmission Lines: Ventyx, November 2014 (used for fragmentation analysis)
- Existing Roads: Esri 2014 dataset (used for fragmentation analysis)

These new data were incorporated into the analysis, and used as part of the impact assessment methods described in detail within Section 3.11.1.4 of the FEIS.

FEIS Proposed 9 is included in three of the BLM action alternatives considered in this SEIS (i.e., Alternatives 2, 4, and 6). The impact values related to FEIS Proposed 9 have been reanalyzed using the data that have become available since the publication of the FEIS (see the list of new data discussed above). As a result, the impact values reported in the FEIS for this route may differ from what is reported in this SEIS in some instances.

The general wildlife taxa that were described in the FEIS for Segments 8 and 9, and which are included in this impact analysis for the SEIS, include big game, raptors, and fish species (see Section 3.10.1.5 of the FEIS for a detailed description of these taxa). The FEIS also addressed general avian species, small mammals, reptiles, and amphibians; however, we have determined that no new information is available regarding these taxa, and the general impact assessment found in the FEIS for these taxa would not change based on the new information available for this SEIS (i.e., the qualitative assessment of potential impacts to these taxa found in the FEIS is still valid for this current assessment).

Habitat fragmentation is a substantial impact that can occur to wildlife habitats, and is an impact that can be quantified to some degree. As a result, the quantitative estimates regarding potential Project-related fragmentation of habitats is discussed in the Affected Environment section of the FEIS (see Section 3.10.1.5), as well as the impact section of this SEIS.

The seven action alternatives consist of combinations of various routes considered in this SEIS, and for the most part the qualitative impacts that would occur along these alternatives are the sum of the impact values from each applicable route (see Chapter 2 for more details); however, this is not the case for the fragmentation analysis. As the fragmentation analysis uses large buffers around each route's centerlines to calculate the existing and expected levels of fragmentation (see Section 3.10.1.5 of the FEIS), these "analysis buffers" create some overlap when considering two routes simultaneously (i.e., the results from two separate routes' fragmentation analyses cannot be summed due to this overlap). As a result, separate tables are provided in Appendix D for the fragmentation analysis, which report the existing and expected fragmentation levels for each of the seven action alternatives (i.e., these alternative tables take the overlap in the individual route analysis buffers into consideration).

3.10.1.4 Existing Conditions

The habitat types described in the FEIS that are crossed by Segments 8 and 9, and which are included in this SEIS, include:

- Shrubland (e.g., disturbed shrubland, sagebrush, saltbrush, greasewood, and other shrubland types)
- Grassland (i.e., both native and semi-natural)
- Juniper Woodlands
- Wetlands, Riparian, and Water

- Agricultural Land
- Developed/Disturbed Lands and Unmapped Areas

Table 3.10-2 and Section 3.10.1.5 of the FEIS describe these habitat types in detail, as well as the wildlife and fish species that could occur within each type crossed by the Project. Figure E.10-1 in Appendix E displays the spatial distribution of these habitat types.

3.10.2 Direct and Indirect Effects

A comprehensive list of all project design features and EPMs, as well as the land ownership to which they apply, can be found in Table 2.7-1 of Chapter 2 of the FEIS. The following impact assessment takes these project design features and EPMs into account when considering the potential impact that the Project could have on general wildlife and fish resources.

Plan Amendments

Amendments to the BLM RMPs and MFPs are summarized for each alternative in Table 2.3-1 (see Chapter 2 for more details). The BLM plan amendments are discussed in detail in Appendices F and G. Amendments are needed to permit the Project to cross various areas of BLM-managed land.

The effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved, and amendments that alter land management designations could change future use of these areas. However, no amendments specific to general wildlife or fish species are proposed for the Project, and no impacts to general wildlife and fish resulting from approving the amendments, beyond those described for the general impacts of the Project, are anticipated.

3.10.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West for Segments 8 and 9 and this portion of the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of these segments. No Project-related impacts to wildlife and fish species or habitats would occur in the Analysis Area; however, impacts to these resources would continue as a result of natural events (such as fire, drought, and severe weather) as well as from current wildlife management policies (e.g., hunting permits), existing and planned developments within the Analysis Area, and from other projects, including wind farms, mining, agricultural, or other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project and the region would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, impacts similar to those described below may occur due to new transmission lines that may be built to meet the increasing demand in place of this Project.

3.10.2.2 Effects Common to All Routes

Construction and Operations

The general impacts that would occur to wildlife and fish species as well as their habitats from construction, operation, and decommissioning of the Gateway West Project were analyzed in detail within Section 3.10.2.2 of the FEIS. These impacts included direct mortality and/or disturbance of individuals, loss or degradation of habitats (e.g., habitat fragmentation, weeds, fire, reduced vegetation cover, and changes to stream temperatures or sedimentation levels), as well as indirect effects (e.g., alterations to predation rates, effects to migratory corridors, effects to prey-base health or populations, creating increased access for recreationalists and hunter). In addition, helicopters may be used for construction of the line in some remote areas (see Section 3.10.2.2 of the FEIS). The use of helicopters for construction (or during annual inspections) could disturb wildlife; however, helicopter use would be restricted by the timing and seasonal restrictions outlined in Appendix I of the FEIS, thereby minimizing the risk of disturbance to wildlife during these sensitive periods. We have reviewed Section 3.10.2.2 of the FEIS and determined that the general impacts that could potentially occur and the relevant assessment for general impacts to wildlife and fish considered in the FEIS have not changed, and that the potential qualitative effects that could occur as a result of the quantitative impacts reported in this SEIS have not changed from what is reported in the FEIS. As a result, these general impacts are not re-stated in this SEIS (see Section 3.10.2.2 of the FEIS for a description of the general Impacts that could occur to wildlife and fish as a result of the Project).

The impact assessment found in this SEIS consists of the quantitative impacts that would occur as a result of the routes and alternatives that are included in this SEIS. This assessment of quantitative impacts is presented in Sections 3.10.2.3 and 3.10.2.4. The assessment of potential impacts related to the MEP on wildlife and fish, as well as a list of additional mitigation measures that may be required, are presented in Sections 3.10.2.5 and 3.10.2.6.

Decommissioning

Note that impacts from decommissioning would be similar to construction impacts (discussed in Section 3.10.2.2 of the FEIS, in the Construction section) and are not discussed separately below. Project facilities would be removed at the end of the operational life of the transmission line. Structures and foundations would be removed to below the ground surface level. They would not be removed in their entirety due to the large ground disturbance this would create. Soil and plants would be restored over the top of these underground foundation structures. Removal of Project structures following decommissioning would result in impacts to wildlife such as visual and noise disturbance, habitat disturbance and alteration, and risk of vehicle collisions. Wildlife may avoid areas of activity during the removal process. The duration of visual and noise disturbance impacts would be only as long as it would take to decommission a given area, and these impacts would end following cessation of these activities. The impacts from habitat alteration would have a similar duration as impacts stemming from construction. Vegetation would be restored, and different habitat types would recover more quickly than others; for example, grassland would recover in 1 to 4 years, while

forest recovery would take decades. The wildlife species that use these habitat types would also take different amounts of time to return to affected areas (relatively short amounts of time for grassland species and longer amounts of time for forest species).

Another potential impact is direct mortality to some wildlife species due to trampling by equipment or personnel during structure removal. Aside from the instantaneous impact to the individual injured or killed, the duration of this impact could vary depending on the effect the loss of the animal(s) has on the local population. A robust, rapidly reproducing population may not experience any impact from the loss of an individual, while a less abundant or slower-reproducing population may feel the impact of this loss for a generation or more.

Removal of Project structures following decommissioning would result in temporary impacts to fisheries. These impacts would include increased sediment runoff to streams from increased vehicle traffic and culvert removal. Increases in turbidity from sediment input into streams would be a short-term impact, and subside shortly after ground-disturbing decommissioning activities ended. Benefits would occur from revegetation of riparian areas where ROW clearing and roads had previously existed.

Benefits to wildlife and fish from decommissioning would include habitat recovery along the ROW and roads, reducing fragmentation and edge effects. There would also be decreased human disturbance due to cessation of Project-related activities after decommissioning is completed. As roads were closed and vegetation recovered, the risk of vehicle collisions would decrease. However, some adverse impacts to raptors and ravens may occur if these species occupy the line as nesting and perching habitats during its operation (i.e., decommissioning could result in the loss of this nesting/perching habitat).

Long-term impacts from the Project following decommissioning would likely be minimal. Nearly all disturbed areas would be restored to pre-construction conditions, and vegetation would be monitored for a minimum of 3 years, or as decided by the land-managing agency.

3.10.2.3 Direct and Indirect Effects by Route

This section assesses the quantitative impacts on wildlife and fish from the Revised Proposed Routes, the other routes (8G, 8H, 9K, and FEIS Proposed 9), as well as the Route Variations (this section generally corresponds to Section 3.10.2.3 of the FEIS). Tables D.10-1 through D.10-9 in Appendix D present the results of the quantitative wildlife/fish analyses for these routes.

The following table provides a general summary of the impacts that would occur to big game ranges and fish habitats (e.g., road crossings of perennial streams) reported in the Appendix D tables. Values in square brackets (i.e., “[ ]”) relate to the impacts that would occur on BLM-managed lands on the SRBOP.

Table 3.10-1. Summary of Construction-Related Impacts to Wildlife and Fish Habitats

Route	Bighorn Sheep Habitat (acres)[1/]	Elk Winter Range (acres)	Mule Deer Winter Range (acres)	Pronghorn Winter Range (acres)	Raptor (acres impacted within 1 mile of nests)[2/]	Perennial Streams Crossed (number)
Revised Proposed Route Segment 8	–	326	791	120	1,762 [474]	8
Route 8G	<1	–	241	492 [9]	1,308 [122]	5
Route 8H	23 [23]	–	240	151 [20]	2,125 [1,173]	3 [3]
Revised Proposed Route Segment 9	25 [23]	–	176	141 [20]	2,521 [1,167]	1
FEIS Proposed 9	<1	–	205	396 [64]	1,942 [229]	5 [3]
Route 9K	2	–	176	479 [8]	1,677 [119]	3
Segment 9 Comparison Portion for the Toana Road Variations	–	–	–	–	171	–
Toana Road Variation 1	–	–	–	–	53	–
Toana Road Variation 1-A	–	–	–	–	54	–

1/ Values in "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP.
2/ Note that these values correspond to the areas within 1 mile of each known raptor nest, and may contain overestimates and double counting as a single impacted area could be within 1 mile of multiple raptor species nests. See Table D.10-7 for impacts broken out by raptor species.

Segment 8

Revised Proposed Route

The Segment 8 Revised Proposed Route would link the Midpoint and Hemingway Substations (see Figure A-1). This 129.7-mile single-circuit 500-kV transmission line would stay north of the Snake River until it crosses just north of Guffey Butte, generally parallel to an existing 500-kV transmission line, before ending at the Hemingway Substation. This route is similar to the original proposed route in the 2013 FEIS except that the line would be 250 feet north of the existing 500-kV line rather than 1,500 feet south of the line from the eastern boundary of the SRBOP (MP 99.7) to the Hemingway Substation. The route east of that point is unchanged from the 2013 FEIS Proposed Route.

Shrublands and Semi-Natural Grasslands are the dominant habitat types that would be impacted along the Revised Proposed Route for Segment 8. These habitat types are ubiquitous and abundant within the Analysis Area and region. Tables D.6-2 and D.6-3 in Appendix D list the acres of impact that would occur to the various habitat types found along Segment 8. The following subsections discuss the quantitative impact values for designated wildlife and fish habitats found along Segment 8 (e.g., big game designated winter ranges[1] or known raptor nests).

[1] Winter range is defined as the portion of the winter range to which a wildlife species is confined during periods of heaviest snow cover (DOE and BLM 2008). On public lands, certain activities are restricted seasonally to protect large ungulates while on winter range. Restrictions are limited to areas of known concentrations of ungulates during times determined by wildlife management agency when ungulates will likely be present.

Construction

Big Game

As discussed in detail within Section 3.10.2.2 of the FEIS, direct impacts to big game from Project construction could include vehicle collisions, noise, habitat loss, and visual disturbance (which is a change in the viewshed of the animal that is perceived as alarming). Vegetation clearing has the potential to alter big game designated winter and parturition range. Alterations on winter range could remove forage that is already scarce during this time of year. On parturition range, removal of vegetation used for concealment could decrease the female's ability to isolate herself and hide the newborn, possibly decreasing the newborn's chance of survival. It would also decrease the amount of forage available while the female is lactating, which presents a considerable energy demand. More details regarding these general impacts (which could occur along all Segment 8 and 9 routes) can be found in Section 3.10.2.2 of the FEIS.

Figure E.10-2 displays the spatial distribution of designated big game ranges along Segments 8 and 9. Under the current proposal, the Segment 8 Revised Proposed Route would cross through 17.5 miles of elk winter range, 45.1 miles of mule deer winter range, and 7.4 miles of pronghorn winter range (see Table D.10-1). Construction of the Project in these areas would result in 326 acres of impact to elk winter range, 791 acres of impact to mule deer winter range, and 120 acres of impact to pronghorn winter range (see Table D.10-6). Because there is overlap among ranges for these three species, the total amount of this habitat type impacted by Segment 8 during construction is 1,237 acres.

Raptors

As discussed in detail within Section 3.10.2.2 of the FEIS, the general impacts of the Project's construction on raptors include collision with Project structures, electrocution, disturbance due to construction noise, fugitive dust, and visual disturbance (these impacts could occur along all Segments 8 and 9 routes). Raptors are particularly sensitive to disturbance while building a nest and brooding, and some construction activities could cause nest failure or abandonment.

Figure E.10-3 displays the spatial distribution of known raptor nests along Segments 8 and 9. As shown in Table D.10-2, the centerline for the Revised Proposed Route for Segment 8 would pass within 1 mile of 489 currently documented raptor nests (66 of these are also within 1 mile of the existing line proposed for removal along Segment 8). The majority of these nests are ferruginous hawk (284 nests) and prairie falcon nests (105 nests).

Table D.10-7 lists the acreage of impact that would occur within 1 mile of known raptor nests. Similar information is shown in Table D.10-7 of the FEIS for the routes assessed in the FEIS.

Fish

Generally, the greater the number of stream crossings that would occur, the greater the risk to fish resources would be. However, many factors could affect the severity of impacts that would occur at each individual crossing, including what fish species are present, the period when the crossing occurs, and the distance to any spawning habitat.

Furthermore, the Project construction could decrease water quality due to a potential increase in suspended sediment, as well as effects to temperatures due to loss of riparian vegetation. High levels of suspended sediment and associated high turbidity can have adverse effects on fish behavior and physiology (e.g., blood chemistry, gill trauma, immune system resistance), and can cause mortality if levels become high enough. Accidental spills of toxic materials (e.g., oils) as well as inadvertent drift of herbicides can also adversely affect aquatic habitats. More details regarding these general impacts can be found in Section 3.10.2.2 of the FEIS (which are applicable to all Segment 8 and 9 routes).

A total of eight perennial stream crossings by proposed Project roads would occur along the Revised Proposed Route for Segment 8 (see Table 3.10-1 and Section 3.16 – Water Resources). During construction, about 8 acres of riparian or wetland vegetation would be impacted along the Revised Proposed Route (see Table D.6-2 and Section 3.6 – Vegetation Communities).

Operations

Habitat Fragmentation

Construction of the Project along Segment 8 would result in the fragmentation of habitats (see Section 3.10 of the FEIS for a detailed discussion of the effects of habitat fragmentation, as well as Tables D.10-3 and D.10-5 of the FEIS for the levels of fragmentation that would result from the various routes assessed in the FEIS).

The levels of fragmentation that would occur to various habitat types along the revised Proposed Route for Segment 8 are shown in Tables D.10-3 through D.10-5. As shown in these tables, shrublands and grasslands would be the habitat types most highly fragmented by the Project in this area (i.e., have the largest change in average patch size and patch count between pre- and post-construction of the Project). Riparian and agricultural areas would also experience some fragmentation.

The removal of 1.1 miles of existing 500-kV line along Segment 8 would result in short-term disturbance to the area, but the fragmentation of adjacent habitat that has resulted from this existing line could be eliminated over the long term, as long as the disturbed area is restored to pre-fragmentation levels and the once-fragmented habitats are reconnected. However, because the length of the removed line is only 1.1 miles, the beneficial effects of reduced fragmentation resulting from this lines removal would be minimal. This would also apply to all proposed line removals considered in this SEIS for Segments 8 and 9 (i.e., that the removal of the existing line would have a minimal benefit to wildlife species; see the section above addressing the Project's decommissioning for more details).

Big Game

As discussed in detail within Section 3.10.2.2 of the FEIS, ROW maintenance would remove thermal and hiding cover in the woodland habitat types; however, the removal of the overstory could result in additional foraging habitat for big game species. The increased human presence in the analysis area during the Project's operation could result in disturbances to big game species. On winter range, disturbance could affect winter survival by causing animals to mobilize energy reserves that are needed to

survive the winter. More details regarding these general impacts, as well as the measures that would be implemented to avoid or minimize these impacts, can be found in Section 3.10.2.2 of the FEIS.

Under the current proposal, the Project's operational footprint would impact 35 acres of elk winter range, 94 acres of mule deer winter range, and 13 acres of pronghorn winter range (see Table D.10-8). Due to overlap of winter ranges among these species, the total amount of winter range that would be impacted by Segment 8 during operations is 128 acres.

Raptors

The general impacts of the Project's operation on raptors are discussed in detail within Section 3.10.2.2 of the FEIS. Some of the nests identified within 1 mile of the Project may become abandoned during operation, while new nests may be constructed along the Project's infrastructure (e.g., on towers). The number of nests that may be abandoned or established during operations cannot be accurately estimated at this time.

Table D.10-9 lists the acreage of permanent impacts that would occur within 1 mile of known raptor nests. Similar information is shown in Table D.10-9 of the FEIS for the various routes assessed in the FEIS.

Fish

The general impacts of the Project's operation on fish species are discussed in detail within Section 3.10.2.2 of the FEIS. No new crossings beyond those disclosed above in the Construction section are anticipated to occur during operations.

Impacts on the SRBOP

All of the impacts to big game ranges along the Segment 8 Revised Proposed Route would occur outside of the SRBOP (see Table 3.10-1, as well as Tables D.10-1, D.10-6, and D.10-8 in Appendix D).

As shown in Table D.10-2, ferruginous hawk nests are the most abundant raptor nests known to occur within 1 mile of the Segment 8 Revised Proposed Route on the SRBOP (i.e., 75 nests). Impacts to habitats within 1 mile of raptor nests located on the SRBOP would be greatest for ferruginous hawk and burrowing owl nests (with 219 acres each of construction impacts and approximately 20 acres each of operations impacts occurring within 1 mile of known nests on the SRBOP). Tables D.10-7 and D.10-9 list the acres of construction and operations impacts that would occur within 1 mile of raptor nests on the SRBOP.

No perennial streams would be crossed on the SRBOP along Segment 8.

Route 8G

Route 8G is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows an alignment similar to the ones analyzed for Routes 8A and 9B in the FEIS for approximately 44 miles, although it generally parallels 250 feet north of the existing 500-kV line rather than1,500 feet to the south in order to avoid the Hagerman Fossil Beds National Monument and development near Hagerman (see Figure A-1). The route then parallels 250 feet north of the Segment 9 Proposed Route

and Route 9K for most of the remaining distance into the Hemingway Substation. The route is 146.9 miles long (including a 1.9-mile rebuild of the existing 500-kV line), compared to the 129.7-mile-long Revised Proposed Route.

Route 8G would cross through very similar habitats as described above for Segment 8's Revised Proposed Route, except that it would cross more juniper woodland habitats.

Construction

Big Game

Route 8G would cross through 15.4 miles of mule deer winter range and 24.0 miles of pronghorn winter range (see Table D.10-1). Construction of the Project in these areas would result in less than 1 acre of impact to bighorn sheep habitat (i.e., to areas not directly crossed by the Project's centerline, but which would be impacted by supporting construction areas and Project features), 241 acres of impact to mule deer winter range, and 492 acres of impact to pronghorn winter range (see Table D.10-6). Because there is overlap among ranges for these species, the total amount of bighorn sheep habitat and big game winter ranges impacted by Route 8G during construction is 733 acres (see Figure E.10-2).

The Revised Proposed Route for Segment 8 would result in impacts to 326 acres of elk winter range that would be otherwise avoided by Route 8G (which would not impact elk winter range). Route 8G would result in substantially less impacts to mule deer winter range but substantially more impacts to pronghorn winter range compared to the Revised Proposed Route for Segment 8. The less than an acre of impact to bighorn sheep habitat that would be impacted under Route 8G would be entirely avoided by the Revised Proposed Route for Segment 8 (Table D.10-6).

Raptors

As shown in Table D.10-2, the centerline for Route 8G would pass within 1 mile of 228 currently documented raptor nests. The majority of these nests are golden eagle nests (164 nests). The number of nests recorded within 1 mile of Route 8G is substantially less than what has been recorded within 1 mile of the Revised Proposed Route for Segment 8 (228 nests versus 489 nests respectively; see Table D.10-2).

Table D.10-7 lists the acreage of impact that would occur within 1 mile of known raptor nests. As shown in this table, Route 8G would have more impacts to habitats within 1 mile of raptor nests compared to the Segment 8 Revised Proposed Route for the following species: golden eagle, common raven, northern harrier[2], and prairie falcon. It would have fewer impacts compared to the Segment 8 Revised Proposed Route for the following species: bald eagle, burrowing owl, ferruginous hawk, short-eared owl, and Swainson's hawk[3].

Fish

A total of five perennial stream crossings by proposed Project roads would occur along Route 8G (see Table 3.10-1 and Section 3.16 – Water Resources). During

[2] The Revised Proposed Route would entirely avoid impact to habitats within 1 mile of common raven and northern harrier nests, while Route 8G would impact 7 and 87 acres, respectively.

[3] Route 8G would entirely avoid impact to habitats within 1 mile of short-eared owl and Swanson's hawk nests, while the Revised Proposed Route for Segment 8 would impact habitats within 1 mile of these species nests.

construction, about 3 acres of riparian or wetland vegetation would be impacted along the Revised Proposed Route (see Table D.6-2 and Section 3.6 – Vegetation Communities).

Route 8G would have less stream crossings and less impacts to riparian/wetland vegetation than the Revised Proposed Route for Segment 8.

Operations

Habitat Fragmentation

Construction of the Project along Route 8G would result in the fragmentation of habitats (see Section 3.10 of the FEIS for a detailed discussion of the effects of habitat fragmentation, as well as Tables D.10-3 and D.10-5 of the FEIS for the levels of fragmentation that would result from the various routes assessed in the FEIS).

The levels of fragmentation that would occur to various habitat types along Route 8G are shown in Tables D.10-3 through D.10-5. As shown in these tables, shrublands, grasslands, and agricultural fields would be the habitat types most highly fragmented by the Project in this area (i.e., have the largest change in average patch size and patch count between pre and post-construction phases of the Project). Riparian areas would also experience some fragmentation.

Big Game

The Project's operations footprint for Route 8G would impact less than 1 acre of bighorn sheep habitat (i.e., areas not directly crossed by the Project's centerline, but which would be impacted by supporting Project features), 39 acres of mule deer winter range, and 61 acres of pronghorn winter range (see Table D.10-8). Due to overlap of winter ranges among these species, the total amount of bighorn sheep habitat and big game winter ranges that would be impacted by Route 8G during operation is 100 acres.

Route 8G would result in impacts to fewer acres of mule deer winter range and more acreage of pronghorn and bighorn sheep habitat than the Revised Proposed Route for Segment 8 (see Table D.10-8).

Raptors

Table D.10-9 lists the acreage of permanent impact that would occur within 1 mile of known raptor nests. Permanent impacts would be greater under Route 8G than the Revised Proposed Route for golden eagle, common raven, northern harrier, and prairie falcon habitats[4]. Impacts would be less under Route 8G for burrowing owl ferruginous hawk, short-eared owl, and Swainson's hawk[5].

Fish

The general impacts of the Project's operations on fish species are discussed in detail within Section 3.10.2.2 of the FEIS. No new crossings beyond those disclosed above in the Construction section are anticipated to occur during operations.

[4] The Revised Proposed Route would entirely avoid impact to habitats within 1 mile of common raven and northern harrier nests, while Route 8G would have 2 and 9 acres of impacts, respectively, to these areas.

[5] Route 8G would entirely avoid impact to habitats within 1 mile of short-eared owl and Swanson's hawk nests, while the Revised Proposed Route for Segment 8 would impact habitats within 1 mile of these species nests.

Impacts on the SRBOP

Most of the impacts to big game ranges along Route 8G would occur outside of the SRBOP. Of the 492 total acres of pronghorn winter range that would be impacted along Route 8G, only 9 acres would be impacted on the SRBOP (see Table 3.10-1). No other big game ranges would be impacted along the portion of Route 8G located on the SRBOP.

As shown in Table D.10-2, golden eagle nests are the most abundant raptor nests known to occur along Route 8G; however, only 12 ferruginous hawk nests are known to occur along the centerline of Route 8G in this portion of the SRBOP. Approximately 114 acres of construction impacts would occur within 1 mile of ferruginous hawk nests and 8 acres of impacts within 1 mile of burrowing owl nests (along access roads and other disturbance features not located along the Project's centerline) on the SRBOP along Route 8G. Tables D.10-7 and D.10-9 list the acres of construction and operations impacts that would occur within 1 mile of raptor nests on the SRBOP.

No perennial streams would be crossed on the SRBOP along Route 8G.

Route 8H

Route 8H is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows a combination of portions of the alignments analyzed for 8G and the Revised Proposed Route for Segment 9. The route is 137.5 miles long (including a 1.9-mile rebuild of the existing 500-kV line and a 25.7-mile removal and rebuild of a 138-kV line), compared to the 129.7-mile-long Segment 8 Revised Proposed Route. Approximately 44 miles of the route follows the 8G alignment, while the remainder of 8H follows the alignment of the Segment 9 Revised Proposed Route.

Route 8H would cross through very similar habitats as described for Route 8G and for the Revised Proposed Route for Segment 9.

Construction

Big Game

Route 8H would cross through 15.4 miles of mule deer winter range, 6.8 miles of pronghorn winter range, and 0.8 mile of bighorn sheep habitat (see Table D.10-1). Construction of the Project in these areas would result in 240 acres of mule deer winter range, 151 acres of pronghorn winter range, and 23 acres of bighorn sheep habitat (see Table D.10-6). Because there is overlap among ranges for these species, the total amount of bighorn sheep habitat and big game winter ranges impacted by Route 8H during construction is 388 acres (see Figure E.10-2).

The Revised Proposed Route for Segment 8 would result in impacts to 326 acres of elk winter range that would be otherwise avoided by Route 8H (which would not impact elk winter range). Route 8H would result in substantially less impacts to mule deer winter range but more impacts to pronghorn winter range and bighorn sheep habitat compared to the Revised Proposed Route (Table D.10-6).

Route 8H would result in greater impacts to bighorn sheep habitats, but less impacts to pronghorn winter ranges compared to Route 8G. Impacts would be similar to mule deer winter ranges under both Routes 8H and 8G (Table D.10-6).

Raptors

As shown in Table D.10-2, the centerline for Route 8H would pass within 1 mile of 908 currently documented raptor nests. The majority of these nests are prairie falcon nests (548 nests). The number of nests recorded within 1 mile of Route 8H is substantially more than what has been recorded within 1 mile of the Revised Proposed Route for Segment 8 (i.e., 489 nests) and Route 8G (i.e., 228 nests; see Table D.10-2).

Table D.10-7 lists the acreage of impact that would occur within 1 mile of known raptor nests. As shown in this table, Route 8H would have more impacts to habitats within 1 mile of raptor nests compared to the Segment 8 Revised Proposed Route for the following species: burrowing owl, common raven, golden eagle, northern harrier[6], and prairie falcon. It would have fewer impacts compared to the Segment 8 Revised Proposed Route for the following species: bald eagle, ferruginous hawk, short-eared owl, and Swainson's hawk[7].

In general, Route 8H would impact more habitats within one mile of raptor nests than Route 8G, with the exception of the following species: bald eagle, golden eagle, and northern harrier (see Table D.10-7).

Fish

A total of three perennial stream crossings by proposed Project roads would occur along Route 8H (see Table 3.10-1 and Section 3.16 – Water Resources). During construction, about 3 acres of riparian or wetland vegetation would be impacted along the Revised Proposed Route (see Table D.6-2 and Section 3.6 – Vegetation Communities).

Route 8H would have less stream crossings and less impacts to riparian/wetland vegetation than the Revised Proposed Route. It would have less stream crossings but similar levels of impacts to riparian/wetland vegetation as Route 8G.

<u>Operations</u>

Habitat Fragmentation

Construction of the Project along Route 8H would result in the fragmentation of habitats (see Section 3.10 of the FEIS for a detailed discussion of the effects of habitat fragmentation, as well as Tables D.10-3 and D.10-5 of the FEIS for the levels of fragmentation that would result from the various routes assessed in the FEIS).

The levels of fragmentation that would occur to various habitat types along Route 8H are shown in Tables D.10-3 through D.10-5. As shown in these tables, shrublands, grasslands, and agricultural fields would be the habitat types most highly fragmented by the Project in this area (i.e., have the largest change in average patch size and patch

[6] The Revised Proposed Route would entirely avoid impact to habitats within 1 mile of northern harrier nests, while Route 8H would impact 20 acres.

[7] Route 8H would entirely avoid impact to habitats within 1 mile of short-eared owl and Swanson's hawk nests, while the Revised Proposed Route for Segment 8 would impact habitats within 1 mile of these species nests.

count between pre and post-construction phases of the Project). Riparian areas would also experience some fragmentation.

Big Game

The Project's operations footprint for Route 8H would impact about 2 acre of bighorn sheep habitat, 39 acres of mule deer winter range, and 20 acres of pronghorn winter range (see Table D.10-8). Due to overlap of winter ranges among these species, the total amount of bighorn sheep habitat and big game winter ranges that would be impacted by Route 8H during operation is 61 acres.

Route 8H would result in impacts to fewer acres of mule deer winter range and more acreage of pronghorn and bighorn sheep habitat than the Revised Proposed Route for Segment 8 (see Table D.10-8). Route 8H would have similar impacts to mule deer winter range compared to Route 8G, more impacts to bighorn sheep habitats, and fewer impacts to pronghorn winter ranges (see Table D.10-8).

Raptors

Table D.10-9 lists the acreage of permanent impact that would occur within 1 mile of known raptor nests. Permanent impacts would be greater under Route 8H than the Revised Proposed Route for burrowing owl, common raven, golden eagle, northern harrier, and prairie falcon. Impacts would be less under Route 8H for bald eagle, ferruginous hawk, short-eared owl, and Swainson's hawk[8].

Route 8H would have more permanent impacts to habitats within one mile of raptor nests compared to Route 8G for all raptor species assessed in Appendix D except of the following species: bald eagle, ferruginous hawk, golden eagle, and northern harrier (see Table D.10-9).

Fish

The general impacts of the Project's operations on fish species are discussed in detail within Section 3.10.2.2 of the FEIS. No new crossings beyond those disclosed above in the Construction section are anticipated to occur during operations.

<u>Impacts on the SRBOP</u>

Of the 151 total acres of pronghorn winter range that would be impacted along Route 8H during construction, only 20 acres would be impacted on the SRBOP. However, all of the impacts that would occur to bighorn sheep habitats (i.e., 23 areas) would occur on the SRBOP (see Table 3.10-1). No other big game ranges would be impacted along the portion of Route 8H located on the SRBOP.

As shown in Table D.10-2, prairie falcon nests are the most abundant raptor nests known to occur within 1 mile of Route 8H centerline, with 399 nest occurring on the SRBOP. Impacts to habitats within 1 mile of raptor nests located on the SRBOP would be greatest for ferruginous hawk, burrowing owl, and prairie falcon nests (with 396, 372, and 314 acres of construction impacts, respectively, and approximately 33, 26, and 27 acres of operations impacts, respectively). Tables D.10-7 and D.10-9 list the acres of

[8] Route 8H would entirely avoid impact to habitats within 1 mile of short-eared owl and Swanson's hawk nests, while the Revised Proposed Route for Segment 8 would impact habitats within 1 mile of these species nests.

construction and operations impacts that would occur within 1 mile of raptor nests on the SRBOP.

Three perennial streams would be crossed on the SRBOP along Route 8H.

Segment 9

Revised Proposed Route

The Segment 9 Revised Proposed Route would link the proposed Cedar Hill and existing Hemingway Substations with a 165.3-mile single-circuit 500-kV transmission line that skirts the Jarbidge and Owyhee Military Operating Areas to the north, then follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering the Hemingway Substation (see Figure A-1). It follows an alignment similar to the 2013 FEIS Route 9D/9G between MP 95.6 and 154.7, except that two portions of the route (totaling 25.7 miles) would be double-circuited with existing 138-kV lines. The first area is 5.2 miles near C.J. Strike Reservoir and the Bruneau Arm (MP 106.2 to 109.3 and 109.9 to 112.1), and the second area is 20.2 miles along the Baja Road (MP 121.0 to 141.2). Several rebuilds totaling approximately 0.6 mile are also required to tie the existing 138-kV lines into the new double-circuit alignments. Except for minor variations, the route is similar to the 2013 FEIS Route 9D/9G between MP 141.2 to 154.7. From MP 154.7 and into the Hemingway Substation, the route is the same as the 2013 FEIS Proposed Route.

Shrublands and Semi-Natural Grasslands are the dominant habitat types that would be impacted along the Revised Proposed Route for Segment 9. These habitat types are ubiquitous and abundant within the Analysis Area and region. Tables D.6-2 and D.6-3 in Appendix D list the acres of impact that would occur to the various habitat types found along Segment 9. The following subsections discuss the quantitative impact values for designated wildlife and fish habitats found along Segment 9 (e.g., big game designated winter ranges or known raptor nests).

Construction

Big Game

Figure E.10-4 displays the spatial distribution of designated big game ranges along Segments 8 and 9.

Under the current proposal, Segment 9 would cross through 0.8 mile of bighorn sheep habitat, 10 miles of mule deer winter range, and 6.9 miles of pronghorn winter range (see Table D.10-1). Construction of the Project in these areas would result in 25 acres of impact to bighorn sheep winter range, 176 acres of impact to mule deer winter range, and 141 acres of impact to pronghorn winter range (see Table D.10-6). Because there is overlap among ranges for these species, the total amount of this habitat type that would be impacted by the Segment 9 Revised Proposed Route during construction is 657 acres.

Raptors

Figure E.10-3 displays the spatial distribution of known raptor nests along Segment 9.

As shown in Table D.10-2, the centerline for Revised Proposed Route for Segment 9 would pass within 1 mile of 963 currently documented raptor nests (297 of these are also within 1 mile of the existing line proposed for removal along Segment 9). The majority of these nests are prairie falcon nests (548 nests).

The number of nests located within 1 mile of the Revised Proposed Route for Segment 9 is substantially more than what was recorded for the FEIS Preferred Route (825 more nests compared to the revised Proposed Route; see Table 3.10-40 in the FEIS).

Table D.10-7 lists the acreage of impact that would occur within 1 mile of known raptor nests. Similar information is shown in Table D.10-7 of the FEIS for the various routes assessed in the FEIS.

Fish

There would be one perennial stream crossed along Segment 9. During construction, about 3 acres of riparian and wetland vegetation would be impacted along the Revised Proposed Route (see Table D.6-2 and Section 3.6 – Vegetation Communities).

Operations

Habitat Fragmentation

Construction of the Project along Segment 9 would result in the fragmentation of habitats (see Section 3.10 of the FEIS for a detailed discussion of the effects of habitat fragmentation, as well as Tables D.10-3 and D.10-5 of the FEIS for the levels of fragmentation that would result from the various routes assessed in the FEIS).

The levels of fragmentation that would occur to various habitat types along the Revised Proposed Route for Segment 9 are shown in Tables D.10-3 through D.10-5. As shown in these tables, shrublands, grasslands, and agricultural fields would be the habitat types most highly fragmented by the Project in this area (i.e., have the largest change in average patch size and patch count between pre- and post-construction of the Project). Juniper woodlands and riparian areas would also experience some fragmentation.

Big Game

Under the current proposal, the Project's operations footprint would impact 2 acres of bighorn sheep habitat, 16 acres of mule deer winter range, and 20 acres of pronghorn winter range (see Table D.10-8). Due to overlap of habitat and winter ranges among these species, the total amount of bighorn sheep habitat and winter ranges that would be impacted by Segment 9 during operation is 38 acres.

Raptors

Table D.10-9 lists the acreage of permanent impact that would occur within 1 mile of known raptor nests. Similar information is shown in Table D.10-9 of the FEIS for the various routes assessed in the FEIS.

Fish

The general impacts of the Projects operations on fish species are discussed in detail within Section 3.10.2.2 of the FEIS. No new crossings beyond those disclosed above in the Construction section are anticipated to occur during operations.

Impacts on the SRBOP

Most of the impacts to big game ranges along Segment 9 would occur outside of the SRBOP. Of the 141 total acres of pronghorn winter range that would be impacted along the Segment 9 Revised Proposed Route, only 20 acres would be impacted on the SRBOP (see Table 3.10-1). No other big game ranges would be impacted along the portion of Segment 9 located on the SRBOP.

As shown in Table D.10-2, prairie falcon nests are the most abundant raptor nests known to occur within 1 mile of Segment 9 on the SRBOP (i.e., 399 nests). Impacts to habitats within 1 mile of raptor nests located on the SRBOP would be greatest for ferruginous hawk, prairie falcon, and burrowing owl nests (with 389, 315, and 373 acres of construction impacts, respectively, and approximately 33, 27, and 26 acres of operations impacts, respectively). Tables D.10-7 and D.10-9 list the acres of construction and operations impacts that would occur within 1 mile of raptor nests on the SRBOP.

No perennial streams would be crossed on the SRBOP along the Segment 9 Revised Proposed Route.

FEIS Proposed Route for Segment 9

The Proponents originally designed the 162.2-mile-long FEIS Proposed Route in Segment 9 to follow existing utility corridors and avoid the SRBOP and other protected areas where feasible. Approximately 54 miles of the route is within or adjacent to a utility corridor. FEIS Proposed 9 is approximately 3.1 miles shorter than the Revised Proposed Route but it crosses 13.6 miles of the SRBOP compared to 54.2 miles for the Revised Proposed Route. Both the Revised Proposed Route and FEIS Proposed 9 cross the Salmon Falls Creek at Lilly Grade adjacent to an existing single-phase 34.5-kV distribution line just north of the Salmon Falls Creek wilderness study area.

FEIS Proposed 9 would cross through very similar habitats as described above for Segment 9's Revised Proposed Route.

Construction

Big Game

FEIS Proposed 9 would cross through 10.0 miles of mule deer winter range and 20.0 miles of pronghorn winter range (see Table D.10-1). Construction of the Project in these areas would result in less than 1 acre of impact to bighorn sheep habitat (i.e., to areas not directly crossed by the Project's centerline, but which would be impacted by supporting construction areas and Project features), 205 acres of impact to mule deer winter range, and 398 acres of impact to pronghorn winter range (see Table D.10-6). Because there is overlap among ranges for these species, the total amount of bighorn sheep habitat and big game winter ranges impacted by FEIS Proposed 9 during construction is 571 acres (see Figure E.10-2).

FEIS Proposed 9 would result in more impacts to mule deer and pronghorn winter ranges compared to the Revised Proposed Route for Segment 9, but would result in fewer impacts to bighorn sheep habitats (Table D.10-6)

Raptors
As shown in Table D.10-2, the centerline for FEIS Proposed 9 would pass within 1 mile of 306 currently documented raptor nests. The majority of these nests are golden eagle nests (151 nests). The number of nests recorded within 1 mile of FEIS Proposed 9 is substantially less than what has been recorded within 1 mile of the Revised Proposed Route for Segment 9 (963 nests; see Table D.10-2).

Table D.10-7 lists the acreage of impact that would occur within 1 mile of known raptor nests. As shown in this table, FEIS Proposed 9 would have more impacts to habitats within 1 mile of raptor nests compared to the Segment 9 Revised Proposed Route for the following species: bald eagle, golden eagle, northern harrier, red-tailed hawk, and Swainson's hawk. It would have fewer impacts compared to the Segment 9 Revised Proposed Route for the following species: burrowing owl, common raven, ferruginous hawk, prairie falcon, and short-eared owl.

Fish
A total of five perennial stream crossings by proposed Project roads would occur along FEIS Proposed 9 (see Table 3.10-1 and Section 3.16 – Water Resources). During construction, about 6 acres of riparian or wetland vegetation would be impacted along the FEIS Proposed Route for Segment 9 (see Table D.6-2 and Section 3.6 – Vegetation Communities).

FEIS Proposed 9 would have more stream crossings and more impacts to riparian/wetland vegetation than the Revised Proposed Route for Segment 9.

Operations

Habitat Fragmentation
Construction of the Project along FEIS Proposed 9 would result in the fragmentation of habitats (see Section 3.10 of the FEIS for a detailed discussion of the effects of habitat fragmentation, as well as Tables D.10-3 and D.10-5 of the FEIS for the levels of fragmentation that would result from the various routes assessed in the FEIS).

The levels of fragmentation that would occur to various habitat types along FEIS Proposed 9 are shown in Tables D.10-3 through D.10-5. As shown in these tables, shrublands, grasslands, and agricultural fields would be the habitat types most highly fragmented by the Project in this area (i.e., have the largest change in average patch size and patch count between pre- and post-construction of the Project). Juniper woodlands and riparian areas would also experience some fragmentation.

Big Game
The Project's operations footprint for FEIS Proposed 9 would impact 17 acers of mule deer winter range and 43 acres of pronghorn winter range (see Table D.10-8). Due to overlap of winter ranges among these species, the total amount of bighorn sheep habitat and big game winter ranges that would be impacted by FEIS Proposed 9 during operation is 59 acres.

FEIS Proposed 9 would result in impacts to more acres of mule deer winter range (by one acre) and pronghorn winter range than the Revised Proposed Route for Segment 9 (see Table D.10-8).

Raptors

Table D.10-9 lists the acreage of permanent impact that would occur within 1 mile of known raptor nests. Permanent impacts would be greater under FEIS Proposed 9 than the Revised Proposed Route for Segment 9 for the common raven, ferruginous hawk, golden eagle, northern harrier, and red-tailed hawk. Permanent impacts would be less for the burrowing owl, prairie falcon, and short-eared owl; and would be similar for the bald eagle and Swainson's hawk.

Fish

The general impacts of the Project's operations on fish species are discussed in detail within Section 3.10.2.2 of the FEIS. No new crossings beyond those disclosed above in the Construction section are anticipated to occur during operations.

Impacts on the SRBOP

Most of the impacts to big game ranges along FEIS Proposed 9 would occur outside of the SRBOP. Of the 396 total acres of pronghorn winter range that would be impacted along this route, only 64 acres would be impacted on the SRBOP (see Table 3.10-1). No other big game ranges would be impacted along this portion of the Project on the SRBOP.

As shown in Table D.10-2, golden eagle nests are the most abundant raptor nests known to occur along FEIS Proposed 9; however, only 12 ferruginous hawk nests, one burrowing owl nest, and one prairie falcon nests are known to occur along the centerline of this route on the SRBOP. Approximately 149 acres of construction impacts within 1 mile of ferruginous hawk nests, 62 acres of impacts within 1 mile of a burrowing owl nest, 6 acres within 1 mile of a prairie falcon nest, and 13 acres within 1 mile of golden eagle nests (along access roads and other disturbance features not located along the Project's centerline) would occur on the SRBOP along this route. Tables D.10-7 and D.10-9 list the acres of construction and operations impacts that would occur within 1 mile of raptor nests on the SRBOP.

Three perennial streams would be crossed on the SRBOP along FEIS Proposed 9.

Route 9K

Route 9K is being considered by the BLM as a modified version of FEIS Route 9E (the FEIS Preferred Route) to avoid crossing the northwestern portion of the SRBOP and to minimize direct and indirect impacts to priority sage-grouse habitat. The route is approximately 174.6 miles long, compared to the 165.3-mile-long Revised Proposed Route (see Figure A-1).

Route 9K would cross through very similar habitats as described above for Segment 9's Revised Proposed Route, except that it would cross more juniper woodland habitats.

Construction

Big Game

Route 9K would cross through 10 miles of mule deer winter range and 24.1 miles of pronghorn winter range (see Table D.10-1). Construction of the Project in these areas would result in 2 acres of impact to bighorn sheep habitat (i.e., areas not directly

crossed by the Project's centerline, but which would be impacted by supporting construction areas and Project features), 176 acres of impact to mule deer winter range, and 479 acres of impact to pronghorn winter range (see Table D.10-6). Because there is overlap among bighorn sheep habitat and mule deer and pronghorn winter ranges, the total amount of bighorn sheep habitat and big game winter ranges impacted by Route 9K during construction is 657 acres.

Route 9K would result in comparable impacts to mule deer winter range as the Revised Proposed Route for Segment 9, more impacts to pronghorn winter range, and fewer impacts to bighorn sheep habitat (see Table D.10-6).

Route 9K would result in more impacts to bighorn sheep habitat and pronghorn winter range compared to FEIS Proposed 9, but fewer impacts to mule deer winter range (see Table D.10-6).

Raptors

As shown in Table D.10-2, the centerline for Route 9K would pass within 1 mile of 284 currently documented raptor nests. The majority of these nests are golden eagle nests (166 nests). The number of nests recorded within 1 mile of Route 9K is substantially less than what has been recorded within 1 mile of the Revised Proposed Route for Segment 9 (284 nests versus 963 nests, respectively; see Table D.10-2).

Table D.10-7 lists the acreage of impact that would occur within 1 mile of known raptor nests. As shown in this table, Route 9K would have comparable impacts to habitats within 1 mile of raptor nests compared to Segment 9's Revised Proposed Route for the following species: short-eared owl and Swanson's hawk. Route 9K would have fewer impacts to habitats within 1 mile of raptor nests for the following species: burrowing owl, ferruginous hawk, and prairie falcon. Route 9K would have more impacts to habitats within 1 mile of raptor nests for the following species: bald eagle, golden eagle, and northern harrier.

In general, Route 9K would impact fewer habitats within one mile of raptor nests compared to FEIS Proposed 9, with the exception of the following species: bald eagle, golden eagle, northern harrier, and short-eared owl (see Table D.10-7).

Fish

A total of three perennial stream crossings by proposed Project roads would occur along Route 9K (see Table 3.10-1 and Section 3.16 – Water Resources). During construction, about 4 acres of riparian and wetland vegetation would be impacted along the Revised Proposed Route (see Table D.6-2 and Section 3.6 – Vegetation Communities).

Route 9K would have more stream crossings and less impacts to riparian/wetland vegetation compared to the Revised Proposed Route for Segment 9. Impacts would be greater under FEIS Proposed 9 compared to Route 9K.

Operations

Habitat Fragmentation

Construction of the Project along Route 9K would result in the fragmentation of habitats (see Section 3.10 of the FEIS for a detailed discussion of the effects of habitat fragmentation, as well as Tables D.10-3 and D.10-5 of the FEIS for the levels of fragmentation that would result from the various routes assessed in the FEIS).

The levels of fragmentation that would occur to various habitat types along Route 9K are shown in Tables D.10-3 through D.10-5. As shown in these tables, shrublands, grasslands, and agricultural fields would be the habitat types most highly fragmented by the Project in this area (i.e., have the largest change in average patch size and patch count between pre- and post-construction of the Project). Juniper woodlands and riparian areas would also experience some fragmentation.

Big Game

The Project's operations footprint for Route 9K would impact less than 1 acre of bighorn sheep habitat (i.e., areas not directly crossed by the Project's centerline, but which would be impacted by supporting Project features), 17 acres of mule deer winter range, and 61 acres of pronghorn winter range (see Table D.10-8). Due to overlap of bighorn sheep habitat and mule deer and pronghorn winter ranges, the total amount of bighorn sheep habitat and big game winter range that would be impacted by Route 9K during operations is 78 acres.

Route 9K would result in fewer acres of impact to bighorn sheep habitat, comparable impacts to mule deer winter range, and more impacts to pronghorn winter range than the Revised Proposed Route for Segment 9 (see Table D.10-8). Route 9K would have similar impacts to mule deer winter range, and more impacts to bighorn sheep habitats and pronghorn winter ranges, compared to FEIS Proposed 9 (see Table D.10-8).

Raptors

Table D.10-9 lists the acreage of permanent impact that would occur within 1 mile of known raptor nests. Permanent impacts to habitats within 1 mile of bald eagle and Swainson's hawk nests would be similar between the Revised Proposed Route for Segment 9 and Route 9K. Impacts would be greater under Route 9K compared to the Segment 9 Revised Proposed Route for ferruginous hawk, golden eagle, and northern harrier. Impacts would be less under Route 9K for burrowing owl, prairie falcon, and short-eared owl.

In general, Route 9K would have fewer permanent impacts to habitats within 1 mile of raptor nests compared to FEIS Proposed 9, with the exception of the following species: bald eagle, golden eagle, northern harrier, short-eared owl, and Swainson's hawk (see Table D.10-7).

Fish

The general impacts of the Project's operations on fish species are discussed in detail within Section 3.10.2.2 of the FEIS. No new crossings beyond those disclosed above in the Construction section are anticipated to occur during operations.

Impacts on the SRBOP

Most of the impacts to big game ranges along Segment 9 would occur outside of the SRBOP. Of the 479 total acres of pronghorn winter range that would be impacted along Route 9K, only 8 acres would be impacted on the SRBOP (see Table 3.10-1). No other big game ranges would be impacted along the portion of Route 9K located on the SRBOP.

As shown in Table D.10-2, ferruginous hawk nests are the most abundant raptor nests known to occur within 1 mile of Route 9K centerline on the SRBOP (i.e., 12 nests). Approximately 112 acres of construction impacts would occur within 1 mile of ferruginous hawk nests and 8 acres of impacts within 1 mile of burrowing owl nests (along access roads and other disturbance features not located along the Project's centerline) on the SRBOP along Route 9K. Table D.10-7 and D.10-9 list the acres of construction and operations impacts that would occur within 1 mile of raptor nests on the SRBOP.

No perennial streams would be crossed on the SRBOP along Route 9K.

Toana Road Variations 1 and 1-A and the Comparison Portion of the Revised Proposed Route

Toana Road Variation 1 to the Segment 9 Revised Proposed Route was recommended by the BLM Jarbidge Field Office archaeologist to avoid paralleling the Toana Freight Wagon Road, an NRHP site. The Segment 9 Revised Proposed Route parallels within 0.25 mile of the Toana Road between MP 38.2 and 40.6, and parallels within 1 mile of the road through Blue Gulch between MP 40.6 and 43.5. Variation 1 is approximately 8.5 miles in length. Approximately 0.3 mile of the route crosses State land, with the remainder on land managed by the BLM. The Toana Road Variation 1-A to the Segment 9 Revised Proposed Route was recommended by the BLM to minimize visual impacts to the Toana Freight Wagon Road, and was also intended to utilize existing roads in order to minimize new road construction in the area. Variation 1-A is approximately 8.9 miles long. Approximately 1 mile of the route crosses State land, with the remainder on land managed by the BLM.

Construction

Big Game

Neither of the two Toana Road Variations or the comparison portion of the Revised Proposed Route for Segment 9 would cross through or impact designated big game ranges (see Tables D.10-1 and D.10-6).

Raptors

The two Toana Road Variations would have the same number of raptor nests located within 1 mile of their centerlines, but Toana Road Variation 1-A would have slightly more impact within 1 mile of burrowing owl nests (a 2-acre difference; see Table D.10-7). The comparison portion of the Revised Proposed Route for Segment 9 would have a greater number of raptor nests and more impact within 1 mile of its centerline compared to either of the two Route Variations (see Tables D.10-2 and D.10-7).

Fish
No streams would be crossed by the two Toana Road Variations or by the comparison portion of the Revised Proposed Route for Segment 9. No riparian vegetation would be cleared along the two Toana Road Variations, while less than 1 acre of riparian vegetation would be cleared along the comparison portion of the Revised Proposed Route.

Operations

Habitat Fragmentation
Construction of the Project along the Toana Road Variations would result in the fragmentation of habitats (see Section 3.10 of the FEIS for a detailed discussion of the effects of habitat fragmentation, as well as Tables D.10-3 and D.10-5 of the FEIS for the levels of fragmentation that would result from the various routes assessed in the FEIS).

The levels of fragmentation that would occur to various habitat types along the Toana Road Variations are shown in Tables D.10-3 through D.10-5. As shown in these tables, shrublands and grasslands would be the habitat types most highly fragmented by the Project in this area (i.e., have the largest change in average patch size and patch count between pre- and post-construction of the Project). Agricultural areas would also experience some fragmentation.

Big Game
Neither of the two Toana Road Variations nor the comparison portion of the Revised Proposed Route for Segment 9 would cross through or impact designated big game ranges (see Tables D.10-2 and D.10-6).

Raptors
The comparison portion of the Revised Proposed Route for Segment 9 would have greater impacts to habitats within 1 mile of raptor nests compared to either of the two Toana Road Variations. The two Toana Road Variations would have similar impacts to habitats within 1 mile of raptor nests (with a difference of less than 1 acre within 1 mile of burrowing owl nests).

Fish
No streams would be crossed by the two Toana Road Variations or by the comparison portion of the revised Proposed Route for Segment 9.

Impacts on the SRBOP
Neither of the two Toana Road Variations or the comparison portion of the Revised Proposed Route for Segment 9 would cross through the SRBOP. As a result, these route variations would not impact the SRBOP.

3.10.2.4 Direct and Indirect Effects of the Alternatives

This section assesses the quantitative impacts on wildlife and fish from the seven BLM Action Alternatives. Table 3.10-2 lists the quantitative impacts that would occur to wildlife habitats under these Action Alternatives. The alternatives are visually displayed in Figures A-2 through A-8.

As discussed in Section 3.10.2.3, inclusion of the Toana Road Variations (1 or 1-A) into any of the alternatives would reduce the impacts that would occur to raptor habitats (i.e., areas within 1 mile of raptor nests), but would not affect the other wildlife habitat types listed in Tables 3.10-1 or 3.10-2.

Table 3.10-2. Comparison of Impacts to Wildlife and Fish Habitats during Construction of the Seven Action Alternatives

Alternative	Bighorn Sheep Habitat (acres)[1/]	Elk Winter Range (acres)	Mule Deer Winter Range (acres)	Pronghorn Winter Range (acres)	Raptor (acres impacted within 1 mile of nests)[2/]	Perennial Streams Crossed
Alternative 1	25 [23]	326	968	261 [20]	4,283 [1,641]	9
Alternative 2	<1	326	996	516 [64]	3,704 [703]	13 [3]
Alternative 3	2	326	968	599 [8]	3,439 [593]	11
Alternative 4	<1	–	446	888 [73]	3,250 [351]	10 [3]
Alternative 5	2	–	417	971 [17]	2,985 [241]	8
Alternative 6	23 [23]	–	445	547 [84]	4,067 [1,402]	8 [6]
Alternative 7	25 [23]	–	416	630 [28]	3,802 [1,292]	6 [3]

1/ Values in "[ ]" correspond to impacts that would occur on BLM-managed land within the SRBOP.

2/ Note that these values correspond to the areas within 1 mile of each known raptor nest, and may contain overestimates and double counting as a single impacted area could be within 1 mile of multiple raptor species nests. See Table D.10-7 for impacts broken out by raptor species.

Alternative 1 – Proposed Action (the Revised Proposed Routes for Segments 8 and 9)

Alternative 1 consists of the Revised Proposed Routes for Segments 8 and 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.10.2.3). Table 3.10-2 lists the construction impacts that would occur to wildlife under Alternative 1.

Alternative 2 – Revised Proposed 8 and FEIS Proposed 9

Alternative 2 consists of the Revised Proposed Route for Segment 8 and FEIS Proposed 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.10.2.3). As shown in Table 3.10-2, impacts to elk habitats under Alternative 2 would be similar to those experienced under Alternative 1 (i.e., the Proponents' Proposed Action). Impacts to bighorn sheep and raptor habitats (i.e., areas within 1 mile of a raptor nest) would be less under Alternative 2 compared to Alternative 1, while impacts would be greater to mule deer and pronghorn habitat and more perennial streams would be crossed under Alternative 2 compared to Alternative 1.

Alternative 3 – Revised Proposed 8 and the 9K Route

Alternative 3 consists of the Revised Proposed Route for Segment 8 and Route 9K; therefore, the impacts associated with this alternative correspond to those described above for the these two routes combined (see Section 3.10.2.3). As shown in Table 3.10-2, impacts to elk and mule deer habitats under Alternative 3 would be similar to those experienced under Alternative 1. Impacts to bighorn sheep and raptor habitats

(i.e., areas within 1 mile of a raptor nest) would be less under Alternative 3 compared to Alternative 1, while impacts would be greater to pronghorn habitat and more perennial streams would be crossed under Alternative 3 compared to Alternative 1.

Alternative 4 – The 8G Route and FEIS Proposed 9

Alternative 4 consists of the Route 8G and FEIS Proposed 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.10.2.3). As shown in Table 3.10-2, impacts would be less under Alternative 4 to bighorn sheep, elk, mule deer, and raptor habitats (i.e., areas within 1 mile of a raptor nest) compared to Alternative 1. Impacts would be greater to pronghorn habitat and more perennial streams would be crossed under Alternative 4 compared to Alternative 1.

Alternative 5 – The 8G and 9K Routes

Alternative 5 consists of Routes 8G and 9K; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.10.2.3). As shown in Table 3.10-2, impacts to pronghorn habitat would be greater under Alternative 5 compared to Alternative 1; however, impacts would be less under Alternative 5 to all other wildlife habitat types listed in Table 3.10-2.

Alternative 6 – The 8H Route and FEIS Proposed 9

Alternative 6 consists of Route 8H and FEIS Proposed 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.10.2.3). As shown in Table 3.10-2, impacts to pronghorn habitat would be greater under Alternative 6 compared to Alternative 1; however, impacts would be less under Alternative 6 to all other wildlife habitat types listed in Table 3.10-2.

Alternative 7 – The 8H and 9K Routes

Alternative 7 consists of Routes 8H and 9K; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.10.2.3). As shown in Table 3.10-2, impacts to pronghorn habitat would be similar under Alternative 7 and Alternative 1; however, impacts would be less under Alternative 7 to all other wildlife habitat types listed in Table 3.10-2.

3.10.2.5 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, as well as additional measures proposed by the Project Proponents specifically for the SRBOP.

Environmental Protection Measures

The Proponents have committed to Project design features and EPMs meant to minimize or avoid impacts on environmental resources. These measures, the areas where they would be applicable (e.g., private, state, or federally-managed lands), as well as the details of each measure are provided in Table 2.7-1 of the FEIS. Many of these measures would be either directly or indirectly applicable to general wildlife and

fish resources (i.e., they would avoid or minimize impact to general wildlife and fish species).

Measures that would indirectly apply to general wildlife and fish resources (i.e., measures that were not developed directly to benefit wildlife and fish, but if implemented could avoid or minimize impacts to wildlife and fish) include G-1; G-2; OM-1 through OM-27; VEG-1 through VEG-10; WEED-1 through WEED-4; WET-1 through WET-4; WQA-1 through WQA-28; BLA-1 through BLA-2; FIRE-1 through FIRE-5; and FIRE-7 through FIRE-8 (see Table 2.7-1 in the FEIS).

The following measures, which were identified in Table 2.7-1 of the FEIS, are directly related to general wildlife and fish species and would be applicable to Segments 8 and 9:

WILD-1 Requests for exceptions from closure periods and areas will be submitted by the Proponents to the appropriate BLM Field Office in which the exception is requested through the Environmental CIC. Established exception processes on BLM-managed lands will be followed. The agency, the CIC, or a contractor chosen by the Proponents and approved by the agency will conduct any surveys and coordinate with any other agencies as necessary. Factors considered in granting the exception include animal conditions, climate and weather conditions, habitat conditions and availability, spatial considerations (e.g., travel routes and landscape connectivity), breeding activity levels, incubation or nestling stage, and timing, intensity, and duration of the Proposed Action. Requests will be submitted in writing no more than 2 weeks prior to the proposed commencement of the construction period, to ensure that conditions during construction are consistent with those evaluated. The authorized officer, on a case-by-case basis, may grant exceptions to seasonal stipulations, and has the authority to cancel this exception at any time. A good faith effort will be made to act on exceptions within 5 business days of receiving a request to allow for orderly` construction mobilization. The CIC will conduct any required site visit and report the status to BLM for consideration of the decision to accept or deny the request. There is no exception process for NFS lands; all closure periods will be adhered to. Any proposed modifications to closure periods will be discussed on a case-by-case basis with the Forest Service.

WILD-2 See TRANS-6 for vehicular speeds on all lands. Crew and vehicle travel will be restricted to designated routes while on federally designated big game winter range (except for areas within the ROW).

WILD-3 The Project will be designed and constructed in compliance with Avian Power Line Interaction Committee (APLIC) standards (APLIC 2006, 2012) in order to reduce impacts to avian species. Any changes to the Project's design, as requested by federal, state, or local jurisdictions, as well as any changes considered by the Proponents, will also be in compliance with APLIC guidance.

WILD-4 Pre-construction pedestrian or aerial nest surveys will be conducted in suitable habitat during the appropriate nesting time periods needed to identify new raptor nest locations, and to establish the status of previously identified raptor nests. Appropriate buffers will be applied to active nests during construction. All encounters of nesting raptors in the Analysis Area will be reported to the biological monitor and to appropriate agencies.

WILD-6 Guy wires will be marked with bird deterrent devices on federal lands to avoid avian collisions with structures, as directed by local land manager.

WILD-7 Flight diverters will be installed and maintained where the transmission line crosses rivers at the locations identified in Table 3.10-4. Additional locations may be identified by the Agencies or the Project Proponents. The flight diverters will be installed as directed in the Proponents' approved Avian Protection Plans and in conformance with the Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (Eagle Act) as recommended in the current collision manual of APLIC.

WILD-8 Pre-construction pedestrian or aerial surveys will be completed during appropriate nesting time periods, needed to identify each raptor species. The Proponents will provide survey results to the authorized officer for approval. (See WILD-1)

WILD-9 To the extent feasible, all vegetation clearing will be conducted to avoid the avian breeding season (generally April 15 through July 31, depending on local conditions and federal land management plan requirements) in order to minimize impacts to migratory birds. Where this is not feasible, pre-construction surveys within the disturbance footprint shall be conducted within seven days prior to clearing. If an active nest (containing eggs or young) of a bird species protected under the MBTA is found during either pre-construction surveys or construction activities, the nest will be identified to species, inconspicuously marked, and left in place until any young have fledged before the vegetation is removed.

WILD-10 Snags will be maintained to the extent practical and where it does not conflict with the Proponents vegetation management specifications along the outer portions of the Project's ROW in order to reduce the impacts to habitat for cavity nesters.

WILD-11 Any areas that may require blasting will be identified and a blasting plan will be submitted to the appropriate agency for approval. Blasting within 0.25 mile of a known sensitive wildlife resource will require review and approval by the appropriate agency.

WILD-12 The Proponents will annually document the presence and location of large stick nests on any towers constructed as a result of this Project. Nests will be categorized to species or species group (raptors or ravens), to the extent possible. This would begin following the first year of construction

through year 10 of operations. Results would be provided annually to the applicable land-management agency and to the USFWS.

FISH-1 On BLM-administered land, all culverts, whether temporary or permanent, must be designed to meet BLM Gold Book standards (Surface Operating Standards and Guidelines for Oil and Gas Exploration Development). On NFS lands, Forest Plan standards and guidelines shall apply.

FISH-2 When taking water from TES fish-bearing streams for road and facility construction and maintenance activities, intake hoses shall be screened with the most appropriate mesh size (generally 3/32 of an inch), or as determined through coordination with NMFS and/or USFWS.

FISH-3 All wetlands and waters in the project area are assumed to contain aquatic invasive species and all equipment contacting water will be properly disinfected. After work is complete in a waterbody, any equipment involved in construction in that waterbody must be washed to remove any propagules of aquatic invasive species and to prevent the spread of those species to other waterbodies.

These EPMs consist mostly of timing and spatial restrictions that would be implemented to prevent impacts from occurring during designated sensitive periods or near sensitive areas, requirements that the project be designed in a way as to reduce the likelihood of direct or indirect impacts, or requirements related to pre-construction surveys. However, these EPMs would not alter the total extent of direct impacts that would actually occur (e.g., they would not alter the acreage of impacts that would occur). These EPMs are a part of the current Project description, and as such, the effects of their implementation are included in the impact discussion found in Sections 3.10.2.2, 3.10.2.3, and 3.10.2.4.

Proponent-Proposed MEP and Potential Effects of the MEP within the SRBOP

The Proponents have developed an MEP that contains design features specific to the SRBOP. This plan was developed to mitigate the effects of Project-related impacts within the SRBOP, as well as comply with the SRBOP's enabling statute (P.L. 103-64) which requires enhancement of resources within the SRBOP. The Proponents' plan contains two forms of mitigation: "compensation mitigation" and "enhancement." For this analysis, mitigation is defined as avoidance, minimization, and compensation measures aimed at offsetting adverse impacts of the Project; enhancement is defined as additional mitigation measures that are required in order to enhance the objectives and values for which the SRBOP was established.

One of the goals of the Proponents' proposal is to return treated areas to their baseline condition, which is defined using the NRCS ESD of the affected area (see Section 3.6 – Vegetation Communities, for how ESDs are defined). However, the NRCS ESDs have not been defined for 38 percent of Segment 8 and 12 percent of Segment 9. The site descriptions for the unidentified areas would need to be established in order to determine the baseline conditions, which are necessary to define restoration goals. This is because a determination of the adequacy of any proposed mitigation and

enhancement cannot be made unless the baseline conditions for all areas impacted as well as those proposed for mitigation/enhancement are known in order to fully calculate both the debit (i.e., Project impact) and mitigation/enhancement credit. As a result, more information is required from the Proponents to fully assess the proposed MEP.

The Proponents' proposal offers a portfolio that contains five types of mitigation/enhancement proposals. The following discusses the benefit and/or impact that these proposed mitigation/enhancement proposals could have to wildlife and fish.

Habitat Restoration

The MEP states that the goal for the Proponents' habitat restoration proposal is to convert "non-native grasslands to native perennial plant communities" as well as to conduct "noxious weed control." This proposal, in general, is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute (e.g., P.L. 103-64 established the SRBOP in part for the "….conservation, protection and enhancement of raptor populations and habitats"). In fact, recovery of native vegetation structure and diversity in the SRBOP is critical to protecting and increasing the population size of raptor prey base species, providing more diverse pollinator habitat for rare plant species, reducing fire frequencies, and increasing the areas resilience to climate change. However, there are some factors within the Proponents' habitat enhancement proposal that may reduce its ability to enhance resources within the SRBOP.

The Proponents' proposal for habitat restoration includes separate proposals for "mitigation" and for "enhancement." Under the Proponents' proposal:

- Mitigation would be conducted at a 1:1 ratio for every acre of the Project's "long-term occupancy," regardless of the condition of the habitat prior to disturbance.
- Enhancement would be conducted at various ratios depending on the condition of the site as well as its location in relation to designated utility corridors. For areas within designated corridors, enhancement would be conducted at a 1:1 ratio for "presently undisturbed ecological sites" and at a 0.5:1 for "presently disturbed ecological sites." For areas outside of designated corridors, enhancement would be conducted at a 2:1 ratio for "presently undisturbed ecological sites" and at a 1:1 for "presently disturbed ecological sites."

Although the ratios in the Proponents' proposal depend on whether an affected area is a "presently disturbed ecological site" or an "undisturbed" site, the proposal does not adequately define or delineate these areas. For example, the MEP states that disturbed vegetation consist of "sagebrush and grassland habitat invaded by cheatgrass." This definition is too broad to clearly delineate what areas the Proponents would apply their various mitigation ratios too. More information is required from the Proponents in order to fully assess what areas the Proponents are considering "presently undisturbed ecological sites" or "presently disturbed ecological sites," or how these areas relate to

the BLM Management Areas as defined in the SRBOP RMP. The following describes the SRBOP Management Areas:

- Not all areas of the SRBOP have the potential to achieve the DFC in the same manner and time-frame; therefore, the RMP has divided the SRBOP into three management areas that reflect differences in soils, precipitation, fire history, seeding history, current vegetation, and site potential (i.e., Management Areas 1, 2, and 3).
  - Management Area 1 encompasses approximately 31 percent of the SRBOP and is located in the western portion of the SRBOP north of the Snake River. Area 1 has sustained the fewest wildfires (35 percent has burned), and supports the highest percentage of shrub cover (approximately 53 percent of the area supports a cover of native shrubs).
  - Management Area 2 comprises 43 percent of the SRBOP and encompasses the eastern portion of the SRBOP and the portion south of the Snake River. The shrub component has been reduced to approximately 34 percent of the overall vegetative cover in this area.
  - Management Area 3 encompasses the remaining 26 percent of the SRBOP and is generally located in the center of the SRBOP north of the Snake River. Approximately 21 percent of Area 3 supports shrub cover.

Because the Proponents' habitat restoration proposal is based on ratios and an average cost of restoration per acre (which they have estimated to be $1,800 an acre), it is not dependent on a specific route proposal, but can be scaled and modified to match various routes or alternatives. Although this proposal can be scaled to various routes or alternatives during the initial assessment and development, its design is not directly tied to any monitored or achieved on-the-ground success criteria (e.g., it relies on a fixed and finite dollar amount based on the extent of area impacted and "expected" success criteria, as opposed to the actual monitored success during implementation). As a result, the average cost estimated for this proposal per acre likely underestimates the true cost of restoration in the SRBOP (discussed in more detail below).

There are multiple factors that the Proponents' habitat restoration proposal does not take into consideration, such as the past and ongoing disturbance regimes of the area; the composition of the landscape and vegetation communities; the composition of adjacent areas; and the realization that restoration treatment options need to be adapted to respond to site specific conditions within the landscape as opposed to a one-type-fits-all approach. For example, the SRBOP has experienced frequent wildfires as well as other past disturbances, which have converted over 65 percent of the landscape to early successional plant communities, much of which is dominated by cheatgrass. Cheatgrass is an invasive species that can proliferate rapidly in disturbed arid and semi-arid sagebrush grasslands, and can increase the rate and severity of fires, thereby creating a cycle of disturbance that ultimately increases the rate of cheatgrass establishment and spread (Cox and Anderson 2004). As a result, restoration efforts in cheatgrass dominated areas that have experienced an increased fire frequency are often unsuccessful because: 1) cheatgrass in adjacent areas can rapidly spread into the restored/treated areas, and 2) fires that originate in the adjacent cheatgrass dominated

areas can spread into the restored/treated areas thereby increasing the rate of disturbance in the area and killing off the native plants that were restored in the treated areas.

The Proponents' habitat restoration proposal does not take into account the variability in site-specific conditions or past and ongoing disturbance regimes in the area. Instead it assumes that restoration and enhancement within the SRBOP would have an 80 percent success rate (without regards to the differences between habitat types or regions within the SRBOP), and that the cost of habitat restoration per acre is based on this assumption of an 80 percent success rate (i.e., it assumes that only 20 percent of the treatments would require additional measures or follow-up treatments). The Proponents' proposal does not explain how they derived this assumption of an 80 percent success rate; however, the BLM assumes that it was derived from one restoration site in the SRBOP (i.e., the Dedication Point) where after 2 years post-planting the survivorship for Wyoming big sagebrush container stock (grown from locally sourced seed) was 80 percent. As this was one site in the SRBOP, involved container stock plants, and relates to a single species, the results of this site cannot be applied to the entire SRBOP. Therefore, the 80 percent success rate assumption is not valid for this Project or the Proponents' habitat restoration proposal.

The DOI has developed a Technical Guide that defines adaptive management and describes the conditions for its implementation (Williams et al. 2009); however, the Proponents' habitat restoration proposal does not take the guidelines or recommendations in this Technical Guide into consideration in its habitat restoration plan. Also, the Proponents' proposal does not include measures to reduce or control fires, which contribute to the spread of non-native plants in this area. As a result, a large portion of the habitat restoration efforts proposed in the MEP may have lower success rates than those assumed in the Proponents' proposal and the treated area would likely return to pre-treated conditions without extensive follow-up treatments.

Because the Proponents' habitat restoration proposal 1) does not take into consideration the disturbance legacy of affected or proposed treatment areas; 2) does not provide sufficient information regarding the baseline conditions or the methods that would be implemented to restore target areas; and 3) overestimates the potential success rate that would likely be achieved in these areas, it is not likely that the habitat restoration efforts proposed in the MEP would result in enhancement of the SRBOP.

The efforts necessary to treat areas dominated by invasive plant species (e.g., clearing of vegetation, and mechanical or chemical treatment of weeds), would have a short-term adverse effect on general wildlife and fish species (e.g., disturbance and temporary loss of low quality yet still occupied habitat, and the potential of herbicide drift into the adjacent Snake River). If the restoration efforts were successful, they would have long-term beneficial effects (e.g., increase in habitat structure and diversity of native habitats and a possible localized reduction of fire risk); however, as discussed above, restoration success is likely to be low or very limited in extent without implementation of adequate fire protection/reduction efforts coupled with an adaptive management approach to the success criteria (i.e., as opposed to tying the financial support to an assumption of an 80 percent success rate; see Williams et al. 2009).

Therefore, the proposed habitat restoration efforts in the MEP would likely have a short-term adverse impact to wildlife and fish, but may have few to no long-term effects (adverse or beneficial).

Purchase of Private Inholdings

There are private lands within the SRBOP that could contain important cultural and natural resources. The Proponents have proposed (as part of the MEP) to purchase a portion of these lands and deed them to the U.S. government, to be managed by the BLM. The Proponents have indicated that the selection of the parcels that would be purchased and deeded to the BLM would be determined by the Oversight Committee. However, the composition and exact membership of the individuals and agencies within the proposed Oversight Committee has not been identified to date. Therefore, the effectiveness of the Oversight Committee cannot be determined until the individuals and agencies that will be included in the committee are identified, and the process that will be used by the committee to make its final decisions is determined. The Proponents' proposal makes a preliminary estimate of $3,000 an acre for the cost of purchasing lands and transferring them to the BLM for management; however, it acknowledges that the exact price is uncertain until the parcels are identified by the Oversight Committee and purchase negotiations begin.

The Proponents' proposal is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute (e.g., P.L. 103-64 states that "The Secretary is authorized to acquire lands and interests therein within the boundaries of the conservation area by donation, purchase with donated or appropriated funds, exchange, or transfer from another Federal agency, except that such lands or interests owned by the State of Idaho or a political subdivision thereof may be acquired only by donation or exchange").

The Proponents have indicated that all efforts proposed in regards to the purchasing of private inholdings are intended to apply to enhancement of the SRBOP (with no mitigation component).

Purchasing private inholdings and transferring control of the land to the BLM would likely result in a change in how the lands are managed. The BLM would manage the lands in accordance with the BLM's RMP as well as the SRBOP's enabling statute, which in part, emphasizes management, protection, and rehabilitation of habitat for raptor and other resources and values in the area. However, the current condition or management of the private lands cannot be determined at this time because no specific parcels or willing landowners have been identified to date. Therefore, although this proposal may result in the long-term enhancement of the area and its resources, depending on how the land was being managed under private ownership (e.g., much of the existing private lands in the area are used for agricultural purposes as opposed to conservation), a determination of this proposal's ability to enhance the objectives and values for which the SRBOP was established cannot be fully made until the specific parcels are identified by the Oversight Committee.

Law Enforcement

The Proponents' MEP contains a proposal for the funding of increased law enforcement within the SRBOP for a period of 10 years. The goal of this increased funding is to change adverse behaviors in the SRBOP by aiding law enforcement in their coverage and ability to manage public induced damage to resource. This proposal is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute.

Under the Proponents' proposal, approximately 17 percent of the funding would go to mitigation, while the remaining funding would go to enhancement; however, the Proponents' proposal does not provide the rationale for this financial breakdown (i.e., why 17 percent would apply to mitigation and 83 percent to enhancement). The Proponents' stated intent for the mitigation funding is to prevent an increase in illegal behavior that could occur as a result of the presence of new Project-related roads in the area. Although the Proponents' intent for the enhancement funding is to "permanently reduce illegal behaviors in the SRBOP thereby further protecting the objectives and values for which the SRBOP was established," the Proponents' proposal only offers this funding for a period of 10 years, which would neither constitute a permanent fund nor last for the life of the Project.

If illegal or inappropriate activities were conducted in the SRBOP, they could have adverse impacts to wildlife species. For example, the use of roads by unauthorized vehicles, as well as the poaching of wildlife in the SRBOP, could result in both disturbance and direct mortality of wildlife species. In addition, the dumping of trash in the SRBOP could result in increased disturbance of habitats, and increase the rate of spread by invasive plants species. These activities could also increase the risk of wildfires occurring in the SRBOP, which could both disturb wildlife habitats as well as result in direct mortality of individuals. As a result, the increase in law enforcement funding meant to limit or prevent these activities may result in the enhancement of wildlife and fish resources in the SRBOP, depending on the extent that these activities currently occur in the area. However, it is not certain if these activities actually occur in the SRBOP, or if they do occur, at what frequency. As a result, because the current baseline conditions of the area (i.e., if these activities occur or how often they occur) cannot be identified at this time, a determination of this proposal's ability to enhance the objectives and values for which the SRBOP was established cannot be made.

Visitor Enhancement

The MEP contains a proposal to fund programs meant to enhance the experiences of visitors to the SRBOP. The Oversight Committee (which has not been established or identified to date; see previous discussion above) would be responsible for selecting the programs that would be funded; however, the Proponents' proposal offers the following as examples of programs that could be funded:

- The "Raptor Camp," which provides an opportunity for the public to learn the values of natural resource in the SRBOP;
- Public service announcements and educational materials that educate the public and promote responsible use of the SRBOP; or

- Cultural resource education programs.

This proposal is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute.

The Proponents have indicated that all efforts proposed under this program are intended to apply to enhancement of the SRBOP (with no mitigation component).

Enhancement of the visitors' experience is an important component of the SRBOP, and the visitors' experience is called out specifically in the SRBOP's enabling statute (see Section 4 of P.L. 103-64 "Management and Use"). It is, therefore, an important part of the mitigation/enhancement package; however, it would not have a direct impact to wildlife or fish resources. Visitor enhancement programs that contains an educational component aimed at the importance of wildlife and fish resources in the area could, however, have indirect long-term beneficial impacts by promoting the public's interest in protecting wildlife and fish resources. However, because the exact programs that would be funded have not been identified to date, a determination of this proposal's ability to enhance the objectives and values for which the SRBOP was established cannot be made.

Line and Substation Removal

The Proponents have proposed to remove some existing infrastructure within the SRBOP. This includes:

- Removing approximately 7 miles of existing 46-kV line on BLM-managed lands, from the Bowmont Substation to Gage Substation;
- Construction of an approximately 1-mile-long section on private land to connect the remaining portion of the line to the Idaho Power system;
- Reconstructing 3.9 miles of existing 12.5 kilovolt lines, including 0.25 mile on BLM-managed lands;
- Converting approximately 4 miles of the existing 46-kV line on BLM-managed lands between the Gage and Ferry substations to a 12.5-kV distribution line; and
- Removing the existing Gage Substation and associated equipment/apparatus, which are on BLM-managed land.

Although not specifically addressed or called out in the SRBOP's enabling statute, this proposal does not contradict the objectives and goals of the BLM's RMP or the SRBOP's enabling statute.

The Proponents have indicated that all efforts proposed as part of the line and substation removal effort are intended to apply to enhancement of the SRBOP (with no mitigation component).

The work necessary to remove the existing line and substation, as well as reconstruct or reconnect the existing lines, would result in short-term disturbances to wildlife and fish. This would include disturbance to habitats and nesting sites (see Table D.6-2 in Section 3.6 – Vegetation Communities, as well as Table 3.10-3), as well as disturbance to individuals. The short-term effects of this effort would be similar to the effects that would occur during the construction of the Project (see Section 3.10.2.3) as similar

construction equipment and personnel would likely be used. Wildlife would likely avoid the area while work is being conducted, resulting in a short-term loss of habitat use. Furthermore, work conducted near streams or waterbodies could result in a short-term increases in sedimentation, thereby affecting fish habitat quality (see Section 3.16). In addition, some direct loss of individuals (i.e., mortality events) may occur due to the use of vehicles and heavy equipment within the habitats, as well as the removal of structures that could contain avian nests. The USFWS would need to be consulted prior to the removal of any structures that contain eagle nests (per the Eagle Act) and the USFWS would likely request that any structures that contain avian nests be removed during times outside of the typical avian breeding season (per their authority under the MBTA). All BMPs implemented during construction would also need to be applied during the removal of these existing lines and substations in order to minimize the impacts that could occur to wildlife and fish species or their habitats.

Table 3.10-3. General Wildlife Impact Values for the MEP's Proposed Line and Substation Removal

Impact Type	Impact Value
Miles of Big Game Range Crossed	Mule Deer Winter Range: 1.3 miles
Construction Impacts Within Big Game Range	Mule Deer Winter Range: 1 acre
Number of Raptor Nests within 1 mile of the Project's centerline[1/]	Burrowing owl: 7 nests
	Ferruginous hawk: 16 nests
	Golden eagle: 33 nests
Construction Impacts within 1 mile of Raptor Nest	Burrowing owl: 17 acres
	Golden eagle: 2 acres
	Prairie falcon: 7 acres
Number of Stream Crossings	Zero

1/ Prairie falcons are known to nest along the Snake River, and there are records of nests within 1 mile of the proposed line and substation removal (based on the IDFG database). However, an accurate estimate regarding the distinct number of nests within this area is not available at this time.

The removal of these existing lines and substations could enhance habitats in the area, by removing the disturbance footprint of these structures from the SRBOP; as long as sufficient BMPs and weed control methods are implemented (as described for construction of the Project) in order prevent further degradation of the habitats from occurring. The Proponents have stated (in their MEP) that raptors and slickspot peppergrass are the taxa/species targeted for enhancement by this proposal (note that the effects of the MEP on slickspot peppergrass is discussed in Section 3.7 – Special Status Plants). This MEP proposal would remove the collision risk posed by these existing structures to raptors, as well as any electrocution risks posed by conductors that are spaced at widths narrower than an avian species' wing span (most of which likely occurs at the existing substation; see page 3.10-40 of the FEIS). However, it could also remove structures that are currently used by raptor species for perching or nesting habitats. As a result, the proposal would have short-term adverse impacts to wildlife and fish species, but could have a mix of adverse and beneficial long-term impacts to raptor species and their habitats. Furthermore, the beneficial impacts of this line and substation removal may be partially offset in areas where the new line may be placed near where this old line and substation were removed (e.g., along the Revised Proposed Route for Segment 8).

3.10.2.6 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

Summary of Remaining Impacts

After implementation of the EPMs and MEP discussed above, some Project-related impacts would likely remain. The impact assessment found in Sections 3.10.2.2, 3.10.2.3, and 3.10.2.4 incorporates the avoidance and minimization contributions of the EPMs in the impact analysis; as a result, Sections 3.10.2.2, 3.10.2.3, and 3.10.2.4 take these measures and their impact offsets into consideration. The design features outlined in the Proponents' MEP (discussed above in Section 3.10.2.5) may reduce the magnitude of impacts to some degree (thereby reducing the need for additional compensatory mitigation); however, the extent of this reduction cannot be fully quantified at this time (as discussed in detail above).

Note that Sections 3.10.2.2, 3.10.2.3, and 3.10.2.4 outline the current extent of known impacts that would occur Project-wide, as well as those that would be unique to the SRBOP.

BLM Compensatory Mitigation Categories

In addition to the design features and EPMs meant to avoid and minimize impacts to wildlife and fish species (as described above in Section 3.10.2.5), two plans were required by the ROD for Segments 1–7 and 10 to compensate and mitigate for the impacts to wildlife species or their habitats that would remain once the avoidance and minimization measures were fully implemented. These plans would be applicable to Segments 8 and 9, if these segments are approved.

These two plans are 1) the Greater Sage-Grouse Habitat Mitigation Plan and 2) the Migratory Bird Habitat Mitigation Plan (both the Greater Sage-Grouse Habitat Mitigation Plan and the Migratory Bird Habitat Mitigation Plan are available to the public in the planning record):

- The Greater Sage-Grouse Habitat Mitigation Plan outlined: 1) the agencies requirements and a mitigation framework related to impacts to sage-grouse; 2) a summary of the Habitat Equivalency Analysis (HEA) that was conducted in order to quantify the habitat services lost due to project related impacts and the potential habitat service gains that could be achieved by various mitigation programs; and 3) the Proponents' proposed mitigation plan to compensate for impacts to sage-grouse as well as sagebrush habitats. The types of mitigation projects and efforts that would be implemented as part of this plan include: 1) fence marking and removal; 2) sagebrush restoration and enhancement; 3) juniper removal; 4) seeding of forb and bunchgrass understory; and 5) the purchase of conservation easements. To ensure that these projects/efforts are successful, a monitoring plan would be developed. The final monitoring and maintenance approach for each mitigation project will be formalized in a

monitoring and maintenance strategy that will be reviewed annually, or as necessary, by the Oversight Committee with involvement of the monitoring entity.

- The Migratory Bird Habitat Mitigation Plan outlined the Proponents' proposal to mitigate for all wildlife habitats not already covered by the Greater Sage-Grouse Habitat Mitigation Plan (i.e., sagebrush habitats) or the Compensatory Wetland Mitigation Plan (i.e., wetland habitats). The plan quantified the forested habitat that would be impacted as well as the programs and funding that would be provided to compensate for these impacts related to Segments 1 through 4 (i.e., the Segments that had been approved in the ROD). The plan created an outline for how mitigation along Segments 5 through 10 would be implemented if the BLM approved Segments 8 and 9. To mitigate for impacts to forested habitats used by migratory birds, the plan proposes to finance off-site compensatory mitigation projects based on an approximate cost derived from considering current BLM forest restoration projects. The types of projects considered in the plan for funding include: 1) habitat restoration projects, such as those BLM is considering currently in Wyoming and Idaho; 2) conservation easements if available that protect forested habitat on private land from development; 3) property purchase if available that would transfer property from private ownership subject to development to either a non-profit land management organization or to public ownership with the commitment for management as migratory bird habitat; 4) law enforcement projects that reduce the incidence of off-road vehicle damage to forested habitat or other illegal activities that damage or fragment forested habitat; and 5) other projects approved by the oversight committee that protect, conserve, or enhance forested habitats. To ensure that the plan fully compensates for Project-related impacts, the Proponents propose the establishment of an Oversight Committee that will provide guidance and oversight for the management and implementation of the fund.

The Greater Sage-Grouse Habitat Mitigation Plan was specifically developed by the Proponents to mitigate for direct and some indirect impacts to sage-grouse. As a result, although it does contain some components that would compensate for impacts to sagebrush habitats (e.g., sagebrush restoration and enhancement), it also contains some measures that would directly benefit sage-grouse but not directly benefit sagebrush habitats themselves (e.g., fence removal). Furthermore, because the exact ratio of these projects/efforts that would be implemented is not known at this time (i.e., how much sagebrush restoration and enhancement efforts the plan would contain compared to fence removal efforts), the exact amount of "offset" that would occur and reduction in impacts to general sagebrush habitats cannot be directly quantified at this time. However, because the Proponents have indicated that the majority of the projects/efforts that would be implemented would be related to restoration of habitats and acquisition of conservation easements, it is likely that this plan would offset the majority of Project-related direct impacts to sagebrush habitats. Note that negotiations between the applicant and the BLM are currently occurring regarding the extent of mitigation that would be required due to indirect impacts to sage-grouse (see Section 3.11 for more details regarding impacts on sage-grouse – which is a special status species - and the required mitigation for these impacts); however, this does not directly

related to the discussion presented here (i.e., this section addresses compensation related to impacts on sagebrush habitats that can be used by general wildlife species).

The Migratory Bird Habitat Mitigation Plan would offset and compensate for impacts to forested habitats; however, very few forested habitats would be impacted along Segments 8 or 9 or within the SRBOP (Section 3.6 discloses the impacts that would occur to forested and woodland habitats); therefore, this mitigation plan would have little effect on the overall impacts that would occur along Segments 8 and 9 or on the SRBOP.

The BLM may require additional mitigation for some remaining impacts of the Project on environmental resources (including impacts that occur outside of the SRBOP), per the guidelines found in the BLM Regional Mitigation Manual (BLM 2013c) and DOI Manual 600 DM 6, *Implementing Mitigation at the Landscape-scale* (DOI 2015). Mitigation for Project-related impacts that would occur within the SRBOP is discussed below.

The BLM will continue to work with applicable stakeholders to identify the impacts that would remain on the SRBOP after implementation of the EPMs and MEP, as well as the existing compensatory mitigation plans discussed above. The BLM will then design mitigation options that address applicable remaining impacts (see Section 3.0 for a discussion of the BLM's policy regarding mitigation). These options will contain components that will ensure that impacts to resources and values on the SRBOP that require mitigation are compensated for, as well as that enhancement of these resources is provided in order to comply with the enabling statute of the SRBOP. Based on internal and external scoping, the BLM is considering eight mitigation categories (see Section 2.6.2 in Chapter 2). The following mitigation categories are among those being considered to address remaining impacts to wildlife resources within the SRBOP:

- Implement habitat/vegetation restoration efforts;
- Evaluate, maintain, enhance, or expand fuels management/fuel breaks;
- Increase wildfire preparedness and suppression;
- Increase applied research and monitoring to inform adaptive management; and
- Acquire private lands as deemed appropriate by the Authorizing Officer.

Appendix K contains a Conceptual Mitigation Model that the BLM may follow when calculating compensatory mitigation requirements for any alternative that impacts raptor populations and habitats or other wildlife resources in the SRBOP.

3.11 SPECIAL STATUS WILDLIFE AND FISH SPECIES

The Project would pass through habitats that could potentially support special status species. These species include threatened and endangered species listed under the ESA, candidate species and those formally proposed for ESA listing, and those listed by the BLM as sensitive. For discussion purposes, these categories of special status wildlife and fish species are referred to collectively as threatened, endangered, and sensitive (TES) wildlife or TES fish species. TES plant species are discussed in Section 3.7 – Special Status Plants. Other wildlife/fish species, including those petitioned for listing under the ESA but not included in any TES category as specified above, are considered in Section 3.10 – General Wildlife and Fish.

This section addresses the potential impacts to TES wildlife and fish species as well as their habitats from the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; and the Toana Road Variations to the Segment 9 Revised Proposed Route. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). Effects associated with the various routes analyzed in the 2013 FEIS were disclosed in that document. With the exception of FEIS Proposed 9, those FEIS routes are not being re-analyzed here, as only new information is included in this resource-specific section.

3.11.1 Affected Environment

3.11.1.1 Analysis Area

The Analysis Area used to define and address the existing environment and potential impact area is described in detail within the FEIS. The extent of the Analysis Area that was used for this SEIS is restricted to that portion described in the FEIS that corresponds to Segments 8 and 9; therefore, not all habitat types and species discussed in the FEIS would be affected by the routes being considered in this SEIS. As a result, species and habitats not found within the Analysis Area for Segments 8 and 9 (but which may be included in the FEIS for the other segments' Analysis Areas) are not discussed or analyzed in this document (see Section 3.11.1.4 for additional details).

<u>Morley Nelson Snake River Birds of Prey National Conservation Area</u>

Portions of the Project would cross through the SRBOP. As a result, this section will discuss specific TES wildlife and fish resources and potential impacts that would occur on the SRBOP. TES wildlife and fish and their habitats are one of the environmental resources and values for which the SRBOP was established to manage and protect.

3.11.1.2 Issues Related to Wildlife and Fish

The following TES wildlife and fish issues relevant to Segments 8 and 9 were brought up by the public during public scoping (Tetra Tech 2009) or in comments on the DEIS, raised by federal and state agencies during scoping and agency discussions, or are issues that must be considered as stipulated in law or regulation:

- The effects of Project activities on species federally listed as threatened, endangered, proposed, or candidates under the ESA;
- The effects of Project activities on species listed as sensitive by the BLM;
- The need to consult various agencies and conservation groups; and
- The need to comply with existing conservation plans.

We reviewed the scoping comments received for this SEIS and determined that these TES wildlife/fish-related issues considered in the FEIS are still relevant to the SEIS. In addition, the following issue would be applicable to Segments 8 and 9, but was not specifically raised for the FEIS:

- Impacts to the values for which the SRBOP was established to manage and protect, which include TES wildlife and fish species.

3.11.1.3 Methods

The Special Status Wildlife and Fish Species section in the 2013 FEIS discusses those aspects of the environment that could be impacted by the Project, as well as the methods that were used to assess potential Project-related impacts to these resources. We reviewed the data, analysis methods, and regulatory requirements in the FEIS and concluded that they are still valid for this SEIS, and that no significant new data were identified for wildlife/fish in the analysis area with the exception of some new/updated GIS datasets, changes that have occurred to the special status of some TES species, as well as new sage-grouse habitat designations. The following new or updated GIS datasets were used in the SEIS analysis:

- Sage-Grouse Leks: IDFG, July 2014
- Raptors: IFWIS Species Diversity Database, IDFG, July 2014
- Sage-grouse designated habitats from the BLM's ROD for the Great Basin Region (BLM 2015c)

The following changes have occurred to the status or extent of wildlife and fish species that could potentially occur within the Project's Analysis Area for Segments 8 and 9 since the publication of the FEIS:

- The suspected occupied range of the Snake River physa snail has expanded.
- The yellow-billed cuckoo (*Coccyzus americanus*) was considered a Candidate species under the ESA during the FEIS. It is now listed as Threatened under the ESA. The BLM will work with the USFWS regarding the ESA effects determination for this species.
- The short-eared owl (*Asio flammeus*) and gray wolf (*Canis lupus*) were Forest Service sensitive species during the FEIS. They are now also listed as BLM sensitive species.
- During the timeframe the FEIS was being prepared and published, the sage-grouse was considered a candidate species under the ESA, and the USFWS was conducting a status review to determine if the sage-grouse warrants protection under the ESA. In September 2015, the USFWS determined that the

sage-grouse does not require protection under the ESA. As a result, the sage-grouse no longer has a regulatory status under the ESA; however, it is still a BLM sensitive species.

- The following species have become listed by the BLM as sensitive since the publication of the FEIS, and could occur within the Analysis Area for Segments 8 or 9: Cassin's finch (*Carpodacus cassinii*); golden eagle (*Aquila chrysaetos*); green-tailed towhee (*Pipilo chlorurus*); pinyon jay (*Gymnorhinus cyanocephalus*); big brown bat (*Eptesicus fuscus*); California myotis (*Myotis californicas*); hoary bat (*Lasiurus cinereus*); little brown bat (*Myotis lucifugus*); long legged myotis (*Myotis evotis*); pallid bat (*Antrozous pallidus*); silver-haired bat (*Lasionycteris noctivagans*); Yuma myotis (*Myotis yumanensis*); great basin black-collard lizard (*Crotaphytus bicinctores*); white sturgeon (*Acipenser transmontanus*); and ashy pebblesnail (*Fluminicola fuscus*).

The FEIS considered several sage-grouse habitat classifications in the impact assessment. These include Key Habitat[1], Restoration (R) 1 through 3 habitat[2], Preliminary Priority Habitat (PPH), and Preliminary General Habitat (PGH)[3]. Although newer federal sage-grouse habitat classifications have been developed since publication of the FEIS (see the discussion below), these habitat classifications from the FEIS are included and assessed in this SEIS to maintain consistency with the FEIS, and because some agencies and group still use these classifications for managing the species.

The BLM's ROD for the Great Basin Region (BLM 2015c), which was published after the FEIS was written, established four additional sage-grouse habitat designations beyond those that were assessed in the FEIS. These include Priority Habitat Management Areas (PHMA), General Habitat Management Areas (GHMA), Important Habitat Management Areas (IHMA), and Sagebrush Focal Areas (SFA). Below is a brief summary of these new BLM sage-grouse habitat designations:

- PHMA are BLM-administered lands identified as having the highest habitat value for maintaining suitable sage-grouse populations. The boundaries and

[1] Key Habitat includes areas mapped by the IDFG and the BLM as areas of generally intact sagebrush that provide sage-grouse habitat during some portion of the year including winter, spring, summer, late brood-rearing, fall, transition sites from winter to spring, spring to summer, and summer/fall to winter.

[2] R1 habitats are defined as sagebrush-limited areas with acceptable understory conditions in terms of grass species composition; it includes native and seeded perennial grass rangelands. R1 habitats are important areas to protect from wildfire and encourage sagebrush establishment and retention. Inexpensive management treatments may be needed (e.g., sagebrush and/or forb seedings) in R1 habitats. R2 habitats are defined as regions where existing sagebrush cover in these areas may or may not be adequate to meet the needs of sage grouse, but understory herbaceous conditions are poor. Undesirable plant species such as cheatgrass, medusahead rye (*Taeniatherum caput-medusae*) or other exotic plants are common to dominant in R2 habitats. Expensive management treatments are needed for restoration of R2 habitats. R3 habitats are areas where conifers (e.g., primarily junipers but could also include other species such as Douglas-fir) are encroaching into sage-grouse habitat areas. Opportunities exist for improving habitat through appropriate fire management response, prescribed fire, chemical or mechanical means in R3 habitats.

[3] BLM Instruction Memorandum [IM] 2012-043 (BLM 2011c) describes interim conservation policies and procedures that are to be used by the BLM within sage-grouse PPH and PGH to conserve sage-grouse. PPHs are defined as areas that have a high conservation value and are important for maintaining sustainable sage-grouse populations. These areas would include breeding, late brood-rearing, and winter concentration areas. PGHs are areas of occupied seasonal or year-round habitat outside of Priority Habitat. Both PPH and PGH were delineated cooperatively between federal and state management agencies.

management strategies for these areas are derived from and generally follow the PPH boundaries.

- GHMA are BLM-administered sage-grouse habitats that are occupied seasonally or year-round by sage-grouse, but which are located outside of PHMA. The boundaries and management strategies for GHMA are derived from and generally follow the PGH boundaries.
- IHMA are BLM-administered lands located in Idaho that provide a management buffer around or connect patches of PHMAs. IHMA encompass areas of generally moderate to high habitat value, but which have been determined by the BLM to not be as important as PHMAs.
- SFA are a subset of the PHMA, and correspond to areas identified by the USFWS as "strongholds" or "represent a priority habitat most vital to the species persistence within which [the USFWS] recommend the strongest level of protection" (USFWS 2014).

These new data were incorporated into the analysis, and used as part of the impact assessment methods described in detail within Section 3.11.1.4 of the FEIS.

Note that the FEIS also considered issues related to the Project's potential impacts to Forest Service sensitive species and Management Indicator Species (MIS); however, because Segments 8 and 9 would not cross or impact NFS lands, these Forest Service–specific issues were determined to not be relevant to the SEIS.

FEIS Proposed 9 is included in three of the BLM Alternatives considered in this SEIS (i.e., Alternatives 2, 4, and 6). The impact values related to FEIS Proposed 9 have been reanalyzed using the data that have become available since the publication of the FEIS (see the list of new data discussed above). As a result, the impact values reported in the FEIS for FEIS Proposed 9 may differ from what is reported in this SEIS in some instances.

The seven action alternatives consist of combinations of various routes considered in this SEIS, and for the most part the qualitative impacts that would occur along these alternatives are the sum of the impact values from each applicable route (see Chapter 2 for more details); however, this is not the case for any analysis that looks at discrete numbers of items located at various distances from the Project's centerline. This is because the various distances (or analysis buffers) used in these types of analyses can overlap with each other when more than one route is considered in the analysis (e.g., could result in double counting). As a result, a separate table is provided in Appendix D for the analysis of sage-grouse leks located at various distances from the line by Alternative (i.e., Table D.11-17), in order to remove the double counting that would occur if the discrete values from each route were added separately. All other quantitative impact values for TES wildlife species in this section, reported for the seven action alternatives, can be determined by summing the impact values reported for their respective route components (note that no sharp-tailed grouse leks occur along this portion of the Project; therefore, there is no possibility for overlap and double counting related to that species' lek analysis).

3.11.1.4 Existing Conditions

Tables D.11-1 and D.11-2 contain the list of TES wildlife and fish species that could occur along Segments 8 and 9, as well as the general habitat types they typically occupy. The impact analysis presented in Section 3.11.2 focuses on TES wildlife and fish species for which quantitative habitat impact values are available (e.g., where habitat extents and locations have been quantified, or lek locations and numbers are known). This includes the bald eagle, bull trout, burrowing owl, Columbia sharp-tailed grouse, Columbia spotted frog, northern goshawk, pygmy rabbit, sage-grouse, yellow-billed cuckoo, and four listed aquatic invertebrate species (i.e., the Banbury Springs limpet, Bliss Rapids snail, Bruneau hot springsnail, and Snake River physa snail). The affected environment related to these species habitats and/or leks is presented in Section 3.11.1.5 of the FEIS. Note that the general TES wildlife habitats discussed in this SEIS (including the quantitative impact values) are based on habitat modeling work that was conducted by the BLM as part of the FEIS (see Section 3.11.1.4 of the FEIS). As disclosed in the FEIS, the results of this habitat modeling effort may overestimate the extent of various species potential suitable habitat (i.e., in some cases these habitats may be “capable” of supporting these species, but are not currently occupied or have ever been occupied by these species).

3.11.2 Direct and Indirect Effects

A comprehensive list of all EPMs, and the land ownership to which they apply, can be found in Table 2.7-1 of Chapter 2 of the FEIS. The following impact assessment takes these Project design features and EPMs into account when considering the potential impact that the Project could have on environmental resources.

Plan Amendments

Amendments to the BLM RMPs and MFPs are summarized for each alternative in Table 2.3-1 (see Chapter 2 for more details). BLM plan amendments are discussed in detail in Appendices F and G. Amendments are needed to permit the Project to cross various areas of BLM-managed land.

The effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved, and amendments that alter land management designations could change future use of these areas. However, no amendments specific to TES wildlife or fish species are proposed for the Project, and no impacts to TES wildlife and fish resulting from approving the amendments, beyond those described for the general impacts of the Project, are anticipated.

3.11.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West for Segments 8 and 9 and this portion of the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of these segments. No Project-related impacts to TES wildlife and fish species or their habitats would occur in the Analysis Area; however, impacts to these resources would continue as a result of natural events (such as fire, drought, and severe weather) as well as from current wildlife management policies (e.g., hunting permits for sage-grouse), existing and planned developments within the Analysis Area, and from other

projects, including wind farms, mining, agricultural, or other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project and the region would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, impacts similar to those described below may occur due to new transmission lines that may be built to meet the increasing demand in place of this Project.

3.11.2.2 Effects Common to All Routes

Construction and Operation

The general impacts that would occur to TES wildlife and fish species as well as their habitats from construction, operations, and decommissioning of the Gateway West Project were analyzed in detail within Section 3.11.2.2 of the FEIS. These impacts included direct mortality and/or disturbance of individuals, loss or degradation of habitats (e.g., habitat fragmentation, weeds, fire, reduced vegetation cover, and changes to stream temperatures or sedimentation levels), as well as indirect effects (e.g., alterations to predation rates as well as prey base health or populations, effects to migratory corridors, creating increased access for recreationalists and hunters, increased avian predator presence and predation, potential decrease in survival and productivity, as well as a possible avoidance of transmission lines by sage-grouse). We have reviewed Section 3.11.2.2 of the FEIS and determined that the general impacts that could potentially occur to TES wildlife and fish considered in the FEIS have not changed, and that the potential qualitative effects that could occur as a result of the quantitative impacts reported in this SEIS have not changed from what is reported in the FEIS. As a result, these general impacts are not re-stated in this SEIS (see Section 3.11.2.2 of the FEIS for a description of the general impacts that could occur to TES wildlife and fish as a result of the Project).

The impact assessment found in this SEIS consists of the quantitative impacts that would occur as a result of the routes and alternatives that are included in this SEIS. This assessment of quantitative impacts is presented in Section 3.11.2.3. The assessment of potential impacts related to the Proponents' new proposed MEP on TES wildlife and fish, as well as a list of additional mitigation measures that may be required, are presented in Sections 3.11.2.5 and 3.11.2.6.

Decommissioning

Note that impacts from decommissioning would be similar to construction impacts (discussed in Section 3.10.2.2 of the FEIS, in the Construction section) and are not discussed separately below. Project facilities would be removed at the end of the operational life of the transmission line. Structures and foundations would be removed to below the ground surface level. They would not be removed in their entirety due to the large ground disturbance this would create. Soil and plants would be restored over the top of these underground foundation structures. Removal of Project structures following decommissioning would result in impacts to wildlife such as visual and noise disturbance, habitat disturbance and alteration, and risk of vehicle collisions. Wildlife

may avoid areas of activity during the removal process. The duration of visual and noise disturbance impacts would be only as long as it would take to decommission a given area, and these impacts would end following cessation of these activities. The impacts from habitat alteration would have a similar duration as impacts stemming from construction. Vegetation would be restored, and different habitat types would recover more quickly than others; for example, grassland would recover in 1 to 4 years, while forest recovery would take decades.

Decommissioning of the Project could result in both temporary adverse effects and long-term beneficial effects to TES wildlife species. Temporary adverse effects would include disturbances to wildlife resulting from the presence of workers and construction equipment necessary for the removal of Project components, increased sedimentation to waterbodies created during road decommissioning or culvert removal, temporary loss of habitat if some vegetation needs to be cleared to remove Project components or temporarily widen roads, and the possibility of direct mortality during decommissioning actions. The extent of adverse impacts would be similar to those discussed for Project construction, and the mitigation measures discussed for construction would be required during decommissioning. Long-term beneficial effects would include the removal of tall structures (towers) from grouse habitats, and the decommissioning of Project facilities and access roads, both of which could increase the connectivity and size of wildlife habitat. Due to the potential for both adverse and beneficial effects to TES wildlife species, consultation with the USFWS would need to be initiated prior to decommissioning.

3.11.2.3 Direct and Indirect Effects by Route

This section assesses the quantitative effects on TES wildlife and fish from the Revised Proposed Routes, the other routes (8G, 8H, 9K, and FEIS Proposed 9), as well as the Toana Road Variations. Tables D.11-1 through D.11-17 in Appendix D present the results of the quantitative analyses for these routes. This assessment focuses on the TES species for which quantitative impact values are known (e.g., based on designated or modeled habitats or known locations of nests/leks; see Section 3.11.1.4 of the FEIS), while Section 3.11.2.2 of the FEIS addresses the effects to TES species for which quantitative impacts are not known.

<u>Segment 8</u>

Revised Proposed Route

The Segment 8 Revised Proposed Route would link the Midpoint and Hemingway Substations (see Figure A-1). This 129.7-mile single-circuit 500-kV transmission line would stay north of the Snake River until it crosses just north of Guffey Butte, generally parallel to an existing 500-kV transmission line, before ending at the Hemingway Substation. This route is similar to the original proposed route in the 2013 FEIS except that the line would be 250 feet north of the existing 500-kV line rather than 1,500 feet south of the line from the eastern boundary of the SRBOP (MP 99.7) to the Hemingway Substation. The route east of that point is unchanged from the 2013 FEIS Proposed Route.

Shrublands and Semi-Natural Grasslands are the dominant habitat type that would be impacted along the Revised Proposed Route for Segment 8 (see Section 3.6 –

Vegetation Communities). These habitat types are ubiquitous and abundant within the Analysis Area and region. Pages 3.11-114 through 3.11-126 of the FEIS list the general impacts that would occur to TES species that have not had specific quantitative impact parameters established. Tables D.6-2 and D.6-3 in Appendix D list the acres of impact that would occur to the various habitat types found along Segment 8 (i.e., in habitats where these TES species could occur), while Tables D.11-1 and D.11-2 provide the general habitat type that each TES species generally occupies.

Of the TES species where quantitative species-specific data/parameters are available, the bald eagle, burrowing owl, Columbia spotted frog, sage-grouse, northern leopard frog, pygmy rabbit, and the yellow-billed cuckoo could occur along the Revised Proposed Route for Segment 8. In addition, the four listed aquatic invertebrate species (i.e., the Banbury Springs limpet, Bliss Rapids snail, Bruneau hot springsnail, and Snake River physa snail) could also occur along the Revised Proposed Route for Segment 8.

The Revised Proposed Route for Segment 8 would cross 2 miles of habitat within 1 mile of bald eagle nests (Table D.11-4), and would result in 40 acres of construction impacts and 4 acres of operations impacts within this area (Tables D.11-6 and D.11-8). It would also cross 109.4 miles of burrowing owl habitat (with 1,936 acres of construction impacts and 191 acres of operations impacts), less than 1 mile of Columbia spotted frog habitat (with 3 acres of construction and no operations impacts), 71.9 miles of sage-grouse habitat (with 1,259 acres of construction impacts and 140 acres of operations impacts), 1.2 miles of northern leopard frog habitat (with 23 acres of construction impacts and 3 acres of operations impacts), 108.2 miles of pygmy rabbit habitat (with 1,920 acres of construction impacts and 188 acres of operations impacts), and less than 1 mile of yellow-billed cuckoo habitat (with 2 acres of construction and operations impacts; see Tables D.11-3 through D.11-8).

Construction of the Revised Proposed Route for Segment 8 would also involve the removal of an existing 500-kV line. Removal of this existing line would impact approximately 7 acres of burrowing owl and pygmy rabbit habitat (Table D.11-6); however, a portion of this impact would overlap with the impact resulting from the construction of the new line along Segment 8.

The Project-related effects on these TES species or habitats could include direct mortality and/or disturbance of individuals, loss or degradation of habitats (e.g., habitat fragmentation, weeds, fire, reduced vegetation cover, and changes to stream temperatures or sedimentation levels), as well as indirect effects (e.g., alterations to predation rates, effects to migratory corridors, creating increased access for recreationalists and hunters; see Section 3.11.2.2 of the FEIS for more details).

In addition to the general sage-grouse habitats discussed above (that were defined based on remote sensing and habitat modeling work, which is described in Section 3.11.1.4 of the FEIS), the Project would also cross through agency classified sage-grouse habitats (see Figure E.11-1 in Appendix E). Table D.11-11 lists the miles of each of these sage-grouse habitat types that would be crossed by Segment 8, while Tables D.11-14 and D.11-15 list the acres that would be impacted during construction and operation of the Project. As shown in these tables, the designated sage-grouse

habitats most heavily impacted by the Revised Proposed Route for Segment 8 would be GHMA (with 889 acres of construction impacts), R1 habitat (with 509 acres of construction impacts), and PGH (with 380 acres of construction impacts). Approximately 129 acres of PPH (which are areas with a high conservation concern to the agencies) would be impacted during construction, with 12 acres of this consisting of permanent impacts. The Revised Proposed Route for Segment 8 would not cross through or impact PHMA or SFA (which are the areas with the highest conservation concern to the agencies), but it would impact approximately 70 acres of IHMA (which are considered to contain moderate to high habitat value for sage-grouse).

The Revised Proposed Route's centerline for Segment 8 would pass within 1 mile of a single sage-grouse lek[4] that has an undetermined management status. This value increases to 7 leks with either an occupied[5] or undetermined status when considering a distance of 4 miles from the Project's centerline (with 5 of these leks located on federally managed lands), and 54 leks when considering a distance of 11 miles (with 45 of these leks located on federally managed lands; see Table D.11-9). No sharp-tailed grouse leks occur near the Revised Proposed Route's centerline for Segment 8 (see Table D.11-10).

As stated in EPM TESWL-9, the 4-mile temporal avoidance requirement related to occupied and undetermined leks located on federally managed lands can be reduced through the BLM's established exception process, based on site-specific conditions (see WILD-1 for a description of the exception process). These conditions include areas where topography prevents construction activities from being visible from the lek, or a major disturbance such as a freeway or existing powerline is located between the Project and the lek. Table D.11-16 in Appendix D lists the distance that sightlines from leks on federally managed lands[6] would extend in the direction of the proposed construction disturbances (e.g., transmission line, access roads, fly yards, etc.) based on an assessment of topography, slope, and the location of existing power-lines and highways. The BLM would take these distances into consideration when evaluating any exceptions to the 4-mile avoidance requirement requested by the Proponents.

The USFWS has established recovery areas for the four listed invertebrate species that occur within the Project's Analysis Area. These include:

- River Mile (RM) 584.8 to 589.3 of the Snake River is designated as a recovery area for the Banbury Springs limpet (USFWS 1995).
- RM 547 to 585 of the Snake River is designated as a recovery area for the Bliss Rapids snail (USFWS 1995).
- RM 553 to 675 of the Snake River is designated as a recovery area for the Snake River physa (USFWS 1995).

[4] As required by BLM IM WY-2012-019 (BLM 2012b), calculations of distance between leks and proposed projects use lek perimeters when available (lek perimeter data is mapped and maintained by the respective state wildlife agency along with the state's lek database); when lek perimeter data are not available, the lek's centroid is used in the calculation.

[5] In Idaho, the IDFG define occupied leks as any lek that has been active during at least one breeding season within the prior 5 years

[6] This analysis includes all leks located on federally managed lands that are within 4 miles of any Project-related disturbance, which includes the centerline of the Project as well as roads and other auxiliary project features.

- The recovery plan defines the recovery area for the Bruneau hot springsnail as the portion of the Bruneau River between the southern boundary of Section 12, Township 8 South, Range 6 East and the northern boundary of Section 35, Township 7 South, Range 6 East, of Owyhee County, Idaho (Myler et al. 2007).

The Revised Proposed Route for Segment 8 would cross the Snake River at RM 445.2, which is located outside (and downstream) of the recovery areas for all four listed invertebrate species. However, current information indicates that the Snake River physa has expanded its range along the Snake River to areas outside of the established recovery area (as far downstream as RM 368 located near Ontario, Oregon; Gates and Kerans 2010; Keebaugh 2009); therefore, this species may be present near the crossing at RM 445.2, even though this area is located outside of the species' recovery area. The crossing at this location (i.e., RM 445.2) would involve the transmission line spanning the waterbody, with no in-water work conducted and no new roads, thereby minimizing the risk that construction and operations of the line could have to this species if present (although indirect impacts in the form of erosion or increased sedimentation could still occur). The potential impacts that the Project could have on these species if crossings occurred at or upstream of these species habitats, as well as recommendations from the agencies on how to minimize or avoid indirect impacts, are described in detail on pages 3.11-89 through 3.11-92 of the FEIS.

Impacts on the SRBOP

As shown in Tables D.11-5 and D.11-6, the Revised Proposed Route for Segment 8 would result in impacts on BLM managed lands within the SRBOP to habitats for the burrowing owl (260 acres during construction), sage-grouse (109 acres during construction), and pygmy rabbit (260 acres during construction).

Approximately 26 acres of GHMA, PGH, and Key areas, as well as less than 1 acre of R2 habitats would be impacted on BLM-administered lands on the SRBOP by Revised Proposed Route for Segment 8 during construction. No PHMA, SFA, or PPH (which are the areas with the highest conservation concern to the agencies) would be impacted on the SRBOP along this route (see Tables D.11-11, D.11-14, and D.11-15).

Route 8G

Route 8G is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows an alignment similar to the ones analyzed for Routes 8A and 9B in the FEIS for approximately 44 miles, although it generally parallels 250 feet north of the existing 500-kV line rather than1,500 feet to the south in order to avoid the Hagerman Fossil Beds National Monument and development near Hagerman (see Figure A-1). The route then parallels 250 feet north of the Segment 9 Proposed Route and Route 9K for most of the remaining distance into the Hemingway Substation. The route is 146.9 miles long (including a 1.9-mile rebuild of the existing 500-kV line), compared to the 129.7-mile-long Revised Proposed Route.

Of the TES species for which quantitative species-specific data/parameters are available, the bald eagle, burrowing owl, Columbia spotted frog, sage-grouse, northern leopard frog, pygmy rabbit, and yellow-billed cuckoo could occur along Route 8G. In addition, the four listed aquatic invertebrate species (i.e., the Banbury Springs limpet,

Bliss Rapids snail, Bruneau hot springsnail, and Snake River physa snail) could also occur along Route 8G.

Route 8G would cross 1.8 miles of habitat within 1 mile of bald eagle nests (Table D.11-4), and would result in 32 acres of construction impacts and 4 acres of operations impacts within this area (Tables D.11-6 and D.11-8). It would also cross 121.9 miles of burrowing owl habitat (with 2,283 acres of construction impacts and 261 acres of operations impacts), less than 1 mile of Columbia spotted frog habitat (with 3 acres of construction impacts and less than an acre of operations impacts), 93.7 miles of sage-grouse habitat (with 1,689 acres of construction impacts and 209 acres of operations impacts), less than 1 mile of northern leopard frog habitat (with 6 acres of construction impacts and 1 acre of operations impacts), 112.6 miles of pygmy rabbit habitat (with 2,122 acres of construction impacts and 241 acres of operations impacts), and less than 1 mile of yellow-billed cuckoo habitat (with 1 acres of construction and operations impacts; see Tables D.11-3 through D.11-8).

Construction of Route 8G would also involve the removal of an existing 500-kV line. Removal of this existing line would impact approximately 8 acres of burrowing owl habitat, 4 acres of pygmy rabbit habitat, and 1 acre of sage-grouse habitat (Tables D.11-5 and D.11-6); however, a portion of this impact would overlap with the impact resulting from the construction of Route 8G.

The Project-related effects on these TES species or habitats could include direct mortality and/or disturbance of individuals, loss or degradation of habitats (e.g., habitat fragmentation, weeds, fire, reduced vegetation cover, and changes to stream temperatures or sedimentation levels), as well as indirect effects (e.g., alterations to predation rates, effects to migratory corridors, creating increased access for recreationalists and hunters; see Section 3.11.2.2 of the FEIS for more details).

The Revised Proposed Route for Segment 8 would have a greater extent (i.e., acreage) of impacts to bald eagle, northern leopard frog, and yellow billed cuckoo habitat; but fewer impacts to burrowing owl, pygmy rabbit, and sage-grouse habitats than Route 8G. The Revised Proposed Route for Segment 8 and Route 8G would have comparable impacts to Columbia spotted frog habitats (Tables D.11-5 and D.11-6).

Table D.11-11 lists the miles of each agency designated sage-grouse habitat type that would be crossed by Route 8G, while Tables D.11-14 and D.11-15 list the acres that would be impacted during construction and operation of the Project, respectively. As shown in these tables, the most heavily impacted designated sage-grouse habitats by Route 8G would be to PGH habitats (with 563 acres of construction impacts), IHMA (with 457 acres of construction impacts), R1 habitats (with 356 acres of construction impacts), and GHMA (with 350 acres of construction impacts). Approximately 103 acres of PPH would be impacted during construction (which are areas with high conservation concern to the agencies), 13 acres of this consisting of permanent impacts. Route 8G would not cross through or impact PHMAs or SFAs (which are the areas with the highest conservation concern to the agencies).

The Revised Proposed Route for Segment 8 would result in fewer impacts to PGH, IHMA, and R2 habitats; but more impacts to PPH, GHMA, Key, and R1 habitats

compared to Route 8G (see Table D.11-14). Note that PPH are defined as areas that have a high conservation value and are important for maintaining sustainable sage-grouse populations. As a result, routes that impact more PPH compared to other routes (even if more habitat of the other types, such as PGH or Key habitats, were impacted) would be seen as having a greater impact to sage-grouse. IHMA are also considered important to sage-grouse because these areas contain moderate to high habitat value for sage-grouse.

The centerline for Route 8G would pass within 1 mile of two sage-grouse leks that have an undetermined management status. This value increases to 9 leks with either an occupied or undetermined status when considering a distance of 4 miles from the Project's centerline (all of which occur on federally managed lands), and 52 leks when considering a distance of 11 miles (with 47 of these leks located on federally managed lands; see Table D.11-9). No sharp-tailed grouse leks occur near the centerline for Route 8G (see Table D.11-10).

One of the local-populations of sage-grouse that would be impacted by Route 8G includes the Owyhee Front/Triangle local-population (fine-scale), which is part of the Owyhee Sub-population of the Northern Great Basin Population (mid-scale; BLM 2015d). Potential Project-related impacts to this local population are a concern to the BLM due to various limiting factors that currently affect this local population.[7,8] Because the current condition of breeding (e.g., nesting and early brood rearing), summer (i.e., late-brood rearing), and winter seasonal habitats is currently limiting suitability in many areas occupied by the Owyhee Front/Triangle local population (due to insufficient deep-rooted perennial grass and forb cover and height, insufficient sagebrush height, decadent sagebrush stands, and prevalence of cheatgrass), Route 8G could introduce an additional stressor to this relatively isolated, small local population. The Revised Proposed Route for Segment 8 would not directly impact this sub-population of sage-

[7] A rigorous review of the 2012 PPH output revealed that the area supporting the Owyhee Front/Triangle local population in one of the critical input data layers (i.e., Idaho Sage-grouse Key Habitat Planning Map) had, for the most part, not been refined since its initial creation in the early 2000s. Much of the area was coarsely classified as Conifer Encroachment (R3). Review of recent (2012) aerial imagery and an Owyhee Field Office land cover classification (Bunting and Strand 2008) of the area have provided better habitat information and edits to be incorporated into the 2013 Greater Sage-grouse Habitat Planning Map (as per IM ID-2013-010). The update identifies large areas of currently Key Habitat (K) that were misclassified as R3 across the OFO, especially in the area supporting the Owyhee Front/Triangle local population. Model results indicate that the Owyhee Front/Triangle local population occurs within large and contiguous areas of PPH and Key Habitat.

[8] Based on lek surveys, incidental observations, and a telemetry study of sage-grouse from the Owyhee Front/Triangle local population, seasonal locations identified different lekking, breeding, upland summer, early and late brood-rearing riparian summer, and winter seasonal habitat areas. Sage-grouse in the Owyhee Front/Triangle local population display a relatively pronounced seasonal migration pattern between winter/breeding and summer areas based largely on elevation. Typically, sage-grouse in the Owyhee Front/Triangle local population congregate on communal strutting grounds (i.e., leks) located in lower elevations (3,500-4,500 feet) of the Owyhee Front in the vicinity of the Project from March to early May. The nesting season occurs soon after, extending from May to late June. Nesting typically occurs at mid-elevations (3,500-5,500 feet) in the Owyhee Front. Broods remain with females for several more months as they move from early brood-rearing areas (e.g., forb- and insect-rich upland areas surrounding nest sites) to the moister, higher elevations (5,000-8,000 feet) in the Silver City Range and Triangle Basin that support late brood-rearing and summer habitats (e.g., wet meadows and riparian areas) from June to August. Local sage-grouse remain at higher elevations through the fall and early winter (i.e., September through November) where they begin to congregate into large groups and gradually move to the lower elevations (3,500-5,000 feet) of the Owyhee Front in winter (i.e., December through February) where sagebrush is exposed above typical snow accumulations and is available for forage and cover.

grouse (i.e., the Owyhee Front/Triangle local population) and would be located in areas that currently contain more tall structures and less intact sage-brush habitats than Route 8G.

The USFWS has established recovery areas for the four listed aquatic invertebrate species that occur within the Project's Analysis Area (see the discussion under the Segment 8 Revised Proposed Route section above for a list of the species and recovery areas). The transmission line associated with Route 8G would span the recovery area of the Bliss Rapids snail and the Snake River physa at RM 572.75. The transmission line would span approximately 355 feet of these species' recovery areas. The adjacent riparian habitat is defined as "shrub riparian," but this habitat would not be disturbed by the construction footprint. In addition, Route 8G would span the Snake River at RM 460.0, in an area that contains disturbed grassland riparian vegetation. Although this area is outside of the established recovery areas for any listed aquatic invertebrate; current information indicates that the Snake River physa has expanded its range along the Snake River to areas outside of the established recovery area (see discussion above for the Revised Proposed Route for Segment 8); therefore, the Snake River physa may be present near the crossing at RM 445.2, even though this area is located outside of the species' recovery area. The impacts that the Project could have on listed aquatic invertebrates due to these crossings, as well as recommendations from the agencies on how to minimize or avoid indirect impacts, are described in detail on pages 3.11-89 through 3.11-92 of the FEIS. Because the Revised Proposed Route for Segment 8 would not cross any ESA listed aquatic invertebrate recovery areas (as discussed above) while Route 8G would cross these areas, Route 8G would have greater impacts to ESA listed aquatic invertebrates than the Revised Proposed Route.

Impacts on the SRBOP

As shown in Tables D.11-5 and D.11-6, Route 8G would result in impacts on BLM-managed lands within the SRBOP to habitats for the burrowing owl (153 acres during construction), sage-grouse (90 acres during construction), northern leopard frog (less than 1 acre during construction), and pygmy rabbit (149 acres during construction).

Approximately 9 acres of GHMA, 5 acres of PPH, 4 acres of Key, 1 acre of IHMA, and less than 1 acre of PGH would be impacted on BLM-administered lands on the SRBOP during construction (see Table D.11-14). The Revised Proposed Route for Segment 8 would not impact IHMA or PPH on the SRBOP whereas Route 8G would impact these habitats. Note that IHMA and PPH are considered as having a high conservation concern to the agencies; therefore, routes that impact less of these two habitat types (even at the expense of other sage-grouse habitats such as GHMA, PGH, or Key) would be seen as having potentially less impacts to sage-grouse.

Route 8H

Route 8H is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows a combination of portions of the alignments analyzed for 8G and the Revised Proposed Route for Segment 9. The route is 137.5 miles long (including a 1.9-mile rebuild of the existing 500-kV line and a 25.7-mile removal and rebuild of a 138-kV line), compared to the 129.7-mile-long Segment 8 Revised

Proposed Route. Approximately 44 miles of the route follows the 8G alignment, while the remainder of 8H follows the alignment of the Segment 9 Revised Proposed Route.

Of the TES species for which quantitative species-specific data/parameters are available, the bald eagle, burrowing owl, Columbia spotted frog, sage-grouse, northern leopard frog, and pygmy rabbit could occur along Route 8H. In addition, the four listed aquatic invertebrate species (i.e., the Banbury Springs limpet, Bliss Rapids snail, Bruneau hot springsnail, and Snake River physa snail) could also occur along Route 8H.

Route 8H would cross 1.5 miles of habitat within 1 mile of bald eagle nests (Table D.11-4), and would result in 20 acres of construction impacts and 3 acres of operations impacts within this area (Tables D.11-6 and D.11-8). It would also cross 114.0 miles of burrowing owl habitat (with 2,135 acres of construction impacts and 209 acres of operations impacts), less than 1 mile of Columbia spotted frog habitat (with 2 acres of construction impacts and less than an acre of operations impacts), 71.8 miles of sage-grouse habitat (with 1,271 acres of construction impacts and 135 acres of operations impacts), about 1 mile of northern leopard frog habitat (with 9 acres of construction impacts and less than 1 acre of operations impacts), and 111.3 miles of pygmy rabbit habitat (with 2,090 acres of construction impacts and 207 acres of operations impacts; see Tables D.11-3 through D.11-8).

Construction of Route 8H would also involve the removal of existing 138-kV and 500-kV lines. Removal of these existing lines would impact burrowing owl (53 acres), sage-grouse (27 acres), and pygmy rabbit habitat (48 acres; see Tables D.11-5 and D.11-6); however, a portion of this impact would overlap with the impact resulting from the construction of Route 8H.

The Project-related effects on these TES species or habitats could include direct mortality and/or disturbance of individuals, loss or degradation of habitats (e.g., habitat fragmentation, weeds, fire, reduced vegetation cover, and changes to stream temperatures or sedimentation levels), as well as indirect effects (e.g., alterations to predation rates, effects to migratory corridors, creating increased access for recreationalists and hunters; see Section 3.11.2.2 of the FEIS for more details).

Route 8H would have a greater extent (i.e., acreage) of impacts to bald eagle roosting habitats, as well as burrowing owl, pygmy rabbit, and sage-grouse habitats, than the Revised Proposed Route for Segment 8. Route 8H would have fewer impacts within bald eagle nest buffers and northern leopard frog habitats than the Revised Proposed Route for Segment 8, but comparable impacts to Columbia spotted frog habitats.

Table D.11-11 lists the miles of each agency designated sage-grouse habitat type that would be crossed by Route 8H, while Tables D.11-14 and D.11-15 list the acres that would be impacted during construction and operation of the Project, respectively. As shown in these tables, the most heavily impacted designated sage-grouse habitats by Route 8H would be to PGH habitats (with 396 acres of construction impacts), R1 habitats (with 248 acres of construction impacts), and GHMA (with 248 acres of construction impacts). Route 8H would not cross through or impact PPH, PHMA, or SFA (which are the areas with the highest conservation concern to the agencies).

Route 8H would result in fewer impacts to all agency designated sage-grouse habitats than the Revised Proposed Route for Segment 8, except for PGH and IHMA (where Route 8H would result in more impacts; see Table D.11-14). Note that IHMA are considered important to sage-grouse because these areas contain moderate to high habitat value for sage-grouse.

The centerline for Route 8H would not pass within 2 miles of any sage-grouse leks. It would pass within 4 mile of two sage-grouse leks that have an occupied management status. This value increases to 22 leks with either an occupied or undetermined status when considering a distance of 11 miles from the Project's centerline (most of which occur on federally managed lands; see Table D.11-9). No sharp-tailed grouse leks occur near the centerline for Route 8H (see Table D.11-10).

The USFWS has established recovery areas for the four listed aquatic invertebrate species that occur within the Project's Analysis Area (see the discussion under the Segment 8 Revised Proposed Route section above for a list of the species and recovery areas). The transmission line associated with Route 8H would span the recovery area of the Bliss Rapids snail and the Snake River physa at RM 572.75 (as was discussed for Route 8G). The transmission line would span approximately 355 feet of these species' recovery areas. The adjacent riparian habitat is defined as "shrub riparian," but this habitat would not be disturbed by the construction footprint. In addition, Route 8H would span the Snake River at RM 460.0, in an area that contains disturbed grassland riparian vegetation. Although this area is outside of the established recovery areas for any listed aquatic invertebrate; current information indicates that the Snake River physa has expanded its range along the Snake River to areas outside of the established recovery area (see discussion above for the Segment 8 Revised Proposed Route); therefore, the Snake River physa may be present near the crossing at RM 445.2, even though this area is located outside of the species' recovery area. The impacts that the Project could have on listed aquatic invertebrates due to these crossings, as well as recommendations from the agencies on how to minimize or avoid indirect impacts, are described in detail on pages 3.11-89 through 3.11-92 of the FEIS. Because the Revised Proposed Route for Segment 8 would not cross any ESA-listed aquatic invertebrate recovery areas (as discussed above) while Route 8H would cross these areas, Route 8H would have greater impacts to ESA listed aquatic invertebrates than the Revised Proposed Route.

Impacts on the SRBOP

As shown in Tables D.11-5 and D.11-6, Route 8H would result in impacts on BLM managed lands within the SRBOP to habitats for the burrowing owl (940 acres during construction), Columbia spotted frog (2 acres during construction), sage-grouse (468 acres during construction), northern leopard frog (2 acres during construction), and pygmy rabbit (921 acres during construction).

Approximately 9 acres of PGH and 40 acres of IHMA would be impacted on BLM-administered lands on the SRBOP during construction (see Table D.11-14). The Revised Proposed Route for Segment 8 would not impact IHMA on the SRBOP whereas Route 8H would impact these habitats. Note that IHMA are considered as having a high conservation concern to the agencies; therefore, routes that impact less

of this type of habitat (even at the expense of other sage-grouse habitats such as GHMA, PGH, or Key) would be seen as having potentially less impacts to sage-grouse.

Segment 9

Revised Proposed Route

The Segment 9 Revised Proposed Route would link the proposed Cedar Hill and existing Hemingway Substations with a 165.3-mile single-circuit 500-kV transmission line that skirts the Jarbidge and Owyhee Military Operating Areas to the north, then follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering the Hemingway Substation (see Figure A-1). It follows an alignment similar to the 2013 FEIS Routes 9D/9G between MP 95.6 and 154.7, except that two portions of the route (totaling 25.7 miles) would be double-circuited with existing 138-kV lines. The first area is 5.2 miles near C.J. Strike Reservoir and the Bruneau Arm (MP 106.2 to 109.3 and 109.9 to 112.1), and the second area is 20.2 miles along the Baja Road (MP 121.0 to 141.2). Several rebuilds totaling approximately 0.6 mile are also required to tie the existing 138-kV lines into the new double-circuit alignments. Except for minor variations, the route is similar to the 2013 FEIS Routes 9D/9G between MP 141.2 to 154.7. From MP 154.7 and into the Hemingway Substation, the route is the same as the 2013 FEIS Proposed Route.

Shrublands and Semi-Natural Grasslands are the dominant habitat type that would be impacted along the Revised Proposed Route for Segment 9 (see Section 3.6 – Vegetation Communities). These habitat types are ubiquitous and abundant within the Analysis Area and region. Pages 3.11-114 through 3.11-126 of the FEIS list the general impacts that would occur to TES species that have not had specific quantitative impact parameters established. Tables D.6-2 and D.6-3 in Appendix D list the acres of impact that would occur to the various habitat types found along Segment 9 (i.e., in habitats where these TES species could occur), while Tables D.11-1 and D.11-2 provide the general habitat type that each TES species generally occupies.

Of the TES species where quantitative species-specific data/parameters are available, the bald eagle, burrowing owl, Columbia sharp-tailed grouse, Columbia spotted frog, northern goshawk, northern leopard frog, sage-grouse, and pygmy rabbit could occur along Segment 9. In addition, the four listed aquatic invertebrate species (i.e., the Banbury Springs limpet, Bliss Rapids snail, Bruneau hot springsnail, and Snake River physa snail) could also occur along the Revised Proposed Route for Segment 9.

The Revised Proposed Route for Segment 9 would cross 1.6 miles of habitat within 1 mile of bald eagle nests and less than 1 mile of habitat within 1 mile of winter roost habitat (Table D.11-4); this would result in 24 acres of construction impacts and 4 acres of operations impacts (Tables D.11-6 and D.11-8). It would also cross 146.3 miles of burrowing owl habitat (with 2,738 acres of construction impacts and 288 acres of operations impacts), 1.8 miles of sharp-tailed grouse habitat (with 39 acres of construction impacts and 3 acres of operations impacts), less than 1 mile of Columbia spotted frog habitat (with 3 acres of construction impacts and less than an acre of operations impacts), less than 1 mile of northern leopard frog habitat (with 7 acres of construction impacts and less than an acre of operations impacts),101.6 miles of sage-

grouse habitat (with 1,840 acres of construction impacts and 194 acres of operations impacts), and 141.1 miles of pygmy rabbit habitat (with 2,609 acres of construction impacts and 277 acres of operations impacts; see Tables D.11-3 through D.11-8). Although the northern goshawk's range overlaps the Analysis Area for Segment 9, there are no known goshawk nests within 1 mile of this portion of the Project and no impacts would occur within 1 mile of any currently known goshawk nests.

Construction of the Revised Proposed Route for Segment 9 would also involve the removal of an existing 138-kV line. Removal of this existing line would impact approximately 45 acres of burrowing owl habitat, 44 acres of pygmy rabbit habitat, as well as 26 acres of sage-grouse habitat (Tables D.11-5 and D.11-6). A portion of this impact would overlap with the impact resulting from the construction of the new line along Segment 9.

The Project-related effects on these TES species or habitats could include direct mortality and/or disturbance of individuals, loss or degradation of habitats (e.g., habitat fragmentation, weeds, fire, reduced vegetation cover, and changes to stream temperatures or sedimentation levels), as well as indirect effects (e.g., alterations to predation rates, effects to migratory corridors, creating increased access for recreationalists and hunters; see Section 3.11.2.2 of the FEIS for more details).

Table D.11-11 lists the miles of each agency designated sage-grouse habitat type that would be crossed by Segment 9, while Tables D.11-14 and D.11-15 list the acres that would be impacted during construction and operation of the Project, respectively. As shown in these tables, the most heavily impacted designated sage-grouse habitats by the Revised Proposed Route for Segment 9 would be PGH habitats (with 509 acres of construction impacts) and R1 habitat (with 326 acres of construction impacts). The Revised Proposed Route for Segment 8 would not cross through or impact PHMA or SFA (which are the areas with the highest conservation concern to the agencies), but it would impact approximately 304 acres of IHMA (which is considered to contain moderate to high habitat value for sage-grouse) and 282 acres of PPH (which is an area with high conservation concern to the agencies).

The Revised Proposed Route's centerline for Segment 9 would pass within 2 miles of one sage-grouse lek that has an undetermined management status and one with an occupied status. This value increases to 16 leks with either an occupied[9] or undetermined status when considering a distance of 4 miles from the Project's centerline (with 13 of these leks located on federally managed lands), and 104 leks when considering a distance of 11 miles (with 97 of these leks located on federally managed lands; see Table D.11-9). No sharp-tailed grouse leks occur near the Revised Proposed Route's centerline for Segment 9 (see Table D.11-10).

One of the local-populations of sage-grouse that would be impacted by the Revised Proposed Route for Segment 9 includes the Owyhee Front/Triangle local-population (fine-scale), which is part of the Owyhee Sub-population of the Northern Great Basin Population (mid-scale; BLM 2015d). Potential Project-related impacts to this local

[9] In Idaho, the IDFG define occupied leks as any lek that has been active during at least one breeding season within the prior 5 years

population are a concern to the BLM due to various limiting factors that currently affect this local population. Because the current condition of breeding (e.g., nesting and early brood rearing), summer (i.e., late-brood rearing), and winter seasonal habitats is currently limiting suitability in many areas occupied by the Owyhee Front/Triangle local population (due to insufficient deep-rooted perennial grass and forb cover and height, insufficient sagebrush height, decadent sagebrush stands, and prevalence of cheatgrass), the Revised Proposed Route for Segment 9 could introduce an additional stressor to this relatively isolated, small local population.

The USFWS has established recovery areas for the four listed invertebrate species that occur within the Project's Analysis Area. See the discussion under the Segment 8 section above for a list of the species and recovery areas. The Revised Proposed Route for Segment 9 would have two proposed crossings of the Snake River: one at RM 460 and one at RM 493.4 (with disturbed grassland and agricultural areas adjacent to the waterbody in these areas). Segment 9 would also cross the Bruneau River, in Section 1, Township 6 South, 4 East. These crossings are located outside (and downstream) of the recovery areas for all four listed invertebrate species. As a result the Revised Proposed Route for Segment 9 would not impact the recovery areas for these listed invertebrate species. However, current information indicates that the Snake River physa has expanded its range along the Snake River to areas outside of the established recovery area (as far downstream as RM 368 located near Ontario, Oregon; Gates and Kerans 2010; Keebaugh 2009); therefore, this species may be present near the crossings proposed at RMs 460 and 493.4, even though these areas are located outside of the species' recovery area. The crossing at these locations would involve the transmission line spanning the waterbody, with no in-water work conducted and no new roads, thereby minimizing the risk that construction and operation of the line could have to this species if present (although indirect impacts in the form of erosion or increased sedimentation could still occur). The potential impacts that the Project could have on these species if crossings occurred at or upstream of these species habitats, as well as recommendations from the agencies on how to minimize or avoid indirect impacts, are described in detail on pages 3.11-89 through 3.11-92 of the FEIS.

<u>Impacts on the SRBOP</u>

As shown in Tables D.11-5 and D.11-6, the Revised Proposed Route for Segment 9 would result in impacts on BLM managed lands within the SRBOP to habitats for the burrowing owl (930 acres during construction), sage-grouse (460 acres during construction), northern leopard frog (2 acres during construction), and pygmy rabbit (911 acres during construction).

Approximately 40 acres of IHMA and 9 acres of PGH would be impacted on BLM-administered lands on the SRBOP by the Revised Proposed Route for Segment 9 during construction. No PHMA, SFA, or PPH (which are the areas with the highest conservation concern to the agencies) would be impacted by the Revised Proposed Route for Segment 9 on the SRBOP (see Tables D.11-11, D.11-14, and D.11-15).

FEIS Proposed 9

The Proponents originally designed the 162.2-mile-long FEIS Proposed 9 to follow existing utility corridors and avoid the SRBOP and other protected areas where feasible.

Approximately 54 miles of the route is within or adjacent to a utility corridor. FEIS Proposed 9 is approximately 3.1 miles shorter than the Revised Proposed Route but it crosses 13.6 miles of the SRBOP compared to 54.2 miles for the Revised Proposed Route. Both the Revised Proposed Route and FEIS Proposed 9 cross the Salmon Falls Creek at Lilly Grade adjacent to an existing single-phase 34.5-kV distribution line just north of the Salmon Falls Creek wilderness study area.

Of the TES species for which quantitative species-specific data/parameters are available, the bald eagle, burrowing owl, sharp-tailed grouse, Columbia spotted frog, northern goshawk, northern leopard frog, sage-grouse, pygmy rabbit, and yellow-billed cuckoo could occur along FEIS Proposed 9. In addition, the four listed aquatic invertebrate species (i.e., the Banbury Springs limpet, Bliss Rapids snail, Bruneau hot springsnail, and Snake River physa snail) could also occur along FEIS Proposed 9.

FEIS Proposed 9 would cross 1.6 miles of habitat within 1 mile of bald eagle nests (Table D.11-4), and would result in 33 acres of construction impacts and 4 acres of operations impacts within this area (Tables D.11-6 and D.11-8). It would also cross 131.7 miles of burrowing owl habitat (with 2,592 acres of construction impacts and 291 acres of operations impacts), 1.8 miles of sharp-tailed grouse habitat (with 34 acres of construction impacts and 3 acres of operations impacts), about 1 mile of Columbia spotted frog habitat (with 13 acres of construction impacts and 2 acres of operations impacts), 1.3 miles of northern leopard frog habitat (with 16 acres of construction impacts and 2 acre of operations impacts), 103.4 miles of sage-grouse habitat (with 1,925 acres of construction impacts and 210 acres of operations impacts), and 111.1 miles of pygmy rabbit habitat (with 2,225 acres of construction impacts and 252 acres of operations impacts; see Tables D.11-3 through D.11-8). Although no yellow-billed cuckoo habitat would be crossed by the FEIS Proposed 9 centerline, less than 1 acre of habitat would be disturbed during construction (see Table D.11-4). Although the northern goshawk's range overlaps the Analysis Area for FEIS Proposed 9, there are no known goshawk nests within 1 mile of this portion of the Project and no impacts would occur within 1 mile of any currently known goshawk nests.

The Project-related effects on these TES species or habitats could include direct mortality and/or disturbance of individuals, loss or degradation of habitats (e.g., habitat fragmentation, weeds, fire, reduced vegetation cover, and changes to stream temperatures or sedimentation levels), as well as indirect effects (e.g., alterations to predation rates, effects to migratory corridors, creating increased access for recreationalists and hunters; see Section 3.11.2.2 of the FEIS for more details).

FEIS Proposed 9 would have a greater extent (i.e., acreage) of impacts to bald eagle (i.e., a buffer within 1 mile of nests), Columbia spotted frog, northern leopard frog, sage-grouse, and yellow-billed cuckoo habitat compared to the Revised Proposed Route for Segment 9. FEIS Proposed 9 would have fewer impacts to burrowing owl, Columbia sharp-tailed grouse, and pygmy rabbit habitat, as well as bald eagle roost buffers compared to the Revised Proposed Route for Segment 9.

Table D.11-11 lists the miles of each agency-designated sage-grouse habitat type that would be crossed by FEIS Proposed 9, while Tables D.11-14 and D.11-15 list the acres that would be impacted during construction and operations of the Project, respectively.

As shown in these tables, the designated sage-grouse habitats most heavily impacted by FEIS Proposed 9 would be PGH (with 507 acres of construction impacts) and IHMA (with 449 acres of construction impacts). FEIS Proposed 9 would also impact 292 acres of PPH (which is an area of high conservation concern to the agencies). FEIS Proposed 9 would not cross through or impact PHMA or SFA (which are the areas with the highest conservation concern to the agencies).

FEIS Proposed 9 would have fewer impacts to Key, R1, and PGH compared to the Revised Proposed Route for Segment 9, but more impacts to R2, PPH, GHMA, and IHMA (Tables D.11-14 and D.11-15).

The centerline for FEIS Proposed 9 would pass within 0.6 mile of a sage-grouse lek that has an undetermined management status. This value increases to 3 leks with either an occupied or undetermined status when considering a distance of 2 miles from the Project's centerline (all of which occur on federally managed lands), 20 leks (17 on federally managed lands) at 4 miles, and 121 leks (111 on federally managed lands) at a distance of 11 miles (see Table D.11-9). No sharp-tailed grouse leks occur near the centerline for FEIS Proposed 9 (see Table D.11-10).

The USFWS has established recovery areas for the four listed aquatic invertebrate species that occur within the Project's Analysis Area (see the discussion under the Segment 8 Revised Proposed Route section above for a list of the species and recovery areas). The transmission line associated with FEIS Proposed 9 would not cross through the recovery areas for any ESA listed aquatic invertebrate species. However, the FEIS Proposed 9 would span the Snake River at RM 460.0, in an area that contains disturbed grassland riparian vegetation. Although this area is outside of the established recovery areas for any listed aquatic invertebrate; current information indicates that the Snake River physa has expanded its range along the Snake River to areas outside of the established recovery area (see discussion above for Revised Proposed 8); therefore, the Snake River physa may be present near this proposed crossing even though this area is located outside of the species' recovery area. This route would also cross the Bruneau River at approximately RM 13.0, in an area that contains disturbed grassland and greasewood riparian vegetation; however, this area is also outside of any designated recovery areas. The impacts that the Project could have on listed aquatic invertebrates due to these crossings, as well as recommendations from the agencies on how to minimize or avoid indirect impacts, are described in detail on pages 3.11-89 through 3.11-92 of the FEIS.

<u>Impacts on the SRBOP</u>

As shown in Tables D.11-5 and D.11-6, FEIS Proposed 9 would result in impacts on BLM-managed lands within the SRBOP to habitats for the burrowing owl (240 acres during construction), Columbia spotted frog (about 1 acre during construction) sage-grouse (168 acres during construction), northern leopard frog (about 1 acre during construction), and pygmy rabbit (244 acres during construction).

Approximately 59 acres of GHMA, 24 acres of IHMA, and 3 acres of PGH would be impacted on BLM-administered lands on the SRBOP by FEIS Proposed 9 during construction (see Table D.11-14). The Revised Proposed Route for Segment 9 would

have fewer impacts to GHMA on the SRBOP than the FEIS Proposed 9, but it would have more impacts to IHMA and PGH.

Route 9K

Route 9K is being considered by the BLM as a modified version of FEIS Route 9E (the FEIS Preferred Route) to avoid crossing the northwestern portion of the SRBOP and to minimize direct and indirect impacts to priority sage-grouse habitat. The route is approximately 174.6 miles long, compared to the 165.3-mile-long Revised Proposed Route (see Figure A-1).

Of the TES species for which quantitative species-specific data/parameters are available, the bald eagle, burrowing owl, Columbia sharp-tailed grouse, Columbia spotted frog, northern goshawk, northern leopard frog, sage-grouse, pygmy rabbit, and yellow-billed cuckoo could occur along Route 9K. In addition, the four listed aquatic invertebrate species (i.e., the Banbury Springs limpet, Bliss Rapids snail, Bruneau hot springsnail, and Snake River physa snail) could also occur along Route 9K.

Route 9K would cross 1.9 miles of habitat within 1 mile of bald eagle nests (Table D.11-4), and would result in 33 acres of construction impacts and 4 acres of operations impacts within this area (Tables D.11-6 and D.11-8). It would also cross 152.1 miles of burrowing owl habitat (with 2,890 acres of construction impacts and 344 acres of operations impacts), 1.8 miles of sharp-tailed grouse habitat (with 39 acres of construction impacts and 3 acres of operations impacts), less than 1 mile of Columbia spotted frog habitat (with 3 acres of construction impacts and less than an acre of operations impacts), less than 1 mile of northern leopard frog habitat (with 4 acres of construction impacts and 1 acre of operations impacts), 124.1 miles of sage-grouse habitat (with 2,284 acres of construction impacts and 268 acres of operations impacts), 141.1 miles of pygmy rabbit habitat (with 2,652 acres of construction impacts and 316 acres of operations impacts), and less than 1 mile of yellow-billed cuckoo habitat (with 1 acre of construction and operations impacts; see Tables D.11-3 through D.11-8). Although the northern goshawk's range overlaps the Analysis Area for Route 9K, there are no known goshawk nests within 1 mile of this portion of the Project and no impacts would occur within 1 mile of any currently known goshawk nests.

The Project-related effects on these TES species and habitats could include direct mortality and/or disturbance of individuals, loss or degradation of habitats (e.g., habitat fragmentation, weeds, fire, reduced vegetation cover, and changes to stream temperatures or sedimentation levels), as well as indirect effects (e.g., alterations to predation rates, effects to migratory corridors, creating increased access for recreationalists and hunters; see Section 3.11.2.2 of the FEIS for more details).

The Revised Proposed Route for Segment 9 would have a greater extent (i.e., acreage) of impacts to northern leopard frog habitat than Route 9K; while the Revised Proposed Route for Segment 9 would have a fewer impacts to bald eagle, burrowing owl, pygmy rabbit, sage-grouse, and yellow-billed cuckoo habitat than Route 9K (Tables D.11-5 and D.11-6).

Table D.11-11 lists the miles of each agency designated sage-grouse habitat type that would be crossed by Route 9K, while Tables D.11-14 and D.11-15 list the acres that

would be impacted during construction and operation of the Project, respectively. As shown in these tables, the designated sage-grouse habitats most heavily impacted by Route 9K would be PGH (with 673 acres of construction impacts), IHMA (with 565 acres of construction impacts), R1 habitat (434 acres of construction impacts), and PPH (386 acres of construction impacts). Route 9K would not cross through or impact PHMA or SFA (which are the areas with the highest conservation concern to the agencies).

The Revised Proposed Route for Segment 9 would have fewer impacts to all agency designated sage-grouse habitats compared to Route 9K.

The centerline for Route 9K would pass within 1 mile of 2 sage-grouse leks that have an undetermined management status. This value increases to 23 leks with either an occupied or undetermined status when considering a distance of 4 miles from the Project's centerline (20 of which occur on federally managed lands), and 134 leks when considering a distance of 11 miles (with 123 of these leks located on federally managed lands; see Table D.11-9). No sharp-tailed grouse leks occur near the centerline for Route 9K (see Table D.11-10).

One of the local populations of sage-grouse that would be impacted by Route 9K includes the Owyhee Front/Triangle local-population (fine-scale), which is part of the Owyhee Sub-population of the Northern Great Basin Population (mid-scale; BLM 2015d). Potential Project-related impacts to this local population are a concern to the BLM due to various limiting factors that currently affect this local population. Because the current condition of breeding (e.g., nesting and early brood rearing), summer (i.e., late-brood rearing), and winter seasonal habitats is currently limiting suitability in many areas occupied by the Owyhee Front/Triangle local population (due to insufficient deep-rooted perennial grass and forb cover and height, insufficient sagebrush height, decadent sagebrush stands, and prevalence of cheatgrass), Route 9K could introduce an additional stressor to this relatively isolated, small, local population.

The USFWS has established recovery areas for the four listed aquatic invertebrate species that occur within the Project's Analysis Area (see the discussion under the Segment 8 Revised Proposed Route section above for a list of the species and recovery areas). Neither Route 9K nor the Revised Proposed Route for Segment 9 would cross the recovery areas designated for these four listed aquatic invertebrate species.

The closest bull trout to the Analysis Area are in the Boise River watershed, upstream of Lucky Peak Dam, just southeast of Boise; therefore, there are no bull trout located within the Project's Analysis Area. However, designated critical habitat for this species is located within the Analysis Area for Route 9K. On January 14, 2010, the USFWS proposed revising the designation of critical habitat for the bull trout. In total, approximately 22,679 miles of streams and 533,426 acres of reservoirs or lakes were proposed for the revised critical habitat designation within Washington, Oregon, Nevada, Idaho, and Montana. On October 18, 2010, the USFWS made a determination regarding this proposed critical habitat (effective on November 17, 2010), and designated a total of 19,729 miles of streams and a total of about 488,252 acres of reservoirs or lakes as critical habitat for the bull trout. The transmission line would span a portion of this designated critical habitat along Route 9K (near MP 101.1 of Route 9K); however, no road crossings would occur across bull trout critical habitat. The

transmission line crossing would occur once along the Bruneau River, located approximately 10 miles south of where this river joins C.J. Strike Reservoir. Vegetation adjacent to the crossing was defined as "Wetland and Riparian" during Project-specific remote sensing, with adjacent areas defined as "Disturbed Sagebrush" (Tetra Tech 2010); however, the Project's footprint does not overlap with this riparian area (i.e., no anticipated direct impacts would occur to this riparian habitat, and the stream would be spanned by the transmission line). No other route segment crosses bull trout designated critical habitat; therefore, Route 9K would have a greater impact to bull trout critical habitat than the Revised Proposed Route for Segment 9. Note that Route 8G crossed close to the same location where 9K spans this designated critical habitat; however, Route 8G would span the river north of the area that was designated as critical habitat (i.e., not through designated critical habitat), and would not impact any riparian habitat adjacent to the spanning (i.e., no impact to the river or riparian area).

Impacts on the SRBOP

As shown in Tables D.11-5 and D.11-6, Route 9K would result in impacts on BLM-managed lands within the SRBOP to habitats for the burrowing owl (145 acres during construction), sage-grouse (86 acres during construction), northern leopard frog (less than 1 acre during construction), and pygmy rabbit (141 acres during construction).

Approximately 7 acres of GHMA, 4 acres of Key and PPH sage-grouse habitats, and 1 acre of IHMA would be impacted on BLM-administered lands on the SRBOP by Route 9K during construction (see Table D.11-14). The Revised Proposed Route for Segment 9 would have fewer impacts to GHMA, PPH, and Key habitats than Route 9K on the SRBOP, but it would have more impacts to IHMA and PGH.

Toana Road Variations 1 and 1-A and the Comparison Portion of the Revised Proposed Route

Toana Road Variation 1 to the Segment 9 Revised Proposed Route was recommended by the BLM Jarbidge Field Office archaeologist to avoid paralleling the Toana Freight Wagon Road, an NRHP site. The Segment 9 Revised Proposed Route parallels within 0.25 mile of the Toana Road between MP 38.2 and 40.6, and parallels within 1 mile of the road through Blue Gulch between MP 40.6 and 43.5. Variation 1 is approximately 8.5 miles in length. Approximately 0.3 mile of the route crosses state land, with the remainder on land managed by the BLM. The Toana Road Variation 1-A to the Segment 9 Revised Proposed Route was recommended by the BLM to minimize visual impacts to the Toana Freight Wagon Road, and was also intended to utilize existing roads in order to minimize new road construction in the area. Variation 1-A is approximately 8.9 miles long. Approximately 1 mile of the route crosses state land, with the remainder on land managed by the BLM.

The two Toana Road Variations along Segment 9 would cross through burrowing owl, sage-grouse, and pygmy rabbit habitat. Toana Road Variations 1 and 1-A would have fewer acres of impacts to burrowing owl and sage-grouse habitats than the comparison portion of the Revised Proposed Route, but would have more impacts to pygmy rabbit habitats (see Tables D.11-5 and D.11-6). Due to the short length and close proximity of these variations to the Revised Proposed Route, the differences between their impact values are small (e.g., an 11-acre difference between Variation 1-A and the Revised

Proposed Route for sage-grouse is the largest difference; with most of the impact acreage differences closer to 4 acres; see Tables D.11-5 and D.11-6).

Table D.11-11 lists the miles of each agency designated sage-grouse habitat type that would be crossed by the two route variations along Segment 9, while Tables D.11-14 and D.11-15 list the acres that would be impacted during construction and operation of the Project, respectively. As shown in these tables, PPH would be the most heavily impacted agency designated sage-grouse habitat type along the two route variations (i.e., 126 acres impacted along Variation 1 and 129 acres along Variation 1-A); however, these impacts are comparable to the level of impact that would occur to PPH along the comparison portion of the Revised Proposed Route (124 acres of impact; Table D.11-14). The two Route Variations would result in fewer impacts to GHMA, PGH, and R1 habitats than the comparison portion of the Revised Proposed Route; however, the two Route Variations would impact considerably more IHMA (which is considered important to sage-grouse because these areas contain moderate to high habitat value for sage-grouse) than the comparison portion of the Revised Proposed Route (Table D.11-14). Neither of the route variations would cross through or impact PHMA or SFA (which are the areas with the highest conservation concern to the agencies).

No sage-grouse leks occur within 1 mile of the two Route Variations' centerlines (Table D.11-9). The two Route Variations would pass within 4 miles of 5 sage-grouse leks that have an occupied or undetermined management status. This value increases to 19 leks with either an occupied or undetermined status when considering a distance of 11 miles from the two route variations' centerlines (17 of which occur on federally managed lands; see Table D.11-9). No sharp-tailed grouse leks occur near the Route Variations' centerlines (see Table D.11-10).

Impacts on the SRBOP

Neither of the two Toana Road Variations or the comparison portion of the Revised Proposed Route for Segment 9 would cross through the SRBOP. As a result, these route variations would not impact the SRBOP.

3.11.2.4 Direct and Indirect Effects of the Alternatives

This section assesses the impacts on wildlife and fish from the seven BLM action alternatives. The alternatives are visually displayed in Figures A-2 through A-8.

As discussed in Section 3.11.2.3, inclusion of the Toana Road Variations (1 or 1-A) into any of the alternatives would reduce the acres of impacts to burrowing owl and sage-grouse habitats, but would increase the acres of impact to pygmy rabbit habitats (see Tables D.11-5 and D.11-6). Inclusion of these variations into the alternatives would also result in fewer impacts to GHMA, PGH, and R1 habitats, but would increase the impacts to IHMA (see Table D.11-14).

Alternative 1 – Proposed Action (the Revised Proposed Routes for Segments 8 and 9)

Alternative 1 consists of the Revised Proposed Routes for Segments 8 and 9; therefore, the impacts associated with this alternative correspond to those described above for

these two routes combined (see Section 3.11.2.3). The quantitative impacts on TES species and habitats associated with these two routes are listed in Appendix D.

Alternative 2 – Revised Proposed 8 and FEIS Proposed 9

Alternative 2 consists of the Revised Proposed Route for Segment 8 and the FEIS Proposed 9 route; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.11.2.3). As shown in Appendix D, impacts to the bald eagle, Columbia spotted frog, northern leopard frog, sage-grouse, and yellow-billed cuckoo would be greater under Alternative 2 than under Alternative 1 (i.e., the Proponents' Proposed Action), but would be less for the burrowing owl, Columbia sharp-tailed grouse, and pygmy rabbit (see Tables D.11- 5 and D.11-6).

Alternative 2 would result in more impacts to R2, PPH, GHMA, and IHMA than would Alternative 1, but fewer impacts to Key, R1, and PGH (see Table D.11-14). More sage-grouse leks would be located near the Project if Alternative 2 were constructed compared to Alternative 1 (see Table D.11-17).

Alternative 3 – Revised Proposed 8 and the 9K Route

Alternative 3 consists of the Revised Proposed Route for Segment 8 and Route 9K; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.11.2.3). As shown in Appendix D, impacts to bald eagle, burrowing owl, pygmy rabbit, sage-grouse, and yellow-billed cuckoo habitat would be greater under Alternative 3 than under Alternative 1, but would be less for the northern leopard frog (by about 3 acres; see Tables D.11- 5 and D.11-6). Impacts would be similar to sharp-tailed grouse and Columbia spotted frog habitat under Alternatives 1 and 3.

Alternative 3 would result in more impacts to agency-designated sage-grouse habitats than would Alternative 1 (see Table D.11-14). More sage-grouse leks would be located near the Project if Alternative 3 were constructed compared to Alternative 1 (see Table D.11-17).

Alternative 4 – The 8G Route and FEIS Proposed 9

Alternative 4 consists of Routes 8G and FEIS Proposed 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.11.2.3). As shown in Appendix D, impacts to burrowing owl, Columbia spotted frog, and sage-grouse would be greater under Alternative 4 than under Alternative 1, but would be less for the Columbian sharp-tailed grouse, northern leopard frog, and pygmy rabbit. Impacts would be comparable for the bald eagle and yellow-billed cuckoo (see Tables D.11- 5 and D.11-6).

Alternative 4 would result in more impacts to agency designated Key, R2, PPH, PGH, and IHMA compared to Alternative 1, but fewer impacts to R1 and GHMA habitats (see Table D.11-14). Fewer sage-grouse leks would be located near the Project under Alternative 4 than under Alternative 1 at a distance of 11 miles from the Project, similar numbers of leks would occur between 2 and 4 miles from the Project, and more leks would occur when considering distances of a mile or less (see Table D.11-17).

Alternative 5 – The 8G and 9K Routes

Alternative 5 consists of Routes 8G and 9K; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.11.2.3). As shown in Appendix D, impacts to burrowing owl, pygmy rabbit, and sage-grouse habitat would be greater under Alternative 5 than under Alternative 1, but would be less for the northern leopard frog (see Tables D.11- 5 and D.11-6). Impacts would be similar to bald eagle, sharp-tailed grouse, Columbia spotted frog, and yellow-billed cuckoo habitat under Alternatives 1 and 5.

Alternative 5 would result in more impacts to agency-designated Key, R2, PPH, PGH, and IHMA sage-grouse habitats than under Alternative 1, but fewer impacts to R1 and GHMA habitats (see Table D.11-14). Fewer sage-grouse leks would be located near the Project under Alternative 5 than under Alternative 1 at a distance of 11 miles from the Project, similar numbers of leks between 2 and 4 miles from the Project, and more leks when at distances of a mile or less (see Table D.11-17).

Alternative 6 – The 8H Route and FEIS Proposed 9

Alternative 6 consists of Routes 8H and FEIS Proposed 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.11.2.3). As shown in Appendix D, impacts to burrowing owl, Columbia spotted frog, sage-grouse, and yellow-billed cuckoo habitat would be greater under Alternative 6 than under Alternative 1, but would be less for the bald eagle, northern leopard frog, pygmy rabbit (see Tables D.11- 5 and D.11-6).

Alternative 6 would result in more impacts to agency designated R2, PGH, and IHMA sage-grouse habitats than Alternative 1; fewer impacts to R1 and GHMA habitats; and comparable impacts to Key and PPH (see Table D.11-14). Fewer sage-grouse leks would be located near the Project under Alternative 6 than under Alternative 1 at distances of more than a mile from the Project, but more leks at distances of less than a mile (see Table D.11-17).

Alternative 7 – The 8H and 9K Routes

Alternative 7 consists of Routes 8H and 9K; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.11.2.3). As shown in Appendix D, impacts to burrowing owl, sage-grouse, and pygmy rabbit would be greater under Alternative 7 than under Alternative 1, but would be less for the bald eagle and northern leopard frog (see Tables D.11- 5 and D.11-6). Impacts would be similar to Columbia spotted frog, sharp-tailed grouse, and yellow-billed cuckoo habitat under Alternatives 1 and 7.

Alternative 7 would result in more impacts to agency designated R2, PGH, and IHMA sage-grouse habitats than under Alternative 1; fewer impacts to R1 and GHMA habitats; and comparable impacts to Key and PPH (see Table D.11-14). Fewer sage-grouse leks would be located near the Project under Alternative 7 than under Alternative 1 at a distance of 11 miles from the Project, similar numbers of leks between 2 and 4 miles from the Project, and more leks at distances of a mile or less (see Table D.11-17).

3.11.2.5 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, as well as additional measures proposed by the Project Proponents specifically for the SRBOP.

Environmental Protection Measures

The Proponents have committed to Project design features and EPMs to minimize or avoid impacts on environmental resources. These measures, the areas where they would be applicable (e.g., private, state, or federally managed lands), as well as the details of each measure are provided in Table 2.7-1 of the FEIS. Many of these measures would be either directly or indirectly applicable to TES wildlife and fish species (i.e., they would avoid or minimize impact to TES species).

Measures that would indirectly apply to TES species (i.e., measures that were not developed directly to benefit TES species, but if implemented could avoid or minimize impacts to these species) include G-1; G-2; OM-1 through OM-27; WILD-1 through WILD-12; FISH-1 through FISH-3; VEG-1 through VEG-10; WEED-1 through WEED-4; WET-1 through WET-4; WQA-1 through WQA-28; BLA-1 through BLA-2; FIRE-1 through FIRE-5; and FIRE-7 through FIRE-8 (see Table 2.7-1 in the FEIS).

The following measures, which were identified in Table 2.7-1 of the FEIS, are directly related to TES wildlife and fish species and would be applicable to Segments 8 and 9:

TESWL-1 H-frame structures will be equipped with anti-perch devices to reduce raven and raptor use, and limit predation opportunities on special status prey species on federally managed lands.

TESWL-2 In the event that an ESA-listed species not covered by the BO is discovered during surveys, construction will cease, the USFWS will be notified, and Section 7 consultation will be initiated. In addition, the transmission line or structures will be relocated to minimize direct impacts to newly discovered ESA species, to the extent practical.

TESWL-4 The Environmental CIC, an agency biologist, or agency designee will accompany the Construction Contractor site engineers during the final engineering design or prior to ground-disturbing activities to verify and flag the location of any known occupied structures (e.g., nests, burrows, colonies) utilized by sensitive species. This will include, but not be limited to, artificial burrows that have been constructed as part of research/restoration efforts, prairie dog colonies, and raptor nests, which could be impacted by the Project based on the indicative engineering design. The final engineering design will be “microsited” (routed) to avoid direct impact to these occupied structures to the extent practical within engineering standards and constraints.

TESWL-5 Grouse Species – Proponents will provide the Agencies a list of the protocols that the Proponents will use during greater sage-grouse and

sharp-tailed grouse pre-construction surveys. The Agencies will either approve these protocols, or suggest alternative protocols to be used.

TESWL-6 Sharp-tailed Grouse – In areas where sharp-tailed grouse leks occur in proximity to greater sage-grouse leks, surface disturbance will be avoided within 4 miles of occupied or undetermined greater sage-grouse leks from March 1 to July 15. In areas where sharp-tailed grouse leks occur in isolation from greater sage-grouse leks, surface disturbance will be avoided within 1.2 miles of occupied or undetermined sharp-tailed grouse leks from March 15 to July 15.

TESWL-7 Yellow-billed cuckoo – A pre-construction survey for the yellow-billed cuckoo will be conducted at any proposed crossing of suitable habitat. If these birds are detected within 1 mile of the centerline (within existing habitat), construction will not occur until the young have fledged or the nest is abandoned. The crossing-specific plan will contain proposed monitoring measures to assure compliance with this measure.

TESWL-8 Sage-Grouse – On federal lands, there will be no surface occupancy (NSO) within 0.6 mile of the perimeter (or centroid if the perimeter has not been mapped) of occupied greater sage-grouse leks located within Core areas in Wyoming, and NSO within 0.25 mile in non-Core areas (as required by BLM Instruction Memorandum [IM] WY-2012-19 and BLM land management plans). “No surface occupancy,” as used here, means no new surface facilities, including roads, will be placed within the NSO area. Other activities (i.e., non-surface occupancy) may be authorized, with the application of appropriate seasonal stipulations, provided the resource’s protected area is not adversely affected.

TESWL-9 Sage-Grouse – On federal lands, surface disturbance will be avoided within 4 miles of occupied or undetermined greater sage-grouse leks from March 1 to July 15. This distance (i.e., 4 miles) may be reduced on a case-by-case basis by the applicable agency, if site-specific conditions would allow the Project to be located closer to the lek than 4 miles (e.g., topography prevents the Project from being visible from the lek, or a major disturbance such as a freeway or existing transmission line is located between the Project and the lek).

TESWL-10 Sage-Grouse – If Winter Concentration Areas for the greater sage-grouse are designated, there will be no surface disturbances within the designated areas from November 1 through March 15.

TESWL-14 For the protection of aquatic and riparian/wetland dependent species, surface disturbing and disruptive activities will be avoided in the following areas: 1) identified 100-year floodplains; 2) areas within 500 feet of perennial waters, springs, wells, and wetlands; and 3) areas within 100 feet of the inner gorge of ephemeral channels on federally managed lands. Where it is not possible to avoid wetland and riparian habitat, crossing-specific plans will be developed. These plans will: 1)

demonstrate that vegetation removal is minimized; 2) show how sediment would be controlled during construction and operation within wetland and riparian areas; 3) attempt to intersect the wetland or riparian habitat at its edge; and 4) provide measures to restore habitat and ensure conservation of riparian microclimates. This plan will be submitted to the appropriate land management agency and approved prior to construction of any portion of the Project within sensitive riparian habitat.

These EPMs consist mostly of timing and spatial restrictions that would be implemented to prevent impacts from occurring during designated sensitive periods or near sensitive areas, requirements that the project be designed in a way as to reduce the likelihood of direct or indirect impacts, or requirements related to pre-construction surveys. However, these EPMs would not alter the total extent of direct impacts that would actually occur (e.g., they would not alter the acreage of impacts that would occur). These EPMs are a part of the current Project description, and as such, the effects of their implementation are included in the impact discussion found in Sections 3.11.2.2, 3.11.2.3, and 3.11.2.4.

Proponent-Proposed MEP and Potential Effects to the MEP within the SRBOP

The Proponents have developed an MEP, which contains design features specific to the SRBOP. This plan was developed to mitigate the effects of Project-related impacts within the SRBOP, as well as comply with the SRBOP's enabling statute (P.L. 103-64) which requires enhancement of resources within the SRBOP. The Proponents' plan contains two forms of mitigation: "compensation mitigation" and "enhancement." For this analysis, mitigation is defined as avoidance, minimization, and compensation measures aimed at offsetting adverse impacts of the Project; enhancement is defined as additional mitigation measures that are required in order to enhance the objectives and values for which the SRBOP was established.

One of the goals of the Proponents' MEP proposal is to return treated areas to their baseline condition, which is defined using the NRCS Ecological Site Description of the affected area (see Section 3.6 – Vegetation Communities, for how "Ecological Site Descriptions" are defined). However, the NRCS Ecological Site Descriptions have not been defined for 38 percent of Segment 8 and 12 percent of Segment 9. The site descriptions for the unidentified areas would need to be established in order to determine the baseline conditions, which are necessary to define restoration goals. This is because a determination of the adequacy of any proposed mitigation and enhancement cannot be made unless the baseline conditions for all areas impacted as well as those proposed for mitigation/enhancement are known in order to fully calculate both the debit (i.e., Project impact) and mitigation/enhancement credit. As a result, more information is required from the Proponents to fully assess the proposed MEP.

The Proponents' MEP offers a portfolio that contains five types of mitigation/enhancement proposals: 1) Habitat Restoration; 2) Property Purchase; 3) Law Enforcement; 4) Visitor Enhancement; and 5) Line and Substation Removal.

Although the MEP's portfolio contains measures that would benefit wildlife and fish species in general (e.g., the successful restoration of disturbed habitats would benefit a wide range of wildlife species, including TES species), it does not contain any measures or programs that are specifically targeted at TES wildlife or fish species. In addition, the exact location where the programs outlined in the MEP would be implemented has only been identified for one of the proposed measures (i.e., the proposal removal of existing lines and a substation). Therefore determining the exact TES occupied habitat that would be affected is not possible for most of the proposals. As a result, the MEP's effects on TES wildlife and fish species would not differ from what is described in detail within the general wildlife section of the SEIS for all of the MEP's proposals except for the proposal to remove existing lines and a substation (see Section 3.10.2.5 for more details).

For the remaining measures other than the line and substation removal, the Proponents have indicated that the exact location, methods, or programs that would be funded and implemented would be determined by the Oversight Committee. However, the composition and exact membership of the individuals and agencies within the Oversight Committee have not been identified to date. Therefore, the effectiveness of the Oversight Committee cannot be determined until the individuals and agencies that will be included in the committee are identified, and the process that will be used by the committee to make its final decisions is determined.

The following assesses the benefit and/or impact that the proposed enhancement/mitigation proposals could have to TES wildlife and fish.

Habitat Restoration

The effects of this proposal to TES wildlife and fish species would not differ from the assessment presented for general wildlife and fish species (see Section 3.10.2.5).

Purchase of Private Inholdings

The effects of this proposal to TES wildlife and fish species would not differ from the assessment presented for general wildlife and fish species (see Section 3.10.2.5).

Law Enforcement

The effects of this proposal to TES wildlife and fish species would not differ from the assessment presented for general wildlife and fish species (see Section 3.10.2.5).

Visitor Enhancement

The effects of this proposal to TES wildlife and fish species would not differ from the assessment presented for general wildlife and fish species (see Section 3.10.2.5).

Line and Substation Removal

The Proponents have proposed to remove some existing infrastructure within the SRBOP. This includes:

- Removing approximately 7 miles of existing 46-kV line on BLM-managed lands, from the Bowmont Substation to Gage Substation;

- Constructing an approximately 1-mile-long section on private land to connect the remaining portion of the line to the Idaho Power system;
- Reconstructing 3.9 miles of existing 12.5 kilovolt lines, including 0.25 mile on BLM-managed lands;
- Converting approximately 4 miles of the existing 46-kV line on BLM-managed lands between the Gage and Ferry substations to a 12.5-kV distribution line; and
- Removing the existing Gage Substation and associated equipment/apparatus, which are on BLM-managed land.

Although not specifically addressed or called out in the SRBOP's enabling statute, this proposal does not contradict the objectives and goals of the BLM's RMP or the SRBOP's enabling statute.

The Proponents have indicated that all efforts proposed as part of the line and substation removal effort are intended to apply to enhancement of the SRBOP (with no mitigation component).

Unlike the other proposals presented in the MEP, the location of the existing line and substation that would be removed is known at this time. Therefore, the impact that this action could have on TES species can be determined at this time. Table 3.11-1 lists the quantitative impact values related to TES wildlife species related to the removal of the existing line and substation, while Table D.6-2 in the Vegetation section lists the acres of impact that would occur to various general habitat types. There are no known sage-grouse leks with an occupied or undetermined status within 4 miles of the lines or substation proposed for removal; there are, however, nine occupied and nine undetermined leks within 11 miles of the Project disturbance. Impacts to leks located 11 miles away are possible, but unlikely (see Sections 3.1.1.4 and 3.11.2.2 of the FEIS).

Table 3.11-1. TES Wildlife Impact Values for the MEP's Proposed Line and Substation Removal

Species	Impact Parameter		
	Miles Crossed	Construction Impacts (acres)	Operations Impacts (acres)
Greater Sage-Grouse (general habitat)	9.3	29	<1
Greater Sage-Grouse (R2 habitat)	0.2	1	<1
Burrowing Owl Habitat	18.0	52	<1
Pygmy Rabbit Habitat	16.8	52	<1

Note: Miles are rounded to nearest tenth of a mile, and acres to nearest whole acre; rows/columns may therefore not sum exactly.

The work necessary to remove the existing line and substation, as well as reconstruct or re-connect the existing lines, would result in short-term disturbances to some TES wildlife and fish species. This would include disturbance to habitats and nesting sites, as well as disturbance to individuals. The short-term effects of this effort would be similar to the effects that would occur during the construction of the Project (see Section 3.10.2.3) as similar construction equipment and personnel would likely be used. Wildlife would likely avoid the area during construction, resulting in a short-term loss of habitat

use. Furthermore, work conducted near streams or waterbodies could result in a short-term increases in sedimentation, thereby affecting aquatic habitat quality (see Section 3.16 – Water Resources). In addition, some direct loss of individuals (i.e., mortality events) may occur due to the use of vehicles and heavy equipment within the habitats, as well as the removal of structures that could contain avian nests.

In summary, as discussed in Section 3.10 – General Wildlife and Fish Species, the proposed removal of the existing line and substation would have short-term adverse impacts to wildlife and fish species (including TES) but may have a mix of adverse and beneficial long-term impacts. Furthermore, the beneficial impacts of this line and substation removal may be partially offset in areas where the new line may be placed near where this old line and substation were removed (e.g., along the Revised Proposed Route for Segment 8).

3.11.2.6 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

Summary of Remaining Impacts

After implementation of the EPMs and MEP discussed in Section 3.11.2.5, some Project-related impacts would likely remain. The impact assessment found in Sections 3.11.2.2, 3.11.2.3, and 3.11.2.4 incorporates the avoidance and minimization contributions of the EPMs in the impact analysis; as a result, Sections 3.11.2.2, 3.11.2.3, and 3.11.2.4 take these measures and their impact offsets into consideration. The design features outlined in the Proponents' MEP (discussed above) may reduce the magnitude of impacts to some degree (thereby reducing the need for additional compensatory mitigation); however, the extent of this reduction cannot be fully quantified at this time (as discussed in detail above).

Note that Sections 3.11.2.2, 3.11.2.3, and 3.11.2.4 outline the current extent of known impacts that would occur Project-wide, as well as those that would be unique to the SRBOP.

BLM Compensatory Mitigation Categories

In addition to the design features and EPMs meant to avoid and minimize impacts to TES wildlife and fish species as well as their habitats (as described above), two mitigation plans were required by the ROD for Segments 1–7 and 10 to compensate and mitigate for the impacts to wildlife/fish species and their habitats that would remain once the avoidance and minimization measures were fully implemented. These include the 1) Greater Sage-Grouse Habitat Mitigation Plan and 2) the Migratory Bird Habitat Mitigation Plan. These plans would be applicable to Segments 8 and 9, if these segments are approved.

- The Greater Sage-Grouse Habitat Mitigation Plan outlined: 1) the agencies requirements and a mitigation framework related to direct impacts to sage-

grouse; 2) a summary of the HEA that was conducted in order to quantify the habitat services lost due to project related impacts and the potential habitat service gains that could be achieved by various mitigation programs; and 3) the Proponents' proposed mitigation plan to compensate for impacts to sage-grouse as well as sagebrush habitats. The types of mitigation projects and efforts that would be implemented as part of this plan include: 1) fence marking and removal; 2) sagebrush restoration and enhancement; 3) juniper removal; 4) seeding of forb and bunchgrass understory; and 5) the purchase of conservation easements. To ensure that these projects/efforts are successful, a monitoring plan would be developed. The final monitoring and maintenance approach for each mitigation project will be formalized in a monitoring and maintenance strategy that will be reviewed annually, or as necessary, by the Oversight Committee with involvement of the monitoring entity.

- The Migratory Bird Habitat Mitigation Plan outlined the Proponents' proposal to mitigate for all wildlife habitats not already covered by the Greater Sage-Grouse Habitat Mitigation Plan (i.e., sagebrush habitats) or the Compensatory Wetland Mitigation Plan (i.e., wetland habitats). The plan quantified the forested habitat that would be impacted as well as the programs and funding that would be provided to compensate for these impacts related to Segments 1 through 4 (i.e., the Segments that had been approved in the ROD). The plan created an outline for how mitigation along Segments 5 through 10 would be implemented if the BLM approved Segments 8 and 9. To mitigate for impacts to forested habitats used by migratory birds, the plan proposes to finance off-site compensatory mitigation projects based on an approximate cost derived from considering current BLM forest restoration projects. The types of projects considered in the plan for funding include: 1) habitat restoration projects, such as those BLM is considering currently in Wyoming and Idaho; 2) conservation easements if available that protect forested habitat on private land from development; 3) property purchase if available that would transfer property from private ownership subject to development to either a non-profit land management organization or to public ownership with the commitment for management as migratory bird habitat; 4) law enforcement projects that reduce the incidence of off-road vehicle damage to forested habitat or other illegal activities that damage or fragment forested habitat; and 5) other projects approved by the oversight committee that protect, conserve, or enhance forested habitats. To ensure that the plan fully compensates for Project-related impacts, the Proponents propose the establishment of an Oversight Committee that will provide guidance and oversight for the management and implementation of the fund.

The Greater Sage-Grouse Habitat Mitigation Plan was specifically developed by the Proponents to mitigate for direct and some indirect impacts to sage-grouse. As a result, although it does contain some components that would compensate for impacts to sagebrush habitats (e.g., sagebrush restoration and enhancement), it also contains some measures that would directly benefit the sage-grouse species but not directly benefit sagebrush habitats themselves (e.g., fence removal). Furthermore, because the exact ratio of these projects/efforts that would be implemented is not known at this time

(i.e., how much sagebrush restoration and enhancement efforts the plan would contain compared to fence removal efforts), the exact amount of offset that would occur and reduction in impacts to general sagebrush habitats cannot be directly quantified at this time. However, because the Proponents have indicated that the majority of the projects/efforts that would be implemented would be related to restoration of habitats and acquisition of conservation easements, it is likely that this plan would offset the majority of Project-related direct impacts to sagebrush habitats.

As noted above, the Greater Sage-Grouse Habitat Mitigation Plan addresses mitigation for direct and some indirect impacts that would occur to sage-grouse Project-wide, and it has been determined by the agencies that this plan would fully compensate for direct impacts to sage-grouse; however, all potential indirect impacts to sage-grouse are not fully compensated for in this plan. As a result, the BLM will require that the Proponents develop a mitigation proposal that fully compensates for all potential indirect impacts to sage-grouse. Although no official requirement regarding the indirect impact calculation methodology has been established, the BLM and USFWS have developed a white-paper (i.e., *Assessing Indirect Effects of Transmission Lines on Greater Sage-Grouse for the Gateway West Interstate Transmission Line Project* [USFWS and BLM 2015]) that provides an outline that would be acceptable to the BLM and USFWS regarding how to calculate the extent of required mitigation related to indirect impacts. This includes assessing three indirect impact buffer zones around the Project: 1) an "*avoidance*" zone extending from 0 to 600 meters, resulting in a 75 to 90 percent reduction in habitat services; 2) an "*increased avian predator presence and predation*" zone extending from 600 to 1,200 meters, resulting in a 20 to 50 percent reduction in habitat services; and 3) a "*decreased productivity and survival*" zone extending from 1,200 to 5,000 meters, resulting in a 5 to 40 percent reduction in habitat services (USFWS and BLM 2015). It is expected that the Proponents will use this or a similar metric when developing their mitigation proposal for indirect impacts. The USFWS and BLM will continue to work with the Proponents regarding required mitigation for indirect impacts to sage-grouse.

The Migratory Bird Habitat Mitigation Plan would offset and compensate for impacts to forested habitats; however, very few forested habitats would be impacted along Segments 8 or 9 or within the SRBOP (Section 3.6 discloses the impacts that would occur to forested and woodland habitats); therefore, this mitigation plan would have little effect on the overall impacts that would occur along Segments 8 and 9 or on the SRBOP.

The BLM may require additional mitigation for some remaining impacts of the Project on environmental resources (including impacts that occur outside of the SRBOP), based on the guidelines found in the BLM Regional Mitigation Manual (BLM 2013c) and DOI Manual 600 DM 6, *Implementing Mitigation at the Landscape-scale* (DOI 2015). Mitigation for Project-related impacts that would occur within the SRBOP is discussed below.

The BLM will continue to work with applicable stakeholders to identify the impacts that would remain on the SRBOP after implementation of the EPMs and MEP, as well as the existing compensatory mitigation plans discussed above. The BLM will then design mitigation options that address applicable remaining impacts (see Section 3.0 for a

discussion of the BLM's policy regarding mitigation). These options will contain components that will ensure that impacts to resources and values on the SRBOP that require mitigation are compensated for, as well as that enhancement of these resources is provided in order to comply with the enabling statute of the SRBOP. Based on internal and external scoping, the BLM is considering eight mitigation categories (see Section 2.6.2 in Chapter 2). The following mitigation categories are being considered to address remaining impacts to wildlife resources within the SRBOP:

- Implement habitat/vegetation restoration efforts;
- Evaluate, maintain, enhance, or expand fuels management/fuel breaks;
- Increase wildfire preparedness and suppression;
- Increase applied research and monitoring to inform adaptive management; and
- Acquire private lands as deemed appropriate by the Authorizing Officer.

Appendix K contains a Conceptual Mitigation Model that the BLM may follow when calculating habitat restoration treatment–related mitigation requirements.

3.12 MINERALS

This section addresses potential impacts to mineral resources from the Segment 8 and 9 Revised Proposed Route; FEIS Proposed 9; Routes 8G, 8H, and 9K; and the Toana Road Variations to the Segment 9 Revised Proposed Route. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). The primary reason to define impacts to minerals is to eliminate, minimize, or mitigate effects to minerals from construction and operations of the Project. This section considers the potential impacts to exploitable mineral resources from all phases of the Project. Related geological-type sections include Section 3.13 – Paleontological Resources, Section 3.14 – Geologic Hazards, and Section 3.15 – Soils. Effects associated with routes analyzed in the 2013 FEIS were disclosed in that document. With the exception of FEIS Proposed 9, those routes are not being re-analyzed here; only new information is included in this resource-specific section.

3.12.1 Affected Environment

The Minerals Section in the 2013 FEIS discusses those aspects of the locatable, leasable, and saleable mineral development in Segments 8 and 9 that could be impacted by the Project. It begins with a discussion of the Analysis Area considered, identifies the issues that have driven the analysis, and characterizes the existing conditions in the area crossed by the Project.

3.12.1.1 Analysis Area

The Analysis Area for this SEIS is restricted to that area crossed by Segments 8 and 9; therefore, not all mineral resources discussed in the FEIS would be present in or affected by the Revised Proposed Action or the new Route Alternatives and Route Variations being considered. As a result, mineral resources not found within Analysis Areas for Segments 8 and 9 (but which may be included in the FEIS for other segments' Analysis Areas) are not discussed or analyzed in this document.

The Analysis Area includes the geologic environment crossed by the revised proposed and other routes, substations, and temporary construction areas in Segments 8 and 9.

Bedrock in this portion of the southern Idaho Snake River Valley consists of primarily basalt bedrock and lesser quantities of younger sedimentary rocks and unconsolidated sediments.

Most of southern Idaho contains the potential for geothermal resources within deep aquifers (DOE 2003). The Idaho Department of Water Resources lists over 1,000 geothermal wells in southern Idaho, many of which are used for building heating, greenhouses, and aquaculture (IDWR 2009).

The Analysis Area for minerals was defined in a GIS file by buffering the locations of known mineral deposits, claims, or leases within the construction and operations disturbance areas.

Morley Nelson Snake River Birds of Prey National Conservation Area

Portions of the Project would cross through the SRBOP, where mineral extraction can only occur on existing permitted mineral material sites; no new mineral material sites may be established. Mineral resources are not one of the environmental resources and values for which the SRBOP was established to manage and protect.

3.12.1.2 Issues Related to Minerals

The following minerals-related issues were brought up by the public during public scoping (Tetra Tech 2009) and comments on the DEIS, raised by federal and state agencies during scoping and agency discussions, or are issues that must be considered as stipulated in law or regulation:

- The effect that underground mining could have on possible subsidence-related hazards for the transmission line. This issue is discussed in the 2013 FEIS Section 3.14 – Geologic Hazards;
- The effect the Project could have on the ability to explore or extract mineral deposits or affect mineral leases;
- The effect the Project could have on oil and natural gas wells and leases; and
- The effect the Project could have on geothermal resources.

We reviewed the scoping comments received for this SEIS and determined that minerals-related issues considered in the FEIS have not changed.

3.12.1.3 Methods

The mineral resource assessment was conducted as discussed in Section 3.12.1.4 of the FEIS.

3.12.1.4 Existing Conditions

The Segment 8 and 9 routes fall within the Snake River Valley of southern Idaho, where basalt bedrock is the primary bedrock topped by fluvial and lacustrine sediments. The predominant mineral resources in the Snake River Valley are saleable minerals, including sand, gravel, clay, road base, fill, or building stones. The basalt does not contain economic quantities of metallic or energy-related mineral deposits.

3.12.2 Direct and Indirect Effects

This section is organized to present effects to mineral resources from construction, then operations, followed by decommissioning activities for the proposed Project. The Proposed Action includes measures designed to mitigate and enhance the SRBOP, as required by the enabling statute for the SRBOP and the SRBOP RMP.

A comprehensive list of all project design features and EPMs, as well as the land ownership to which they apply, can be found in Table 2.7-1 of Chapter 2 of the FEIS. There are no new minerals EPMs proposed for this SEIS. The following impact assessment takes these project design features and EPMs into account when considering the potential impact that the Project could have on mineral resources.

Plan Amendments

Amendments to the BLM RMPs and MFPs are summarized for each alternative in Table 2.3-1 (see Chapter 2 for more details). The BLM plan amendments associated with the SEIS are discussed in detail in Appendices F and G to this document. Amendments are needed to permit the Project to cross various areas of BLM-managed land. Effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved. Amendments that alter land management designations could change future use of these areas. No amendments specific to minerals are proposed for the Project and no impacts to minerals resulting from approving the amendments beyond the impacts of the Project are anticipated.

3.12.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West for Segments 8 and 9 and this portion of the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of these segments. No Project-related impacts to mineral resources would occur in the Analysis Area for these segments because these segments would not be constructed; however, impacts would continue as a result of natural events (such as fire, drought, and severe weather) as well as from existing and planned developments within the Analysis Area and from other projects, including wind farms, mining, agricultural, or other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project, and the area would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, mineral resources could potentially be affected due to unrelated new transmission lines built to meet the increasing demand in place of this Project.

3.12.2.2 Effects Common to All Routes

The general impacts that would occur to minerals resources from construction, operations, and decommissioning of the Gateway West Project were analyzed in detail within Section 3.12.2.2 of the FEIS. The assessment of quantitative impacts specifically related the Revised Proposed Routes along Segments 8 and 9, as well as FEIS Proposed 9, Routes 8G, 8H, and 9K, and the Toana Road Variations, is presented in Section 3.12.2.3. The assessment of potential impacts related to the MEP, as well as a list of additional mitigation measures that would be recommended by the BLM related to impacts on the SRBOP, is presented in Section 3.12.2.5 as well.

Construction

The presence of existing mineral claims and leases could interfere with plans to construct the Project. As part of the pre-construction process, the Proponents would identify active mining claims and mineral leases and either negotiate permission to use the land surface in these areas or re-locate the transmission line to avoid existing active claims and leases. If necessary, the Proponents could provide mine operators with mine access across the project area during construction.

The construction of the Project could restrict exploration of mineral resources along the Revised Proposed Routes in Segments 8 and 9; Routes 8G, 8H, FEIS Proposed 9, and 9K; and the Toana Road Variations during the 2-year construction period. Construction activities could also restrict mining companies' ability to access land for mining or exploration. Construction of the Project would result in the need for saleable minerals, including fill material for grade changes, sand and gravel for concrete production, gravel for road beds, and similar uses. The use of saleable minerals would provide an economic benefit to local mineral providers but would also result in consumption of materials that would not be available for other uses.

Operations

During the operations period, the Project could restrict the operation of new mines within the transmission line ROW. The operations area is smaller than the construction disturbance area but the time interval is much longer: 50 years for operations compared to about 2 years for construction. The Scoping Report (Tetra Tech 2009) indicated concern that the high-voltage transmission lines would restrict access to drill rigs conducting exploration or repair of oil or gas wells. Project operations would remove acreage that would not be available for mining for the life of the Project. However, the Project would only impact a small fraction of the total resource area available. Table 3.12-2 (in Section 3.12.2.3 below) indicates that selection of the Revised Proposed Route 8 would result in no effects to current mineral resources. Revised Proposed Route 9 would affect 3 acres of saleable minerals. Alternatives 8G, 8H, and 9K would affect 10 acres, 0.3 acres, and 13 acres, respectively.

Decommissioning

Project decommissioning would disturb an area roughly equivalent to the construction disturbance area and the time of disturbance would be approximately 2 to 3 years, including the time to remove Project structures, plus another growing season for reclamation. The Mining Law of 1872 provides public land access to existing mining claims or mineral leases. Access routes to existing claims or leases would need to be maintained during the decommissioning phase of the Project. When decommissioning is complete, mineral access due to Project activities would return to pre-Project conditions not considering changes to land ownership or land use that may have occurred during the life of the Project. Additional details concerning decommissioning are provided in Appendix B of the FEIS.

3.12.2.3 Direct and Indirect Effects by Route

This section details the minerals effects from Project construction, operations, and decommissioning. Tables 3.12-1 and 3.12-2 present the results of minerals analyses for the Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; and the Toana Road Variations.

Table 3.12-1. Acres of Active Claims, Leases, or Saleable Mineral Areas within Construction Disturbance Areas

Segment Number	Route	Total Acreage[1/]	Mine POD	Oil and Gas Lease	Coal Lease	Trona	Geothermal	Saleable Minerals	Mining Claims[2/]	Total Mineral Acreage[3/]
8	Revised Proposed Route	2,271	–	–	–	–	–	–	–	–
	Revised Proposed 500-kV Line Removal[4/]	9	–	–	–	–	–	–	–	–
	Route 8G	2,752	–	–	–	–	69	1	6	77
	Route 8G 500-kV Line Removal	10	–	–	–	–	–	–	–	–
	Route 8H	2,525	–	–	–	–	–	2	–	2
	Route 8H 138-kV Line Removal	48	–	–	–	–	–	–	–	–
	Route 8H 500-kV Line Removal	10	–	–	–	–	–	–	–	–
9	Revised Proposed Route	3,149	–	–	–	–	–	28	3	31
	138-kV Line Removal[4/]	48	–	–	–	–	–	–	–	–
	FEIS Proposed Route	3,294	–	–	–	–	–	14	3	17
	Route 9K	3,383	–	–	–	–	68	26	11	106
	Revised Proposed Route 9 – Compare to Toana Road Variations 1/1-A	177	–	–	–	–	–	–	–	–
	Toana Road Variation 1	168	–	–	–	–	–	–	–	–
	Toana Road Variation 1-A	163	–	–	–	–	–	–	–	–

Notes: The LR-2000 database sometimes lacks or contains incorrect information concerning mineral resource type. However, it does accurately provide the presence of a mining claim or mineral lease.
1/ Numbers in table are rounded to nearest acre.
2/ Includes mining claims of any type or mineral.
3/ Due to multiple claim owners or leases, and overlapping mineral interests, the total area of all claims and leases can be much less than the sum of the individual categories. The total acreage provides the most realistic estimate of the actual affected acreage.
4/ Portions of the disturbance area may overlap; therefore, actual effects may be less than presented.

Table 3.12-2. Acres of Active Claims, Leases, or Saleable Mineral Areas within Operations Disturbance Areas

Segment Number	Alternative	Total Acreage[1/]	Mine POD	Oil and Gas Lease	Coal Lease	Trona	Geothermal	Saleable Minerals	Mining Claims[2/]	Total Mineral Acreage[3/]
8	Revised Proposed Route	243	–	–	–	–	–	–	–	–
	Route 8G	332	–	–	–	–	9	–	1	10
	Route 8H	136	–	–	–	–	–	<1	–	<1
9	Revised Proposed Route	350	–	–	–	–	–	3	–	3
	FEIS Proposed Route	162	–	–	–	–	–	2	<1	3
	Route 9K	425	–	–	–	–	9	3	2	13
	Revised Proposed Route 9 – Compare to Toana Road Variations 1/1-A	16	–	–	–	–	–	–	–	–
	Toana Road Variation 1	16	–	–	–	–	–	–	–	–
	Toana Road Variation 1-A	11	–	–	–	–	–	–	–	–

Note: The LR-2000 database sometimes lacks or contains incorrect information concerning mineral resource type. However, it does accurately provide the presence of a mining claim or mineral lease.
1/ Numbers in table are rounded to nearest acre.
2/ Includes mining claims of any type or mineral.
3/ Due to multiple claim owners or leases, and overlapping mineral interests, the total area of all claims and leases can be much less than the sum of the individual categories. The total acreage provides the most realistic estimate of the actual affected acreage.

Segment 8

Revised Proposed Route

The Segment 8 Revised Proposed Route would link the Midpoint and Hemingway Substations (see Figure A-1). This 129.7-mile single-circuit 500-kV transmission line would stay north of the Snake River until it crosses just north of Guffey Butte, generally parallel to an existing 500-kV transmission line, before ending at the Hemingway Substation. This route is similar to the original proposed route in the 2013 FEIS except that the line would be 250 feet north of the existing 500-kV line rather than 1,500 feet south of the line from the eastern boundary of the SRBOP (MP 99.7) to the Hemingway Substation. The route east of that point is unchanged from the 2013 FEIS Proposed Route.

Section 3.12 of the 2013 FEIS indicated that there were few or no effects to current mining claims or mineral production in either of the Segment 8 FEIS Preferred or Proposed Routes. There no current oil or gas leases in either the construction or operations disturbance areas. The Segment 8 Revised Proposed Route would not affect current mineral resources. Removal of the 500-kV transmission line also would not affect current mineral resources.

Route 8G

Route 8G is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows an alignment similar to the ones analyzed for Routes 8A and 9B in the FEIS for approximately 44 miles, although it generally parallels 250 feet north of the existing 500-kV line rather than 1,500 feet to the south in order to avoid the Hagerman Fossil Beds National Monument and the development near Hagerman (see Figure A-1). The alternative then parallels 250 feet north of the Segment 9 Proposed Route and Route 9K for most of the remaining distance into the Hemingway Substation. This alternative is 146.9 miles long (including a 1.9-mile rebuild of the existing 500-kV line), compared to the 129.7-mile-long Revised Proposed Route.

The construction area for Route 8G contains active claims, leases, or saleable mineral areas. There are 77 acres of active mineral resources in the construction disturbance area, which is approximately 3 percent of the total construction area. The operations area for Route 8G contains active claims, leases, or saleable mineral areas. There are 13 acres of active mineral resources in the operation disturbance area, which is approximately 3 percent of the total operation disturbance area, which includes geothermal, saleable minerals, and mining claims.

Route 8H

Route 8H is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows a combination of portions of the alignments analyzed for Route 8G and the Revised Proposed Route for Segment 9. The route is 137.5 miles long (including a 1.9-mile rebuild of the existing 500-kV line and a 25.7-mile removal and rebuild of a 138-kV line), compared to the 129.7-mile-long Segment 8 Revised Proposed Route. Approximately 44 miles of the route follows the 8G alignment; the remainder of 8H follows the alignment of the Segment 9 Revised Proposed Route.

Mineral intercepts in Route 8H are extremely limited, with intercepts of only 2 acres of saleable mineral properties within the construction disturbance area.

Segment 9

Revised Proposed Route

The Segment 9 Revised Proposed Route would link the proposed Cedar Hill and existing Hemingway Substations with a 165.3-mile single-circuit 500-kV transmission line that skirts the Jarbidge and Owyhee Military Operating Areas to the north, then follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering the Hemingway Substation (see Figure A-1). It follows an alignment similar to the 2013 FEIS Route 9D/G between MP 95.6 and 154.7, except that two portions of the route (totaling 25.7 miles) would be double-circuited with existing 138-kV lines. The first area is 5.2 miles near C.J. Strike Reservoir and the Bruneau Arm (MP 106.2 to 109.3 and 109.9 to 112.1), and the second area is 20.2 miles along the Baja Road (MP 121.0 to 141.2). Several rebuilds totaling approximately 0.6 mile are also required to tie the existing 138-kV lines into the new double-circuit alignments. Except for minor variations, the route is similar to the 2013 FEIS Route 9D/G between MP 141.2 to 154.7. From MP 154.7 and into the Hemingway Substation, the route is the same as the 2013 FEIS Proposed Route.

The construction area for the Segment 9 Revised Proposed Route contains 31 acres of saleable minerals and mining claims, which is less than 1 percent of the total construction area. Removal of the 138-kV transmission line would not affect current minerals. The operations area for the Segment 9 Revised Proposed Route contains effects to 3 acres of saleable minerals and mining claims, which is less than 1 percent of the total construction area.

FEIS Proposed 9

The Proponents originally designed the 162.2-mile-long FEIS Proposed 9 to follow existing utility corridors and avoid the SRBOP and other protected areas where feasible. Approximately 54 miles of the route is within or adjacent to a utility corridor. FEIS Proposed 9 is approximately 3.1 miles shorter than the Revised Proposed Route but it crosses 13.6 miles of the SRBOP compared to 54.2 miles for the Revised Proposed Route. Both the Revised Proposed Route and FEIS Proposed 9 cross the Salmon Falls Creek at Lilly Grade adjacent to an existing single-phase 34.5-kV distribution line just north of the Salmon Falls Creek WSA.

The FEIS Proposed Route would have very low impacts to mineral resources with less than 3 acres of impacts to saleable mineral properties or mining claims.

Route 9K

Route 9K is being considered by the BLM as a modified version of FEIS Route 9E (i.e., the FEIS Preferred Route) to avoid crossing the northwestern portion of the SRBOP and to minimize direct and indirect impacts to priority sage-grouse habitat. The route is approximately 174.6 miles long, compared to the 165.3-mile-long Revised Proposed Route (see Figure A-1).

Route 9K contains more areas of mineral resources than the comparison portion of the Revised Proposed Route. This includes geothermal leases not found on the Revised Proposed Route and slightly more saleable mineral acreage and mining claims. Total

mineral disturbance for this alternative includes 106 acres (approximately 3 percent) in the construction disturbance area and 13 acres (less than 1 percent) in the operation disturbance area.

Toana Road Variations 1 and 1-A and the Comparison Portion of the Segment 9 Revised Proposed Route

Toana Road Variation 1 to the Segment 9 Revised Proposed Route was recommended by the BLM Jarbidge Field Office archaeologist to avoid paralleling the Toana Freight Wagon Road, an NRHP site. The Segment 9 Revised Proposed Route parallels within 0.25 mile of the Toana Road between MP 38.2 and 40.6, and parallels within 1 mile of the road through Blue Gulch between MP 40.6 and 43.5. Variation 1 is approximately 8.5 miles in length. Approximately 0.3 mile of the route crosses State land, with the remainder on land managed by the BLM. The Toana Road Variation 1-A to the Segment 9 Revised Proposed Route was recommended by the BLM to minimize visual impacts to the Toana Freight Wagon Road, and was also intended to utilize existing roads in order to minimize new road construction in the area. Variation 1-A, which is approximately 8.9 miles long. Approximately 1 mile of the route crosses State land, with the remainder of the route variation on land managed by the BLM.

Neither of the Toana Road Variations contain current mineral leases, claims, or active mining areas.

3.12.2.4 Direct and Indirect Effects of the Alternatives

A total of seven action alternatives are considered in this SEIS. This section includes a brief description of the alternatives, and the relative effects to mineral resources by alternative, which are summarized in Table 3.12-3. The alternatives are visually displayed in Figures A-2 through A-8.

Table 3.12-3. Comparison of Mineral Resources in Construction and Operations Disturbance Areas in the Seven Action Alternatives

Alt.	Total Acres	Geothermal	Saleable Minerals	Mining Claims	Total Mineral Acreage
Construction					
1	5,420	-	28	3	31
2	5,565	-	14	3	17
3	5,654	68	26	11	106
4	6,046	69	1	6	77
5	6,135	137	27	17	183
6	5,819	-	16	3	19
7	5,908	68	28	11	108
Operations					
1	593	-	3		3
2	405	-	2	<1	3
3	468	9	3	2	13
4	494	9	2	1	13
5	757	18	3	3	23
6	298	-	3	<1	3
7	561	9	3	2	13

Note: Acres are rounded to the nearest whole acre; rows may not sum precisely.

Alternative 1 – Proposed Action (the Revised Proposed Routes for Segments 8 and 9)

The Revised Proposed Routes for Segments 8 and 9 are described in Section 3.12.2.3, above. Total mileage for Alternative 1 is 294.9 miles. Alternative 1 would affect no geothermal resources and 31 total mineral acres during construction (Table 3.12-3). All mineral resources in the construction disturbance area of Alternative 1 were found in the Segment 9 portion of the alternative. No geothermal resources would be affected and 3 total mineral acres would be affected during operations.

There are no mineral resources identified in the Toana Road Variations. Therefore, mineral resources for the Toana Road Variations are not further discussed.

Alternative 2 – Revised Proposed 8 and FEIS Proposed 9

Total mileage for Alternative 2 is 291.9 miles, 3 miles shorter than Alternative 1. Alternative 2 would affect no geothermal resources and 17 total mineral acres during construction (Table 3.12-3). All mineral resources in the construction disturbance area of Alternative 2 were found in the Segment 9 portion of the alternative. No geothermal resources would be affected and 3 total mineral acres would be affected during operations. When compared with Alternative 1, neither alternative would affect geothermal resources and Alternative 2 would affect 14 fewer total mineral acres during construction and would affect the same total mineral acres during operations.

Alternative 3 – Revised Proposed 8 and the 9K Route

Total mileage for Alternative 3 is 304.3 miles, which is 9.4 miles longer than Alternative 1. Alternative 3 would affect 68 acres of geothermal resources and 106 total mineral acres during construction (Table 3.12-3). Approximately 9 acres of geothermal resources and 13 total mineral acres would be affected during operations. When compared with Alternative 1, Alternative 3 would affect 68 acres more geothermal mineral resources and 75 more total mineral acres during construction. During operations, Alternative 3 would affect 9 acres more geothermal mineral resources and 10 more total mineral acres than Alternative 1.

Alternative 4 – The 8G Route and FEIS Proposed 9

Total mileage for Alternative 4 is 309.1 miles, which is 14.2 miles longer than Alternative 1. Alternative 4 avoids the northern crossing of the SRBOP. Alternative 4 would affect 69 acres of geothermal resources and 77 total mineral acres will be affected during construction (Table 3.12-3). Approximately 9 acres of geothermal resources and 13 total mineral acres of mineral resources would be affected during operations. When compared with Alternative 1, Alternative 4 would affect 69 acres more geothermal mineral resources and 46 more total mineral acres during construction. During operations, Alternative 4 would affect 9 acres more geothermal mineral resources and 10 more total mineral acres than Alternative 1.

Alternative 5 – The 8G and 9K Routes

Alternative 5 has a length of 321.5 miles, the longest of all the alternatives, and 26.6 miles longer than Alternative 1. Alternative 5 contains more disturbance to mineral resources than any other alternative during both construction and operations.

Alternative 5 would affect 137 acres of geothermal resources and 183 total mineral acres will be affected during construction (Table 3.12-3). Approximately 18 acres of geothermal resources and 23 total mineral acres of mineral resources would be affected during operations. When compared with Alternative 1, Alternative 5 would affect 137 acres more geothermal mineral resources and 152 more total mineral acres during construction. During operations, Alternative 5 would affect 18 acres more geothermal mineral resources and 20 more total mineral acres than Alternative 1.

Alternative 6 – The 8H Route and FEIS Proposed 9

The combined length of Alternative 6 is 299.7 miles, which is 4.8 miles longer than Alternative 1. Alternative 6 would affect no geothermal resources and 19 total mineral acres during construction (Table 3.12-3). Alternative 6 would affect no geothermal resources and 3 total mineral acres of mineral resources during operations. When compared with Alternative 1, neither alternative impact geothermal resources and Alternative 6 would affect the 12 fewer total mineral acres during construction and the same number of total mineral acres during operations.

Alternative 7 – The 8H and 9K Routes

The combined length of Alternative 7 is 312.1 miles, which is 17.2 miles longer than Alternative 1. Alternative 7 would affect 68 acres of geothermal resources and 108 total mineral acres during construction (Table 3.12-3). Alternative 7 would affect 9 acres of geothermal resources and 13 total mineral acres of mineral resources during operations. When compared to Alternative 1, Alternative 7 would affect 68 more acres of geothermal resources and 77 more total mineral acres during construction and 9 more acres of geothermal resources and 10 more total mineral acres during operations than Alternative 1.

3.12.2.5 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, as well as additional measures proposed by the Project Proponents specifically for the SRBOP.

Environmental Protection Measures

The Proponents have committed to Project design features and EPMs to minimize or avoid impacts on environmental resources. These measures, the areas where they would be applicable (e.g., private, state, or federally-managed lands), as well as the details of each measure are provided in Table 2.7-1 of the FEIS. There were no EPMs presented in the FEIS that would be applicable to minerals in Segments 8 and 9.

Proponent-Proposed MEP and Potential Effects to the MEP within the SRBOP

The Proponents have developed an MEP that contains design features specific to the SRBOP. This plan was developed to mitigate the effects of Project-related impacts within the SRBOP, as well as comply with the SRBOP's enabling statute (P.L. 103-64) which requires enhancement of resources within the SRBOP. The Proponents' plan contains two forms of mitigation: "compensation mitigation" and "enhancement." For this analysis, mitigation is defined as avoidance, minimization, and compensation measures aimed at offsetting adverse impacts of the Project; enhancement is defined

as additional mitigation measures that are required in order to enhance the objectives and values for which the SRBOP was established.

The Proponents' MEP offers a portfolio that contains five types of mitigation/enhancement proposals. The following discusses the benefit and/or impact that these proposed mitigation/enhancement proposals could have to mineral resources.

Habitat Restoration

The goal for the Proponents' habitat restoration proposal is to convert "non-native grasslands to native perennial plant communities" as well as to conduct "noxious weed control." The proposed habitat restoration proposal would have neither beneficial nor detrimental effects on mineral resources.

Purchase of Private Inholdings

There are private lands within the SRBOP that could contain important cultural and natural resources. The Proponents have proposed (as part of the MEP) to purchase a portion of these lands and deed them to the U.S. government, to be managed by the BLM. The Proponents have indicated that the selection of the parcels that would be purchased and deeded to the BLM would be determined by the Oversight Committee. However, the composition and exact membership of the individuals and agencies within the proposed Oversight Committee have not been identified to date. Therefore, the effectiveness of the Oversight Committee cannot be determined until the individuals and agencies that will be included in the committee are identified, and the process that will be used by the committee to make its final decisions is determined. The MEP makes a preliminary estimate of $3,000 an acre for the cost of purchasing lands and transferring them to the BLM for management; however, it acknowledges that the exact price is uncertain until the parcels are identified by the Oversight Committee and purchase negotiations begin.

This proposal is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute (e.g., P.L. 103-64 states that "The Secretary is authorized to acquire lands and interests therein within the boundaries of the conservation area by donation, purchase with donated or appropriated funds, exchange, or transfer from another Federal agency, except that such lands or interests owned by the State of Idaho or a political subdivision thereof may be acquired only by donation or exchange").

The Proponents have indicated that all efforts proposed in regard to the purchasing of private inholdings are intended to apply to enhancement of the SRBOP (with no mitigation component).

This proposal would not have any effects to the extent or quality of mineral resources in the area. Depending on the properties that are purchased, it may affect the extent of mineral resources that fall under the jurisdiction and management of the BLM; however, as no specific parcels or willing landowners have been identified to date, the determination of what mineral resources may be contained in these new parcels cannot be made at this time.

Law Enforcement

The Proponents' MEP contains a proposal for the funding of increased law enforcement within the SRBOP for a period of 10 years. The goal of this increased funding is to change adverse behaviors in the SRBOP by aiding law enforcement in their coverage and ability to manage public induced damage to resources. The proposed enhancement of law enforcement would have neither a beneficial nor detrimental effect on mineral resources.

Visitor Enhancement

The MEP contains a proposal to fund programs meant to enhance the experiences of visitors to the SRBOP. The proposed enhancement of the visitor experience would have neither a beneficial nor detrimental effect on mineral resources.

Line and Substation Removal

The Proponents have proposed to remove some existing infrastructure within the SRBOP. This includes:

- Removing approximately 7 miles of existing 46-kV line on BLM-managed lands, from the Bowmont Substation to Gage Substation;
- Constructing an approximately 1-mile-long section on private land to connect the remaining portion of the line to the Idaho Power system;
- Reconstructing 3.9 miles of existing 12.5 kilovolt lines, including 0.25 mile on BLM-managed lands;
- Converting approximately 4 miles of the existing 46-kV line on BLM-managed lands between the Gage and Ferry substations to a 12.5-kV distribution line; and
- Removing the existing Gage Substation and associated equipment/apparatus, which are on BLM-managed land.

Although not specifically addressed or called out in the SRBOP's enabling statute, this proposal does not contradict the objectives and goals of the BLM's RMP or the SRBOP's enabling statute.

The Proponents have indicated that all efforts proposed as part of the line and substation removal effort are intended to apply to enhancement of the SRBOP (with no mitigation component).

Effects on minerals resources from this action could affect 1 acre of saleable minerals located within the construction disturbance area.

3.12.2.6 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

Summary of Remaining Impacts

The Project would have no impacts to mineral resources. Mineral extraction within the SRBOP can only occur on existing permitted mineral material sites and no new mineral material sites may be established. The presence or absence of the Gateway West transmission line would have no impact on mineral resources in the SRBOP.

BLM Compensatory Mitigation Categories

There are no specific mitigation plans for mineral resources because the presence or absence of the Gateway West transmission line is not expected to impact mineral resources in the SRBOP.

3.13 PALEONTOLOGICAL RESOURCES

This section addresses potential impacts to paleontological resources from the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; and the Toana Road Variations to the Segment 9 Revised Proposed Route. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). The primary reason to define impacts to paleontological resources is to reduce, minimize, or mitigate effects to those resources from all phases of the Project. Related geological-type sections include Section 3.12 – Mineral Resources, Section 3.14 – Geologic Hazards, and Section 3.15 – Soils. Effects associated with routes analyzed in the 2013 FEIS were disclosed in that document. With the exception of FEIS Proposed 9, those routes are not being re-analyzed here, as only new information is included in this resource-specific section.

3.13.1 Affected Environment

This Paleontology section in the 2013 FEIS discusses those aspects of paleontological resources that could be impacted by the Project. It begins with a discussion of the Analysis Area considered, identifies the issues that have driven the analysis, and characterizes the existing conditions in the area crossed by the Project. No significant new data were identified for paleontological resources in the Segment 8 and 9 routes analyzed here.

3.13.1.1 Analysis Area

The Analysis Area for this SEIS is restricted to that area crossed by Segments 8 and 9; therefore, not all paleontological resources discussed in the FEIS would be present in or affected by the Revised Proposed Action and other routes and variations being considered.

For the purposes of paleontological record searches, a 1-mile-wide corridor (0.5 mile on either side of the centerline) was used. This allowed the delineation of important fossil-bearing formations in most areas that could be affected by construction of the Project. There may be some access roads located outside the 1-mile corridor that could also affect fossil-bearing formations. These would be examined on a case-by-case basis as they are identified.

Morley Nelson Snake River Birds of Prey National Conservation Area

Portions of the Project would cross through the SRBOP. Paleontological resources are not one of the environmental resources and values for which the SRBOP was established to manage and protect.

3.13.1.2 Issues Related to Paleontology

The following paleontology-related issues were raised by members of the public during public scoping (Tetra Tech 2009) and comments on the DEIS, raised by federal and state agencies during scoping and agency discussions, or are issues that must be considered as stipulated in law or regulation:

- Whether a full inventory of potentially affected paleontological resources would be carried out,

- Whether fossils would be damaged during construction, and
- Whether fossils would be removed or destroyed by increased access to protected areas.

We reviewed the scoping comments received for this SEIS and determined that paleontology-related issues considered in the FEIS have not changed.

3.13.1.3 Methods

To identify potential effects to paleontological resources, a GIS analysis was completed, documenting the length of each bedrock formation crossed by the proposed and other routes. The formations crossed by the routes were then compared to the potential fossil yield classification (PFYC) tables described in the FEIS. Results of those comparisons are summarized in Section 3.13.2.3 (Table 3.13-1), and in Appendix D, Table D.13-1. Similar comparisons for the seven action alternatives are presented in Table 3.13-2.

To compare the potential to affect paleontological resources by route, the PFYC for each bedrock unit was multiplied by the miles crossed. This provided a value called the paleontology risk factor. The summation of all of the paleontological sensitivity ratings for each segment yielded a total paleontological sensitivity rating for each route. To compare the relative paleontological risk by route, the paleontology risk factor for each route was compared to that of the comparison portions of the routes by segment. The route with the higher risk factor rating was judged to have greater potential for paleontological risk.

The routes were also compared by segment according to the miles of PFYC Classes 3, 4, and 5 crossed. An assessment of surface disturbance in these classes sufficient to determine whether significant paleontological resources occur in the Project area, as well as the effects the Project would have on the paleontological resources, would be required. This may include field surveys in accordance with the Paleontological Resources Protection Plan.

3.13.1.4 Existing Conditions

The Segment 8 routes fall within the Snake River Plain, a broad structural valley that cuts off the Basin and Range Province. The Snake River Plain is dominated by flood basalts, thinly covered with silty, aeolian deposits and interlain with minor clastic sediments. Segment 9 routes fall within the Basin and Range mountain ranges similar to those in southeast Idaho. The block-faulted ranges of southern and southwestern Idaho have more volcanic features than ranges in the eastern portion of the state.

Southwest Idaho contains extensive fossiliferous units of Idaho Group bedrock. The Poison Creek, Chalk Hills, Glenns Ferry, and Bruneau Formations within the Idaho Group are Miocene, Pliocene, and Pleistocene in age. These units have been known to yield important fossil discoveries and they have been classified as PFYC Classes 4 and 5.

3.13.2 Direct and Indirect Effects

This section is organized to present effects to paleontology from construction, then operations, followed by decommissioning activities for the proposed Project. The

Proposed Action includes measures designed to mitigate and enhance the SRBOP, as required by the enabling statute for the SRBOP and the SRBOP RMP.

A comprehensive list of all project design features and EPMs, as well as the land ownership to which they apply, can be found in Table 2.7-1 of Chapter 2 of the FEIS. The following impact assessment takes these project design features and EPMs into account when considering the potential impact that the Project could have on environmental resources. There are no new paleontology EPMs proposed for this SEIS.

Plan Amendments

Amendments to the BLM RMPs and MFPs are summarized for each alternative in Table 2.3-1 (see Chapter 2 for more details). The BLM plan amendments associated with the SEIS are discussed in detail in Appendices F and G to this document. Amendments are needed to permit the Project to cross various areas of BLM-managed land. The effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved. Amendments that alter land management designations could change future use of these areas. No new amendments specific to paleontology are proposed for the Project, and no impacts to paleontological resources resulting from approving the amendments beyond the impacts of the Project are anticipated.

3.13.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West for Segments 8 and 9 and this portion of the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of these segments. No Project-related impacts to paleontological resources would occur; however, impacts would continue as a result of natural events (such as fire, drought, and severe weather) as well as from existing and planned developments within the Analysis Area and other projects, including wind farms, mining, agricultural, or other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project, and the area would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, paleontological resources could potentially be affected due to unrelated new transmission lines built to meet the increasing demand in place of this Project.

3.13.2.2 Effects Common to All Routes

The general impacts that would occur to paleontological resources from construction, operations, and decommissioning of the Gateway West Project were analyzed in detail within Section 3.13.2.2 of the FEIS. The assessment of quantitative impacts specifically related the Revised Proposed Route along Segments 8 and 9, as well as Routes 8G, 8H, FEIS Proposed 9, and 9K, and the Toana Road Variations, is presented in Section 3.13.2.3. The assessment of potential impacts related to the MEP, as well as a list of additional mitigation measures that would be recommended by the BLM related to impacts on the SRBOP, is presented in Section 3.13.2.5.

Construction

Direct effects due to construction of the Revised Proposed Routes in Segments 8 and 9, other routes (i.e., FEIS Proposed 9, 8G, 8H, and 9K), and the Toana Road Variations include possible damage to paleontological specimens and possible loss of associated data. The scientific information provided by fossils is maximized by discovery of fossil specimens preserved in place within the host geologic formations. Construction disturbance activities could result in the discovery of isolated fossil specimens. Further examination in the vicinity of these isolated finds could result in significant fossil discoveries. Excavation or blasting in fossil-bearing rock formations could damage intact fossils and reduce the scientific value of the paleontological resource. The likelihood of recovering scientifically important fossil specimens using heavy construction equipment is low. Therefore, use of construction equipment and blasting could have direct negative effects on paleontological resources.

Construction impacts include excavations for the tower foundations and construction of access roads, multipurpose yards, laydown yards, substations, and regeneration sites. Transmission line tower foundations would consist of drilled piers, 4 to 6 feet in diameter and 15 to 20 feet deep. Blasting may be necessary in bedrock areas that are not suitable for excavation by standard drilled pier augering. The construction impacts from installation of other features would likely be less than the impacts from the tower excavations because those ground-disturbing activities would be much shallower. Indirect effects due to construction include the unauthorized collecting or destruction of paleontological specimens due to increased access.

The Proponents' POD provided in the 2013 FEIS includes a Paleontological Resources Protection Plan that describes the potential for paleontological resources, the need for surveys in areas with high potential for sensitive fossils, and procedures to be implemented in the event of fossil discovery.

Operations

No direct effects to paleontological resources due to operations are foreseen. Possible indirect effects would be the unauthorized collecting or destruction of paleontological specimens due to increased access.

Decommissioning

Very limited effects due to decommissioning are foreseen because the activities would occur within the same footprint as construction. Assuming that concrete footings would not be removed from the ground, only exposed outcrops could be affected. It is possible that fossils exposed at the surface could be damaged by vehicles involved in decommissioning. Additional details concerning decommissioning are provided in Appendix B of the FEIS.

3.13.2.3 Direct and Indirect Effects by Route

This section details the paleontological effects from the Revised Proposed Routes, other routes, and variations. Table 3.13-1 summarizes paleontological risk factors by Segment and route. Table D.13-1 provides detailed paleontology risk factors by route and bedrock type.

Table 3.13-1. Paleontology Risk Factors of Routes by Segment

Segment	Route	Length (Miles)[1/]	Paleontology Risk Factor[2/]	PFYC Class 3 (miles)	PFYC Class 4 or 5 (miles)
8	Revised Proposed Route	129.7	366.7	39.8	46.9
	Existing 500-kV Line Removal	1.1	3.0	1.1	–
	Route 8G	146.9	489.9	24.3	80.2
	Existing 500-kV Line Removal	1.9	6.5	1.2	0.7
	Route 8H	137.5	387.5	17.7	62.6
	Existing 138-kV Line Removal	25.7	68.9	0.1	11.8
	Existing 500-kV Line Removal	1.9	7.1	1.2	0.7
9	Revised Proposed Route	165.2	465.3	35.9	67.4
	Existing 138-kV Line Removal	25.7	47.2	2.3	5.4
	FEIS Proposed Route	162.2	537.2	45.5	77.6
	Route 9K	174.6	598.3	51.8	84.0
	Revised Proposed Route 9 – Compare to Toana Road Variations 1/1-A	8.7	21.4	6.4	–
	Toana Road Variation 1	8.5	14.9	5.2	–
	Toana Road Variation 1-A	8.9	18.1	4.6	–

PFYC – Potential Fossil Yield Classification
1/ Mileages are rounded to the nearest tenth of a mile; therefore, rows may not sum exactly due to rounding.
2/ The paleontology risk factor is a product of the length of the segment or alternative multiplied by the BLM PFYC of the individual rock formations crossed.

Segment 8

Revised Proposed Route

The Segment 8 Revised Proposed Route would link the Midpoint and Hemingway Substations (see Figure A-1). This 129.7-mile single-circuit 500-kV transmission line would stay north of the Snake River until it crosses just north of Guffey Butte, generally parallel to an existing 500-kV transmission line, before ending at the Hemingway Substation. This route is similar to the original proposed route in the 2013 FEIS except that the line would be 250 feet north of the existing 500-kV line rather than 1,500 feet south of the line from the eastern boundary of the SRBOP (MP 99.7) to the Hemingway Substation. The route east of that point is unchanged from the 2013 FEIS Proposed Route.

The Segment 8 Revised Proposed Route is 1.8 miles shorter than the 2013 FEIS Proposed Route. It crosses 39.8 miles of land in PFCY Class 3, land with moderate fossil potential. It also crosses 46.9 miles in PFYC Class 4 or 5; with rock units with higher potential for unique fossils or vertebrate fossils. The paleontology risk factor for the Segment 8 Revised Proposed Route is 366.7. The paleontology risk factor and miles crossed of PFYC Classes 3, 4, and 5 are less for the Segment 8 Revised Proposed Route than for the 2013 FEIS Proposed Route. Removal of the existing 500-kV circuit would occur on basalt, a rock type that would not contain fossils. In summary, the Segment 8 Revised Proposed Route would result in fewer potential paleontological effects, compared to the Segment 8 2013 FEIS Proposed Route. The Revised Proposed Route also has a lower paleontology risk factor than the FEIS Preferred Route.

Route 8G

Route 8G is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows an alignment similar to the ones analyzed for Routes 8A and 9B in the FEIS for approximately 44 miles, although it generally parallels 250 feet north of the existing 500-kV line rather than 1,500 feet to the south in order to avoid the Hagerman Fossil Beds National Monument and the development near Hagerman (see Figure A-1). The route then parallels 250 feet north of the Segment 9 Proposed Route and Route 9K for most of the remaining distance into Hemingway Substation. This route is 146.9 miles long (including a 1.9-mile rebuild of the existing 500-kV line), compared to the 129.7-mile-long Revised Proposed Route.

Route 8G is 17.2 miles longer than the Revised Proposed Route and would result in more potential impacts to paleontology resources. The paleontology risk factor of Route 8G is 489.9 compared to 366.7 for the Revised Proposed Route. It also crosses 80.2 miles of land with PFCY Classes 4 and 5.

Route 8H

Route 8H is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows a combination of portions of the alignments analyzed for 8G and the Revised Proposed Route for Segment 9. The route is 137.5 miles long (including a 1.9-mile rebuild of the existing 500-kV line and a 25.7-mile removal and rebuild of a 138-kV line), compared to the 129.7-mile-long Segment 8 Revised Proposed Route. Approximately 44 miles of the route follows the 8G alignment, while the remainder of 8H follows the alignment of the Segment 9 Revised Proposed Route.

Route 8H is 7.8 miles longer than the Revised Proposed Route and would result in more potential impacts to paleontology resources. The paleontology risk factor of 8H is 387.5 compared to 366.7 for the Revised Proposed Route. It also crosses 62.6 miles of land with PFCY Classes 4 and 5. Approximately 50 percent of the 138-kV and 500-kV line removals would occur on bedrock with PFYC Classes 4 or 5. Surface disturbances associated with these removals may increase the paleontology impacts to Route 8H.

Segment 9

Revised Proposed Route

The Segment 9 Revised Proposed Route would link the proposed Cedar Hill and existing Hemingway Substations with a 165.3-mile single-circuit 500-kV transmission line that skirts the Jarbidge and Owyhee Military Operating Areas to the north, then follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering the Hemingway Substation (see Figure A-1). It follows an alignment similar to the 2013 FEIS Route 9D/9G between MP 95.6 and 154.7, except that two portions of the route (totaling 25.7 miles) would be double-circuited with existing 138-kV lines. The first area is 5.2 miles near C.J. Strike Reservoir and the Bruneau Arm (MP 106.2 to 109.3 and 109.9 to 112.1), and the second area is 20.2 miles along the Baja Road (MP 121.0 to 141.2). Several rebuilds totaling approximately 0.6 mile are also required to tie the existing 138-kV lines into the new double-circuit alignments. Except for minor variations, the route is similar to the 2013 FEIS Route 9D/G between MP 141.2 to 154.7. From MP 154.7 and into the Hemingway Substation, the route is the same as the 2013 FEIS Proposed Route.

The Segment 9 Revised Proposed Route paleontology risk factor is 465.3. Removal of the 25.7 miles of existing 138-kV circuit would occur in 5.4 miles with PFYC Class 4 or 5. However, this line removal would not be likely to include excavation activities that would affect fossils in bedrock.

FEIS Proposed Route 9

The Proponents originally designed the 162.2-mile-long FEIS Proposed Route in Segment 9 to follow existing utility corridors and avoid the SRBOP and other protected areas where feasible. Approximately 54 miles of the route is within or adjacent to a utility corridor. FEIS Proposed 9 is approximately 3.1 miles shorter than the Revised Proposed Route but it crosses 13.6 miles of the SRBOP compared to 54.2 miles for the Revised Proposed Route. Both the Revised Proposed Route and FEIS Proposed 9 cross the Salmon Falls Creek at Lilly Grade adjacent to an existing single-phase 34.5-kV distribution line just north of the Salmon Falls Creek WSA.

The FEIS Proposed Route has a paleontology risk factor of 537.2, which is more than the Segment 9 Revised Proposed Route (465.3). It contains 45.5 miles of crossings in PFYC Class 3, and 77.6 miles of crossings in PFYC Classes 4 and 5.

Route 9K

Route 9K is being considered by the BLM as a modified version of FEIS Route 9E (i.e., the FEIS Preferred Route) to avoid crossing the northwestern portion of the SRBOP and to minimize direct and indirect impacts to priority sage-grouse habitat. The alternative is approximately 174.6 miles long, compared to the 165.3-mile-long Revised Proposed Route (see Figure A-1).

Route 9K is 9.3 miles longer than the Revised Proposed Route. It crosses more land in PFYC Classes 3, 4, and 5 and has a higher paleontology risk factor (598.3 compared to 465.3).

Toana Road Variations 1 and 1-A and the Comparison Portion of the Revised Proposed Route

Toana Road Variation 1 to the Segment 9 Revised Proposed Route was recommended by the BLM Jarbidge Field Office archaeologist to avoid paralleling the Toana Freight Wagon Road, an NRHP site. The Segment 9 Revised Proposed Route parallels within 0.25 mile of the Toana Road between MP 38.2 and 40.6, and parallels within 1 mile of the road through Blue Gulch between MP 40.6 and 43.5. Variation 1 is approximately 8.5 miles in length. Approximately 0.3 mile of the route crosses State land, with the remainder on land managed by the BLM. The Toana Road Variation 1-A to the Segment 9 Revised Proposed Route was recommended by the BLM to minimize visual impacts to the Toana Freight Wagon Road, and was also intended to utilize existing roads in order to minimize new road construction in the area. Variation 1-A is approximately 8.9 miles long. Approximately 1 mile of the route crosses State land, with the remainder on land managed by the BLM.

The Toana Road Variations are similar in length to the comparison portion of the Segment 9 Revised Proposed Route. Both variations have a slightly lower paleontology risk factor and both cross less land in PFYC Class 3. Neither of the Toana Road Variations would cross land in PFYC Class 4 or 5.

3.13.2.4 Direct and Indirect Effects of the Alternatives

A total of seven action alternatives are considered in this SEIS. This section includes a brief description of the alternatives, and the relative effects to paleontological resources by alternative. Paleontological effects of Alternatives 2 through 7 are compared to the Proposed Action (Alternative 1). The alternatives are visually displayed in Figures A-2 through A-8 in Appendix A and numerically compared in Table 3.13-2.

Table 3.13-2. Comparison of Paleontological Impacts from the Seven Action Alternatives

Alternative	Total Miles	Paleontological Effects		
		Paleontology Risk Factor	PFYC Class 3 (miles crossed)	PFYC Class 4 or 5 (miles crossed)
1	294.9	832.0	75.7	114.3
2	291.9	903.9	85.3	124.5
3	304.3	965.0	91.6	130.9
4	309.1	1,027.1	69.8	157.8
5	321.5	1,088.2	76.1	164.2
6	299.7	924.7	63.2	140.2
7	312.1	985.8	69.5	146.6

Alternative 1 – Proposed Action (the Revised Proposed Routes for Segments 8 and 9)

The Revised Proposed Routes for Segments 8 and 9 are described in Section 3.13.2.3, above. Total mileage for Alternative 1 is 294.9 miles.

The cumulative paleontology risk factor for Alternative 1 is 832.0. Alternative 1 crosses 75.7 miles of PFYC Class 3 bedrock and 114.3 miles with PFYC Classes 4 and 5 (Table 3.13-2).

Selection of either the Toana Road Variation 1 or 1-A would not affect any strata with PFYC Class 4 or 5. This is true for all alternatives. Therefore, the Toana Road Variations are not further discussed for effects to paleontology.

Alternative 2 – Revised Proposed 8 and FEIS Proposed 9

Alternative 2 combines the Revised Proposed Segment 8 and the FEIS Proposed Route 9 as described above. The combined length is 291.9 miles, 3.1 miles shorter than Alternative 1. When compared to Alternative 1, the paleontology risk factor is greater, at 903.9 for Alternative 2 compared to 832.0 for Alternative 1. Alternative 2 crosses approximately 10 additional miles of bedrock in PFYC Class 3, and PFYC Class 4 and 5. Based on the risk factors evaluated, Alternative 2 would have more potential effects on paleontology resources than Alternative 1.

Alternative 3 – Revised Proposed 8 and Route 9K

The combined length for Alternative 3 is 304.3 miles, which is 9.4 miles longer than Alternative 1. When compared to Alternative 1, the paleontology risk factor is greater, at 965.0 compared to 832.0. Alternative 3 also crosses approximately 16 additional miles of bedrock in PFYC Class 3, and PFYC Class 4 and 5. Alternative 3 would have more potential effects on paleontology resources than Alternative 1.

Alternative 4 – The 8G Route and FEIS Proposed 9

The combined length for Alternative 4 is 309.1 miles, which is 14.2 miles longer than Alternative 1. When compared to Alternative 1, the paleontology risk factor is greater, at 1,027.1 compared to 832.0. Alternative 4 also crosses slightly fewer miles (approximately 6 miles) of bedrock in PFYC Class 3, but over 43 additional miles of PFYC Class 4 and 5. Alternative 4 would have more potential effects on paleontology resources Alternative 1.

Alternative 5 – The 8G and 9K Routes

The combined length for Alternative 5 is 321.5 miles, the longest of all the alternatives, and 26.6 miles longer than Alternative 1. Alternative 5 has the highest paleontology risk factor at 1,088.2, and crosses slightly more (about 0.5 miles) PFYC Class 3 areas and about 50 miles more PFYC Class 4 and 5 compared to Alternative 1. Given the highest paleontology risk factor and greatest number of miles in PFYC Class 4 and 5, Alternative 5 would have the greatest potential effects on paleontology resources of all the alternatives.

Alternative 6 – The 8H Route and FEIS Proposed 9

The combined length of Alternative 6 is 299.7 miles, which is 4.8 miles longer than Alternative 1. When compared to Alternative 1, the paleontology risk factor is greater, at 924.7 compared to 832.0. Alternative 6 crosses less bedrock (12.5 miles) in PFYC Class 3, but more PFYC Class 4 and 5 (approximately 26 miles) compared to Alternative 1. Removal of the 138-kV and 500-kV as part of Alternative 8H would increase the potential for paleontology effects as approximately half of the removal routes are in bedrock with PFYC Classes 4 or 5. Selection of Alternative 6 would have more potential effects on paleontology resources than Alternative 1.

Alternative 7 – The 8H and 9K Routes

The combined length of Alternative 7 is 312.1 miles, which is 17.2 miles longer than Alternative 1. When compared to Alternative 1, the paleontology risk factor is greater, at 985.8 compared to 832.0. Alternative 7 crosses slightly fewer miles (6.2 miles) of bedrock in PFYC Class 3, but an additional 32 miles of PFYC Classes 4 and 5. Removal of the 138-kV and 500-kV as part of Alternative 8H would increase the potential for paleontology effects as approximately half of the removal routes are in bedrock with PFYC Classes 4 or 5. Selection of Alternative 7 would more potential effects on paleontology than Alternative 1.

3.13.2.5 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, as well as additional measures proposed by the Project Proponents on BLM-administered land..

Environmental Protection Measures

The Proponents have committed to Project design features and EPMs to minimize or avoid impacts on environmental resources. These measures, the areas where they would be applicable (e.g., private, state, or federal-managed lands), as well as the details of each measure are provided in Table 2.7-1 of the FEIS.

The following measures, which were identified in Table 2.7-1 of the FEIS, are directly related to paleontology and would be applicable to Segments 8 and 9:

PALEO-1 If significant fossil materials are discovered during Project construction, all surface-disturbing activities in the vicinity of the find will cease until notification to proceed is given by the authorized officer. The site will be protected to reduce the risk of damage to fossils and context. Appropriate measures to mitigate adverse effects to significant paleontological resources will be determined by the authorized officer.

BLM would require that the Paleontological Resources Protection Plan address all paleontological resources, not just "fossil materials."

PALEO-2 Paleontological resources (as defined by Omnibus Public Land Management Act – Paleontological Resources Preservation Section) on federally managed land shall be managed and protected using scientific principles and expertise. Appropriate plans for inventory, monitoring, and the scientific and educational use of these resources shall be developed in accordance with applicable agency laws, regulations and policies.

PALEO-3 Where fossil-bearing sediments are exposed by construction, the sediments must be covered with a 4-inch layer of soil where feasible to reduce unauthorized removal or disturbance of resources.

BLM would require that exposed paleontological resources be monitored by a qualified paleontologist and covered by an appropriate management plan.

In addition to the EPMs originally proposed by the Proponents, the Agencies would require the following:

PALEO-4 To ensure compliance with the Paleontological Resources Preservation Section of the Public Land Management Act, the Proponents' Paleontological Mitigation Plan for the Project (see PALEO-2) shall specify that:

- Monitoring of excavation and grading in sensitive sediments, including areas with PFYC Classes 3, 4 or 5, especially access roads and tower sites, must occur when construction is near or in those geologic formations.
- Monitoring of excavations in areas with PFYC Classes 3, 4, or 5, screening the excavated spoils, and processing of bulk sediment samples for microvertebrate fossils must occur where there is a significant potential for data recovery from those spoils. Standard wet-screening techniques should be employed.
- Assessments, field surveys, and monitoring must be performed by a qualified paleontologist and in consultation with a designated paleontologist in each state, NF, or BLM district. The Agencies would be contacted to provide a list of qualified paleontologists so that the Proponents can select an Agency-approved consultant.

PALEO-5 Field surveys will be completed prior to vehicle, equipment, or other surface disturbance in areas with potential fossil yields of Class 3, 4, or 5, in accordance with criteria stated in the Paleontological Resources Protection Plan and as required by the land-management agency.

These EPMs would avoid or minimize the extent of impacts that could occur to paleontological resources. These EPMs are a part of the current Project description, and as such, the effects of their implementation are included in the impact discussion found in Sections 3.13.2.2, 3.13.2.3, and 3.13.2.4.

Proponent-Proposed MEP and Potential Effects to the MEP within the SRBOP

The Proponents have developed an MEP that contains design features specific to the SRBOP. The plan was developed to mitigate the effects of Project-related impacts within the SRBOP, as well as comply with the SRBOP's enabling statute (P.L. 103-64) which requires enhancement of resources within the SRBOP. The Proponents' plan contains two forms of mitigation: "compensation mitigation" and "enhancement." For this analysis, mitigation is defined as avoidance, minimization, and compensation measures aimed at offsetting adverse impacts of the Project; enhancement is defined as additional mitigation measures that are required in order to enhance the objectives and values for which the SRBOP was established.

The Proponents' MEP offers a portfolio that contains five types of mitigation/enhancement proposals. The following discusses the benefit and/or impact that these proposed mitigation/enhancement proposals could have to paleontological resources.

Habitat Restoration

The goal for the Proponents' habitat restoration proposal is to convert "non-native grasslands to native perennial plant communities" as well as to conduct "noxious weed control." The proposed habitat restoration proposal would have neither beneficial nor detrimental effects on paleontological resources.

Purchase of Private Inholdings

There are private lands within the SRBOP that could contain important cultural and natural resources. The Proponents have proposed (as part of the MEP) to purchase a portion of these lands and deed them to the U.S. government, to be managed by the BLM. The Proponents have indicated that the selection of the parcels that would be purchased and deeded to the BLM would be determined by the Oversight Committee. However, the composition and exact membership of the individuals and agencies within the proposed Oversight Committee have not been identified to date. Therefore, the effectiveness of the Oversight Committee cannot be determined until the individuals and agencies that will be included in the committee are identified, and the process that will be used by the committee to make its final decisions is determined. The MEP makes a preliminary estimate of $3,000 an acre for the cost of purchasing lands and transferring them to the BLM for management; however, it acknowledges that the exact price is uncertain until the parcels are identified by the Oversight Committee and purchase negotiations begin.

This proposal is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute (e.g., P.L. 103-64 states that "The Secretary is authorized to acquire lands and interests therein within the boundaries of the conservation area by donation, purchase with donated or appropriated funds, exchange, or transfer from another Federal agency, except that such lands or interests owned by the State of Idaho or a political subdivision thereof may be acquired only by donation or exchange").

The Proponents have indicated that all efforts proposed in regards to the purchasing of private inholdings are intended to apply to enhancement of the SRBOP (with no mitigation component).

Depending on the properties that are purchased, this proposal may affect the extent of paleontological resources that fall under the jurisdiction and management of the BLM; however, as no specific parcels or willing landowners have been identified to date, the determination of what paleontological resources may be contained in these new parcels cannot be made at this time.

Law Enforcement

The Proponents' MEP contains a proposal for the funding of increased law enforcement within the SRBOP for a period of 10 years. The goal of this increased funding is to change adverse behaviors in the SRBOP by aiding law enforcement in their coverage and ability to manage public-induced damage to resources. The proposed enhancement of law enforcement could help protect paleontological resources.

Visitor Enhancement

The MEP contains a proposal to fund programs meant to enhance the experiences of visitors to the SRBOP. This visitor enhancement could include information on protecting paleontological resources, which would result in beneficial effects.

Line and Substation Removal

The Proponents have proposed to remove some existing infrastructure within the SRBOP. This includes:

- Removing approximately 7 miles of existing 46-kV line on BLM-managed lands, from the Bowmont Substation to Gage Substation;
- Constructing an approximately 1-mile-long section on private land to connect the remaining portion of the line to the Idaho Power system;
- Reconstructing 3.9 miles of existing 12.5 kilovolt lines, including 0.25 mile on BLM-managed lands;
- Converting approximately 4 miles of the existing 46-kV line on BLM-managed lands between the Gage and Ferry substations to a 12.5-kV distribution line; and
- Removing the existing Gage Substation and associated equipment/apparatus, which are on BLM-managed land.

Although not specifically addressed or called out in the SRBOP's enabling statute, this proposal does not contradict the objectives and goals of the BLM's RMP or the SRBOP's enabling statute.

The Proponents have indicated that all efforts proposed as part of the line and substation removal effort are intended to apply to enhancement of the SRBOP (with no mitigation component).

The MEP construction area crosses 14.4 miles and contains similar risks to paleontology as those for the Segments 8 and 9 Revised Proposed Routes. The MEP construction area crosses 3.2 miles in PFYC Class 3 land and 7.8 miles in PFYC Class 4 or 5.

3.13.2.6 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

Summary of Remaining Impacts

After implementation of the EPMs and MEP discussed above, some Project-related impacts would likely remain. The impact assessment found in Sections 3.13.2.2, 3.13.2.3, and 3.13.2.4 incorporates the avoidance and minimization contributions of the EPMs in the impact analysis. The design features outlined in the Proponents' MEP (discussed above in Section 3.13.2.5) may reduce the magnitude of impacts to some degree (thereby reducing the need for additional compensatory mitigation); however, the extent of this reduction cannot be fully quantified at this time (as discussed in detail above).

Note that Sections 3.13.2.2, 3.13.2.3, and 3.13.2.4 outline the current extent of known remaining impacts that would occur Project-wide.

BLM Compensatory Mitigation Categories

In addition to the design features and EPMs meant to avoid and minimize impacts to paleontological resources (as described above in Section 3.13.2.5), the Proponents have developed a Framework Paleontological Resources Protection Plan (Plan) as presented in Appendix J of the 2013 FEIS POD. This plan would be applicable to Segments 8 and 9, if these segments are approved.

The Plan described stipulations and methods to be employed prior to and during construction. The Proponents would be responsible for conducting preconstruction surveys by qualified paleontological personnel to determine specific monitoring locations.

The purposes of the preconstruction survey are: 1) to determine if any vertebrate or significant invertebrate or plant fossils are located within the areas where ground disturbance will occur; 2) if fossils are on the surface, to determine alternative locations to avoid fossils, if feasible, or properly remove the fossils; and 3) to help determine where monitoring might be required during construction. The Plan included a preconstruction orientation workshop that shall be prepared, reviewed by the BLM, and presented by a professional paleontologist to explain paleontological mitigation guidelines and procedures to the contractor and construction workers.

During construction, if significant paleontological resources are found, work at that particular site would be temporarily halted within the immediate vicinity to allow further evaluation of exposed fossil resources. If a small fossil is discovered, a qualified paleontologist would immediately excavate and evaluate it, and construction would be allowed to proceed. If a complex fossil is discovered, the area would be marked for temporary avoidance. The qualified paleotonologist would arrange for sampling and/or immediate removal and verify when construction at that site may continue.

If warranted, a qualified professional paleontologist with regional experience may then be hired by the Proponents to assess the significance of the discovery and recommend additional mitigation measures, as necessary, salvage exposed fossils, and implement a curation plan. If the find is considered a cultural resource discovery, it will be treated according to the procedures specified in the Historic Properties Treatment Plan prepared prior to construction.

All fossils collected during construction shall be curated at a qualified research facility, such as the Idaho Museum of Natural History or other qualified repository. A repository agreement for curation would be completed between the paleontologist and the repository. This permit and associated repository are reviewed and approved by the BLM for all fossils from BLM-administered land. Fossils discovered on private land would be considered property of the landowner. The landowner would have the option to keep the fossils or donate them to a federally approved, professional repository, preferably the same repository receiving fossils discovered on federal and state lands. However, the Agencies would encourage the landowner to donate significant paleontological finds to a federally approved repository.

A final report of methods and results of the Paleontological Assessment, Survey, and Mitigation Plan will be provided at the cessation of the mitigation program. The report will include a detailed discussion of how the research goals of the project have been met, in addition to descriptions of significant discoveries, discussion of the curation of the resources, and results of sampling and analysis, as well as an itemized accession inventory of all specimens collected. A discussion of the significance of each taxon discovered will be provided, where feasible. All resource locality information will be presented as a confidential appendix and a printout of all locality data, as well as pull-out maps with all paleontological resource localities plotted.

The BLM may require additional mitigation for some remaining impacts of the Project on environmental resources (including for impacts that occur outside of the SRBOP), per the guidelines found in the BLM Regional Mitigation Manual (BLM 2013c) and DOI Manual 600 DM 6, Implementing Mitigation at the Landscape-scale (DOI 2015). Mitigation for Project-related impacts that would occur within the SRBOP is discussed below.

The BLM will continue to work with applicable stakeholders to identify the impacts that would remain on the SRBOP after implementation of the EPMs and MEP, as well as the existing compensatory mitigation plans discussed above. The BLM will then design mitigation options that address applicable remaining impacts (see Section 3.0 for a discussion of the BLM's policy regarding mitigation). These options will contain components that will ensure that impacts to resources and values on the SRBOP that

require mitigation are compensated for, as well as that enhancement of these resources is provided in order to comply with the enabling statute of the SRBOP. Based on internal and external scoping, the BLM is considering eight mitigation categories (see Section 2.6.2 in Chapter 2). The following mitigation categories are being considered to address remaining impacts to paleontological resources within the SRBOP:

- Increase applied research, assessment, survey, and monitoring to inform adaptive management;
- Increase funding for recreation and visitor management;
- Acquire private lands as deemed appropriate by the Authorizing Officer; and
- Increase funding to law enforcement on the SRBOP.

3.14 GEOLOGIC HAZARDS

This section addresses potential impacts from geologic hazards on the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; and the Toana Road Variations to the Segment 9 Revised Proposed Route. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). The primary reason to define impacts from geologic hazards is to eliminate, minimize, or mitigate effects from these hazards to all phases of the Project. This section considers the potential impacts from earthquakes, subsidence, landslides, and blasting in shallow bedrock on Project construction and operations. Impacts on minerals are discussed in Section 3.12 – Minerals, and impacts on soils are discussed in Section 3.15 – Soils. Effects associated with the routes analyzed in the 2013 FEIS were disclosed in that document. With the exception of FEIS Proposed 9, those routes are not being re-analyzed here, as only new information is included in this resource-specific section.

3.14.1 Affected Environment

The Geologic Hazards section in the 2013 FEIS discusses those aspects of the environment that could be impacted by the Project. It begins with a discussion of the Analysis Area considered, identifies the issues that have driven the analysis, and characterizes the existing conditions in the area crossed by the Project.

3.14.1.1 Analysis Area

The Analysis Area for this SEIS is restricted to that area crossed by Segments 8 and 9; therefore, not all of the geologic hazards discussed in the FEIS would be present in the Revised Proposed Action, the new Routes, and the Toana Road Variations being considered. For this SEIS, geologic hazards reviewed included those for landslides and earthquakes.

The Analysis Area for landslide hazard zones was defined in a GIS file by comparing the centerlines of the Segment 8 and 9 Proposed Routes and Routes to the Office of Pipeline Safety (OPS) landslide hazard zone, as described in Section 3.14.1.3 of the FEIS. The Analysis Area for OPS earthquake hazard zone was based on the hazard zone classification compared to the route centerlines. The Analysis Area for earthquake magnitude was defined by a variable distance around earthquake epicenters. The maximum radius from the largest earthquake was selected at 100 miles. The distance of 100 miles was chosen because, at that distance, the effect on the proposed transmission line from even the strongest recorded past earthquakes in the area would be minimal.

Morley Nelson Snake River Birds of Prey National Conservation Area

Portions of the Project would cross through the SRBOP. Geologic hazards is not one of the environmental resources and values for which the SRBOP was established to manage and protect.

3.14.1.2 Issues Related to Geologic Hazards

The following geologic hazard–related issues were submitted by the public during public scoping (Tetra Tech 2009) and comments on the DEIS, raised by federal and state agencies during scoping and agency discussions, or are issues that must be considered as stipulated in law or regulation:

- A full inventory of potentially affected geological resources;
- The potential for earthquakes to damage the transmission line and associated structures;
- The effect subsidence from underground mining would have on the transmission line, and what the hazard to workers or infrastructure would be;
- The effect landslides would have on the transmission line (segments that cross medium or high landslide risk areas are identified); and
- The effect construction blasting in shallow bedrock would have on unstable landforms (landslide or subsidence-prone areas or coal-mining areas containing methane), or on adjacent human-made structures not related to the transmission line.

We reviewed the scoping comments received for this SEIS and determined that geologic hazard–related issues considered in the FEIS have not changed. However, the Segment 8 and 9 Routes do not contain mining methods associated with mine subsidence, and the limited areas with medium or high landslide potential minimizes the landslide risks from blasting. Therefore, subsidence and blasting as discussed in the FEIS are not discussed here.

3.14.1.3 Methods

The geologic hazards assessment was conducted as discussed in Section 3.14.1.4 of the FEIS.

3.14.1.4 Existing Conditions

The Segment 8 routes fall within the Snake River Plain, a broad structural valley that cuts off the Basin and Range Province. The Snake River Plain is dominated by flood basalts, thinly covered with silty, aeolian deposits and interlain with minor clastic sediments. The Segment 9 routes fall within the lower foothills of the basin and range mountains of southern and southwestern Idaho. The block-faulted ranges of southern and southwestern Idaho have more volcanic features than ranges in the southeastern portion of the state.

Geologic processes within the Project area, including earthquakes and landslides could occur during the life of the Project. Existing conditions that could lead to geologic hazards affecting the transmission lines and associated facilities such as substations, access roads or communication facilities are earthquakes, landslides, and shallow bedrock as discussed in more detail in Section 3.14.1 of the FEIS.

3.14.2 Direct and Indirect Effects

This section is organized to present effects from geologic hazards on construction, then operations, followed by decommissioning activities for the proposed Project. The

Revised Proposed Action includes measures designed to mitigate and enhance the SRBOP, as required by the enabling statute for the SRBOP and the SRBOP RMP.

EPMs are presented in detail within this section only if it is the first time they have been discussed in Chapter 3; all other measures are referenced or summarized. A comprehensive list of all design features and EPMs, as well as the land ownership to which they apply, can be found in Table 2.7-1 of Chapter 2 of the FEIS. The following impact assessment takes these Project design features and EPMs into account when considering the potential impact that the Project could have on environmental resources. There are no new geologic hazards EPMs proposed for this SEIS.

Plan Amendments

Amendments to the BLM RMPs and MFPs are summarized for each alternative in Table 2.3-1 (see Chapter 2 for more details). The BLM plan amendments are discussed in detail in Appendices F and G. Amendments would be needed to permit the Project to cross various areas of BLM-managed land. Effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved. Amendments that alter land management designations could change future use of these areas. No amendments specific to geologic hazards are proposed for the Project, and no additional impacts from geologic hazards resulting from approving the amendments beyond the impacts of the Project are anticipated.

3.14.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West for Segments 8 and 9, and this portion of the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of these segments. The potential for geologic hazards to affect the proposed Segments 8 or 9 transmission lines would not occur because these segments would not be constructed. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project, and the area would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, geologic hazards could potentially affect unrelated new transmission lines built to meet the increasing demand in place of this Project.

3.14.2.2 Effects Common to All Routes

The general impacts that would occur related to geologic hazards from construction, operations, and decommissioning of the Gateway West Project were analyzed in detail within Section 3.14.2.2 of the FEIS. The assessment of quantitative impacts specifically related the Revised Proposed Route along Segments 8 and 9, as well as Routes 8G, 8H, FEIS Proposed 9, and 9K, and the Toana Road Variations, is presented in Section 3.14.2.3. The assessment of potential impacts related to the MEP, as well as a list of additional mitigation measures that would be recommended by the BLM related to impacts on the SRBOP, is presented in Section 3.14.2.4.

Construction

During construction, transmission lines and associated facilities could be negatively affected by geologic hazards, including earthquakes, landslides, and blast vibrations in shallow bedrock. Earthquakes could occur in any segment of the Project. Project construction, operations, or decommissioning would have no effect on earthquake risks. However, ground shaking and displacement related to earthquakes may damage human-made structures, including transmission lines and substations.

The FEIS states that transmission lines would be designed to withstand various weather-related structural loading and these design factors are also sufficient to resist earthquake ground motions. Due to weather-related design considerations, the Proponents do not plan any additional design efforts specific to earthquakes.

Natural events, such as earthquakes or excessive rain or snow fall, can trigger landslides that could damage transmission lines and associated structures. The potential for landslides is slope dependent, with steep slopes containing greater landslide potential than shallow slopes. Construction activities can result in human-caused landslides in landslide-prone areas. Removal of soil at the base of an unstable slope can decrease slope stability and result in a landslide. Excavation and/or blasting in geological hazard areas at substations, transmission structure sites, or during road building could destabilize slopes, resulting in landslides, soil erosion, and stream sedimentation. Midslope road construction, concentration of drainage water on unstable ground, and removal of vegetation during construction can trigger landslides.

The FEIS discussed the effects from subsidence in underground mining areas; however, no subsidence potential was identified in Segments 8 or 9. Therefore, this SEIS did not evaluate the effects of mining subsidence.

Foundations for transmission line structures can be as deep as 32 feet below ground surface. Construction in areas of shallow bedrock may require blasting. The vibrations generated by blasting can also result in slope instability, damage to nearby structures, damage to water wells, and disturbance to wildlife. Ground shaking from blasting could result in landslides in unstable areas. Blasting may also impact undiscovered cultural or paleontological resources. Paleontological effects are discussed in Section 3.13 – Paleontological Resources. The results presented in the FEIS indicated that blasting in Segments 8 and 9 would not affect otherwise unstable areas. Therefore, the effects from blasting are not analyzed further in this SEIS.

Operations

There is more risk from natural geologic hazards during operations than during construction of the Project because of the longer time interval for operations. The risk varies proportionally to the length of time of construction (2 years) versus the operational life of the Project (50 years). Ground shaking and displacement related to earthquakes may damage human-made structures, including transmission lines and substations, which could result in interruption of power and/or environmental consequences. Naturally occurring landslides could occur in areas of instability. However, the risks of Project-related landslides during operations would be less than

those during construction because Project areas disturbed during construction would be stabilized.

Decommissioning

The decommissioning time interval for risks from earthquakes and landslides is similar to the construction interval, about 2 years. Decommissioning would involve some ground disturbance, including vegetation removal, which could result in temporary increased risks for landslides on unstable slopes. Additional details concerning decommissioning are provided in Appendix B of the FEIS.

3.14.2.3 Direct and Indirect Effects by Route

This section describes the geologic hazard effects from Project construction, operations, and decommissioning. Tables D.14-1 through D.14-3 in Appendix D show the presence of geologic hazard conditions for the Revised Proposed Routes, FEIS Proposed 9, Routes 8G, 8H, and 9K, and the Toana Road Variations.

Segment 8

Revised Proposed Route

The Segment 8 Revised Proposed Route would link the Midpoint and Hemingway Substations (see Figure A-1). This 129.7-mile single-circuit 500-kV transmission line would stay north of the Snake River until it crosses just north of Guffey Butte, generally parallel to an existing 500-kV transmission line, before ending at the Hemingway Substation. This route is similar to the original proposed route in the 2013 FEIS except that the line would be 250 feet north of the existing 500-kV line rather than 1,500 feet south of the line from the eastern boundary of the SRBOP (MP 99.7) to the Hemingway Substation. The route east of that point is unchanged from the 2013 FEIS Proposed Route.

The Segment 8 Revised Proposed Route is 1.8 miles shorter than the 2013 FEIS Proposed Route. Both routes would cross zones of low earthquake risks (Table D.14-1). The short portion of Segment 8 that would require removal of the 500-kV line would also be located in a low earthquake risk zone. A total of 60.7 miles of the Segment 8 Revised Proposed Route would be located within the 100-mile buffer of a single magnitude 7 or greater historic earthquake (Table D.14-2), while 65.9 miles of the FEIS Route would be within the same magnitude zone. However, more of the Segment 8 Revised Proposed Route would be located within earthquake magnitude 0.1 to 6 zones than the FEIS Proposed Route (Table D.14-2). The Segment 8 Revised Proposed Route would cross 7.8 miles of medium landslide risk (Table D.14-3), while the 2013 FEIS Proposed Route would cross 7.2 miles. The remainders of both routes are in areas of low landslide risk. Thus, the Segment 8 Revised Proposed Route would not result in increased risk from geohazards, including earthquakes or landslides.

Route 8G

Route 8G is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows an alignment similar to the ones analyzed for Routes 8A and 9B in the FEIS for approximately 44 miles, although it generally parallels 250 feet north of the existing 500-kV line rather than1,500 feet to the south in order to avoid the

Hagerman Fossil Beds National Monument and development near Hagerman (see Figure A-1). The route then parallels 250 feet north of the Segment 9 Proposed Route and Route 9K for most of the remaining distance into the Hemingway Substation. The alternative is 146.9 miles long (including a 1.9-mile rebuild of the existing 500-kV line), compared to the 129.7-mile-long Revised Proposed Route.

Route 8G would be located within fewer miles of earthquake magnitude 0.1 to 6 zones than the Revised Proposed Route (Table D.14-2). The Segment 8 Revised Proposed Route would cross 7.8 miles of medium landslide risk (Table D.14-3), while 8G would avoid medium or high landslide risk. The remainders of the routes are in areas of low landslide risk. Otherwise, 8G provides no advantage from risk from geohazards compared to the Segment 8 Revised Proposed Route.

Route 8H

Route 8H is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows a combination of portions of the alignments analyzed for 8G and the Revised Proposed Route for Segment 9. The route is 137.5 miles long (including a 1.9-mile rebuild of the existing 500-kV line and a 25.7-mile removal and rebuild of a 138-kV line), compared to the 129.7-mile-long Segment 8 Revised Proposed Route. Approximately 44 miles of the route follows the 8G alignment; the remainder of 8H follows the alignment of the Segment 9 Revised Proposed Route.

The Revised Proposed Route and Routes 8G and 8H are all located within areas with low risk of earthquakes (Table D.14-1). Route 8H would be located within fewer miles of earthquake magnitude 0.1 to 6 zones than the Revised Proposed Route (Table D.14-2). The Segment 8 Revised Proposed Route would cross 7.8 miles of medium landslide risk (Table D.14-3), while Route 8H would avoid medium or high landslide risk. The remainders of the routes are in areas of low landslide risk. Otherwise, Route 8H provides slight advantages from risk from geohazards compared to the Segment 8 Revised Proposed Route. Route 8H avoids areas of medium landslide risks and avoids areas within magnitude greater than 7 earthquake radii.

Segment 9

Revised Proposed Route

The Segment 9 Revised Proposed Route would link the proposed Cedar Hill and existing Hemingway Substations with a 165.3-mile single-circuit 500-kV transmission line that skirts the Jarbidge and Owyhee Military Operating Areas to the north, then follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering the Hemingway Substation (see Figure A-1). It follows an alignment similar to the 2013 FEIS Route 9D/G between MP 95.6 and 154.7, except that two portions of the route (totaling 25.7 miles) would be double-circuited with existing 138-kV lines. The first area is 5.2 miles near C.J. Strike Reservoir and the Bruneau Arm (MP 106.2 to 109.3 and 109.9 to 112.1), and the second area is 20.2 miles along the Baja Road (MP 121.0 to 141.2). Several rebuilds totaling approximately 0.6 mile are also required to tie the existing 138-kV lines into the new double-circuit alignments. Except for minor variations, the route is similar to the 2013 FEIS Route

9D/G between MP 141.2 to 154.7. From MP 154.7 and into the Hemingway Substation, the route is the same as the 2013 FEIS Proposed Route.

The Segment 9 Revised Proposed Route would cross zones with low earthquake risks. The portion of Segment 9 that would require removal of the 138-kV line would also be located in a low earthquake risk zone. Approximately 21.6 miles of the Revised Proposed Route is within areas with low magnitude earthquake buffers (Table D.14-2).

FEIS Proposed Route 9

The Proponents originally designed the 162.2-mile-long FEIS Proposed Route in Segment 9 to follow existing utility corridors and avoid the SRBOP and other protected areas where feasible. Approximately 54 miles of the route is within or adjacent to a utility corridor. FEIS Proposed 9 is approximately 3.1 miles shorter than the Revised Proposed Route but it crosses 13.6 miles of the SRBOP compared to 54.2 miles for the Revised Proposed Route. Both the Revised Proposed Route and FEIS Proposed 9 cross the Salmon Falls Creek at Lilly Grade adjacent to an existing single-phase 34.5-kV distribution line just north of the Salmon Falls Creek WSA. FEIS Proposed 9 is located in areas containing low risks from earthquakes and landslides with very similar risks from geologic hazards as those that would be found on the Revised Proposed Route.

Route 9K

Route 9K is being considered by the BLM as a modified version of FEIS Route 9E (the FEIS Preferred Route) to avoid crossing the northwestern portion of the SRBOP and to minimize direct and indirect impacts to priority sage-grouse habitat. The alternative is approximately 174.6 miles long, compared to the 165.3-mile-long Revised Proposed Route (see Figure A-1).

Route 9K is 9.3 miles longer than the Segment 9 Revised Proposed Route and 12.4 miles longer than the FEIS Proposed Route. All routes are located in areas with low risks from earthquakes and landslides.

Toana Road Variations 1 and 1-A to the Comparison Portion of the Revised Proposed Route

Toana Road Variation 1 to the Segment 9 Revised Proposed Route was recommended by the BLM Jarbidge Field Office archaeologist to avoid paralleling the Toana Freight Wagon Road, an NRHP site. The Segment 9 Revised Proposed Route parallels within 0.25 mile of the Toana Road between MP 38.2 and 40.6, and parallels within 1 mile of the road through Blue Gulch between MP 40.6 and 43.5. Variation 1 is approximately 8.5 miles in length. Approximately 0.3 mile of the route crosses state land, with the remainder on land managed by the BLM. The Toana Road Variation 1-A to the Segment 9 Revised Proposed Route was recommended by the BLM to minimize visual impacts to the Toana Freight Wagon Road, and was also intended to utilize existing roads in order to minimize new road construction in the area. Variation 1-A is approximately 8.9 miles long. Approximately 1 mile of the route crosses state land, with the remainder on land managed by the BLM.

The risks from earthquakes and landslides would be low both in the comparison portion of the Revised Proposed Route of Segment 9 and the Toana Road Variations 1 and 1-A. Neither of the Toana Road Variations are at greater geologic hazard risk than the equivalent portion of Revised Proposed Route in Segment 9.

3.14.2.4 Direct and Indirect Effects of the Alternatives

A total of seven action alternatives are considered in this SEIS. This section includes a brief description of the alternatives, and the relative effects from geologic hazard by alternative. Table 3.14-1 summarizes the effects from geologic hazards for each alternative. Construction and operation of the transmission line would not be expected to affect a geologic hazard or feature. The effects analyses for geologic hazards evaluated which potential geologic hazards are present that could affect the transmission line, by alternative. The alternatives are visually displayed in Figures A-2 through A-8.

Table 3.14-1. Comparison of Geologic Hazard Impacts to the Seven Action Alternatives by Mileage

		Earthquake Hazards			Earthquake Magnitude			Landslide Risk		
Alt.	Total Miles	Low 0-69	Medium 70-84	High 85-100	0.1-6	6.0-6.9	> 7	Low <70	Medium 70-84	High 85-100
1	294.9	294.9	–	–	130.8	–	-	287.1	7.8	–
2	291.9	291.9	–	–	135.9	–	60.7	284.2	7.8	–
3	304.3	304.3	–	–	137.7	–	60.7	296.5	7.8	–
4	309.1	309.1	–	–	77.9	–	41.2	309.2	–	–
5	321.5	321.5	–	–	79.7	–	41.2	321.5	–	–
6	299.7	297.8	–	–	70.9	–	39.4	297.8	–	–
7	312.1	310.2	–	–	72.7	–	39.4	310.2	–	–

<u>Alternative 1 – Proposed Action (the Revised Proposed Routes for Segments 8 and 9)</u>

The Revised Proposed Routes for Segments 8 and 9 are described in Section 3.14.2.3, above. Total mileage for Alternative 1 is 294.9 miles. Total mileages were considered because additional miles could result in additional areas that could be affected by geologic hazards.

Both Segments 8 and 9 cross zones of low earthquake risks and predominantly low landslide risks. Alternative 1 has 7.8 miles within an area of medium landslide risk (Table 3.14-1).

Selection of either the Toana Road Variation 1 or 1A would also not affect the overall risk from geologic hazards. This is true for all alternatives. Therefore, for geologic hazards the Toana Road Variations are not further discussed.

<u>Alternative 2 – Revised Proposed 8 and FEIS Proposed 9</u>

The combined length of Alternative 2 is 291.9 miles, 3 miles shorter than Alternative 1. When compared to Alternative 1, the geologic hazards are similar. The majority of both alternatives cross zones of low earthquake risks and predominantly low landslide risks and the same 7.8-mile area containing a medium landslide risk. However, 60.7 miles of Alternative 2 lies within a radius of 100 miles from a single recent magnitude 7.3

earthquake that occurred to the north of the project area (Table 3.14-1). Any other Alternatives with crossings within the radius of a magnitude 7 or greater earthquake are the result of the same recent magnitude 7.3 earthquake. Earthquake hazards and landslide risk would be proportionately similar between Alternative 1 and Alternative 2. However, Alternative 2 would cross the area with a recent magnitude 7.3 earthquake, whereas Alternative 1 would not.

Alternative 3 – Revised Proposed 8 and the 9K Route

The combined length for Alternative 3 is 304.3 miles, which is 9.4 miles longer than Alternative 1. When compared to Alternative 1, the geologic hazards are similar. The majority of both alternatives cross zones of low earthquake risks and predominantly low landslide risks and the same 7.8-mile area containing a medium landslide risk. However, 60.7 miles of Alternative 3 lies within a radius of 100 miles from a single recent magnitude 7.3 earthquake that occurred to the north of the project area (Table 3.14-1). Earthquake hazards and landslide risk would be proportionately similar between Alternative 1 and Alternative 3. However, Alternative 3 would cross the area with a recent magnitude 7.3 earthquake, whereas Alternative 1 would not.

Alternative 4 – The 8G Route and FEIS Proposed 9

The combined length for Alternative 4 is 309.1 miles, which is 14.2 miles longer than Alternative 1. When compared to Alternative 1, the earthquake hazards are proportionately similar. However, Alternative 4 has 52.9 fewer miles crossing the low earthquake magnitude than Alternative 1. Alternative 4 has 41.2 miles that lie within a radius of 100 miles from a single recent magnitude 7.3 earthquake that occurred to the north of the project area (Table 3.14-1); whereas Alternative 1 does not cross this area. Both alternatives have proportionately similar landslide risk.

Alternative 5 – The 8G and 9K Routes

The combined length for Alternative 5 is 321.5 miles, the longest of all the alternatives, and 26.6 miles longer than Alternative 1. When compared to Alternative 1, the earthquake hazards are proportionately similar. However, Alternative 5 has 51.1 fewer miles crossing the low earthquake magnitude than Alternative 1. Alternative 5 has 41.2 miles that lie within a radius of 100 miles from a single recent magnitude 7.3 earthquake that occurred to the north of the project area (Table 3.14-1), whereas Alternative 1 does not cross this area. Both alternatives have proportionately similar landslide risk.

Alternative 6 – The 8H Route and FEIS Proposed 9

The combined length of Alternative 6 is 299.7 miles, which is 4.8 miles longer than Alternative 1. When compared to Alternative 1, the earthquake hazards are proportionately similar. However, Alternative 6 has 59.9 fewer miles crossing the low earthquake magnitude than Alternative 1. Alternative 6 has 39.4 miles that lie within a radius of 100 miles from a single recent magnitude 7.3 earthquake that occurred to the north of the project area (Table 3.14-1), whereas Alternative 1 does not cross this area. Both alternatives have proportionately similar landslide risk.

Alternative 7 – The 8H and 9K Routes

The combined length for Alternative 7 is 312.1 miles, which is 17.2 miles longer than Alternative 1. When compared to Alternative 1, the earthquake hazards are proportionately similar. However, Alternative 7 has 58.1 fewer miles crossing the low earthquake magnitude than Alternative 1. Alternative 7 has 39.4 miles that lie within a radius of 100 miles from a single recent magnitude 7.3 earthquake that occurred to the north of the project area (Table 3.14-1), whereas Alternative 1 does not cross this area. Both alternatives have proportionately similar landslide risk.

3.14.2.5 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, as well as additional measures proposed by the Project Proponents specifically for the SRBOP.

Environmental Protection Measures

The Proponents have committed to Project design features and EPMs to minimize or avoid impacts on environmental resources. These measures, the areas where they would be applicable (e.g., private, state, or federal-managed lands), as well as the details of each measure are provided in Table 2.7-1 of the FEIS.

The following measure, which was identified in Table 2.7-1 of the FEIS, is related to geologic hazards and would be applicable to Segments 8 and 9. Other geohazard EPMs for blasting and mine subsidence are not applicable to these segments:

GEO-2 A site-specific soil analysis shall be conducted prior to construction to verify any areas identified as unstable or marginally unstable on federal lands. A site-specific geotechnical analysis shall be conducted of federal lands prior to construction to locate areas where there is landslide risk. If such areas are identified, the Proponents will develop mitigation and submit a report to the appropriate land management agency.

This EPM would avoid or minimize the extent of impacts that could occur from geologic hazards. This EPM is a part of the current Project description, and as such, the effects of their implementation are included in the impact discussion found in Sections 3.14.2.2, 3.14.2.3, and 3.14.2.4.

Proponent-Proposed MEP and Potential Effects to the MEP within the SRBOP

The Proponents have developed an MEP that contains design features specific to the SRBOP. This plan was developed to mitigate the effects of Project-related impacts within the SRBOP, as well as comply with the SRBOP's enabling statute (P.L. 103-64) which requires enhancement of resources within the SRBOP. The Proponents' plan contains two forms of mitigation: "compensation mitigation" and "enhancement." For this analysis, mitigation is defined as avoidance, minimization, and compensation measures aimed at offsetting adverse impacts of the Project; enhancement is defined as additional mitigation measures that are required in order to enhance the objectives and values for which the SRBOP was established.

The Proponents' MEP offers a portfolio that contains five types of mitigation/enhancement proposals. The following discusses the benefit and/or impact that these proposed mitigation/enhancement proposals could have on geologic hazards.

Habitat Restoration

The goal for the Proponents' habitat restoration proposal is to convert "non-native grasslands to native perennial plant communities" as well as to conduct "noxious weed control." The proposed habitat restoration proposal would have neither a beneficial nor detrimental effect on geologic hazards.

Purchase of Private Inholdings

There are private lands within the SRBOP that could contain important cultural and natural resources. The Proponents have proposed (as part of the MEP) to purchase a portion of these lands and deed them to the U.S. government, to be managed by the BLM. This proposal would have neither a beneficial nor detrimental effect on geologic hazards.

Law Enforcement

The Proponents' MEP contains a proposal for the funding of increased law enforcement within the SRBOP for a period of 10 years. The goal of this increased funding is to change adverse behaviors in the SRBOP by aiding law enforcement in their coverage and ability to manage public induced damage to resource. The proposed enhancement of law enforcement would have neither a beneficial nor detrimental effect on geologic hazards.

Visitor Enhancement

The MEP contains a proposal to fund programs meant to enhance the experiences of visitors to the SRBOP. The proposed enhancement of the visitor experience would have neither a beneficial nor detrimental effect on geologic hazards.

Line and Substation Removal

The Proponents have proposed to remove some existing infrastructure within the SRBOP. This includes:

- Removing approximately 7 miles of existing 46-kV line on BLM-managed lands, from the Bowmont Substation to Gage Substation;
- Constructing an approximately 1-mile-long section on private land to connect the remaining portion of the line to the Idaho Power system;
- Reconstructing 3.9 miles of existing 12.5-kV lines, including 0.25 mile on BLM-managed lands;
- Converting approximately 4 miles of the existing 46-kV line on BLM-managed lands between the Gage and Ferry substations to a 12.5-kV distribution line; and
- Removing the existing Gage Substation and associated equipment/apparatus, which are on BLM-managed land.

Although not specifically addressed or called out in the SRBOP's enabling statute, this proposal does not contradict the objectives and goals of the BLM's RMP or the SRBOP's enabling statute.

The Proponents have indicated that all efforts proposed as part of the line and substation removal effort are intended to apply to enhancement of the SRBOP (with no mitigation component).

The MEP actions would occur in areas with predominantly low risk from earthquakes and landslides. MEP actions would not result in any greater risk from geologic hazards.

3.14.2.6 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

Summary of Remaining Impacts

After implementation of the EPMs and MEP discussed above, some Project-related impacts would likely remain. The impact assessment found in Sections 3.14.2.2, 3.14.2.3, and 3.14.2.4 incorporates the avoidance and minimization contributions of the EPMs in the impact analysis; as a result, Sections 3.14.2.2, 3.14.2.3, and 3.14.2.4 take these measures and their impact offsets into consideration. The primary potential impact may include ground disturbance that could affect slope stability. The occurrence of other geologic hazards, such as earthquakes, would not be affected by the Project. The design features outlined in the Proponents' MEP (discussed above) may reduce the magnitude of these residual impacts to some degree (thereby reducing the need for additional compensatory mitigation); however, the extent of this reduction cannot be fully quantified at this time (as discussed in detail above).

Note that Sections 3.14.2.2, 3.14.2.3, and 3.14.2.4 outline the current extent of known impacts that would occur Project-wide.

BLM Compensatory Mitigation Categories

There are no specific mitigation plans for geologic hazards. The BLM may require additional mitigation for some remaining impacts of the Project on environmental resources (including for impacts that occur outside of the SRBOP), per the guidelines found in the BLM Regional Mitigation Manual (BLM 2013c) and DOI Manual 600 DM 6, *Implementing Mitigation at the Landscape-scale* (DOI 2015). Mitigation for Project-related impacts that would occur within the SRBOP is discussed below.

The BLM will continue to work with applicable stakeholders to identify the impacts that would remain on the SRBOP after implementation of the EPMs and MEP, as well as the existing compensatory mitigation plans discussed above in Section 3.14.2.5. The BLM will then design mitigation options that address applicable remaining impacts (see Section 3.0 for a discussion of the BLM's policy regarding mitigation). These options will contain components that will ensure that impacts to resources and values on the SRBOP that require mitigation are compensated for, as well as that enhancement of these resources is provided in order to comply with the enabling statute of the SRBOP. Based on internal and external scoping, the BLM is considering eight mitigation categories (see Section 2.6.2 in Chapter 2). No mitigation categories are being considered to address remaining impacts of geologic hazards within the SRBOP.

3.15 SOILS

This section addresses potential impacts to soils on the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; and the Toana Road Variations to the Segment 9 Revised Proposed Route. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). The primary reason to define impacts to soils is to eliminate, minimize, or mitigate effects to soils from all phases of the Project. This section considers the potential impacts to soil erosion, soil compaction, and soil permanently removed from productivity from all phases of the Project. In some cases, geologic features, such as landslides and shallow bedrock, could have an impact on soils. Those cases are discussed in Section 3.14 – Geologic Hazards. Prime farmland is presented as a soil characteristic here and impacts to agricultural operations are also discussed in Section 3.18 – Agriculture. The discussion of hydric soils here supplements the broader discussion of wetlands found in Section 3.9 – Wetlands and Riparian Areas. Effects associated with the routes analyzed in the 2013 FEIS. With the exception of FEIS Proposed 9, those routes are not being re-analyzed here, as only new information is included in this resource-specific section.

3.15.1 Affected Environment

The Soils section in the 2013 FEIS discusses those aspects of the environment that could be impacted by the Project. It begins with a discussion of the Analysis Area considered, identifies the issues that have driven the analysis, and characterizes the existing conditions in the area crossed by Project.

3.15.1.1 Analysis Area

The Analysis Area for this SEIS is restricted to that area crossed by Segments 8 and 9; therefore, not all soil properties discussed in the FEIS would be present in the Revised Proposed Action, the new Routes, and the Toana Road Variations being considered.

3.15.1.2 Issues Related to Soils

The following soils-related issues were submitted by the public during public scoping (Tetra Tech 2009) and comments on the DEIS, raised by federal and state agencies during scoping and agency discussions, or are issues that must be considered as stipulated in law or regulation:

- What would be the effect on soil erosion, and the potential for increased soil erosion from Project construction, operations, and decommissioning?
- What would be the effect on Project soils from compaction by vehicle and equipment traffic?
- What effect would topsoil disturbance have on soil productivity after construction and reclamation?

We reviewed the scoping comments received for this SEIS and determined that soils-related issues considered in the FEIS have not changed. In addition, the following issue would be applicable to Segments 8 and 9, but was not specifically raised for the FEIS:

Impacts to the values for which the SRBOP was established to manage and protect, which include soils.

3.15.1.3 Methods

The environmental effects analysis completed for this assessment was conducted using readily available data and GIS files as described in Section 3.15.1.4 of the FEIS.

3.15.1.4 Existing Conditions

The Project crosses several major soil orders that closely match the physiographic regions. The mountainous parts of the Project area are slightly cooler than the valleys, receive more precipitation, and more readily support plant growth. The valley soils of southern Idaho support desert conditions, with less plant growth and infrequent summer precipitation. Soil in the valleys of Segments 8 and 9 predominantly consist of Aridisols, which are found in dry climates and contain subsurface horizons in which clay, calcium carbonate, silica, salts, and/or gypsum have accumulated. They are not usually suitable for agriculture unless irrigation water is provided. Revegetation in these areas may be more difficult due to lack of water, or revegetation may need to be initiated in a wetter portion of the year.

The soil characteristics of wind erodibility, K Factor, and slope were used to evaluate erosion potential, as described in the FEIS (Section 3.15.1.4). Segments 8 and 9 contain high percentages of area with high erosion potential (K Factor), low soil loss tolerances in 50 percent or greater of their areas, contain prime farmland, and contain shallow bedrock. Droughty soil is also common in these areas; Segment 8 contains at least 50 percent droughty soil.

Morley Nelson Snake River Birds of Prey National Conservation Area

Portions of the Project would cross through the SRBOP. As a result, this section will discuss specific soil resources and potential impacts that would occur on the SRBOP. Soil is one of the environmental resources and values for which the SRBOP was established to manage and protect.

3.15.2 Direct and Indirect Effects

This section is organized to present effects to soils from construction, then operations, followed by decommissioning activities for the proposed Project. The Proposed Action includes measures designed to mitigate and enhance the SRBOP, as required by the enabling statute for the SRBOP and the SRBOP RMP.

A comprehensive list of all EPMs and design features and EPMs, as well as the land ownership to which they apply can be found in Table 2.7-1 of Chapter 2 of the FEIS. The following impact assessment takes these Project design features and EPMs into account when considering the potential impact that the Project could have on environmental resources.

Plan Amendments

Amendments to the BLM RMPs and MFPs are summarized for each alternative in Table 2.3-1 (see Chapter 2 for more details). The BLM plan amendments are discussed in detail in Appendices F and G. Amendments would be needed to permit

the Project to cross various areas of BLM-managed land. The effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved. Amendments that alter land management designations could change future use of these areas. No amendments specific to soils are proposed for the Project, and no impacts to soils resulting from approving the amendments beyond the impacts of the Project are anticipated.

3.15.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West for Segments 8 and 9, and this portion of the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of these segments. No Project-related impacts to soils would occur in the Analysis Area for these segments; however, impacts would continue as a result of natural events (such as fire, drought, and severe weather) as well as from existing and planned developments within the Analysis Area and from other projects, including wind farms, mining, agricultural, or other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project, and the area would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, soils could potentially be affected due to unrelated new transmission lines built to meet the increasing demand in place of this Project.

3.15.2.2 Effects Common to All Action Alternatives

The general impacts that would occur to soil resources from construction, operations, and decommissioning of the Gateway West Project were analyzed in detail within Section 3.15.2.2 of the FEIS. The assessment of quantitative impacts specifically related the Segments 8 and 9 Revised Proposed Routes, FEIS Proposed 9, Routes 8G, 8H and 9K, and the Toana Road Variations, is presented in Section 3.15.2.3. The assessment of quantitative impacts related to the action alternatives is presented in Section 3.15.2.4. The assessment of potential impacts related to the MEP on soil, as well as a list of additional mitigation measures that would be required by the BLM related to impacts on the SRBOP, is presented in Section 3.15.2.5.

<u>Construction</u>

Construction Erosion Effects

Project construction activities that could affect soils include clearing, grubbing, and grading along the ROW and at additional temporary workspaces; trenching; backfilling; excavating; and construction of permanent structures, such as transmission line towers, access and service roads, co-generation sites, and substations. Ground clearing during construction could increase the potential for erosion. Certain soils within the Project area could be more sensitive to soil disturbance, including soils with a low soil loss tolerance, and soils qualifying as prime farmland. Removal of protective vegetation could expose soil to potential wind and water erosion. The construction areas for the Revised Proposed Routes in Segments 8 and 9, Route Alternatives, and Route Variations would be larger than the operations areas due to the need for tower erection

areas at each structure, laydown yards, multipurpose yards, and wire-pulling/splicing sites. The areas used only for construction would be reclaimed as soon as possible, which may include regrading to original land contours, topsoil replacement, and revegetation.

Access roads are included as disturbances that could result in increased erosion. The amount of erosion from disturbances is a result of climate factors (precipitation, wind, etc.). Effective use of construction stormwater BMPs, and compliance with the soil EPMs stated in the 2013 FEIS would reduce the effects of erosion. Service roads used for construction, operations and decommissioning would be reclaimed to minimize erosion potential.

Portions of Segments 8 and 9 contain areas with low soil loss tolerance, defined as soil loss tolerance less than or equal to 2 tons per acre per year (T/A/Y). EPMs and Agency-required EPMs would be used to minimize soil losses. When effectively used, these would ensure that soil loss is minimized and soil loss tolerances would meet applicable RMP guidelines.

Prior to construction, wetland delineations would be necessary in areas crossing or adjacent to assumed wetlands. At that time, the amount of hydric soils/wetlands would be re-evaluated and measures would be implemented to preserve or reclaim those acreages during construction and operations. The procedures presented in the 2013 FEIS and the EPMs included in Table 2.7-1 of the FEIS would be used to minimize effects to hydric soils and wetlands.

Reclamation would be necessary in disturbed soil areas. The Proponents' POD (Appendix B of the FEIS) describes Project reclamation. The POD and the EPMs presented in Table 2.7-1 of the FEIS also contain many BMPs that would be used during Project construction, operations, and reclamation. Erosion in all areas could be exacerbated unless revegetation efforts are implemented as soon as possible following disturbance.

Construction on Sensitive Soils

For the effects analyses, soils with low soil loss tolerances and prime farmland soils were combined and considered as sensitive soils due to the special characteristics that separate them from other Project soils. Potential soil disturbance to prime farmland from transmission line construction include soil erosion, damage to agricultural land drainage and irrigation systems, mixing of topsoil and subsoil, potential loss of topsoil, and soil compaction. Prime farmland within the construction zone would be unavailable to agriculture during the construction interval. Construction on soil with low soil loss tolerance may cause erosion. If blasting is necessary for placement of foundations, the rocky component of soils may increase in blasting areas.

It may be necessary to build construction access roads on sensitive soil areas, including highly erosive soils, steep slopes or near NHT trails. These construction roads would be restored and an alternative access route would be designated for operations.

The reclamation measures presented in the POD and the EPMs would keep soil losses to a minimum. Areas not also used for operations would be reclaimed as soon as possible following construction.

Soil Compaction

Soil compaction would occur in the construction disturbance area from driving vehicles and heavy equipment over the soil. Areas under roadways, structures, and high-use areas would be most affected. Some soils, such as very fine-grained, poorly drained soil, have the greatest potential for soil compaction; however, all soil would have some potential for soil compaction, and compacted soil would need to be ripped, loosened, or otherwise treated using BMPs at the end of the Project to restore their productivity.

Accidental Spills

During construction, use of trucks, heavy equipment, or stored supplies could result in accidental discharge of fuel, lubricants, automotive fluids, or other chemicals. Although the potential exists, these chemical releases would be accidental, occasional, and of limited extent. BMPs for construction housekeeping, spill prevention, and cleanup would be used to prevent and remediate accidental chemical releases. Therefore, chemical releases would not result in widespread or long-term effects to Project soils.

The Proponents have identified and are committed to implementing extensive EPMs related to controlling soil erosion in accordance with NPDES requirements and spill prevention and containment in accordance with industry standards. These EPMs are listed in Table 2.7-1 of the FEIS.

Operations

Operations Erosion Effects

The erosional effects from Project operations would consist of soil disturbances necessary to maintain the transmission lines in working order and conduct necessary repairs. Stormwater BMPs, including erosion and sediment control structures, as well as new culverts would require inspection, maintenance, and repair through the operational life of the Project to minimize soil erosion or sedimentation to surface water. The Revised Proposed Route operations disturbance area would be much smaller than the construction area disturbance. Due to the smaller size of the operations area, the erosion effects in this area would be much less than for the construction area but would last for a much longer time. The operations area consists of buffered areas surrounding transmission line towers, regeneration sites, substations, access roads, and other areas that would remain during Project operations.

The treatment of soils in the operations area would result in more stable soil conditions than those found during construction. For instance, substations would be covered with free draining rock, which would isolate native soil from erosive conditions. Roads retained for operations would be seeded with a grass mix and allowed to revegetate and thereby minimize the surface exposed to erosive conditions. For normal maintenance activities, an 8-foot portion of the road would be used and vehicles would drive over the vegetation. For non-routine maintenance requiring access by larger vehicles, the full width of the access road may be used. Access roads would be repaired, as necessary,

but not be routinely graded again to minimize impact to vegetation. Table 2.7-1 in the FEIS includes EPMs that specify that stormwater protection measures would be employed to minimize erosion and sedimentation to surface water.

Sensitive Soil Effects

Reclamation after construction would minimize effects to soils with low soil loss tolerance during the operations phase of the Project. The area of loss of prime farmland would be less than during construction but for a longer time interval, 50 years compared to 2 years for construction.

Soil Compaction

No additional soil compaction would occur during Project operations. Vehicle travel would occur predominantly on established access roads.

Permanent Soil Loss

The area under the footprint of structures would result in a long-term loss of that acreage to other productive soil uses. The operations disturbance area acreage was considered to result in “permanent” soil loss. However, it is not really permanent, and following Project decommissioning, those areas would be reclaimed for other beneficial uses. The acreage of permanent soil loss would depend on the route alternatives selected; the longer the route, the more acres of soil that would be permanently removed from production.

The Proponents have identified and are committed to implementing extensive EPMs related to controlling soil erosion in accordance with NPDES requirements and spill prevention and containment in accordance with industry standards. These EPMs are listed in Table 2.7-1 of the FEIS and in the preceding section.

Decommissioning

Decommissioning would result in temporary soil effects of approximately the same magnitude as during construction; therefore, the same practices used during construction to minimize effects to the soil would be used during decommissioning activities. All transmission line structures and associated features would be removed, and disturbed areas would be reclaimed. Impacts from decommissioning would be similar to those described for construction and are not discussed separately below.

Decommissioning activities would include excavation to remove structures. This temporarily exposes bare soil to erosional effects. Grading may occur to restore natural land contours, or to spread stockpiled topsoil onto reclaimed land. Reclaimed roads would be ripped to reduce compaction. During decommissioning, those areas with “permanent” topsoil removal would be reclaimed, and revegetated to pre-construction conditions. These activities would result in temporary exposure of bare soil to increased erosion. Additional details concerning decommissioning are provided in Appendix B of the FEIS.

3.15.2.3 Direct and Indirect Effects by Route

This section describes the effects to soils from Project construction and operations. Tables D.15-1 and D.15-2 in Appendix D present the estimated disturbance to soils for

the Revised Proposed Routes as well as a comparison between the Revised Proposed Route, other routes (FEIS Proposed 9, Routes 8G, 8H, and 9K), and the Route Variations.

Segment 8

Revised Proposed Route

The Segment 8 Revised Proposed Route would link the Midpoint and Hemingway Substations (see Figure A-1). This 129.7-mile single-circuit 500-kV transmission line would stay north of the Snake River until it crosses just north of Guffey Butte, generally parallel to an existing 500-kV transmission line, before ending at the Hemingway Substation. This route is similar to the original proposed route in the 2013 FEIS except that the line would be 250 feet north of the existing 500-kV line rather than 1,500 feet south of the line from the eastern boundary of the SRBOP (MP 99.7) to the Hemingway Substation. The route east of that point is unchanged from the 2013 FEIS Proposed Route.

The Segment 8 Revised Proposed Route construction would disturb approximately 2,271 acres of soil. This would include 533 acres of prime farmland, 682 acres of highly wind erodible soils, 1,621 acres of soils with high K factor, 1,809 acres of soils with a low T factor, 1,412 acres of droughty soil, and 738 acres of shallow bedrock (Table D.15-1).

The Segment 8 Revised Proposed Route operations would disturb approximately 243 acres of soil. This would include 50 acres of prime farmland, 120 acres of highly wind erodible soils, 162 acres of soils with high K factor, 197 acres of soils with a low T factor, 166 acres of droughty soil and 87 acres of shallow bedrock (Table D.15-2). This represents the soil acreage lost to other uses for the operational life of the Project.

Soil Disturbance in the SRBOP

Segment 8 Revised Proposed Route construction within the SRBOP would disturb 70 acres of highly wind erodible soil, 276 acres of soils with high K factor, 205 acres of soils with low T factor, 100 acres of prime farmland, 102 acres of droughty soil, and 103 acres of shallow bedrock.

Segment 8 Revised Proposed Route operations within the SRBOP would disturb 8 acres of highly wind erodible soil, 27 acres of soils with high K factor, 20 acres of soils with low T factor, 8 acres of prime farmland, 12 acres of droughty soil, and 9 acres of shallow bedrock.

Route 8G

Route 8G is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows an alignment similar to the ones analyzed for Routes 8A and 9B in the FEIS for approximately 44 miles, although it generally parallels 250 feet north of the existing 500-kV line rather than 1,500 feet to the south in order to avoid the Hagerman Fossil Beds National Monument and development near Hagerman (see Figure A-1). The route then parallels 250 feet north of the Segment 9 Proposed Route and Route 9K for most of the remaining distance into the Hemingway Substation. The

alternative is 146.9 miles long (including a 1.9-mile rebuild of the existing 500-kV line), compared to the 129.7-mile-long Revised Proposed Route.

Route 8G is 17.2 miles longer than the Revised Proposed Route and during construction would disturb approximately 2,752 acres of soil, 481 more acres that the Revised Proposed Route. Route 8G construction would disturb 1,711 acres of highly wind erodible soil, approximately 2.5 times more the 682 acres than the Revised Proposed Route (Table D.15-1). Route 8G would impact 156 acres more prime farmland than the Revised Proposed Route. Route 8G would impact 36 more acres of stony-rocky soil and 1,202 more acres of shallow bedrock than the Revised Proposed Route. However, Route 8G would have 480 fewer acres of disturbance to soils with a high K factor and 197 fewer acres of disturbance to soils with a low T factor than the Revised Proposed Route.

The operations of Route 8G would disturb 89 fewer than the Revised Proposed Route. Route 8G operations would disturb 36 more acres of prime farmland, 102 more acres of highly wind erodible soils, 4 more acres of soils with low T factor, 43 more acres of droughty soil and 162 more acres of shallow bedrock than the Revised Proposed Route. However, Route 8G would disturb 39 fewer acres of soils with high K factor than the Revised Proposed Route.

<u>Soil Disturbance the SRBOP</u>
Route 8G construction within the SRBOP would disturb approximately 109 fewer acres than the Revised Proposed Route. This would include disturbance of 100 more acres of highly wind erodible soil, 49 more acres of prime farmland, 68 more acres of droughty soil and 73 more acres of shallow bedrock than the Revised Proposed Route. Route 8G would disturb 266 fewer acres of soils with high K factor. Overall, construction impacts to soils within the SRBOP are greater for Route 8G than the Revised Proposed Route.

Route 8G operations within the SRBOP would disturb the same number of acres of soils (28 acres) than the Revised Proposed Route. This would include disturbance of 18 more acres of highly wind erodible soils, 53 more acres of prime farmland, 10 more acres of droughty soil and 19 more acres of shallow bedrock than the Revised Proposed Route. However, Route 8G operations within the SRBOP would disturb 23 fewer acres of soils with high K factor and 14 acres of soils with low T factor than the Revised Proposed Route. Overall, operations impacts to soils within the SROBP are greater for Route 8G than the Revised Proposed Route.

Route 8H

Route 8H is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows a combination of portions of the alignments analyzed for Route 8G and the Revised Proposed Route for Segment 9. The route is 137.5 miles long (including a 1.9-mile rebuild of the existing 500-kV line and a 25.7-mile removal and rebuild of a 138-kV line), compared to the 129.7-mile-long Segment 8 Revised Proposed Route. Approximately 44 miles of the route follows the 8G alignment; the remainder of 8H follows the alignment of the Segment 9 Revised Proposed Route.

Route 8H is 7.8 miles longer than the Revised Proposed Route and during construction would disturb approximately 2,525 acres of soil, 254 more acres than the Revised Proposed Route. Route 8H construction would disturb 1,918 acres of highly wind erodible soil, approximately 2.8 times more, than the 682 acres of the Revised Proposed Route (Table D.15-1). Route 8H would impact 733 acres more prime farmland (approximately 2.4 times greater) than the Revised Proposed Route. Route 8H would have 36 more acres of stony-rocky soil, and 841 acres more (more than double) shallow bedrock than the Revised Proposed Route. However, Route 8H would have 325 fewer acres of disturbance to soils with a high K factor, 868 fewer acres of disturbance to soils with a low T factor, and 188 fewer acres of disturbance to droughty soils than the Revised Proposed Route.

Route 8H operations would disturb 13 more acres than the Revised Proposed Route. This would include disturbance of 66 more acres prime farmland, 272 more acres of highly erodible soils, 622 more acres of soils with high K factor, 978 more acres of soils with low T factor, 1,352 more acres of shallow bedrock than the Revised Proposed Route (Table D.15-2). However, Route 8H would disturb 20 fewer acres of droughty soils than the Revised Proposed Route. Overall, Route 8H would affect more acres of sensitive soils, highly erodible soils, and soils that are more difficult to reclaim than the Revised Proposed Route.

Soil Disturbance the SRBOP

Route 8H construction within the SRBOP would disturb approximately 717 more acres than the Revised Proposed Route. This would include disturbance of 984 more acres of highly wind erodible soil, 344 more acres of soils with high K factor, 147 more acres of soils with low T factor, 745 more acres of prime farmland, 282 more acres of droughty soil and 706 more acres of shallow bedrock than the Revised Proposed Route. Overall, construction impacts to soils within the SRBOP are greater for Route 8H than the Revised Proposed Route.

Route 8H operations within the SRBOP would disturb approximately 60 more acres than the Revised Proposed Route. This would include disturbance of 73 more acres of highly wind erodible soil, 20 more acres of soils with high K factor, 12 more acres of soils with low T factor, 64 more acres of prime farmland, 28 more acres of droughty soil and 61 more acres of shallow bedrock than the Revised Proposed Route. Overall, operations impacts to soils within the SRBOP are greater for Route 8G than the Revised Proposed Route.

Segment 9

Revised Proposed Route

The Segment 9 Revised Proposed Route would link the proposed Cedar Hill and existing Hemingway Substations with a 165.3-mile single-circuit 500-kV transmission line that skirts the Jarbidge and Owyhee Military Operating Areas to the north, then follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering the Hemingway Substation (see Figure A-1). It follows an alignment similar to the 2013 FEIS Route 9D/9G between MP 95.6 and 154.7, except that two portions of the route (totaling 25.7 miles) would be double-

circuited with existing 138-kV lines. The first area is 5.2 miles near C.J. Strike Reservoir and the Bruneau Arm (MP 106.2 to 109.3 and 109.9 to 112.1), and the second area is 20.2 miles along the Baja Road (MP 121.0 to 141.2). Several rebuilds totaling approximately 0.6 mile are also required to tie the existing 138-kV lines into the new double-circuit alignments. Except for minor variations, the route is similar to the 2013 FEIS Route 9D/9G between MP 141.2 to 154.7. From MP 154.7 and into the Hemingway Substation, the route is the same as the 2013 FEIS Proposed Route.

The Segment 9 Revised Proposed Route construction would disturb approximately 3,149 acres of soil. This would include 1,531 acres of prime farmland, 1,513 acres of highly wind erodible soils, 1,924 acres of soils with high K factor, 1, 592 acres of soils with low T factor, 1, 258 acres of droughty soil, and 1,825 acres of shallow bedrock (Table D.15-1).

The Segment 9 Revised Proposed Route operations would disturb approximately 350 acres of soil. This would include 140 acres of prime farmland, 161 acres of highly wind erodible soils, 217 acres of soils with high K factor, 181 acres of soils with low T factor, 137 acres of droughty soil and 179 acres of shallow bedrock (Table D.15-2). This represents the soil acreage lost to other uses for the operational life of the Project.

Soil Disturbance the SRBOP

Segment 9 Revised Proposed Route construction within the SRBOP would disturb 956 acres of highly wind erodible soil, 621 acres of soils with high K factor, 353 acres of soils with low T factor, 837 acres of prime farmland, 374 acres of droughty soil, and 801 acres of shallow bedrock.

Segment 9 Revised Proposed Route operations within the SRBOP would disturb 80 acres of highly wind erodible soil, 47 acres of soils with high K factor, 32 acres of soils with low T factor, 111 acres of prime farmland, 39 acres of droughty soil, and 70 acres of shallow bedrock.

FEIS Proposed 9

The Proponents originally designed the 162.2-mile-long FEIS Proposed 9 to follow existing utility corridors and avoid the SRBOP and other protected areas where feasible. Approximately 54 miles of the route is within or adjacent to a utility corridor. FEIS Proposed 9 is approximately 3.1 miles shorter than the Revised Proposed Route but it crosses 13.6 miles of the SRBOP compared to 54.2 miles for the Revised Proposed Route. Both the Revised Proposed Route and FEIS Proposed 9 cross the Salmon Falls Creek at Lilly Grade adjacent to an existing single-phase 34.5-kV distribution line just north of the Salmon Falls Creek WSA.

FEIS Proposed 9 is 3.1 miles shorter than the Revised Proposed Route and during construction would disturb approximately 3,294 acres of soils, 145 more acres than the Revised Proposed Route. The construction disturbance area of the FEIS Proposed route would disturb 539 more acres with low T factor, 554 more acres of droughty soil, and 147 more acres of shallow bedrock. However, FEIS Revised Proposed Route would disturb 27 fewer acres of highly erodible soils, 414 fewer acres of soils with high K factor, and 469 fewer acres of prime farmland than the Revised Proposed Route. Approximately 33

acres of the construction area would be on slopes greater than 25 percent, 6 fewer acres than the Revised Proposed Route (Table D.15-1).

FEIS Proposed 9 operations area is 10 acres larger than the Revised Proposed Route. The FEIS Proposed Route operations would disturb 42 more acres of soils with low T factor, 46 more acres of droughty soil, and 19 more acres of shallow bedrock than the Revised Proposed Route. However, the FEIS Proposed Route would disturb 41 fewer acres of 12 fewer acres of highly wind erodible soils, 36 fewer acres of soils with high K factor, and 41 fewer acres of prime farmland than the Revised Proposed Route (Table D.15-2).

Soil Disturbance in the SRBOP

FEIS Proposed 9 construction within the SRBOP would disturb approximately 967 fewer acres than the Revised Proposed Route. This would include disturbance of 745 fewer acres of highly wind erodible soil, 536 fewer acres of soils with high K factor, 245 fewer acres of soils with low T factor, 651 fewer acres of prime farmland, 190 fewer acres of droughty soil and 561 fewer acres of shallow bedrock than the Revised Proposed Route. Overall, FEIS Proposed 9 construction disturbance to soils within the SRBOP are much less than the Revised Proposed Route.

FEIS Proposed 9 operations within the SRBOP would disturb approximately 59 fewer acres than the Revised Proposed Route. The FEIS Proposed 9 operations would affect 57 fewer acres of highly wind erodible soils, 39 fewer acres of soils with high K factor, 23 fewer acres of soils with low T factor, 90 fewer acres of prime farmland, 19 fewer acres of droughty soil and 45 fewer acres of shallow bedrock than the Revised Proposed Route. Overall, the FEIS Proposed 9 operations disturbance to soils within the SROBP are much less than the Revised Proposed Route.

Route 9K

Route 9K is being considered by the BLM as a modified version of FEIS Route 9E (the FEIS Preferred Route) to avoid crossing the northwestern portion of the SRBOP and to minimize direct and indirect impacts to priority sage-grouse habitat. The alternative is approximately 174.6 miles long, compared to the 165.3-mile-long Revised Proposed Route (see Figure A-1).

Route 9K is 9.3 miles longer than the Segment 9 Revised Proposed Route and during construction would disturb approximately 3,383 acres of soil, 234 more acres than the Revised Proposed Route. Route 9K construction would disturb 668 more acres of soils with low T factor, 393 more acres of droughty soil, and 367 more acres of shallow bedrock than the Revised Proposed Route. Route 9K would disturb 196 fewer acres of highly wind erodible soil, 157 fewer acres of soil with high K factor, and 567 fewer acres of prime farmland than the Revised Proposed Route. Route 9K would affect the same amount of stony-rocky soil during construction as the Segment 9 Revised Proposed Route (490 acres).

The operations of Route 9K would disturb 75 more acres than the Revised Proposed Route. Route 9K would disturb 20 more acres of highly wind erodible soils, 13 more acres of soils with high K factor, 93 more acres of soil with low T factor, 63 more acres of droughty soil, and 88 more acres of shallow bedrock. However, Route 9K would

disturb 30 fewer acres of prime farmland. Route 9K would affect the same amount of stony-rocky soil during operation as the Segment 9 Revised Proposed Route (49 acres).

Soil Disturbance in the SRBOP

Route 9K construction within the SRBOP would disturb approximately 824 fewer acres than the Revised Proposed Route. This would include disturbance of 793 fewer acres of highly wind erodible soil, 613 fewer acres of soils with high K factor, 324 fewer acres of soils with low T factor, 695 fewer acres of prime farmland, 211 fewer acres of droughty soil and 631 fewer acres of shallow bedrock than the Revised Proposed Route. Overall, Route 9K construction disturbance to soils within the SRBOP are much less than the Revised Proposed Route.

Route 9K operations would disturb approximately 60 fewer acres than the Revised Proposed Route. This would include disturbance of 56 fewer acres of highly wind erodible soils, 44 fewer acres of soils with high K factor, 26 fewer acres of soils with low T factor, 50 fewer acres of prime farmland, 15 fewer acres of droughty soil, and 43 fewer acres of shallow bedrock than the Revised Proposed Route. Overall, Route 9K operations disturbance to soils within the SROBP are much less than the Revised Proposed Route.

Toana Road Variations 1 and 1-A and the Comparison Portion of the Revised Proposed Route

Toana Road Variation 1 to the Segment 9 Revised Proposed Route was recommended by the BLM Jarbidge Field Office archaeologist to avoid paralleling the Toana Freight Wagon Road, an NRHP site. The Segment 9 Revised Proposed Route parallels within 0.25 mile of the Toana Road between MP 38.2 and 40.6, and parallels within 1 mile of the road through Blue Gulch between MP 40.6 and 43.5. Variation 1 is approximately 8.5 miles in length. Approximately 0.3 mile of the route crosses state land, with the remainder on land managed by the BLM. The Toana Road Variation 1-A to the Segment 9 Revised Proposed Route was recommended by the BLM to minimize visual impacts to the Toana Freight Wagon Road, and was also intended to utilize existing roads in order to minimize new road construction in the area. Variation 1-A is approximately 8.9 miles long. Approximately 1 mile of the route crosses state land, with the remainder on land managed by the BLM.

The Toana Road Variations 1 and 1A construction disturbance is slightly less than the comparison portion of the Segment 9 Revised Proposed Route: 168 acres, 163 acres, and 177 acres, respectively. The Toana Road Variations 1 and 1-A operations disturbance is also slightly less than the comparison portion of the Segment 9 Revised Proposed Route: 15 acres, 11 acres, and 16 acres, respectively. Selection of either of the Toana Road Variations would result in a slight decrease in disturbance to soils.

3.15.2.4 Direct and Indirect Effects of the Alternatives

A total of seven action alternatives are considered in this SEIS. This section includes the comparison of soils disturbance during construction (Table 3.15-1) and during operation (Table 3.15-2) by alternative. Alternatives 2 through 7 are compared to Alternative 1, the Proposed Action. The alternatives are visually displayed in Figures A-2 through A-8.

Table 3.15-1. Comparison of Soils Disturbance during Construction of the Seven Action Alternatives

Alternative	Total Acres	Highly Wind Erodible	High K Factor	Low T Factor	Prime Farmland	Droughty Soil	Shallow Bedrock
1	5,420 [1,285]	2,195 [1,026]	3,545 [897]	3,401 [558]	2,064 [937]	2,670 [476]	2,563 [904]
2	5,565 [558]	2,168 [281]	3,131 [361]	3,940 [313]	1,595 [286]	3,224 [286]	2,710 [343]
3	5,654 [461]	1,999 [233]	3,388 [284]	4,069 [234]	1,497 [242]	3,063 [265]	2,930 [273]
4	6,046 [449]	3,197 [381]	2,651 [95]	3,743 [138]	1,751 [335]	3,419 [354]	3,912 [419]
5	6,135 [352]	3,028 [333]	2,908 [18]	3,872 [59]	1,653 [291]	3,872 [333]	2,332 [349]
6	5,819 [1,275]	3,404 [1,175]	2,806 [705]	3,072 [460]	2,328 [1,031]	3,036 [568]	3,551 [1,049]
7	5,908 [1,178]	3,235 [1,127]	3,063 [628]	3,201 [381]	2,230 [987]	2,875 [547]	3,771 [979]

Notes: Acres are rounded to the nearest whole acre.
The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-managed land on the SRBOP.

Table 3.15-2. Comparison of Soils Disturbance during Operations of the Seven Action Alternatives

Alternative	Total Acres	Highly Wind Erodible	High K Factor	Low T Factor	Prime Farmland	Droughty Soil	Shallow Bedrock	Permanent Soil Loss
1	593 [115]	281 [88]	379 [74]	378 [52]	190 [119]	303 [51]	266 [79]	593 [115]
2	603 [56]	269 [31]	343 [35]	420 [29]	149 [29]	349 [32]	285 [34]	603 [56]
3	668 [55]	301 [32]	392 [30]	471 [26]	160 [69]	366 [36]	354 [36]	668 [55]
4	692 [56]	371 [49]	304 [11]	424 [15]	185 [82]	392 [46]	447 [53]	692 [56]
5	757 [55]	403 [50]	353 [6]	475 [12]	196 [122]	409 [50]	516 [55]	757 [55]
6	616 [116]	350 [104]	291 [55]	331 [41]	215 [93]	329 [60]	358 [95]	616 [116]
7	681 [115]	382 [105]	340 [50]	382 [38]	226 [133]	346 [64]	427 [97]	681 [115]

Notes: Acres are rounded to the nearest whole acre.
The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-managed land on the SRBOP.

Alternative 1 – Proposed Action (the Revised Proposed Routes for Segments 8 and 9)

The Revised Proposed Routes for Segments 8 and 9 are described in Section 3.12.2.3, above. Alternative 1 would disturb approximately 5,420 acres during construction. Alternative 1 would disturb approximately 2,195 acres of highly wind erodible soil and 3,545 acres of highly erodible soils. Alternative 1 would affect approximately 2,064 acres of prime farmland. Droughty soil and shallow bedrock conditions would be disturbed on about half of the construction acreage at 2,670 acres of droughty soil and 2,563 acres with shallow bedrock.

Alternative 1 would disturb approximately 593 acres during operations. Alternative 1 would disturb approximately 281 acres of highly wind erodible soil and 379 acres of highly erodible soils. Alternative 1 would affect approximately 190 acres of prime farmland. Approximately 303 acres of droughty soil and 266 acres with shallow bedrock would be disturbed.

Impacts on the SRBOP

Alternative 1 construction within the SRBOP would disturb approximately 1,026 acres of highly wind erodible soil and 897 acres of soils with high K factor and 558 acres of soils with low T factor. Alternative 1 would disturb 937 acres of prime farmland, 476 acres of droughty soil, and 904 acres with shallow bedrock on the SRBOP.

Alternative 1 operations within the SRBOP would disturb approximately 88 acres of highly wind erodible soils, 74 acres of soils with high K factor, and 52 acres of soils with low T factor. Alternative 1 would disturb 119 acres of prime farmland, 51 acres of droughty soils, and 79 acres with shallow bedrock on the SRBOP.

Alternative 2 – Revised Proposed 8 and FEIS Proposed 9

Alternative 2 combines the Revised Proposed Segment 8 and the FEIS Proposed Route 9 as described above. Alternative 2 would disturb 145 more acres during construction than Alternative 1. This would include 27 fewer acres of highly wind erodible soils and 414 fewer acres of soils with high K factor, 469 fewer acres of prime farmland than Alternative 1. However, Alternative 2 would disturb 539 more acres of soils with low T factor, and 554 more acres of droughty soil than Alternative 1. Overall, Alternative 2 would disturb more soils during construction that Alternative 1.

Alternative 2 would disturb 10 more acres during operations than Alternative 1. This would include 12 fewer acres of highly wind erodible soils, 36 fewer acres of soils with high K factor, and 41 fewer acres prime farmland. However, Alternative 2 would disturb 42 more acres of soils with low T factor, 46 more acres of droughty soil and 19 more acres of shallow bedrock than Alternative 1. Overall, Alternative 2 would disturb slightly more soils during operations than Alternative 1.

Impacts on the SRBOP

Alternative 2 construction would disturb 727 fewer acres on the SRBOP than Alternative 1. This would include 743 fewer acres of highly wind erodible soil, 536 fewer acres of soils with high K factor, 245 fewer acres of soils with low T factor, 651 fewer acres of prime farmland, 190 fewer acres of droughty soil and 561 fewer acres of shallow bedrock than Alternative 1. Overall, Alternative 2 construction disturbance to soils within the SRBOP would be much less than Alternative 1.

Alternative 2 operations would disturb 59 fewer acres on the SRBOP than Alternative 1. This would include 57 fewer acres of highly wind erodible soils, 39 fewer acres of soils with high K factor, 23 fewer acres of soils with low T factor, 90 fewer acres of prime farmland, 19 fewer acres of droughty soil and 45 fewer acres of shallow bedrock than Alternative 1. Overall, Alternative 2 operations disturbance to soils within the SROBP would be much less than Alternative 1.

Alternative 3 – Revised Proposed 8 and the 9K Route

Alternative 3 combines the Revised Proposed Route for Segment 8 and Route 9K as described above. Alternative 3 would disturb 234 more acres during construction than Alternative 1. This would include 196 fewer acres of highly wind erodible soils and 414 fewer acres of soils with high K factor, 469 fewer acres of prime farmland than Alternative 1. However, Alternative 3 would disturb 539 more acres of soils with low T

factor, and 554 more acres of droughty soil than Alternative 1. Overall, Alternative 3 would disturb more soils during construction than Alternative 1.

Alternative 3 would disturb 75 more acres during operations than Alternative 1. This would include 20 more acres of highly wind erodible soils, 13 more acres of soils with high K factor, and 93 more acres of soils with low T factor, 63 more acres of droughty soil, and 88 more acres of shallow bedrock. However, Alternative 3 would disturb 30 fewer acres of prime farmland and 19 more acres of shallow bedrock than Alternative 1. Overall, Alternative 3 would disturb more soils during operations than Alternative 1.

Impacts on the SRBOP

Alternative 3 construction within the SRBOP would disturb 824 fewer total acres on the SRBOP than Alternative 1. This would include 793 fewer acres of highly wind erodible soil, 613 fewer acres of soils with high K factor, 324 fewer acres of soils with low T factor, 695 fewer acres of prime farmland, 211 fewer acres of droughty soil and 631 fewer acres of shallow bedrock than Alternative 1. Overall, Alternative 3 construction disturbance to soils within the SRBOP are much less than Alternative 1.

Alternative 3 operations would disturb 60 fewer total acres on the SRBOP during operations than Alternative 1. This would include 56 fewer acres of highly wind erodible soils, 44 fewer acres of soils with high K factor, 26 fewer acres of soils with low T factor, 50 fewer acres of prime farmland, 15 fewer acres of droughty soil and 43 fewer acres of shallow bedrock than Alternative 1. Overall, Alternative 3 operations disturbance to soils within the SROBP would be much less than Alternative 1.

Alternative 4 – The 8G Route and FEIS Proposed 9

Alternative 4 combines Route 8G and FEIS Proposed 9. Alternative 4 would disturb 626 more acres during construction than Alternative 1. This would include 1,002 more acres of highly wind erodible soils, 342 more acres of soils with low T factor, 749 more acres of droughty soil, and 1,349 more acres of shallow bedrock than Alternative 1. However, Alternative 4 would disturb 894 fewer acres of soils with high K factor, and 313 fewer acres of prime farmland than Alternative 1. Overall, Alternative 4 would disturb more soils during construction than Alternative 1.

Alternative 4 would disturb 99 more acres during operations than Alternative 1. This would include 90 more acres of highly wind erodible soils, 75 more acres of soils with low T factor, 89 more acres of droughty soil, and 181 more acres of shallow bedrock. However, Alternative 4 would disturb 75 fewer acres of soils with high K factor and 5 more acres of prime farmland than Alternative 1. Overall, Alternative 4 would disturb more soils during operations than Alternative 1.

Impacts on the SRBOP

Alternative 4 construction within the SRBOP would disturb 836 fewer total acres on the SRBOP than Alternative 1. This would include 645 fewer acres of highly wind erodible soil, 802 fewer acres of soils with high K factor, 420 fewer acres of soils with low T factor, 602 fewer acres of prime farmland, 122 fewer acres of droughty soil and 485 fewer acres of shallow bedrock than Alternative 1. Overall, Alternative 4 construction

would disturb the least amount of soils within the SRBOP of all the action alternatives except for Alternative 5 because the alignment largely avoids crossing the NCA.

Alternative 4 operations within the SRBOP would disturb 59 fewer total acres than Alternative 1. This would include 39 fewer acres of highly wind erodible soils, 63 fewer acres of soils with high K factor, 37 fewer acres of soils with low T factor, 37 fewer acres of prime farmland, 5 fewer acres of droughty soil and 26 fewer acres of shallow bedrock than Alternative 1. Overall, Alternative 4 operations disturbance to soils within the SROBP would be less than Alternative 1.

Alternative 5 – The 8G and 9K Routes

Alternative 5 combines Routes 8G and 9K. Alternative 5 would disturb 715 more acres during construction than Alternative 1. This would include 833 more acres of highly wind erodible soils, 471 more acres of soils with low T factor and 1,202 more acres of droughty soil. However, Alternative 5 would disturb 637 fewer acres of soils with high K factor, and 411 fewer acres of prime farmland, and 231 fewer acres of shallow soils than Alternative 1. Overall, Alternative 5 would disturb more soils during construction than Alternative 1.

The Alternative 5 would disturb 164 more acres during operations than Alternative 1. This would include 122 more acres of highly wind erodible soils, 97 more acres of soils with low T factor, 6 more acres of prime farmland, 106 more acres of droughty soil, and 250 more acres of shallow bedrock. However, Alternative 5 would disturb 122 fewer acres of soils with high K factor than Alternative 1. Overall, Alternative 5 would disturb more soils during operations than Alternative 1.

Impacts on the SRBOP

Alternative 5 construction within the SRBOP would disturb 933 fewer total acres on the SRBOP than Alternative 1. This would include 396 fewer acres of highly wind erodible soil, 879 fewer acres of soils with high K factor, 499 fewer acres of soils with low T factor, 646 fewer acres of prime farmland, 143 fewer acres of droughty soil and 555 fewer acres of shallow bedrock than Alternative 1. Overall, Alternative 5 construction would disturb the least amount of soils within the SRBOP of all the action alternatives because the alignment largely avoids crossing the NCA.

Alternative 5 operations within the SRBOP would disturb 60 fewer total acres than Alternative 1. This would include 38 fewer acres of highly wind erodible soils, 68 fewer acres of soils with high K factor, 40 fewer acres of soils with low T factor, 1 fewer acres of droughty soil and 24 fewer acres of shallow bedrock than Alternative 1. Alternative 5 would disturb 3 more acres of prime farmland than Alternative 1 in the SRBOP. Overall, Alternative 5 operations disturbance to soils within the SROBP are much less than the Alternative 1.

Alternative 6 – The 8H Route and FEIS Proposed 9

Alternative 6 combines Routes 8H and FEIS Proposed 9. Alternative 6 would disturb 399 more acres during construction than Alternative 1. This would include 1,209 more acres of highly wind erodible soils, 264 more acres of prime farmland, and 366 more acres of droughty soil. However, Alternative 6 would disturb 739 fewer acres of soils

with high K factor, 329 fewer acres of soils with low T factor, and 12 fewer acres of shallow soils than Alternative 1. Overall, Alternative 6 would disturb more soils during construction than Alternative 1.

Alternative 6 would disturb 23 more acres during operations than Alternative 1. This would include 69 more acres of highly wind erodible soils, 25 more acres of prime farmland, 26 more acres of droughty soil, and 92 more acres of shallow bedrock. However, Alternative 6 would disturb 12 fewer acres of soils with high K factor and 47 fewer acres of soils with low T factor than Alternative 1. Overall, Alternative 6 would disturb more soils during operations than Alternative 1.

Impacts on the SRBOP

Alternative 6 construction within the SRBOP would disturb 10 fewer total acres on the SRBOP than Alternative 1. This would include 192 fewer acres of soils with high K factor and 98 fewer acres of soils with low T factor. Alternative 6 would disturb 149 more acres of highly wind erodible soils, 94 more acres of prime farmland, 92 more acres of droughty soil and 145 more acres of shallow bedrock than Alternative 1. Overall, Alternative 6 construction disturbance to soils within the SRBOP are slightly less than Alternative 1.

Alternative 6 operations within the SRBOP would disturb 1 more acre than Alternative 1. Alternative 6 would disturb 16 more acres of highly wind erodible soils, 9 more acres of droughty soil, and 16 more acres of shallow bedrock. Alternative 6 would disturb 19 fewer acres of soils with high K factor, 11 fewer acres of soils with low T factor, and 26 fewer acres of prime farmland than Alternative 1. Overall, Alternative 6 operations disturbance to soils within the SROBP would be slightly more than Alternative 1.

Alternative 7 – The 8H and 9K Routes

Alternative 7 would disturb 488 more acres during construction than Alternative 1. This would include 1,040 more acres of highly wind erodible soils, 166 more acres of prime farmland, 205 more acres of droughty soil, and 1,208 more acres of shallow bedrock. However, Alternative 7 would disturb 482 fewer acres of soils with high K factor and 200 fewer acres of soils with low T factor than Alternative 1. Overall, Alternative 7 would disturb more soils during construction than Alternative 1.

Alternative 7 would disturb 88 more acres during operations than Alternative 1. This would include 101 more acres of highly wind erodible soils, 4 more acres of soil with low T factor, 14 more acres of prime farmland, 13 more acres of droughty soil, and 18 more acres of shallow bedrock. Alternative 7 would disturb 39 fewer acres of soils with high K factor than Alternative 1. Overall, Alternative 7 would disturb more soils during operations than Alternative 1.

Impacts on the SRBOP

Alternative 7 construction within the SRBOP would disturb 107 fewer total acres on the SRBOP than Alternative 1. Alternative 7 would disturb 101 more acres of highly wind erodible soils, 50 more acres of prime farmland, 71 more acres of droughty soil and 75 more acres of shallow bedrock than the Alternative 1. Alternative 7 would disturb 269 fewer acres of soils with high K factor and 177 fewer acres of soils with low T factor than

Alternative 1. Overall, Alternative 7 construction disturbance to soils within the SRBOP would be slightly less than Alternative 1.

Alternative 7 operations within the SRBOP would disturb the same number of total acres than Alternative 1. Alternative 7 would disturb 17 more acres of highly wind erodible soils, 14 more acres of prime farmland, 13 more acres of droughty soil and 18 more acres of shallow bedrock than the Alternative 1. However, Alternative 7 would disturb 24 fewer acres of soil with high K factor, and 14 fewer acres of soils with low T factor than Alternative 1. Overall, Alternative 7 operations disturbance to soils within the SROBP would be slightly more than Alternative 1.

3.15.2.5 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, as well as additional measures proposed by the Project Proponents specifically for the SRBOP.

Environmental Protection Measures

The Proponents have committed to Project design features and EPMs to minimize or avoid impacts on environmental resources. These measures, the areas where they would be applicable (e.g., private, state, or federal-managed lands), as well as the details of each measure, are provided in Table 2.7-1 of the FEIS. The Proponents' POD also contains protection measures (an SPCC Plan for dealing with environmental spills including notifications to regulatory agencies [see Appendix G of the POD in FEIS Appendix B]). Many of these measures would be either directly or indirectly applicable to soil resources (i.e., they would avoid or minimize impact to soil erosion or reclamation effects).

Measures that would indirectly apply to soil resources (i.e., measures developed for other resources but if properly implemented could avoid or minimize impacts to soils) include WQA-1 through WQA-17 (see Table 2.7-1 in the FEIS).

The following measures, which were identified in Table 2.7-1 of the FEIS, are directly related to soils and would be applicable to Segments 8 and 9:

SOIL-2 The Proponents will submit a Compaction Monitoring Plan for review and Agency approval prior to construction that specifies the conditions under which construction will either not start or will be shut down due to excessively wet soils. Conditions will be measurable in the field and easy to demonstrate to construction workers.

SOIL-3 During decommissioning, some obviously compacted areas, such as established newly constructed access roads, will require loosening prior to revegetation. If necessary to re-establish vegetation, the Proponents will use a ripper blade, till, or similar instrument to loosen the surface soil layer.

SOIL-4 Detrimental soil disturbance such as compaction, erosion, puddling, and displacement will be minimized through implementing measures identified in the SWPPP. Measures may include road ripping, frequent waterbars,

cross-ditching (e.g., rolling dips) or other methods to reduce compaction while preventing gully formation. Ripping pattern should be altered to a crossing, diagonal, or undulating pattern of tine paths to avoid concentrated runoff patterns that can lead to gullies.

SOIL-5 The Proponents are responsible for monitoring to ensure soil protection is achieved, and providing a monitoring report on reseeding success and/or other methods to stabilize soils to the Forest Service by the end of each growing season for areas on NFS lands for 3 years or until requirements are met for the applicable permit.

SOIL-6 Reclamation of all temporary disturbances on NFS lands (such as road cuts) should include replacement of material to original contours and re-compaction to pre-disturbance compaction percentage (which should be identified during reclamation at adjacent locations to the disturbance). Guidelines for streambank re-compaction to maximize vegetative regrowth and mechanical stability are covered in USACE publication ERDC TN-EMRRP-SR-26 (Goldsmith et al. 2001).

SOIL-7 In order to meet Forest Plan Soil Standards on NFS lands, the Reclamation and Revegetation Plan (approved by the Forest Service) will describe on-site restoration using topsoil salvaging.

These EPMs would avoid or minimize the extent of impacts that could occur to soils such as soil loss and potential erosion. These EPMs are a part of the current Project description, and as such, the effects of their implementation are included in the impact discussion found in Sections 3.15.2.2, 3.15.2.3, and 3.15.2.4.

Proponent-Proposed MEP and Potential Effects to the MEP within the SRBOP

The Proponents have developed an MEP that contains design features specific to the SRBOP. This plan was developed to mitigate the effects of Project-related impacts within the SRBOP, as well as comply with the SRBOP's enabling statute (P.L. 103-64) which requires enhancement of resources within the SRBOP. The Proponents' plan contains two forms of mitigation: "compensation mitigation" and "enhancement." For this analysis, mitigation is defined as avoidance, minimization, and compensation measures aimed at offsetting adverse impacts of the Project; enhancement is defined as additional mitigation measures that are required in order to enhance the objectives and values for which the SRBOP was established.

One of the goals of the Proponents' MEP proposal is to return treated areas to their baseline condition, which is defined using the NRCS ESD of the affected area (see Section 3.6 – Vegetation Communities, for a definition of ESDs). However, the NRCS ESDs have not been defined for 38 percent of Segment 8 and 12 percent of Segment 9. The site descriptions for the unidentified areas would need to be established in order to determine the baseline conditions of the area, which are necessary to define restoration goals. This is because a determination of the adequacy of any proposed mitigation and enhancement cannot be made unless the baseline conditions for all areas impacted as well as those proposed for mitigation/enhancement are known in order to fully calculate

both the debit (i.e., Project impact) and mitigation/enhancement credit. As a result, more information is required from the Proponents to fully assess the proposed MEP.

The Proponents' MEP offers a portfolio that contains five types of mitigation/enhancement proposals. The following discusses the benefit and/or impact that these proposed mitigation/enhancement proposals could have to soils.

Habitat Restoration

The MEP states that the goal for the Proponents' habitat restoration proposal is to convert "non-native grasslands to native perennial plant communities" as well as to conduct "noxious weed control." This proposal, in general, is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute. However, there are some factors within the MEP's habitat enhancement proposal that may reduce its ability to enhance resources within the SRBOP (see full discussion in Sections 3.6 – Vegetation Communities and 3.10 – General Wildlife and Fish).

The efforts necessary to treat and restore disturbed habitats within the SRBOP (e.g., clearing of vegetation, and mechanical or chemical treatment of weeds) would have a short-term adverse effect on soils (e.g., disturbance, compaction, risk of erosion). In order to minimize the adverse effects to soils, all soil related BMPs and EPMs implemented during construction of the Project and applicable restoration would need to be implemented during this effort.

As the location and extent of areas that would be treated during this habitat restoration effort have not been identified by the Proponents, the composition and erodibility of soils in these areas cannot be determined. More information from the Proponents regarding the location of these restoration efforts as well as the methods that would be used during this effort would be needed to fully analyze the potential impacts that they would have to soils.

Purchase of Private Inholdings

There are private lands within the SRBOP that could contain important cultural and natural resources. The Proponents have proposed (as part of the MEP) to purchase a portion of these lands and deed them to the U.S. government, to be managed by the BLM. This proposal would have neither a beneficial nor detrimental effect on soils.

Law Enforcement

The Proponents' MEP contains a proposal for the funding of increased law enforcement within the SRBOP for a period of 10 years. The goal of this increased funding is to change adverse behaviors in the SRBOP by aiding law enforcement in their coverage and ability to manage public induced damage to resource. The proposed enhancement of law enforcement could have a beneficial effect on soils by preventing illegal dumping, improper OHV use, or lead contamination from shooting in unauthorized locations.

Visitor Enhancement

The MEP contains a proposal to fund programs meant to enhance the experiences of visitors to the SRBOP. The proposed enhancement of the visitor experience would have neither a beneficial nor detrimental effect on soil.

Line and Substation Removal

The Proponents have proposed to remove some existing infrastructure within the SRBOP. This includes:

- Removing approximately 7 miles of existing 46-kV line on BLM-managed lands, from the Bowmont Substation to Gage Substation;
- Constructing an approximately 1-mile-long section on private land to connect the remaining portion of the line to the Idaho Power system;
- Reconstructing 3.9 miles of existing 12.5-kV lines, including 0.25 mile on BLM-managed lands;
- Converting approximately 4 miles of the existing 46-kV line on BLM-managed lands between the Gage and Ferry Substations to a 12.5-kV distribution line; and
- Removing the existing Gage Substation and associated equipment/apparatus, which are on BLM-managed land.

Although not specifically addressed or called out in the SRBOP's enabling statute, this proposal does not contradict the objectives and goals of the BLM's RMP or the SRBOP's enabling statute.

The Proponents have indicated that all efforts proposed as part of the line and substation removal effort are intended to apply to enhancement of the SRBOP (with no mitigation component).

The MEP construction area consists of 62 acres. A total of 39 acres of the MEP area are in highly erodible soil and prime farmland. Most of the MEP area is in soils with low soil loss tolerance. Otherwise, soil factors in the MEP construction disturbance area would be low. The MEP operations area is 1 acre; therefore, soil effects to the MEP operations area would be low.

3.15.2.1 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

Summary of Remaining Impacts

After implementation of the EPMs and MEP discussed above, some Project-related impacts would likely remain. These include soil disturbances in areas that have a high susceptibility to erosion (as measured by highly wind erodible soil and highly erodible soil) and soil factors including droughty soil and shallow bedrock that may affect reclamation. The impact assessment found in Sections 3.15.2.2, 3.15.2.3, and 3.15.2.4 incorporates the avoidance and minimization contributions of the EPMs in the impact analysis; as a result, Sections 3.15.2.2, 3.15.2.3, and 3.15.2.4 take these measures and their impact offsets into consideration. The design features outlined in the Proponents' MEP (discussed above) may reduce the magnitude of impacts to some degree (thereby reducing the need for additional compensatory mitigation); however, the extent of this reduction cannot be fully quantified at this time (as discussed in detail above).

Note that Sections 3.15.2.2, 3.15.2.3, and 3.15.2.4 outline the current extent of known impacts that would occur Project-wide, as well as those that would be unique to the SRBOP.

BLM Compensatory Mitigation Categories

Appendix C of the FEIS contains mitigation plans developed for the Project. There is no mitigation plan designed specifically for soil resources.

The BLM may require additional mitigation for some remaining impacts of the Project on environmental resources (including impacts that occur outside of the SRBOP), per the guidelines found in the BLM Regional Mitigation Manual (BLM 2013c) and DOI Manual 600 DM 6, *Implementing Mitigation at the Landscape-scale* (DOI 2015). Mitigation for Project-related impacts that would occur within the SRBOP is discussed below.

The BLM will continue to work with applicable stakeholders to identify the impacts that would remain on the SRBOP after implementation of the EPMs and MEP, as well as the existing compensatory mitigation plans discussed above in Section 3.15.2.5. The BLM will then design mitigation options that address applicable remaining impacts (see Section 3.0 for a discussion of the BLM's policy regarding mitigation). These options will contain components that will ensure that impacts to resources and values on the SRBOP that require mitigation are compensated for, as well as that enhancement of these resources is provided in order to comply with the enabling statute of the SRBOP. Based on internal and external scoping, the BLM is considering eight mitigation categories (see Section 2.6.2 in Chapter 2). The following mitigation categories are being considered to address remaining impacts to soil resources within the SRBOP:

- Implement habitat/vegetation restoration efforts;
- Evaluate, maintain, enhance, or expand fuels management/fuel breaks;
- Increase wildfire preparedness and suppression;
- Increase applied research and monitoring to inform adaptive management; and
- Acquire private lands as deemed appropriate by the Authorizing Officer.

3.16 WATER RESOURCES

This section addresses potential impacts to water resources from the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; and the Toana Road Variations to the Segment 9 Revised Proposed Route. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). The primary reason to define impacts to water resources is to reduce, minimize, or mitigate effects to water resources from all phases of the Project. This section analyzes the potential impacts of the Project on surface and ground water. The Project effects on wetlands and riparian areas are found in Section 3.9 – Wetlands and Riparian Areas.

Effects associated with the routes analyzed in the 2013 FEIS were disclosed in that document. With the exception of the FEIS Proposed 9, those FEIS routes are not being re-analyzed here, as only new information is included in this resource-specific section.

3.16.1 Affected Environment

3.16.1.1 Analysis Area

The Analysis Area used to define and address the existing environment and potential impact area is described in detail within the FEIS. The Analysis Area for this SEIS is restricted to that area crossed by Segments 8 and 9. Therefore, not every type of impact to water resources discussed in the FEIS would be affected by the Revised Proposed Action or the new Routes and Variations being considered. The same resources described in the FEIS that are crossed by Segments 8 and 9 are surface water and groundwater, and both are discussed in this SEIS in relation to the same types of impacts as discussed in the FEIS.

Morley Nelson Snake River Birds of Prey National Conservation Area

Portions of the Project would cross through the SRBOP. General water resources are not one of the environmental resources and values for which the SRBOP was established to manage and protect.

3.16.1.2 Issues Related to Water Resources

The following water related issues relevant to Segments 8 and 9 were brought up by the public during public scoping (Tetra Tech 2009) or in comments on the DEIS, raised by federal and state agencies during scoping and agency discussions, or are issues that must be considered as stipulated in law or regulation:

- Whether there would be impacts to water quality from roads and other causes of erosion;
- Whether state water quality standards would be met;
- Whether beneficial uses would be affected;
- Determining which pollutants could enter waterbodies and what the impacts would be from them;
- What the impacts would be on drinking water, wells, and springs;

- Whether municipal water service to individual properties would be affected;
- What the handling procedures would be for hazardous materials near waterbodies and wells;
- Whether water would be drawn from surface waterbodies, and what the effects of that would be;
- What stormwater permits would be required, and whether their stipulations would be met;
- Whether there would be any impacts on water rights;
- What the impacts would be from sedimentation and temperature increases in sediment and temperature-impaired waterbodies;
- Whether there would be a risk of floods;
- Whether groundwater would be affected;
- Riparian vegetation removal for road and transmission line construction could cause erosion, resulting in sedimentation within surface water, and may cause an increase in temperature in streams, including but not limited to those already listed under the CWA 303(d) as temperature-impaired waterbodies; and
- Potential of structures located in flood-prone areas to impede or redirect flood flows.

We reviewed the scoping comments received for this SEIS and determined that the general water resources-related issues considered in the FEIS are still relevant to the SEIS. In addition, the following water-related issue was raised during public scoping for the SEIS (see Appendix I):

- What are the potential impacts to water resources along Segment 8, from MP 126 to the Hemingway Substation?

3.16.1.3 Methods

The Water Resources section in the 2013 FEIS discusses those aspects of the environment that could be impacted by the Project, as well as the methods that were used to assess potential Project-related impacts to these resources. We reviewed the data, analysis methods, and regulatory requirements in the FEIS and concluded that they are still valid for this SEIS, and that no significant new data were identified for water resources in the analysis area with the exception of some updated GIS datasets analyzing water resources. All GIS datasets used in the SEIS analysis for water resources were downloaded in December of 2014 regardless of whether the source data were updated from the FEIS analysis. Therefore, several datasets, but not all, are updated from the FEIS analysis, such as the 303(d) and total maximum daily load (TMDL) listings. These new data were incorporated into the analysis, and used as part of the impact assessment methods described in detail within Section 3.11.1.4 of the FEIS.

The FEIS Proposed Route for Segment 9 is included in three of the BLM Alternatives considered in this SEIS (i.e., Alternatives 2, 4, and 6). The impact values related to FEIS Proposed 9 have been reanalyzed using the data that have become available

since the publication of the FEIS. As a result, some impact values reported in the FEIS for FEIS Proposed 9 may differ from what is reported in this SEIS in some instances.

3.16.1.4 Existing Conditions

Segments 8 and 9 in southern Idaho are underlain by the Snake River Plain aquifer. Shallow groundwater (14 feet deep or less) often occurs above the regional aquifers. Segments 8 and 9 each have over 300 miles of streams in their respective Analysis Areas. However, the areas have low precipitation, with average rainfall of about 10 inches a year. Most of the streams are ephemeral, fed by stormwater or snowmelt.

3.16.2 Direct and Indirect Effects

A comprehensive list of all project design features and EPMs as well as the land ownership to which they apply can be found in Table 2.7-1 of Chapter 2 of the FEIS. The following impact assessment takes these Project design features and EPMs into account when considering the potential impact that the Project could have on environmental resources.

Plan Amendments

Amendments to the BLM RMPs and MFPs are summarized for each alternative in Table 2.3-1 (see Chapter 2 for more details). The BLM plan amendments are discussed in detail in Appendices F and G of this SEIS. Amendments are needed to permit the Project to cross various areas of BLM-managed land. Effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved. Amendments that alter land management designations could change future use of these areas. No amendments specific to water resources are proposed for the Project, and no impacts to water resources resulting from approving the amendments beyond the impacts of the Project are anticipated.

3.16.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West for Segments 8 and 9 and this portion of the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of these segments. No Project-related impacts to water resources would occur in the Analysis Area; however, existing conditions would continue to be affected by natural events (such as fire, drought, and severe weather) as well as from existing and planned developments within the Analysis Area and from other projects, including wind farms, mining, agricultural, or other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project and the area would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, impacts similar to those described below may occur due to new transmission lines that may be built to meet the increasing demand in place of this Project.

3.16.2.2 Effects Common to All Routes

Construction and Operations

The general impacts that would occur to water resources from construction and operations of the Project were analyzed in detail within Section 3.16.2.2 of the FEIS. These impacts include short-term and long-term direct and indirect effects from excavation and grading for Project components. Short-term effects to surface water may occur due to soil disturbances that increase soil erosion and sedimentation in water bodies (or water runoff in areas with compacted soils). Long-term effects to surface water may occur due to removal of riparian vegetation. Effects to groundwater may occur due to blasting of shallow bedrock and construction dewatering.

The following stream crossing categories are used in this section for roads being constructed or improved.

- **Drive-Through Crossing**: Crossing of a channel with only minimal vegetation removal and no cut or fill needed. This is typical for much of the low-precipitation sagebrush country with rolling topography and streams that rarely flow with water. Ground-disturbing activities would comply with Agency-approved BMPs.
- **Cut and Fill (i.e., Ford):** Crossing of a channel that includes grading and stabilization. Streambanks and approaches would be graded to allow vehicle passage and stabilized with rock or other erosion control devices. The streambed would in some areas be reinforced with coarse rock material, where approved by the land-management agency, to support vehicle loads, prevent erosion, and minimize sedimentation into the waterway. The rock would be installed in the streambed movement of water, fish, and debris.
- **Culvert:** Culvert installation would include a stable road surface established over the culvert for vehicle passage. Culverts would be used on perennial streams and intermittent streams that are likely to have flow (Intermittent – wet). Whether flow is present at a particular stream crossing would be determined using a 2-year return interval; streams that are normally dry do not need a culvert. Culverts would be designed and installed under the guidance of a qualified engineer who, in collaboration with a hydrologist and aquatic biologist where required by the land-management agency, would recommend placement locations; culvert gradient, height, and sizing; and proper construction methods.
- **TMDL Crossing:** For TMDL and 303(d) listed streams for sediment, additional erosion and sediment control devices such as hay bales and/or turbidity curtains would be used if flow is present during installation of in-stream structures. The installation of culverts constitutes the greatest disturbance to a stream, and in sensitive stream systems, these impacts may not be justifiable (IDEQ 2005). The specific loads and the stream conditions will dictate what type of stream crossing to employ.
- **Avoid Crossing:** Where constructing a new waterbody crossing is impractical or would require a bridge or a very large (>48-inch-diameter) culvert, existing waterbody crossings would be used and access redesigned to avoid a new would all large perennial bodies like rivers.

Decommissioning

The general impacts that would occur to water resources from decommissioning of the Project were analyzed within Section 3.16.2.2 of the FEIS. These impacts include short-term direct and indirect effects from removal of Project components and grading for restoration. Short-term effects to surface water may occur due to soil disturbances that increase soil erosion and sedimentation in water bodies (or water runoff in areas with compacted soils).

We have reviewed Section 3.16.2.2 of the FEIS and determined that general impacts to water resources that could potentially occur and the relevant assessment of general impacts to water resources considered in the FEIS have not changed. As a result, the effects common to all routes are not re-stated in this SEIS (see Section 3.16.2.2 of the FEIS for a description of the general impacts that could occur to water resources as a result of the Project).

The assessment of quantitative impacts specifically related to the Segments 8 and 9 Revised Proposed Routes, as well as FEIS Proposed 9, Routes 8G, 8H, and 9K, and the Toana Road Variations, is presented in Section 3.16.2.3. The assessment of quantitative impacts related to the Alternatives is presented in Section 3.16.2.4. The assessment of potential impacts related to the MEP on water resources, as well as a list of additional mitigation measures that would be required by the BLM related to impacts on the SRBOP, is presented in Section 3.16.2.5.

3.16.2.3 Direct and Indirect Effects by Route

This section assesses the effects of the Project on water resources from construction and operations. Tables D.16-1 through D.16-15 in Appendix D present the results of water resources analyses for the Revised Proposed Routes, Routes 8G, 8H, and 9K, and the Route Variations (this section generally corresponds to Section 3.16.2.3 of the FEIS).

Segment 8

Revised Proposed Route

The Revised Proposed Route in Segment 8 would link the Midpoint and Hemingway Substations (see Figure A-1). This 129.7-mile single-circuit 500-kV transmission line would stay north of the Snake River until it crosses just north of Guffey Butte, generally parallel to an existing 500-kV transmission line, before ending at the Hemingway Substation. This route is similar to the original proposed route in the 2013 FEIS except that the line would be 250 feet north of the existing 500-kV line rather than 1,500 feet south of the line from the eastern boundary of the SRBOP (MP 99.7) to the Hemingway Substation. The route east of that point is unchanged from the 2013 FEIS Proposed Route.

Construction

Surface Water

There would be 204 surface water crossings on the Revised Proposed Route for Segment 8 access roads. These include an estimated 94 drive-through crossings, 55

fords, and 2 permanent culverts, for a total of 1 acre of disturbance in addition to the average road disturbance (Table D.16-1 in Appendix D).

Approximately 18 percent of the construction disturbance area would be located within the moderate- and high-risk flood zone for Segment 8 of the Revised Proposed Route (Table D.16-2).

Of the 204 stream crossings for the Revised Proposed Route for Segment 8, 63 percent are non-listed ephemeral streams and there are 13 TMDL or 303(d) listed streams for sediment (Table D.16-6 in Appendix D).

The Analysis Area for the Segment 8 Revised Proposed Route includes 13 stream segments that are TMDL or 303(d) listed streams for sediment and 5 stream segments that are TMDL or 303(d) listed streams for temperature (Table D.16-13 in Appendix D).

A total of 78 acres of construction disturbance for Segment 8 Revised Proposed Route would be located within 500 feet of perennial or intermittent streams or 3 percent of the disturbance area, 109 acres would be located within 100 feet of ephemeral streams (5 percent of the disturbance area, and 48 acres would be located within 500 feet of a TMDL or 303(d) listed stream for sediment (2 percent of the disturbance area, Table D.16-14 in Appendix D).

We received a scoping comment concerning the potential impacts to water resources along Segment 8 from MP 126 to the Hemingway Substation. Impacts in this area would be similar to the impacts discussed above and disclosed in the FEIS. Segment 8 of the Revised Proposed Route crosses the Snake River at Noble Island instead of farther upstream as the FEIS Proposed Route would. Either crossing would require the transmission line to span the river, vegetation clearing during construction for the ROW, and access road improvements such as widening and graveling existing roadways. Discussions of impacts due to construction and operation of these activities is included in Section 3.16.2 of the FEIS. Section 3.9 – Wetland and Riparian Resources estimates that approximately 1.1 acres of riparian habitat would be disturbed in the Snake River Canyon.

Groundwater

Approximately 1.4 acres of construction disturbance area for the Revised Proposed Route would overlay shallow groundwater (Table D.16-7 in Appendix D).

Of the 192 water wells in the Segment 8 Analysis Area, 180 wells are located within 200 feet of shallow bedrock, 3 of which are within 200 feet of the centerline and would be most at risk of damage due to blasting. There would be 47 potable water wells within 0.5 mile of the Revised Proposed Route (Table D.16-10 in Appendix D).

The Segment 8 Revised Proposed Route would cross 42 miles of the Eastern Snake River Plain (ESRP) Aquifer, or about 32 percent of their respective lengths (Table D.16-11 in Appendix D). This Project would be almost entirely above ground and the productive portion of this aquifer is much deeper than any Project foundation.

Project construction along both segments would use water each day for construction purposes, including for concrete foundations, dust control, and washing vehicles to

prevent the spread of noxious weeds. The volume of water used for dust control varies greatly based on many conditions, and estimates are based on reasonable construction experience. The longer the segment, the more days it would take to construct, and therefore the more water used over time; see Table D.16-12 in SEIS Appendix D.

The disturbance area for removal of 1.1 miles of the existing 500-kV line in Segment 8 would be approximately 9 acres, and 3 acres would occur in a high flood hazard risk area (Table D.16-2 in Appendix D). No construction disturbance would be located within 100 feet of ephemeral streams or within 500 feet of TMDL or 303(d) listed streams for sediment (Table D.16-14 in Appendix D). Approximately 1 surface water diversion is located within 0.5 mile of the existing line (Table D.16-5 in Appendix D). No new access roads or stream crossings would be constructed for removal and therefore soil disturbance would be minimal and short term. EPMs would be implemented to minimize the risk of soil erosion and sedimentation into nearby waterbodies. Tower bases would remain in the ground and leveled to ground surface, thereby minimizing soil disturbance during removal of the line.

Operations

There is no woody vegetation located within 500 feet of a temperature-impaired stream that would be disturbed due to operations of the Revised Proposed Route (Table 3.16-4 of the FEIS).

Approximately 14 percent of the operations disturbance area for the Revised Proposed Route would be located within the moderate- and high-risk flood zone (Table D.16-3 in Appendix D).

The Revised Proposed Route would include 11 acres of operations disturbance within 500 feet of perennial or intermittent streams (5 percent of the operations disturbance area), 11 acres would be located within 100 feet of ephemeral streams (5 percent of the operations disturbance), and 4 acres would be located within 500 feet of TMDL or 303(d) listed streams for sediment (Table D.16-15 in Appendix D).

Less than half an acre of operations disturbance area would overlay shallow groundwater along the Segment 8 Revised Proposed Route (Table D.16-8 in Appendix D).

Route 8G

Route 8G is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows an alignment similar to the ones analyzed for Routes 8A and 9B in the FEIS for approximately 44 miles, although it generally parallels 250 feet north of the existing 500-kV line rather than1,500 feet to the south in order to avoid the Hagerman Fossil Beds National Monument and development near Hagerman (see Figure A-1). Route 8G then parallels 250 feet north of the Segment 9 Revised Proposed Route and Route 9K for most of the remaining distance into the Hemingway Substation. Route 8G is 146.9 miles long (including a 1.9-mile rebuild of the existing 500-kV line), compared to the 129.7-mile-long Revised Proposed Route 8.

Construction

Surface Water

Route 8G has fewer total crossings, fords, and culverts than the Revised Proposed Route for Segment 8 (Table D.16-1 in Appendix D). Route 8G would have 149 total crossings, 83 drive-through crossings, 39 fords, and 1 permanent culvert for an estimated disturbance area of less than 1 acre (Table D.16-1 in Appendix D).

Route 8G would have approximately 91 more acres of disturbance area located within a moderate to high risk flood zone than the Revised Proposed Route for Segment 8 (Table D.16-2). Route 8G would have a greater number of surface water diversions within 0.5 mile of the route (363) than the Revised Proposed Route (261; see Table D.16-5 in Appendix D).

Route 8G would have a higher percentage of stream crossings on non-listed ephemeral streams and fewer TMDL or 303(d) listed streams for sediment than the Revised Proposed Route for Segment 8. Of the 149 crossings for Route 8G, 80 percent are non-listed ephemeral streams and there would be 11 crossings of TMDL or 303(d) listed streams for sediment (Table D.16-6 in Appendix D).

The Route 8G Analysis Area includes 22 stream segments that are TMDL or 303(d) listed streams for sediment and 9 stream segments that are TMDL or 303(d) listed streams for temperature (Table D.16-13 in Appendix D). The Route 8G Analysis Area includes nine more stream segments that are TMDL or 303(d) listed streams for sediment and four more stream segments that are TMDL or 303(d) listed streams for temperature than the Revised Proposed Route Analysis Area (Table D.16-13 in Appendix D).

Route 8G would have 12 fewer acres of disturbance within 500 feet of perennial or intermittent streams, 23 fewer acres within 100 feet of ephemeral streams, and 31 additional acres within 500 feet of a TMDL or 303(d) listed stream for sediment than the Revised Proposed Route (Table D.16-14 in Appendix D).

Groundwater

Route 8G would have a greater number of acres of construction disturbance area overlying shallow groundwater (5.5 acres) than the Revised Proposed Route for Segment 8 (1.4 acres; see Table D.16-7 in Appendix D).

There would be fewer potable water wells within 0.5 mile of 8G (41 wells; see Table D.16-10 in Appendix D) than along the Revised Proposed Route (47 wells). Therefore, risk of well damage due to blasting would be lower under Route 8G.

Route 8G would have fewer miles crossing the ESRP aquifer (24 miles) than the Segment 8 Revised Proposed Route (42 miles; see Table D.16-11 in Appendix D). This Project would be almost entirely above ground and the productive portion of this aquifer is much deeper than any Project foundation.

Project construction along Route 8G would require slightly more water than the Segment 8 Revised Proposed Route due additional length (146.9 miles as compared to 129.7 miles; see Table D.16-12 in Appendix D).

Operations

No woody vegetation located within 500 feet of a temperature-impaired stream would be disturbed due to operations of Route 8G or the Revised Proposed Route. Approximately 17 percent of the operations disturbance area for Route 8G would be located within the moderate- and high-risk flood zone (Table D.16-3 in Appendix D), or 3 percent more than the operations disturbance area for the Revised Proposed Route.

Route 8G would include 8 acres of operations disturbance within 500 feet of perennial or intermittent streams (2 percent of the operations disturbance area), 15 acres would be located within 100 feet of ephemeral streams (5 percent of the operations disturbance), and 8 acres would be located within 500 feet of TMDL or 303(d) listed streams for sediment (Table D.16-15 in Appendix D). Route 8G would have 3 fewer acres of operations disturbance within 500 feet of perennial or intermittent streams, 4 more acres located within 100 feet of ephemeral streams, and 3 more acres located within 500 feet of TMDL or 303(d) listed streams for sediment as the Revised Proposed Route 8 (Table D.16-15 in Appendix D).

Approximately 1 acre of operations disturbance area would overlay shallow groundwater along Route 8G (Table D.16-8 in Appendix D), or 0.6 acre more than the Segment 8 Revised Proposed Route.

Route 8H

Route 8H is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows a combination of portions of the alignments analyzed for 8G and the Revised Proposed Route for Segment 9. The route is 137.5 miles long (including a 1.9-mile rebuild of the existing 500-kV line and a 25.7-mile removal and rebuild of a 138-kV line), compared to the 129.7-mile-long Segment 8 Revised Proposed Route. Approximately 44 miles of the route follows the 8G alignment, while the remainder of 8H follows the alignment of the Segment 9 Revised Proposed Route.

Construction

Surface Water

Route 8H has fewer total stream crossings, fords, and culverts than the Revised Proposed Route for Segment 8 (Table D.16-1 in Appendix D). Route 8H would have 115 total crossings, 63 drive-through crossings, 27 fords, and no permanent culverts for an estimated disturbance area of less than 1 acre (Table D.16-1 in Appendix D).

Route 8H would have slightly less (9 less acres) of disturbance area located within a moderate to high risk flood zone than the Revised Proposed Route 8 (Table D.16-2). Route 8H would have a greater number of surface water diversions within 0.5 mile of the route (359) than the Revised Proposed Route (261; see Table D.16-5 in Appendix D).

Route 8H has a higher percentage of stream crossings on non-listed ephemeral streams and a greater number of TMDL or 303(d) listed streams for sediment than the Revised Proposed Route for Segment 8. Of the 115 crossings for Route 8H, 76 percent are non-listed ephemeral streams and there are 14 crossings of TMDL or 303(d) listed streams for sediment (Table D.16-6 in Appendix D).

The Route 8H Analysis Area includes 20 stream segments that are 303(d) listed streams for sediment and one stream segment that is a 303(d) listed streams for temperature (Table D.16-13 in Appendix D). Route 8H includes 6 more stream segments that are TMDL or 303(d) listed streams for sediment and 4 more stream segments that are TMDL or 303(d) listed streams for temperature than the Revised Proposed Route Analysis Area (Table D.16-13 in Appendix D).

Route 8H would have 22 acres of disturbance within 500 feet of perennial or intermittent streams, 57 acres within 100 feet of ephemeral streams, and 85 acres within 500 feet of a TMDL or 303(d) listed stream for sediment (Table D.16-14 in Appendix D). Route 8H would have 56 fewer acres of disturbance within 500 feet of perennial or intermittent streams, 52 fewer acres within 100 feet of ephemeral streams, and 37 additional acres within 500 feet of a TMDL or 303(d) listed stream for sediment than the Revised Proposed Route for Segment 8 (Table D.16-14 in Appendix D).

Groundwater

Route 8H would have less than 1 acre of construction disturbance overlying shallow groundwater (see Table D.16-7 in Appendix D).

There would be 43 potable water wells within 0.5 mile of the transmission line (see Table D.16-10 in Appendix D). Risk of well damage due to blasting would be lower under Route 8H than the Revised Proposed Route for Segment 8, which would have 47 potable wells.

Route 8H would have 24 miles crossing the ESRP aquifer (see Table D.16-11 in Appendix D). The Revised Proposed Route for Segment 8 would have 42 miles crossing the ESRP aquifer. However, this Project would be almost entirely above ground and the productive portion of this aquifer is much deeper than any Project foundation.

Project construction along Route 8H would require slightly more water than the Segment 8 Revised Proposed Route due additional length (135.6 miles as compared to 129.7 miles; see Table D.16-12 in Appendix D).

The disturbance area for removal of 25.7 miles of the existing 138-kV line in Route 8H would be approximately 48 acres, and 13 acres would be located within a moderate- or high-risk flood hazard area (Table D.16-2 in Appendix D). The disturbance area for removal of 1.9 miles of the existing 500-kV line in Route 8H would not be located within a moderate- or high-risk flood hazard area (Table D.16-2 in Appendix D).

Approximately 1 acre of disturbance is located within 100 feet of ephemeral streams, and approximately 2 acres is located within 500 feet of TMDL or 303(d) listed streams for sediment (Table D.16-14 in Appendix D) for removal of the 1.9 miles of existing 138-kV line in Route 8H. Less than 1 acre of disturbance is located within 100 feet of ephemeral streams, and no portion of the construction disturbance area is located within 500 feet of TMDL or 303(d) listed streams for sediment (Table D.16-14 in Appendix D) for removal of the 25.7 miles of existing 500-kV line in Route 8H.

Approximately 86 surface water diversions are located within 0.5 mile of the existing 138-kV line for Route 8H and approximately 2 surface water diversion are located within

0.5 mile of the existing 500-kV line that Route 8H would parallel (Table D.16-5 in Appendix D).

No new access roads or stream crossings would be constructed for removal of the existing lines; therefore, soil disturbance would be minimal and short term. EPMs would be implemented to minimize the risk of soil erosion and sedimentation into nearby waterbodies. Tower bases would remain in the ground and be leveled to ground surface, thereby minimizing soil disturbance during removal of the line.

Operations

No acres of woody vegetation located within 500 feet of a temperature-impaired stream would be disturbed due to operations of Route 8H or the Revised Proposed Route. Approximately 13 percent of the operations disturbance area for Route 8H would be located within the moderate- and high-risk flood zone (Table D.16-3 in Appendix D), or 1 percent more than the operations disturbance area for the Revised Proposed Route 8.

Route 8H would include approximately 2 acres of operations disturbance within 500 feet of perennial or intermittent streams (1 percent of the operations disturbance), 10 acres would be located within 100 feet of ephemeral streams (4 percent of the operations disturbance), and 7 acres would be located within 500 feet of TMDL or 303(d) listed streams for sediment (Table D.16-15 in Appendix D). Route 8H would have 9 fewer acres of operations disturbance within 500 feet of perennial or intermittent streams, 1 less acre located within 100 feet of ephemeral streams, and 4 more acres located within 500 feet of TMDL or 303(d) listed streams for sediment as the Segment 8 Revised Proposed Route (Table D.16-15 in Appendix D).

Less than 1 acre of operations disturbance would overlay shallow groundwater along Route 8H (Table D.16-8 in Appendix D), similar to the Segment 8 Revised Proposed Route, with less than 1 acre of operations disturbance in areas of shallow groundwater.

Segment 9

Revised Proposed Route

The Segment 9 Revised Proposed Route would link the proposed Cedar Hill and existing Hemingway Substations with a 165.3-mile single-circuit 500-kV transmission line that skirts the Jarbidge and Owyhee Military Operating Areas to the north, then follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering the Hemingway Substation (see Figure A-1). It follows an alignment similar to the 2013 FEIS Route 9D/9G between MP 95.6 and 154.7, except that two portions of the route (totaling 25.7 miles) would be double-circuited with existing 138-kV lines. The first area is 5.2 miles near C.J. Strike Reservoir and the Bruneau Arm (MP 106.2 to 109.3 and 109.9 to 112.1), and the second area is 20.2 miles along the Baja Road (MP 121.0 to 141.2). Several rebuilds totaling approximately 0.6 mile are also required to tie the existing 138-kV lines into the new double-circuit alignments. Except for minor variations, the route is similar to the 2013 FEIS Route 9D/9G between MP 141.2 to 154.7. From MP 154.7 and into the Hemingway Substation, the route is the same as the FEIS Proposed 9.

Construction

Surface Water

There would be 172 surface water crossings by access roads on the Revised Proposed Route that would require an estimated 65 drive-through crossings, 54 fords, and 15 culverts for a total of 2 acres of disturbance in addition to the average road disturbance (Table D.16-1 in Appendix D).

Approximately 18 percent of the construction disturbance area would be located within the moderate- and high-risk flood zone for the Revised Proposed Route (Table D.16-2 in Appendix D).

There would be 337 surface water diversions within 0.5 mile of the Revised Proposed Route (Table D.16-5 in Appendix D).

Of the 172 crossings on the Revised Proposed Route, 60 percent would be non-listed ephemeral streams and there would be 21 crossings of TMDL or 303(d) listed streams for sediment and 4 crossings of TMDL or 303(d) listed streams for temperature (Table D.16-6 in Appendix D).

A total of 147 acres of construction disturbance (5 percent of the disturbance area) for the Revised Proposed Route would be located within 500 feet of perennial or intermittent streams, 87 acres (3 percent) would be within 100 feet of ephemeral streams, and 105 acres would be within 500 feet of TMDL or 303(d) listed streams for sediment (Table D.16-14 in Appendix D).

Groundwater

The construction disturbance area for the Segment 9 Revised Proposed Route would overlay approximately 4 acres of shallow groundwater (Table D.16-7 in Appendix D).

Along the Segment 9 Revised Proposed Route there would be 15 potable water wells within 0.5 mile of the centerline (Table D.16-10 in Appendix D.

Approximately 8.4 miles, or 5 percent, of the Segment 9 Revised Proposed Route would be located on the ESRP Aquifer (Table D.16-11 in Appendix D). This is the same length as the FEIS Proposed Route and FEIS Preferred Route.

The Segment 9 Revised Proposed Route would be constructed over an 18-month period and would require an estimated 4.8 million gallons (14.7 acre-feet; see Table D.16-12 in Appendix D).

The disturbance area for removal of 25.7 miles of the existing 138-kV line in Segment 9 would be approximately 48 acres, and 13 acres would be located within a moderate- or high-risk flood hazard area (Table D.16-2 in Appendix D). Approximately 1 acre of disturbance is located within 100 feet of ephemeral streams, and approximately 2 acres is located within 500 feet of TMDL or 303(d) listed streams for sediment (Table D.16-14 in Appendix D). Approximately 86 surface water diversions are located within 0.5 mile of the existing line (Table D.16-5). No new access roads or stream crossings would be constructed for removal and therefore soil disturbance would be minimal and short term. EPMs would be implemented to minimize the risk of soil erosion and sedimentation into

nearby waterbodies. Tower bases would remain in the ground and leveled to ground surface, thereby minimizing soil disturbance during removal of the line.

Operations

No woody vegetation located within 500 feet of a temperature-impaired stream would be disturbed due to operations of the Segment 9 Revised Proposed Route.

Approximately 15 percent of the operations disturbance area of the Segment 9 Revised Proposed Route would be located within the moderate- and high-risk flood zone (Table D.16-3 in Appendix D).

The Segment 9 Revised Proposed Route would include 19 acres (5 percent) of the operations disturbance area within 500 feet of perennial or intermittent streams, approximately 13 acres (4 percent) would be within 100 feet of ephemeral streams, and 11 acres would be within 500 feet of TMDL or 303(d) listed streams for sediment (Table D.16-15 in Appendix D).

The operations disturbance area for the Revised Proposed Route would overlay less than 1 acre of shallow groundwater (Table D.16-8 in Appendix D).

FEIS Proposed 9

The Proponents originally designed the 162.2-mile-long FEIS Proposed Route in Segment 9 to follow existing utility corridors and avoid the SRBOP and other protected areas where feasible. Approximately 54 miles of the route is within or adjacent to a utility corridor. FEIS Proposed 9 is approximately 3.1 miles shorter than the Revised Proposed Route but it crosses 13.6 miles of the SRBOP compared to 54.2 miles for the Revised Proposed Route. Both the Revised Proposed Route and FEIS Proposed 9 cross the Salmon Falls Creek at Lilly Grade adjacent to an existing single-phase 34.5-kV distribution line just north of the Salmon Falls Creek WSA.

Construction

Surface Water

FEIS Proposed 9 would have 319 total crossings, including 168 drive-through crossings, 38 fords, and 21 culverts for an estimated disturbance area of 2 acres (Table D.16-1 in Appendix D).

FEIS Proposed 9 would have 626 acres (19 percent) of the construction disturbance area located within the moderate- and high-risk flood zone (Table D.16-2). FEIS Proposed 9 would have 403 surface water diversions within 0.5 mile of the route (see Table D.16-5 in Appendix D).

Of the 319 total crossings for FEIS Proposed 9, 59 percent are non-listed ephemeral streams and there are 20 crossings of TMDL or 303(d) listed streams for sediment (Table D.16-6 in Appendix D).

The FEIS Proposed 9 Analysis Area includes 24 stream segments that are 303(d) listed streams for sediment and 11 stream segments that are 303(d) listed streams for temperature (Table D.16-13 in Appendix D). The FEIS Proposed 9 Analysis Area includes 8 stream segments that have a TMDL for sediment and 6 stream segments that have a TMDL for temperature (Table D.16-13 in Appendix D).

FEIS Proposed 9 would have 171 acres of construction disturbance within 500 feet of perennial or intermittent streams, 89 acres within 100 feet of ephemeral streams, and 90 acres within 500 feet of a TMDL or 303(d) listed stream for sediment (Table D.16-14 in Appendix D).

Groundwater
FEIS Proposed 9 would have 53 acres of construction disturbance area overlying shallow groundwater (see Table D.16-7 in Appendix D).

Along FEIS Proposed 9, there would be 26 potable water wells within 0.5 mile of the transmission line (see Table D.16-10 in Appendix D).

FEIS Proposed 9 would have 8.4 miles crossing the ESRP aquifer (see Table D.16-11 in Appendix D). However, this Project would be almost entirely above ground and the productive portion of this aquifer is much deeper than any Project foundation.

Project construction along FEIS Proposed 9 would require about the same amount of water as the Segment 9 Revised Proposed Route due to the approximately same length that would be constructed (162.2 miles as compared to 165.3 miles; see Table D.16-12 in Appendix D).

Operations
No acres of woody vegetation located within 500 feet of a temperature-impaired stream would be disturbed due to operations of FEIS Proposed 9. Approximately 10 percent of the operations disturbance area for Route 8H would be located within the moderate- and high-risk flood zone (Table D.16-3 in Appendix D).

FEIS Proposed 9 would include 21 acres of operations disturbance area within 500 feet of perennial or intermittent streams or about 6 percent of the operations disturbance area, 17 acres would be located within 100 feet of ephemeral streams or about 5 percent of the operations disturbance, and 10 acres would be located within 500 feet of TMDL or 303(d) listed streams for sediment (Table D.16-15 in Appendix D).

Approximately 3 acres of operations disturbance area would overlay shallow groundwater along Segment 9 FEIS Proposed Route (Table D.16-8 in Appendix D).

Route 9K

Route 9K is being considered by the BLM as a modified version of FEIS Route 9E (i.e., the FEIS Preferred Route) to avoid crossing the northwestern portion of the SRBOP and to minimize direct and indirect impacts to priority sage-grouse habitat. The alternative is approximately 174.6 miles long, compared to the 165.3-mile-long Revised Proposed Route (see Figure A-1).

Construction

Surface Water
Route 9K has a greater number of total crossings, drive-through crossings, and fords than the Revised Proposed Route for Segment 9 (Table D.16-1 in Appendix D). Route 9K would have 237 total crossings, 102 drive-through crossings, 79 fords, and 15

permanent culverts for an estimated disturbance area of 3 acres (Table D.16-1 in Appendix D).

Route 9K would have 110 more acres of disturbance area located within a moderate- to high-risk flood zone than the Revised Proposed Route (Table D.16-2 in Appendix D). Route 9K would have 5 fewer surface water diversions within 0.5 mile of the route (332) than the Revised Proposed Route (337; see Table D.16-5 in Appendix D).

Route 9K has a higher percentage of stream crossings on non-listed ephemeral streams and fewer TMDL or 303(d) listed streams for sediment than the Revised Proposed Route for Segment 9. Of the 237 crossings for Route 9K, 70 percent are non-listed ephemeral streams and there are 19 TMDL or 303(d) listed streams for sediment (Table D.16-6 in Appendix D).

The Route 9K Analysis Area includes 35 stream segments that are TMDL or 303(d) listed streams for sediment and 18 stream segments that are TMDL or 303(d) listed streams for temperature (Table D.16-13 in Appendix D). The Route 9K Analysis Area includes the same number of stream segments that are TMDL or 303(d) listed streams for sediment and 7 more stream segments that are TMDL or 303(d) listed streams for temperature than the Revised Proposed Route Analysis Area (Table D.16-13 in Appendix D).

Route 9K would have 40 more acres of disturbance within 500 feet of perennial or intermittent streams, 13 more acres within 100 feet of ephemeral streams, and 7 fewer acres within 500 feet of a TMDL or 303(d) listed stream for sediment than the Segment 9 Revised Proposed Route (Table D.16-14 in Appendix D).

Groundwater

Route 9K would have a greater number of acres of construction disturbance area overlying shallow groundwater (9.2 acres) than the Segment 9 Revised Proposed Route (4.1 acres; see Table D.16-7 in Appendix D).

There would be fewer potable water wells within 0.5 mile of Route 9K (13 potable water wells; see Table D.16-10 in Appendix D) than the Segment 9 Revised Proposed Route (15 wells). Therefore, risk of well damage due to blasting would be lower under Route 9K.

Route 9K would have the same number of miles crossing the ESRP aquifer (8.4 miles) than the Segment 9 Revised Proposed Route (8.4 miles; see Table D.16-11 in Appendix D). This Project would be almost entirely above ground and the productive portion of this aquifer is much deeper than any Project foundation.

Project construction along Route 9K would require slightly more water than the Segment 9 Revised Proposed Route due to the route's additional length (174.6 miles as compared to 165.3 miles; see Table D.16-12 in Appendix D).

<u>Operations</u>

No woody vegetation is located within 500 feet of a temperature-impaired stream that would be disturbed due to operations of Route 9K or the Revised Proposed Route. Approximately 17 percent of the operations disturbance area for Route 9K would be

located within the moderate- and high-risk flood zone (Table D.16-3 in Appendix D), or 1.8 percent more than the operations disturbance area for the Revised Proposed Route.

Route 9K would include 24 acres of operations disturbance area within 500 feet of perennial or intermittent streams or 6 percent of the operations disturbance area, 17 acres would be located within 100 feet of ephemeral streams or 4 percent of the operations disturbance, and 11 acres would be located within 500 feet of TMDL or 303(d) listed streams for sediment (Table D.16-15 in Appendix D). Route 9K would have 5 more acres of operations disturbance area within 500 feet of perennial or intermittent streams, 4 more acres located within 100 feet of ephemeral streams, and less than 1 more acre located within 500 feet of TMDL or 303(d) listed streams for sediment than the Segment 9 Revised Proposed Route (Table D.16-15 in Appendix D).

Approximately 1 acre of operations disturbance area would overlay shallow groundwater along Route 9K (Appendix D.16-8 in Appendix D), or less than 1 acre more than the Segment 9 Revised Proposed Route.

Toana Road Variations 1 and 1-A and the Comparison Portion of the Revised Proposed Route

Toana Road Variation 1 to the Segment 9 Revised Proposed Route was recommended by the BLM Jarbidge Field Office archaeologist to avoid paralleling the Toana Freight Wagon Road, an NRHP site. The Segment 9 Revised Proposed Route parallels within 0.25 mile of the Toana Road between MP 38.2 and 40.6, and parallels within 1 mile of the road through Blue Gulch between MP 40.6 and 43.5. Variation 1 is approximately 8.5 miles in length. Approximately 0.3 mile of the route crosses State land, with the remainder on land managed by the BLM.

The Toana Road Variation 1-A to the Segment 9 Revised Proposed Route was recommended by the BLM to minimize visual impacts to the Toana Freight Wagon Road, and was also intended to utilize existing roads in order to minimize new road construction in the area. Variation 1-A is approximately 8.9 miles long. Approximately 1 mile of the route crosses State land, with the remainder on land managed by the BLM.

<u>Construction</u>

Surface Water

Toana Road Variation 1 would have two more drive-through crossings and one more ford crossing than the comparison portion of the Segment 9 Revised Proposed Route. Toana Road Variation 1-A would have three fewer drive-through crossings and one less ford crossing than the comparison portion of the Segment 9 Revised Proposed Route (Table D.16-1 in Appendix D).

Toana Road Variations 1 and 1A would have a lower percent of the construction disturbance area located within the moderate- and high-risk flood zone (22 percent and 25 percent, respectively; see Table D.16-2 in Appendix D) than the comparison portion of the Segment 9 Revised Proposed Route (36 percent).

Toana Road Variations 1 and 1-A would have the same number of surface water diversions (five) as the comparison portion of the Segment 9 Revised Proposed Route (Table D.16-5 in Appendix D).

Toana Road Variations 1 and 1-A have a higher percentage of stream crossings on non-listed ephemeral streams than the comparison portion of the Segment 9 Revised Proposed Route (Table D.16-6 in Appendix D). Of the 15 crossings for Toana Road Variation 1, 13 are non-listed ephemeral streams. Of the 10 crossings for Toana Road Variation 1-A, 8 are non-listed ephemeral streams. Of the 13 crossings for the comparison portion for the Segment 9 Revised Proposed Route, 10 are non-listed ephemeral streams. There are no crossings on TMDL or 303(d) listed streams for sediment by the Toana Road Variations 1 and 1-A as well as the comparison portion of the Segment 9 Revised Proposed Route (Table D.16-6 in Appendix D).

Toana Road Variations 1 and 1-A as well as the comparison portion of the Segment 9 Revised Proposed Route Analysis Area includes one stream segment that has a TMDL for temperature (Table D.16-13 in Appendix D). No acres of woody vegetation located within 500 feet of a temperature-impaired stream would be disturbed due to construction of the Toana Road Variation 1 or 1-A.

Toana Road Variation 1 would have 4 more acres of disturbance within 100 feet of ephemeral streams and Toana Road Variation 1-A would have 13 more acres of disturbance within 100 feet of ephemeral streams than the comparison portion of the Segment 9 Revised Proposed Route (Table D.16-14 in Appendix D).

Groundwater

The construction disturbance area for the Toana Road Variations and comparison portion of the Segment 9 Revised Proposed Route would not overlay areas of shallow groundwater (Table D.16-7 in Appendix D). The Toana Road Variations and the comparison portion of the Segment 9 Revised Proposed Route do not have potable water wells within 0.5 mile of the centerline (Table D.16-10 in Appendix D). The Toana Road Variations and the comparison portion of the Segment 9 Revised Proposed Route do not cross the ESRP Aquifer (Table D.16-11 in Appendix D). The Toana Road Variations would require a similar duration of construction and similar volume of water as the comparison portion of the Segment 9 Revised Proposed Route due to a similar length in transmission line (Table D.16-12 in Appendix D).

<u>Operations</u>

No woody vegetation located within 500 feet of a temperature-impaired stream would be disturbed due to operations of the Toana Road Variation 1 or 1-A.

Toana Road Variation 1 would have 4 percent fewer acres and Toana Road Variation 1-A would have 9 percent more acres in the moderate- and high-risk flood zone (Table D.16-3 in Appendix D) than the comparison portion of the Segment 9 Revised Proposed Route.

Toana Road Variation 1 would include less than 1 more acre and Toana Road Variation 1-A would include the same number of acres of operations disturbance area within 100 feet of ephemeral streams than the comparison portion of the Segment 9 Revised Proposed Route (Table D.16-15 in Appendix D).

The operations disturbance area for the Toana Road Variations and the comparison portion of the Segment 9 Revised Proposed Route would not overlay shallow groundwater (Table D.16-8 in Appendix D).

3.16.2.4 Direct and Indirect Effects of the Alternatives

Direct and indirect effects of the seven alternatives identified by the BLM are summarized below and in Table 3.16-1. Values from each route were summed to provide a total for each key parameter. Total values included below are approximate due to the overlap of some portions of the routes. This is especially true of Alternative 5, which has two routes co-located 250 feet apart for most of the alignment. The alternatives are visually displayed in Figures A-2 through A-8.

Table 3.16-1. Road Stream Crossings

Alternative	TMDL or 303(d) Listed	Fords	Drive-through	Permanent Culvert	Temporary Culvert	Total
Alternative 1	35	121	179	3	15	353
Alternative 2	30	97	270	5	18	430
Alternative 3	34	144	220	4	15	417
Alternative 4	23	89	143	2	15	272
Alternative 5	22	82	259	4	18	385
Alternative 6	23	60	214	3	18	318
Alternative 7	27	102	156	2	15	302

Alternative 1 – Proposed Action (the Revised Proposed Routes for Segments 8 and 9)

Surface Water

Alternative 1 would have 179 drive-through crossings, 121 fords, and 18 culverts (Table 3.16-1). Of the 353 crossings for Alternative 1, 35 are TMDL or 303(d) listed streams for sediment. The crossing type for these streams has not yet been determined. The specific loads and the stream conditions will dictate what type of stream crossing to employ.

Alternative 1 would have 18 percent of the construction disturbance area located within a moderate- to high-risk flood zone.

Alternative 1 would have 598 surface water diversions within 0.5 mile of the route.

Alternative 1 would have 225 acres of disturbance within 500 feet of perennial or intermittent streams, 196 acres within 100 feet of ephemeral streams, and 153 acres within 500 feet of a TMDL or 303(d) listed stream for sediment.

Groundwater

Alternative 1 would have 5 acres of construction disturbance area overlying shallow groundwater.

Alternative 1 would have 32 potable water wells within 0.5 mile of the transmission line.

If Toana Road Variation 1 is selected, there would be more total stream crossings, including drive-through and ford crossings, but slightly less construction disturbance

area in a moderate- and high-risk flood hazard than the comparison portion of the Segment 9 Revised Proposed Route. There is the same number of surface water diversions, but more construction disturbance acres within 100 feet of ephemeral streams. If Toana Road Variation 1-A is selected, there would be fewer stream crossings, including drive-through and ford crossings than the comparison portion of the Segment 9Revised Proposed Route. Toana Road Variation 1-A has slight more construction disturbance acres in moderate- and high-risk flood hazard areas and within 100 feet of ephemeral streams than Toana Road Variation 1. All other key parameters are the same for both variations.

Alternative 2 – Revised Proposed 8 and FEIS Proposed 9

Surface Water

Alternative 2 would have 270 drive-through crossings, 97 fords, and 23 culverts (Table 3.16-1). Of the 430 crossings for Alternative 2, 30 are TMDL or 303(d) listed streams for sediment. Alternative 2 would have 109 more drive-through crossings, 24 fewer ford crossings, and 5 fewer culverts than Alternative 1.

Alternative 2 would have 18.5 percent of the construction disturbance located within a moderate- to high-risk flood zone; less than 1 percent more area than Alternative 1.

Alternative 2 would have 664 surface water diversions within 0.5 mile of the route; 66 more than Alternative 1.

Alternative 2 would have 248 acres of disturbance within 500 feet of perennial or intermittent streams, 198 acres within 100 feet of ephemeral streams, and 138 acres within 500 feet of a TMDL or 303(d) listed stream for sediment. Alternative 2 would have 24 more acres of disturbance within 500 feet of perennial or intermittent streams, 2 more acres within 100 feet of ephemeral streams, and 15 fewer acres within 500 feet of a TMDL or 303(d) listed stream for sediment than Alternative 1.

Groundwater

Alternative 2 would have 54 acres of construction disturbance area overlying shallow groundwater and 73 potable water wells within 0.5 mile of the transmission line. Alternative 2 would have 49 more acres of construction disturbance area overlying shallow groundwater and 11 more potable water wells within 0.5 mile of the transmission line than Alternative 1.

If Toana Road Variation 1 is selected, there would be more total stream crossings, including drive-through and ford crossings, and slightly less construction disturbance area in a moderate- and high-risk flood hazard than Toana Road Variation 1-A. There are fewer acres of construction disturbance within 100 feet of ephemeral streams than Toana Road Variation 1-A. All other key parameters are the same for both variations.

Alternative 3 – Revised Proposed 8 and the 9K Route

Surface Water

Alternative 3 would have 220 drive-through crossings, 144 fords, and 19 culverts (Table 3.16-1). Of the 417 crossings for Alternative 3, 34 are TMDL or 303(d) listed streams for sediment (crossing type not yet determined). Alternative 3 would have 41 more

drive-through crossings, 23 more fords and 1 additional culvert as Alternative 1. Alternative 3 would have 64 more stream crossings and I more crossings of a TMDL or 303(d) listed stream for sediment than Alternative 1.

Alternative 3 would have 19 percent of the construction disturbance area located within a moderate- to high-risk flood zone; about the same percentage as Alternative 1.

Alternative 3 would have 593 surface water diversions within 0.5 mile of the route; 5 fewer than Alternative 1.

Alternative 3 would have 266 acres of disturbance within 500 feet of perennial or intermittent streams, 209 acres within 100 feet of ephemeral streams, and 146 acres within 500 feet of a TMDL or 303(d) listed stream for sediment. Alternative 3 would have 41 more acres of disturbance within 500 feet of perennial or intermittent streams, 13 more acres within 100 feet of ephemeral streams, and 7 fewer acres within 500 feet of a TMDL or 303(d) listed stream for sediment than Alternative 1.

Groundwater

Alternative 3 would have 10 acres of construction disturbance area overlying shallow groundwater and 60 potable water wells within 0.5 mile of the transmission line. Alternative 3 would have 5 more acres of construction disturbance area overlying shallow groundwater and 2 fewer potable water wells within 0.5 mile of the transmission line than Alternative 1.

If Toana Road Variation 1 is selected, there would be more total stream crossings, including drive-through and ford crossings, and slightly less construction disturbance area in a moderate- and high-risk flood hazard than Toana Road Variation 1-A. There are fewer acres of construction disturbance within 100 feet of ephemeral streams than Toana Road Variation 1-A. All other key parameters are the same for both variations.

Alternative 4 – The 8G Route and FEIS Proposed 9

Surface Water

Alternative 4 would have 143 drive-through crossings, 89 fords, and 17 culverts (Table 3.16-1). Of the 272 crossings for Alternative 4, 23 are TMDL or 303(d) listed streams for sediment (crossing type undetermined). Alternative 4 would have 36 fewer drive-through crossings, 32 fewer fords, and 1 less culvert than Alternative 1. Alternative 4 would have 81 fewer stream crossings and 1 less crossing of a TMDL or 303(d) listed stream for sediment than Alternative 1.

Alternative 4 would have 19 percent of the construction disturbance area located within a moderate- to high-risk flood zone; about the same percentage as Alternative 1.

Alternative 4 would have 766 surface water diversions within 0.5 mile of the route; 168 more than Alternative 1.

Alternative 4 would have 237 acres of disturbance within 500 feet of perennial or intermittent streams, 175 acres within 100 feet of ephemeral streams, and 168 acres within 500 feet of a TMDL or 303(d) listed stream for sediment. Alternative 4 would have 12 more acres of disturbance within 500 feet of perennial or intermittent streams,

21 fewer acres within 100 feet of ephemeral streams, and 15 more acres within 500 feet of a TMDL or 303(d) listed stream for sediment than Alternative 1.

Groundwater

Alternative 4 would have 58 acres of construction disturbance area overlying shallow groundwater and 67 potable water wells within 0.5 mile of the transmission line. Alternative 4 would have 53 more acres of construction disturbance area overlying shallow groundwater and 5 more potable water wells within 0.5 mile of the transmission line than Alternative 1.

If Toana Road Variation 1 is selected, there would be more total stream crossings, including drive-through and ford crossings, and slightly less construction disturbance area in a moderate- and high-risk flood hazard than Toana Road Variation 1-A. There are fewer acres of construction disturbance within 100 feet of ephemeral streams than Toana Road Variation 1-A. All other key parameters are the same for both variations.

Alternative 5 – The 8G and 9K Routes

Surface Water

Alternative 5 would have 259 drive-through crossings, 82 fords, and 22 culverts (Table 3.16-1). Of the 385 crossings for Alternative 5, 22 are TMDL or 303(d) listed streams for sediment (crossing type undetermined). Alternative 5 would have 80 fewer drive-through crossings, 39 fewer fords, and 4 more culverts than Alternative 1.

Alternative 5 would have up to 19 percent of the construction disturbance area located within a moderate- to high-risk flood zone; about the same percentage as Alternative 1. Alternative 5 would have up to 695 surface water diversions within 0.5 mile of the route; 97 more than Alternative 1. Alternative 5 would have up to 254 acres of disturbance within 500 feet of perennial or intermittent streams, up to 186 acres within 100 feet of ephemeral streams, and up to 176 acres within 500 feet of a TMDL or 303(d) listed stream for sediment. However, because most of the two routes would be collocated 250-feet apart, Alternative 5 would have fewer acres of disturbance within 500 feet of perennial or intermittent streams, within 100 feet of ephemeral streams, or within 500 feet of a TMDL or 303(d) listed stream for sediment than other alternatives.

Groundwater

Alternative 5 would have up to 14 acres of construction disturbance area overlying shallow groundwater and 54 potable water wells within 0.5 mile of the transmission line. Because the two routes that make up this alternative are co-located for most of the two routes, Alternative 5 would have fewer acres of construction disturbance area overlying shallow groundwater and 8 fewer potable water wells within 0.5 mile of the transmission line than Alternative 1.

If Toana Road Variation 1 is selected, there would be more total stream crossings, including drive-through and ford crossings, and slightly less construction disturbance area in a moderate- and high-risk flood hazard than Toana Road Variation 1-A. There are fewer acres of construction disturbance within 100 feet of ephemeral streams than Toana Road Variation 1-A. All other key parameters are the same for both variations.

Alternative 6 – The 8H Route and FEIS Proposed 9

Surface Water

Alternative 6 would have 214 drive-through crossings, 60 fords, and 21 culverts (Table 3.16-1). Of the 318 crossings for Alternative 6, 23 are TMDL or 303(d) listed streams for sediment (crossing type undetermined). Alternative 6 would have 35 more drive-through crossings, 61 fewer fords, and 3 more culverts than Alternative 1. Alternative 6 would have 35 fewer stream crossings and 12 fewer crossings of TMDL or 303(d) listed streams for sediment than Alternative 1.

Alternative 6 would have 18 percent of the construction disturbance area located within a moderate- to high-risk flood zone; about the same percentage as Alternative 1.

Alternative 6 would have 762 surface water diversions within 0.5 mile of the route, 164 more than Alternative 1.

Alternative 6 would have 193 acres of disturbance within 500 feet of perennial or intermittent streams, 145 acres within 100 feet of ephemeral streams, and 175 acres within 500 feet of a TMDL or 303(d) listed stream for sediment. Alternative 6 would have 32 fewer acres of disturbance within 500 feet of perennial or intermittent streams, 51 fewer acres within 100 feet of ephemeral streams, and 22 more acres within 500 feet of a TMDL or 303(d) listed stream for sediment than Alternative 1.

Groundwater

Alternative 6 would have 54 acres of construction disturbance area overlying shallow groundwater and 69 potable water wells within 0.5 mile of the transmission line. Alternative 6 would have 49 more acres of construction disturbance area overlying shallow groundwater and 7 more potable water wells within 0.5 mile of the transmission line than Alternative 1.

If Toana Road Variation 1 is selected, there would be more total stream crossings, including drive-through and ford crossings, and slightly less construction disturbance area in a moderate- and high-risk flood hazard than Toana Road Variation 1-A. There are fewer acres of construction disturbance within 100 feet of ephemeral streams than Toana Road Variation 1-A. All other key parameters are the same for both variations.

Alternative 7 – The 8H and 9K Routes

Surface Water

Alternative 7 would have 156 drive-through crossings, 102 fords, and 17 culverts (Table 3.16-1). Of the 302 crossings for Alternative 7, 27 are TMDL or 303(d) listed streams for sediment (crossing type undetermined). Alternative 7 would have 6 more drive-through crossings, 3 fewer ford crossings, and 2 fewer culverts than Alternative 1. Alternative 7 would have 51 fewer stream crossings and 1 less crossing of a TMDL or 303(d) listed stream for sediment than Alternative 1.

Alternative 7 would have 18 percent of the construction disturbance area located within a moderate- to high-risk flood zone; about the same percentage as Alternative 1.

Alternative 7 would have 691 surface water diversions within 0.5 mile of the route; 93 more than Alternative 1.

Alternative 7 would have 210 acres of disturbance within 500 feet of perennial or intermittent streams, 157 acres within 100 feet of ephemeral streams, and 183 acres within 500 feet of a TMDL or 303(d) listed stream for sediment. Alternative 7 would have 15 fewer acres of disturbance within 500 feet of perennial or intermittent streams, 39 fewer acres within 100 feet of ephemeral streams, and 30 more acres within 500 feet of a TMDL or 303(d) listed stream for sediment than Alternative 1.

Groundwater

Alternative 7 would have 10 acres of construction disturbance area overlying shallow groundwater and 56 potable water wells within 0.5 mile of the transmission line. Alternative 7 would have 5 more acres of construction disturbance area overlying shallow groundwater and 6 fewer potable water wells within 0.5 mile of the transmission line than Alternative 1.

If Toana Road Variation 1 is selected, there would be more total stream crossings, including drive-through and ford crossings, and slightly less construction disturbance area in a moderate- and high-risk flood hazard than Toana Road Variation 1-A. There are fewer acres of construction disturbance within 100 feet of ephemeral streams than Toana Road Variation 1-A. All other key parameters are the same for both variations.

3.16.2.5 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, as well as additional measures proposed by the Project Proponents specifically for the SRBOP.

Environmental Protection Measures

The Proponents have committed to Project design features and EPMs to minimize or avoid impacts on environmental resources. These measures, the areas where they would be applicable (e.g., private, state, or federal-managed lands), and the details of each measure are provided in Table 2.7-1 of the FEIS. Many of these measures would be either directly or indirectly applicable to water resources (i.e., they would avoid or minimize impacts).

Measures that would indirectly apply to water resources (i.e., measures that were not developed directly to benefit water resources, but if implemented could avoid or minimize impacts to water resources) include G-1, G-2, G-3, OM-1, OM-2, OM-3, OM-13, OM-16, OM-17-OM-20, VIS-8, REC-20, VEG-5, and SOIL-4 (see Table 2.7-1 in the FEIS).

The following measures, which were identified in Table 2.7-1 of the FEIS, are directly related to water resources and would be applicable to Segments 8 and 9:

WQA-1 The appropriate NPDES permits for construction activities that disturb one acre or more of land will be obtained from the Department of Environmental Quality and USEPA or their designees.

WQA-2 NPDES permit requirements will be met. This includes implementing and maintaining appropriate BMPs for minimizing impacts to surface water.

WQA-3 One or more responsible persons will be designated to manage stormwater issues, conduct the required stormwater inspections, and maintain the appropriate records to document compliance with the terms of the NPDES permit.

WQA-4 The SWPPPs will be modified as necessary to account for changing construction conditions.

WQA-5 The SWPPPs will identify areas with critical erosion conditions that may require special construction activities or additional BMPs to minimize soil erosion.

WQA-6 Stormwater BMPs will be maintained on all disturbed lands during construction activities, as described in the SWPPP.

WQA-7 Approved sediment and erosion control BMPs will be installed and maintained until disturbed areas meet final stabilization criteria.

WQA-8 Temporary BMPs will be used to control erosion and sediment at staging areas (equipment storage yards, fly yards, lay down areas) and substations.

WQA-9 The construction schedule may be modified to minimize construction activities in rain-soaked or muddy conditions.

WQA-10 Damaged temporary erosion and sediment control structures will be repaired in accordance with the SWPPP.

WQA-11 Upon completion of construction, permanent erosion and sediment BMPs will be installed along the transmission line within the ROW, at substations, and at related facilities in accordance with the SWPPPs.

WQA-12 In areas of droughty soils, the soil surfaces will be mulched and stabilized to minimize wind erosion and to conserve soil moisture in accordance with the SWPPPs.

WQA-13 Construction industry standard practices and BMPs will be used for spill prevention and containment.

WQA-14 Construction spills will be promptly cleaned up and contaminated materials hauled to a disposal site that meets local jurisdictional requirements.

WQA-15 All staging areas will contain fueling areas with containment. Where fueling must be conducted along the ROW, the plan will specify BMPs.

WQA-16 If an upland spill occurs during construction, berms will be constructed with available equipment to physically contain the spill. Absorbent materials will be applied to the spill area. Contaminated materials will be

excavated and temporarily placed on and covered by plastic sheeting in a containment area a minimum of 100 feet away from any wetland or waterbody, until proper disposal is arranged.

WQA-17 If a spill occurs which is beyond the capability of on-site equipment and personnel, an Emergency Response Contractor will be identified and available to further contain and clean up the spill.

WQA-18 For spills in standing water, floating booms, skimmer pumps, and holding tanks will be used as appropriate by the contractor to recover and contain released materials on the surface of the water.

WQA-19 If pre-existing contamination is encountered during operations, work will be suspended in the area of the suspected contamination until the type and extent of the contamination is determined. The type and extent of contamination; the responsible party; and local, state, and federal regulations will determine the appropriate cleanup method(s) for these areas.

WQA-20 The SPCC Plan will include details on the types and quantities of absorbent and protective materials (e.g., visqueen, booms) that must be readily available to construction personnel and requirements for the restocking of materials.

WQA-21 Materials such as fuels, other petroleum products, chemicals, and hazardous materials including wastes will be located in upland areas at least 500 feet away from streams, 400 feet for public wells, and 200 feet from private wells.

WQA-22 Pumps and temporary fuel tanks for the pumps will be stored in secondary containment. Containment will provide a minimum volume equal to 110 percent of the volume of the largest storage vessel located in the yard.

WQA-23 Avoid placement of road bed material in channels (perennial, intermittent or ephemeral). Road bed material contains considerable fines that would create sedimentation in coarse cobble dominated stream channels. Even in seasonally dry reaches those fines could be transported during flow periods and negatively impact fish spawning reaches below.

WQA-24 On federal lands, consult with appropriate land management agency staff prior to siting and design for stream crossings (location, alignment, and approach for culvert, drive-through, and ford crossings). This may include a hydrologist, engineer and, for perennial and many intermittent streams, an aquatic biologist.

WQA-25 All culverts on NFS lands, both permanent and temporary, shall be designed and installed to meet desired conditions for riparian and aquatic species as identified in the applicable Forest Plan. Culverts should not be hydraulically controlled. Hydraulically controlled culverts create passage problems for aquatic organisms. Culvert slope should not exceed stream

gradient and should be designed and implemented (typically by partial burial in the streambed) to maintain streambed material in the culvert.

WQA-26 Culvert sizing on NFS lands should also comply with Guidance for Aquatic Species Passage Design, Forest Service Northern Region & Intermountain Region (Forest Service 2003).

WQA-27 On non-federal lands, culvert placement should comply with state BMPs.

WQA-28 Migration of construction-related sediment to all adjacent surface waterbodies will be prevented.

These EPMs would avoid or minimize the extent of impacts that could occur to water resources such as reducing erosion and sedimentation and reducing the potential for spills into water bodies. These EPMs are a part of the current Project description, and as such, the effects of their implementation are included in the impact discussion found in Sections 3.16.2.2 and 3.16.2.3.

Proponent-Proposed MEP and Potential Effects of the MEP within the SRBOP

The Proponents have developed a MEP that contains design features specific to the SRBOP. This plan was developed to mitigate the effects of Project-related impacts within the SRBOP, as well as comply with the SRBOP's enabling statute (P.L. 103-64) which requires enhancement of resources within the SRBOP. The Proponents' plan contains two forms of mitigation: "compensation mitigation" and "enhancement." For this analysis, mitigation is defined as avoidance, minimization, and compensation measures aimed at offsetting adverse impacts of the Project; enhancement is defined as additional mitigation measures that are required in order to enhance the objectives and values for which the SRBOP was established.

The Proponents' MEP offers a portfolio that contains five types of mitigation/enhancement proposals only two of which have either a beneficial or detrimental effect on water resources and will be described here. The following discusses the benefit and/or impact that these proposed mitigation/enhancement proposals could have on water resources.

Habitat Restoration

The MEP proposes habitat restoration to convert "non-native grasslands to native perennial plant communities" as well as to conduct "noxious weed control." Additional water may be needed to support the 1,500 acres of vegetation restoration. As noted in the FEIS, the Proponents have stated the required water would be procured from municipal sources, from commercial sources, or under a temporary water use agreement with landowners holding existing water rights. No new water rights would be required (see Appendix B of the FEIS). If the entirety of this water use was diverted from existing rights, there would be no depletion of water beyond existing depletions related to existing water rights (Kantola 2010; Hoobles 2010).

Line and Substation Removal

The Proponents have proposed to remove some existing infrastructure within the SRBOP. This includes:

- Removing approximately 7 miles of existing 46-kV line on BLM-managed lands, including all structures (although structures may remain if requested by BLM), from the Bowmont Substation to Gage Substation;
- Constructing an approximately 1-mile-long section on private land to connect the remaining portion of the line to the Idaho Power system;
- Reconstructing 3.9 miles of existing 12.5-kV lines, including 0.25 mile on BLM-managed land;
- Converting approximately 4 miles of the existing 46-kV line on an existing BLM ROW between the Gage and Ferry Substations to a 12.5-kV distribution line; and
- Removing the existing Gage Substation and associated equipment/apparatus, which are on BLM-managed land.

There would be no stream crossings as a result of these actions; therefore, there would be no direct effects on water resources. One acre of construction disturbance is located within the moderate- to high-risk flood zone. There are 69 surface water diversions and 16 potable water wells located along the entire length of the MEP that may need to be avoided or mitigated during construction or reconstruction, depending on location. The Snake River is located along the length of the MEP and is 303(d) listed for temperature. However, MEP activities would not be situated close enough to the Snake River to impact the water resource.

Approximately 4 acres of construction disturbance is located within 500 feet of perennial and intermittent streams, and approximately 1 acre of construction disturbance is located within 100 feet of ephemeral streams. The work necessary to remove the existing line and substation, as well as reconstruct or re-connect the existing lines, would result in short-term soil disturbances. EPMs (listed in Table 2.7-1 of the FEIS) would be implemented during construction and during the removal of these existing lines and substations in order to minimize the soil erosion and thus potential sedimentation within nearby waterbodies.

3.16.2.6 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

<u>Summary of Remaining Impacts</u>

After implementation of the EPMs and MEP discussed above, some Project-related impacts would likely remain. The impact assessment found in Sections 3.16.2.2, 3.16.2.3, and 3.16.2.4 incorporates the avoidance and minimization contributions of the EPMs in the impact analysis; as a result, Sections 3.16.2.2, 3.16.2.3, and 3.16.2.4 take these measures and their impact offsets into consideration. The design features outlined in the Proponents' MEP (discussed above) may reduce the magnitude of impacts to some degree (thereby reducing the need for additional compensatory mitigation); however, the extent of this reduction cannot be fully quantified at this time (as discussed in detail above).

Note that Sections 3.16.2.2, 3.16.2.3, and 3.16.2.4 outline the current extent of known impacts that would occur Project-wide.

BLM Compensatory Mitigation Categories

There are no specific mitigation plans required in addition to the design features and EPMs meant to avoid and minimize impacts to water resources (as described above).

The BLM may require additional mitigation for some remaining impacts of the Project on environmental resources (including impacts that occur outside of the SRBOP), per the guidelines found in the BLM Regional Mitigation Manual (BLM 2013c) and DOI Manual 600 DM 6, *Implementing Mitigation at the Landscape-scale* (DOI 2015). Mitigation for Project-related impacts that would occur within the SRBOP is discussed below.

The BLM will continue to work with applicable stakeholders to identify the impacts that would remain on the SRBOP after implementation of the EPMs and MEP, as well as the existing compensatory mitigation plans discussed above. The BLM will then design mitigation options that address applicable remaining impacts (see Section 3.0 for a discussion of the BLM's policy regarding mitigation). These options will contain components that will ensure that impacts to resources and values on the SRBOP that require mitigation are compensated for, as well as that enhancement of these resources is provided in order to comply with the enabling statute of the SRBOP. Based on internal and external scoping, the BLM is considering eight mitigation categories (see Section 2.6.2 in Chapter 2). The following mitigation categories are being considered to address remaining impacts to water resources within the SRBOP:

- Implement habitat/vegetation restoration efforts;
- Evaluate, maintain, enhance, or expand fuels management/fuel breaks;
- Increase wildfire preparedness and suppression;
- Increase applied research and monitoring to inform adaptive management; and
- Acquire private lands as deemed appropriate by the Authorizing Officer.

3.17 LAND USE AND RECREATION

This section addresses the potential impacts on land use and recreation from the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H and 9K; and the Toana Road Variations to the Segment 9 Revised Proposed Route. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). Effects associated with the various routes analyzed in the 2013 FEIS were disclosed in that document. With the exception of FEIS Proposed 9, those FEIS routes are not being re-analyzed in the SEIS, as only new information is included in this SEIS.

3.17.1 Affected Environment

The following sections address land ownership; the use of designated utility corridors and existing ROW; federal land use plan amendments; and the potential impacts of the Project on specific land uses including residential properties, recreational and public interest areas, and OHV use. Impacts on forests are addressed in Section 3.6 – Vegetation Communities. Agricultural uses (prime farmland, livestock grazing, crop production, lands enrolled in the Conservation Reserve Program, and dairy farms) are addressed in Section 3.18 – Agriculture. Visual and noise effects on land uses are discussed in Sections 3.2 – Visual Resources and 3.23 – Noise, respectively. Mines are discussed in Section 3.12 – Minerals.

Morley Nelson Snake River Birds of Prey National Conservation Area

Portions of the Project would cross through the SRBOP. Recreational resources are one of the environmental resources and values for which the SRBOP was established to manage and protect. As a result, this section will discuss specific recreational resources and potential impacts that would occur on the SRBOP.

3.17.1.1 Analysis Area

The Analysis Area for characterizing land use and ownership patterns extends 250 feet on either side of the Revised Proposed Routes and other routes and 25 feet on either side of access roads, and includes the areas needed for new or expanded substations as well as temporary facilities such as staging areas and fly yards. Specific land uses are identified as crossed or within 1,000 feet of the Revised Proposed Routes and other routes. This area is used because the ground-disturbing activities related to the transmission line that could cause land use effects would occur within these areas. Specific land uses, such as residences, schools, and dairies that may be affected by close proximity to a transmission line are also discussed in Sections 3.18 – Agriculture, 3.21 – Electrical Environment, and 3.22 – Public Safety.

The following affected environment section is limited to a discussion of data and information that differs from that presented in the 2013 FEIS. The Analysis Area for this SEIS is restricted to that area crossed by Segments 8 and 9; therefore, not all resources discussed in the FEIS would be affected by the routes for Segments 8 and 9 being considered.

3.17.1.2 Issues Related to Land Use and Recreation

The following issues related to land use and recreation in Segments 8 and 9 were identified by the public during public scoping (Tetra Tech 2009) and comments on the DEIS, raised by federal and state agencies during scoping, or are issues that must be considered as stipulated in law or regulation. These issues are discussed in more detail in Section 3.17.2 – Direct and Indirect Effects of the FEIS, with the exception of the first two bullets below, which are discussed in Section 3.18 – Agriculture of the FEIS.

- Identify how the Project would affect CAFOs;
- Identify how the Project would affect current agricultural systems, including pivot irrigation and advanced positioning systems used in farm equipment;
- Identify residential areas, planned development, and specially designated uses that would be affected by the Project;
- Assess the effects of the Project on specially designated areas including NWRs, National Parks, National Monuments, SMAs, recreation sites, and roadless areas;
- Assess potential impacts to fire management activities;
- Identify the extent to which the Project would be co-located with existing developments;
- Assess potential effects to hunting or fishing;
- Assess whether there would be any loss of recreational opportunities;
- Describe how the Project would adhere to local land use plans and policies;
- Assess potential Project impacts to military activities;
- Assess how construction of this transmission line would influence the installation of more developments and projects in the same area in the future;
- Indicate whether construction buffers around buildings would be maintained;
- Identify the permits and plan amendments that would be required for this project; and
- Describe the plan for re-entries and maintenance activities on private land that would likely continue over the life of the Project.

We reviewed the scoping comments received for this SEIS and determined that land use and recreation-related issues considered in the FEIS have not changed. Comments received during the SEIS scoping expressed the following concerns:

- The potential impacts to the SRBOP and other public lands, including Bruneau Dunes State Park and Celebration Park. Concern was also expressed about OHV and horseback use on new access roads.
- Impacts to the values for which the SRBOP was established to manage and protect, which include recreational resources (see Appendix I, the SEIS Scoping Report).

3.17.1.3 Methods

The Land Use and Recreation section in the 2013 FEIS describes the methods used for the analysis. We have reviewed the methods in the FEIS and concluded that they are still valid for this SEIS. The updated BLM Surface Management Agency 2014 Land Status GIS layer was used in the SEIS analysis.

3.17.1.4 Existing Conditions

This section describes the existing conditions as they relate to the Analysis Areas for Segments 8 and 9.

Land Ownership

Table 3.17-1 summarizes existing land ownership within the Analysis Area by route. More than half of the Revised Proposed Route for Segment 8 (60 percent) is located on BLM-managed land, with another 27 percent on private land, 9 percent state owned, and 3 percent other. Approximately 86 percent of the Analysis Area for the Revised Proposed Route for Segment 9 consists of BLM-managed land, followed by 9 percent private, 4 percent state, and less than 1 percent other (Table 3.17-1). No Indian Reservations or Indian Trust Assets would be crossed by any of the SEIS routes. Routes 8G, 8H, and 9K are located on a greater portion of BLM-managed land than the respective Revised Proposed Routes, and on similar or less state owned and private land. FEIS Proposed 9 is on slightly less BLM-managed land and more private land than the Segment 9 Revised Proposed Route. The vast majority of the Toana Road Variations 1 and 1-A is located on BLM-managed land, though less than the comparison portion of the Segment 9 Revised Proposed Route. Each variation is located on a small portion of state-owned land (3 and 11 percent, respectively), compared to none for the corresponding portion of the Revised Proposed Route.

Table 3.17-1. Existing Land Ownership within the Analysis Area

Route	Analysis Area Total (Acres)[1/]	Percent of Analysis Area			
		BLM	State[2/]	Private	Other[3/]
Segment 8 Revised Proposed Route	9,092	60	9	27	3
Segment 8 Revised Proposed – Existing 500-kV Removal	70	45	0	55	0
Route 8G	10,636	79	9	12	<1
Route 8G – Existing 500-kV Removal	117	23	0	77	0
Route 8H	9,031	75	10	14	0
Route 8H – Existing 138-kV Removal	1,569	80	12	8	0
Rout 8H – Existing 500-kV Removal	117	23	0	77	0
Segment 9 FEIS Proposed Route	9,835	80	3	17	0
Segment 9 Revised Proposed	11,913	86	4	9	<1
Segment 9 Revised Proposed – Existing 138-kV Removal	1,569	80	12	8	0
Route 9K – Total Length	12,893	89	3	8	<1

Table 3.17-1. Existing Land Ownership within the Analysis Area (continued)

Segment	Analysis Area Total (Acres)[1/]	Percent of Analysis Area			
		BLM	State[2/]	Private	Other[3/]
Segment 9 Revised Proposed – Comparison Portion for Toana Road Variations	619	99	0	1	0
Toana Road Variation 1	609	97	3	0	0
Toana Road Variation 1-A	599	89	11	0	0

1/ The Analysis Area is based on a buffer of 250 feet on either side of the proposed transmission lines, plus 25 feet on either side of access roads, and includes the areas needed for new or expanded substations as well as temporary facilities such as multipurpose yards and fly yards. Note that the Analysis Area for the Project varies by resource.
2/ State includes the beds of navigable rivers, streams, and lakes.
3/ Other includes Bureau of Reclamation and Military Reservation/U.S. Army Corps of Engineers where crossed.

State Lands

The state rules for land use are described in detail within Section 3.17.1.3 of the 2013 FEIS. All endowment assets of the State of Idaho, per the state constitution, must be managed "in such manner as will secure the maximum long term financial return" to the trust beneficiaries. The *State Trust Lands Asset Management Plan* (Idaho State Board of Land Commissioners 2007) identifies utility and roadway ROWs as valid uses of endowment lands. However, any lease on endowment land would need to be negotiated with the IDL. Table 3.17-2 identifies the miles of the SEIS routes that pass through Idaho endowment land, as well as the miles of existing transmission line on Idaho endowment land that would be removed.

Table 3.17-2. Idaho Endowment Land

Segment Number	Route	Total Miles
8	Revised Proposed	11.4
	Route 8G	13.5
	Route 8H	14.3
	Route 8H – Existing 138-kV Removal	3.2
9	Revised Proposed	7.5
	Revised Proposed – Existing 138-kV Removal	3.2
	FEIS Proposed Route	4.6
	Route 9K	4.6
	Comparison portion for Toana Road Variations 1/1-A	0.0
	Toana Road Variation 1	0.3
	Toana Road Variation 1-A	1.0

Federal Lands

Land uses on federal lands in the Analysis Area are governed by various land use plans, including BLM RMPs and MFPs. These plans typically establish goals, objectives, and standards that apply to the land and resources managed under the plan. The BLM has determined that, depending on the route selected, the proposed Project would not conform to certain aspects of some of the RMPs and MFPs that guide management of the lands crossed by the Revised Proposed Route. Approval of a project that has elements that are not in conformance with an applicable management plan requires consideration of an amendment at the same time that the project is being analyzed. Plan amendments for the Revised Proposed Routes and other routes (8G, 8H, 9K, and FEIS Proposed 9) are discussed for each RMP and MFP in Appendix F.

The SEIS routes being considered cross BLM-administered lands managed under six different RMPs and four different MFPs (Table 3.17-3). The plans identified in the table generally proceed from east to west. These plans are described in the 2013 FEIS.

Table 3.17-3. BLM Management Plan Jurisdiction Crossed by the SEIS Routes

Resource Management Plan	Route	Management Framework Plan	Route
Cascade	Segment 8 Revised Proposed	Bennett Hills/Timmerman Hills	Segment 8 Revised Proposed
Monument	Segment 8 Revised Proposed, 8G, 8H	Kuna	Segment 8 and 9 Revised Proposed, 8H, FEIS Proposed 9
Jarbidge	All	Bruneau	8G, 8H, Segment 9 Revised Proposed, FEIS Proposed 9, 9K
SRBOP	Segment 8 and 9 Revised Proposed, FEIS Proposed 9, 8G, 8H, 9K	Twin Falls	Segment 9 Revised Proposed, FEIS Proposed 9, 9K
Owyhee	Segment 8 and 9 Revised Proposed, FEIS Proposed 9, 8G, 8H, 9K		
Cassia	Segment 9 Revised Proposed, FEIS Proposed 9, 9K		

All action alternatives cross some portion of the SRBOP. No feasible route was identified that would completely avoid the SRBOP. Any route south of the SRBOP would have to cross designated wilderness and/or the Saylor Creek Air Force Range Any route north and east of the SRBOP would cross several high-voltage transmission lines and/or populated areas in and near the cities of Kuna or Boise.

Land Use

Segment 8

The Analysis Area for Segment 8 is primarily rangeland (90 percent), with irrigated cropland accounting for 7 percent (Table 3.17-4). Irrigated agriculture is found mostly in the first 40 miles heading west from the Midpoint Substation and the last 25 miles before the Hemingway Substation. Farms and residences occur along the Analysis Area and more intensive residential development is planned in the area south of Boise.

Segment 9

The Analysis Area for Segment 9 is mainly rangeland (95 percent) with approximately 2 percent used for irrigated crop production (Table 3.17-4). Irrigated cropland in the vicinity of the Analysis Area is concentrated in three main areas: west of the proposed Cedar Hill Substation, west of Castleford, and between the communities of Bruneau and Grandview. The majority of the irrigated acres within the Analysis Area are located between Bruneau and Grandview. Development in the Analysis Area for this segment includes a small number of scattered residences and farms. More concentrated residential development exists near the town of Murphy and near the proposed Hemingway Substation.

Table 3.17-4. Existing Land Uses within the Analysis Area

Segment	Analysis Area Total (Acres)[1/2/]	Percent of Analysis Area			
		Rangeland	Cropland	ROW[3/]	Other[4/]
Segment 8 [5/]	14,500	91	6	2	1
Segment 8 – Existing 500-kV Removal	153	88	4	6	2
Segment 9 [6/]	14,154	91	6	2	1
Segment 9 – Existing 138-kV Removal	1,125	94	3	3	<1

1/ The Analysis Area is based on a buffer of 250 feet on either side of the proposed transmission lines, plus 25 feet on either side of access roads, and includes the areas needed for new or expanded substations as well as temporary facilities such as staging areas and fly yards. Note that the Analysis Area used for the Project varies by resource.
2/ Acres are presented here separately for each Revised Proposed Route component, rather than one consolidated area.
3/ Right-of-way (ROW) includes lands used for roads, transmission lines, gas pipelines, and other linear facilities.
4/ Other includes "barren" areas, which include disturbed and extractive mining areas, as well as a small amount of developed areas
5/ The Analysis Area acres for Segment 8 include the Revised Proposed Route and Routes 8G and 8H.
6/ The Analysis Area acres for Segment 9 include the Revised Proposed Route, FEIS Proposed Route, Route 9K, and the Toana Road Variations.

Designated Corridors and Existing ROWs

Corridors are established in BLM land use plans and, most recently, by the WWE Corridor ROD (see Section 1.6.2; BLM 2009a). There is a robust system of east-west high-voltage (230-kV and above) transmission lines that crosses the state of Idaho. Locations of existing electric transmission lines near the Project are noted on figures in Appendix A. The length and percentage of the SEIS routes that align with the WWE corridor and existing transmission lines are summarized in Table 2.5-2 and discussed below in Section 3.17.2.3 by segment.

Recreational and Public Interest Areas

Recreation on federal and other public lands in Idaho involves developed sites and also dispersed activities, such as hiking, backcountry camping, OHV use, riding on horseback, hunting, and fishing, which occur in and outside designated use and public interest areas. Recreation opportunities are available to the public on all BLM-managed lands where legal access exists. Existing recreation resources in the general vicinity of the proposed Project were avoided during the initial route selection studies wherever possible in order to limit the potential impact of the Project on these areas. Land use features used for recreation, and other specific land uses crossed or within 1,000 feet of the Revised Proposed Routes, FEIS Proposed 9, Routes 8G, 8H and 9K, and the Toana Road Variations are identified by segment in Table D.17-1 of Appendix D. Table D.17-1 also identifies land use features that would be crossed or within 1,000 feet of the sections of existing 500-kV and 138-kV transmission lines that would be removed as part of the Project. The features in Table D.17-1 were identified in GIS and may not include all specific place names (e.g., "Park or Recreation Area" instead of a named location).

Recreation activities on federal lands in the Analysis Area are managed under the applicable resource management plans (see Section 3.17.1.4). These plans specify the locations and times when many of these activities can occur, as well as applicable State regulations. Hunting in the Analysis Area, for example, varies by season and location, as permitted by the IDFG.

Designated recreation resources within the Analysis Area include SRMAs and other special management areas designated by the BLM, historic trails, and scenic byways, as well as developed recreation facilities. Management on public lands for OHV use also has important implications for recreation use.

FLPMA recognizes recreation as an important component of multiple use management and BLM Manual 8320 (Recreation) directs the BLM to "designate administrative units known as Recreation Management Areas (RMA). RMAs are designated as either a special recreation management area (SRMA) or an extensive recreation management area (ERMA). SRMAs recognize unique and distinctive recreation values and are managed to enhance a targeted set of activities, experiences, benefits, and recreation setting characteristics, which become the priority management focus. ERMAs recognize existing recreation use, demand, or Recreation and Visitor Services program investments and are managed to sustain principal recreation activities and associated qualities and conditions of the ERMA, commensurate with other resources and resource uses (BLM 2011a). SRMAs that would be crossed by or are within 1,000 feet of the SEIS routes are discussed by segment in the following section.

Historic trails within the Project area include trails designated as NHTs by Congress under the NTSA of 1968, as amended 1978. These include the web of pathways that are variously known as the Oregon, Mormon Pioneer, California, or Pony Express Trails. These pathways were historically a network of trail segments, river crossings, and landmarks that stretched across 1,800 miles of territory and linked the western frontier to the settled lands of the east. Most components of these four historic trails have been designated as NHTs and are part of the National Trails System. The Oregon NHT is the only NHT within the Analysis Area for Segments 8 and 9, including two alternate portions of the trail referred to as the Oregon NHT South Alternate and the North Alternate Oregon Trail. All of the potentially affected Oregon NHT components are described in detail in Section 3.1 – National Historic Trails; other historic trails potentially affected are described in Section 3.3 – Cultural Resources.

The following sections provide an overview of recreational resources within the Analysis Area by segment. OHV use on BLM-managed lands is discussed in a separate section that follows the segment-by-segment summaries.

Segment 8

Recreational resources on federal lands for the Revised Proposed Route along Segment 8 are regulated in part by the Monument, Jarbidge, SRBOP, Owyhee, and Cascade RMPs, as well as the Bennett Hills/Timmerman Hills and Kuna MFPs (Table 3.17-3). Recreational activities identified in BLM management plans are discussed in the 2013 FEIS.

The Revised Proposed Route, Route 8G, or Route 8H would cross the SRBOP and three SRMAs managed under the SRBOP RMP: the Oregon NHT, Owyhee Front, and Snake River Canyon SRMAs. These SRMAs would also be crossed by the FEIS Proposed Route and are discussed in the 2013 FEIS. Other special management areas crossed by the Revised Proposed Route, Route 8G, or Route 8H are the Black Mountain Herd Management Area (HMA), Birds of Prey Avoidance Area, C.J. Strike

SRMA, Saylor Creek HMA, and the Deer Flat NWR, which are also discussed in the 2013 FEIS.

The Revised Proposed Route would cross a number of NHTs and other trails such as stage and wagon roads that have potential historic significance. These include the Oregon NHT, the Oregon NHT South Alternate, the North Alternate Oregon NHT, and Kelton Road. The Revised Proposed Route would not cross the Northside Alternate Oregon NHT, Dorsey's Road, or the Boise City-Silver City Road, all three of which would be crossed by the FEIS Proposed Route. Route 8H would cross the Oregon NHT, Oregon NHT South Alternative, and Kelton Road. Route 8G would cross only the main route of the Oregon NHT.

The Revised Proposed Route for Segment 8 would cross the Western Heritage Historic Byway. The Western Heritage Historic Byway is 47 miles long and includes parts of SR 69 and Swan Falls Road (Idaho Transportation Department 2011). This byway mainly passes through the SRBOP. The Revised Proposed Route along Segment 8 would cross this byway in several locations, including from the Swan Falls Road, McDermott Road, and Sinker Road, all south and southeast of Melba. Route 8G and Route 8H would cross the western end of the Thousand Springs Scenic Byway between Hagerman, Idaho and Lower Salmon Falls. The Revised Proposed Route and Routes 8G and 8H would not cross any other scenic byways (see Section 3.2 – Visual Resources).

The Revised Proposed Route would pass to the south, by approximately 1 to 1.5 miles, of a number of small reservoirs that are popular for bird watching, including two areas (Indian Creek Reservoir and Blair Trail Reservoir) included as part of the Idaho Birding Trail maintained by the IDFG. The Idaho Birding Trail a network of sites and side-trips designed to offer optimal viewing opportunities for birds in Idaho, with 175 sites and about 2,000 miles of trail (IDFG 2015).

The Revised Proposed Route for Segment 8 would pass approximately 0.3 mile north of Celebration Park, which is located along the Snake River southwest of Kuna, Idaho. Celebration Park was established in 1989 as Idaho's only archaeological park and is managed by Canyon County Parks and Recreation. Visitors to the park can view rock-face petroglyphs of Native Americans and early settlers from over 12,000 years ago. Other activities include boating, camping, hiking, picnicking, and scenic/wildlife viewing. Guffey Bridge at the downstream edge of the park is one of the few crossings over the Snake River. Although Celebration Park is owned by the County, visitors also use adjacent BLM-managed lands for many of the parks activities (Fluckiger 2015a).

Route 8G runs along the edge of the Owyhee Front, a large dispersed area to the southwest of the alternative route from Oreana to Hemingway. This area sees upward of 50,000 to 60,000 visitors each year, largely for OHV use (see separate section below). In addition to OHV routes, the area is used for hunting in the fall, and is a designated competitive use area for annual events such as motorcycle races, mountain bike races, running races, equestrian endurance rides, and a variety of recreation-based fundraisers (Homan 2015).

Route 8H would cross the Cove non-motorized area and would pass within 1,000 feet of Locust Park, which is owned and maintained by Idaho Power. The route would cross the southern edge of the Cove Recreation Site on the C.J. Strike Reservoir. Though the Cove Recreation Site includes BLM-managed campsites for both RVs and tents, the crossing is just inside the southern boundary in an area not developed for camping. Just to the west of the Cove Recreation Site is a popular area for dispersed camping. Route 8H would also pass close to a Special Recreational Permit area used by hobbyists to launch rockets (Fluckiger 2015a). In addition, Route 8H would pass south of Bruneau Dunes State Park, approximately 0.2 mile away at its closest point. Bruneau Dunes State Park is open for camping year-round, with two cabins in addition to over 100 campsites. The park is known for its rolling dunes and star gazing at the park's observatory.

Segment 9

Recreational resources on federal lands for the Revised Proposed Route along Segment 9 are regulated in part by the Cassia, Jarbidge, SRBOP, and Owyhee RMPs, as well as the Twin Falls and Bruneau MFPs, all of which are discussed in the 2013 FEIS. In addition, a portion of the Revised Proposed Route for Segment 9 crosses BLM land managed by the Kuna MFP. Recreational activities identified in the various RMPs and MFPs are discussed in the 2013 FEIS for Segment 9 and not repeated in this document. Recreational activities identified in the Kuna MFP are described under Segment 8 in the 2013 FEIS.

The Revised Proposed Route and FEIS Proposed 9 would cross the SRBOP and four SRMAs managed under the SRBOP RMP: the Oregon NHT, Owyhee Front, Snake River Canyon, and C.J. Strike SRMA. Summary information is presented for the Oregon NHT, Owyhee Front, and Snake River Canyon SRMAs in the 2013 FEIS under Segment 8 in Section 3.17.1.5; summary information for C.J. Strike SRMA is provided under Segment 9 in the same section.

Other SMAs that would be crossed by the Revised Proposed Route or FEIS Proposed 9 for this segment are the Salmon Falls Creek ACEC, the Birds of Prey Avoidance Area, and the Black Mountain and Saylor Creek HMAs. Summary information is presented for these areas in the 2013 FEIS in Section 3.17.1.5.

The Revised Proposed Route and the FEIS Proposed Route along Segment 9 would cross the Toana Freight Wagon Road and the Oregon NHT South Alternate. The FEIS Proposed would also cross the Boise City-Silver City Road, which would not be crossed by the Revised Proposed Route. Route 9K does not cross any portion of the Oregon NHT.

The Segment 9 Revised Proposed Route would cross the Cove non-motorized area and would pass within 1,000 feet of Locust Park, which is owned and maintained by Idaho Power. The Revised Proposed Route would cross the southern edge of the Cove Recreation Site on the C.J. Strike Reservoir. Though the Cove Recreation Site includes BLM-managed campsites for both RVs and tents, the crossing is just inside the southern boundary in an area not developed for camping. Just to the west of the Cove Recreation Site is a popular area for dispersed camping. The Revised Proposed Route would also pass close to a Special Recreational Permit area used by hobbyists to

launch rockets (Fluckiger 2015a). In addition, the Revised Proposed Route would pass south of Bruneau Dunes State Park, approximately 0.2 mile away at its closest point. Bruneau Dunes State Park is open for camping year-round, with two cabins in addition to over 100 campsites. The park is known for its rolling dunes and star gazing at the park's observatory.

Unlike the FEIS Proposed Route, the Revised Proposed Route for Segment 9 would not cross the Owyhee Uplands Backcountry Byway or a motorcycle area on BLM lands managed by the Bruneau Field Office. The Revised Proposed Route and the FEIS Proposed Route for Segment 9 pass more than a mile west of Balanced Rock County Park.

OHV Use on BLM-managed Lands

The OHV designations for the majority of travel routes on public lands are currently either "open," "closed," or "limited" ("limited" routes may have seasonal restrictions or travel limitations to existing/designated routes in varying combinations). The Analysis Area includes numerous maintained trails, some of which are designated as open to OHV use and some as closed to OHV use (Table 3.17-5).

Table 3.17-5. OHV Designations on Federal Lands for the SEIS Routes (miles)

Segment	Total Route Length	Closed	Limited	Open	Undesignated
Segment 8 Revised Proposed	129.7	–	26.0	29.9	26.6
Segment 8 Revised Proposed – Existing 500-kV Removal	1.1	–	0.3	–	–
Route 8G	146.9	1.1	36.8	65.1	10.9
Route 8G – Existing 500-kV Removal	1.9	0.0	–	–	–
Route 8H	137.6	1.1	58.5	31.8	10.9
Route 8H – Existing 138-kV Removal	25.7	–	17.5	3.5	–
Route 8H – Existing 500-kV Removal	1.9	0.0	–	–	–
Segment 9 Revised Proposed – Total Length	165.3	3.1	61.9	76.6	–
Segment 9 Revised Proposed – Existing 138-kV Removal	25.7	–	17.5	3.5	–
Segment 9 FEIS Proposed Route – Total Length	162.2	3.1	36.9	89.2	–
Route 9K	174.6	–	40.2	112.1	–
Segment 9 Comparison Portion for Toana Road Variation	8.7	–	–	8.7	–
Toana Road Variation 1	8.5	–	–	8.3	–
Toana Road Variation 1-A	8.9	–	–	7.8	–

Travel by snowmobiles is permitted off existing routes and in all open or limited areas (unless otherwise specifically limited or closed to snowmobiles) provided the snowmobiles are operated in a responsible manner without damaging the vegetation or harming wildlife.

The non-highway road networks within the planning area consist of a series of county roads, BLM-maintained roads, private (ungated) roads, two-track routes, and snowmobile trails. These travel ways are used for both recreational and non-recreational purposes.

Typical OHV activities within the planning area are described in the 2013 FEIS Section 3.17.1.5 and not repeated in this document.

3.17.2 Direct and Indirect Effects

This section addresses potential impacts to land use and recreation from construction, operations, and decommissioning of the proposed Project. The Proposed Action includes measures designed to mitigate and enhance the SRBOP, as required by the enabling statute for the SRBOP and the SRBOP RMP. Mitigation measures, including the effects of implementing the MEP, are assessed in Sections 3.17.2.5 and 3.17.2.6.

A comprehensive list of all Project design features and EMPs, as well as the land ownership to which they apply, can be found in Table 2.7-1 of Chapter 2 of the FEIS. The following impact assessment takes these Project design features and EPMs into account when considering the potential impact that the Project could have on resources.

Plan Amendments

Amendments to the BLM RMPs and MFPs are summarized for each alternative in Table 2.3-1. As noted in Chapter 2, all plan amendments associated with the routes considered in this SEIS are included in the assessment. Some amendments overlap with those proposed in the FEIS and others are new to the SEIS, as indicated in the Chapter 2 tables. BLM plan amendments are discussed in detail in Appendices F and G of this SEIS. Amendments are needed to permit the Project to cross various areas of BLM-managed land. Effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved. Amendments that alter land management designations could change future use of these areas. Plan amendments are described for each alternative for applicable amendments in Section 3.17.2.4.

3.17.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West and the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of this Project. No Project-related impacts to land use or recreation would occur; however, impacts would continue as a result of natural events (such as fire, drought, and severe weather) as well as from existing and planned developments within the Analysis Area and from other projects, including wind farms, mining, agricultural, or other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project and the area would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, impacts similar to those described below may occur due to other new transmission lines built to meet the increasing demand in place of this Project.

3.17.2.2 Effects Common to All Routes

The general impacts that would occur to land use and recreation from construction, operations, and decommissioning of the Project were analyzed in detail in Section

3.17.2.2 of the 2013 FEIS. We have reviewed that section of the FEIS and effects common to all action alternatives have not changed since the 2013 FEIS and are not restated in this SEIS.

Lands with Wilderness Characteristics

FLPMA requires the BLM to maintain inventories of lands with wilderness characteristics and both FLPMA and NEPA require disclosure of impacts on wilderness characteristics from proposed projects. This is discussed in more detail in the 2013 FEIS. As indicated in the 2013 FEIS, no areas with wilderness characteristics are crossed by Segments 8 or 9. Also, Routes 8G, 8H, and 9K as well as the Toana Road Variations do not cross any areas with wilderness characteristics.

Decommissioning

Decommissioning would create another temporary disturbance of the area and land uses along the ROW. Vegetation, including trees, could be removed to provide safe work areas for decommissioning activities. Once structures and facilities are removed, former uses could resume and forested areas would be replanted. It is unlikely that decompaction of soils would be 100 percent effective, so it is possible that forests reestablished in some areas would not be as productive as areas that had never been a road or facility location. These impacts would remain until the soil naturally recovers. Additional details concerning decommissioning are provided in Appendix B of the FEIS.

3.17.2.3 Direct and Indirect Effects by Route

This section evaluates the potential impacts of the Revised Proposed Route in terms of land ownership, designated corridors and existing ROWs, anticipated federal land use plan amendments, and specific land uses and recreational resources.

Specific land uses, including residences, commercial buildings, barns, other structures, wind farms, mines, gravel pits, wells, center-pivot agricultural fields, and historic trails that are either crossed or within 1,000 feet of the centerline of the Segments 8 and 9 Revised Proposed Routes, other routes (FEIS Proposed 9, 8G, 8H, and 9K), and Variations, and other Project components are identified in Table D.17-1 in Appendix D. The area within 1,000 feet is used because the ground-disturbing activities related to the transmission line that could cause land use effects would occur within this distance. The following segment-by-segment discussion also addresses SMAs and OHV use. Though noted when applicable for recreational users, effects to historic trails are assessed in more detail in the NHT (Section 3.1), visual resources (Section 3.2), and cultural resources (Section 3.3) sections.

Other potential land uses including wetlands, mineral resources, water resources, and agriculture are discussed in Sections 3.9, 3.12, 3.16, and 3.18, respectively. Potential impacts related to visual resources, transportation, and noise are noted in this section, as appropriate. Detailed analyses of impacts to these resources are included in the visual resources (Section 3.2), transportation (Section 3.19), and noise (Section 3.23) sections.

Segment 8

Revised Proposed Route

The Segment 8 Revised Proposed Route would link the Midpoint and Hemingway Substations (see Figure A-1). This 129.7-mile single-circuit 500-kV transmission line would stay north of the Snake River until it crosses just north of Guffey Butte, generally parallel to an existing 500-kV transmission line, before ending at the Hemingway Substation. This route is similar to the original proposed route in the 2013 FEIS except that the line would be 250 feet north of the existing 500-kV line rather than 1,500 feet south of the line from the eastern boundary of the SRBOP (MP 99.7) to the Hemingway Substation. The route east of that point is unchanged from the 2013 FEIS Proposed Route.

Land Ownership

Almost two-thirds (60 percent) or 78.4 miles of the Segment 8 Revised Proposed Route would cross BLM-managed land, with the remainder crossing private (35.8 miles), state (11.5 miles), and other (Bureau of Reclamation; 3.9 miles) land (Table 3.17-6). The majority of the existing 500-kV line that would be removed as part of the Revised Proposed Route is located on private land (0.8 mile), with the remaining 0.3 mile located on BLM-managed land. The Segment 8 Revised Proposed Route would not cross land that is part of the city of Kuna.

Table 3.17-6. Miles Crossed by Land Ownership – Segment 8 Revised Proposed Route

Route	Total	BLM	NFS	Other[1/]	State	Private
Segment 8 Revised Proposed	129.7	78.4	–	3.9	11.5	35.8
Existing 500-kV Removal	1.1	0.3	–	–	–	0.8

Miles are rounded to tenths of a mile; columns/rows may therefore not sum exactly.
1/ The “Other” miles crossed are Bureau of Reclamation lands.
2/ “t” indicates values less than 0.1.

Designated Corridors and Existing ROW

Table 2.5-2 in Chapter 2 provides the length and percentage of the SEIS routes that align with existing corridors, including the WWE corridor. The Segment 8 Revised Proposed Route would be within or adjacent to existing transmission corridors for 117.1 miles (90.3 percent of its length). This route would follow the WWE corridor for much of its length except at the north end where there are no existing designated corridors across the SRBOP. Approximately 33.8 miles (26.1 percent) of the Revised Proposed Route would be within the WWE corridor (15.5 miles [11.9 percent] on federal lands and 18.3 miles [14.1 percent] on other land ownerships that are interspersed along the WWE corridor alignment), with 5.6 miles (4.3 percent) of the Revised Proposed Route adjacent to the WWE corridor (Table 2.5-2).

Specific Land Uses and Recreational Resources

Land Use

Land use within the Analysis Area for the Segment 8 Revised Proposed Route is summarized by segment in Table 3.17-4. Land uses crossed by the Revised Proposed Route are presented in miles in Table 3.17-7. Viewed in terms of miles crossed, the majority of the Segment 8 Revised Proposed Route (88 percent) would cross rangeland

(113.8 miles), with the remainder of the route crossing cropland (10 percent; 13.3 miles), and water and wetlands (1 percent; 1 mile; Table 3.17-7). The 1.1 miles of existing 500-kV line that would be removed as part of the Revised Proposed Route action are located on rangeland and cropland (Table 3.17-7).

Table 3.17-7. Miles Crossed by Land Use – Segment 8 Revised Proposed Route

Route/Variation	Total	Rangeland	Agriculture	Forest	Water and Wetlands	ROW	Developed	Other
Segment 8 Revised Proposed	129.7	113.8	13.3	–	1.0	<1	<1	<1
Existing 500-kV Removal	1.1	<1	<1	–	–	–	–	–

Miles are rounded to tenths of a mile; columns/rows may therefore not sum exactly. ROW – right-of-way

The Segment 8 Revised Proposed Route would pass within 1,000 feet of 37 residences, 5 of which are located within 300 feet of the proposed ROW centerline.

The Segment 8 Revised Proposed Route would cross (15) or pass within 1,000 feet (61) of 76 center-pivots used for agricultural irrigation. The Revised Proposed Route would also cross approximately 0.5 mile of a wind energy facility and a CAFO (Table D.17-1). Potential impacts to agricultural operations are addressed in Section 3.18 – Agriculture.

The Segment 8 Revised Proposed Route would also cross approximately 7.7 miles of the OCTC, including 0.5 mile of the training area. Consultation with the IDANG indicated their preference for the line to avoid a portion of the “Alpha” Maneuver Sector, OCTC. The IDANG has indicated that the presence of additional power lines would adversely affect existing ground maneuver and aerial combat training operations within the OCTC (Kelly 2011). The IDANG has also indicated that Revised Proposed Route would adversely affect approximately 3,500 acres of lands in the northern portion of the OCTC by limiting or restricting training near the proposed transmission line. This would adversely affect their ability to train personnel. In addition, this impact would constitute a permanent loss of lands within the OCTC, due to the Major Land Acquisition Moratorium established in 1990 by the Deputy Secretary of Defense, which constrains the DoD Agencies from acquiring new land.

The Segment 8 Revised Proposed Route would pass approximately 0.3 mile north of Celebration Park. While the transmission line would not directly cross the park, it would be visible to visitors using the area. The visual impact to recreational park users is evaluated in Section 3.2 – Visual Resources.

The Segment 8 Revised Proposed Route may cross or come within close proximity to BLM parcels identified as available for public disposal in the Monument RMP. In addition, there are multiple groupings of disposal parcels identified in the Jarbidge RMP between Range 5 and 13 East along Segment 8 that would need to be reviewed in more detail to determine any crossings. A transmission line crossing or located in close proximity may affect the eligibility and/or value for disposal of these parcels.

Special Management Areas

The Segment 8 Revised Proposed Route would cross approximately 25.1 miles of the SRBOP and an additional 2.6 miles among three SRMAs managed under the SRBOP RMP: the Oregon NHT, Owyhee Front, and Snake River Canyon SRMAs (Table 3.17-8). The Revised Proposed Route would also cross 4.8 miles of the Black Mountain HMA and 0.3 mile of the Deer Flat NWR. The 1.1 miles of existing 500-kV line that would be removed as part of the Revised Proposed Route action are located on the SRBOP.

Table 3.17-8. Special Management Areas Crossed by the Segment 8 Revised Proposed Route

Route	Length (Miles)	Management Area	Miles Crossed
Segment 8 Revised Proposed	129.7	Black Mountain HMA	4.8
		Deer Flat NWR	0.3
		Oregon NHT SRMA	0.2
		Owyhee Front SRMA	0.5
		SRBOP	25.1
		Snake River Canyon SRMA	1.9
Existing 500-kV Removal	1.1	SRBOP	1.1

Miles are rounded to tenths of a mile; columns/rows may therefore not sum exactly.
HMA – Herd Management Area; NHT – National Historic Trail; NWR – National Wildlife Refuge; SRBOP – Morley Nelson Snake River Birds of Prey National Conservation Area; SRMA – Special Recreation Management Area

Historic Trails

The Segment 8 Revised Proposed Route would cross a number of NHTs and other trails such as stage and wagon roads that have potential historic significance. These include the Oregon NHT, the Oregon NHT South Alternate, the North Alternate Oregon NHT, and Kelton Road. The Revised Proposed Route would not cross the Northside Alternate Oregon NHT, Dorsey's Road, or the Boise City-Silver City Road. For recreational users focused on the historic nature of the trails, an interruption by a modern transmission line crossing would alter that experience for the amount of time the Project remains in view. Potential impacts to historic trails are assessed in Section 3.3 – Cultural Resources. Impacts to NHTs are further assessed in Section 3.1 – National Historic Trails.

OHV Use

The Segment 8 Revised Proposed Route would cross 26.1 miles of public land where OHV use is limited (Table 3.17-5). The Revised Proposed Route would cross four trails closed to OHV use, crossing one of the trails three times for a total of six crossings. New road construction would result in six additional trail crossings. Approximately 91 percent of the Revised Proposed Route would follow existing transmission lines, reducing the potential for new unauthorized OHV access.

The 1.1 miles of existing 500-kV line that would be removed as part of the Segment 8 Revised Proposed Route action cross 0.3 mile of public land where OHV use is limited.

Route 8G

Route 8G is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows an alignment similar to the ones analyzed for Alternatives 8A and 9B in the FEIS for approximately 44 miles, although it generally parallels 250

feet north of the existing 500-kV line rather than1,500 feet to the south in order to avoid the Hagerman Fossil Beds National Monument and development near Hagerman (see Figure A-1). The route then parallels 250 feet north of the Segment 9 Revised Proposed Route and Route 9K for most of the remaining distance into the Hemingway Substation. The route is 146.9 miles long (including a 1.9-mile rebuild of the existing 500-kV line), compared to the 129.7-mile-long Segment 8 Revised Proposed Route.

Land Ownership

Route 8G would cross 114.5 miles of BLM-managed land, about 36 more miles than the Revised Proposed Route (Table 3.17-9). The remainder of the route would cross state (13.6 miles) and private (18.9 miles) land. The length of state land crossed is slightly longer than the Revised Proposed Route, while Route 8G crosses approximately half as much private land. The 1.9 miles of existing 500-kV line that would be removed as part of Route 8G is located nearly entirely on private land, with less than a tenth of a mile on BLM-managed land (Table 3.17-9).

Table 3.17-9. Miles Crossed by Land Ownership – Route 8G

Route	Total	BLM	NFS	Other[1/]	State	Private
Route 8G	146.9	114.5	–	–	13.6	18.9
Existing 500-kV Removal	1.9	t[2/]	–	–	0.0	1.8

Miles are rounded to tenths of a mile; columns/rows may therefore not sum exactly.
1/ The "Other" miles crossed are Bureau of Reclamation lands.
2/ "t" indicates values less than 0.1.

Designated Corridors and Existing ROW

Route 8G would be within or adjacent to existing transmission corridors for 38.9 miles (26.5 percent of its length) as compared to 117.1 miles (90.3 percent) of the Segment 8 Revised Proposed Route. Approximately 49.8 miles (33.9 percent) of Route 8G would be within the WWE corridor (32.8 miles [22.3 percent] on federal lands and 17 miles [11.7 percent] on other land ownerships that are interspersed along the WWE corridor), with 15 miles (10.2 percent) of Route 8G adjacent to the WWE corridor (Table 2.5-2). Overall, Route 8G is within or adjacent to existing transmission corridors or the WWE corridor for just over half its length, 52 percent, compared to 93.5 percent for the Revised Proposed Route.

Specific Land Uses and Recreational Resources

Land Use

Land uses crossed by Route 8G are presented in miles in Table 3.17-10. In terms of miles crossed, the vast majority of Route 8G (92 percent) would cross rangeland (134.5 miles), slightly more than the Segment 8 Revised Proposed Route. The remainder of the route crosses cropland (6.3 percent; 9.3 miles), existing ROW (less than 1 percent; 1.3 miles), and small portions of water and wetlands (less than 1 mile) and other land uses (less than 1 mile; Table 3.17-10). This is similar to the Segment 8 Revised Proposed Route. The 1.9 miles of existing 500-kV line that would be rebuilt as part of Route 8G are located primarily on rangeland (1.2 miles) with small portions on right-of-way (less than 1 mile) and developed lands (less than 1 mile). Unlike the removal section for the Revised Proposed Route, this section does not impact cropland.

Table 3.17-10. Miles Crossed by Land Use – Route 8G

Route/Variation	Total	Rangeland	Agriculture	Forest	Water and Wetlands	ROW	Developed	Other
Route 8G	146.9	134.5	9.3	–	<1	1.3	<1	1.0
Existing 500-kV Removal	1.9	1.2	–	–	–	<1	<1	–

Miles are rounded to tenths of a mile; columns/rows may therefore not sum exactly.
ROW – right-of-way

Route 8G would pass within 1,000 feet of 40 residences, 1 of which is within 300 feet of the ROW centerline, compared to 37 total residences and 4 within 300 feet for the Segment 8 Revised Proposed Route.

Route 8G would cross (10) or pass within 1,000 feet (32) of 42 center-pivots used for agricultural irrigation, 34 fewer than the Revised Proposed Route (Table D.17-1). Route 8G would not cross any CAFOs, but would cross a small portion of a wind energy facility, in a different location than the Revised Proposed Route. Unlike the Revised Proposed Route, Route 8G avoids crossing the OCTC.

This route does not cross any developed park or recreation areas. While it borders the Owyhee Front SRMA, it does not cross it and would not impact use of the area for OHV riders and participants in outdoor competitive events.

Route 8G may cross or come within close proximity to BLM parcels identified as available for public disposal, and would need to be reviewed in more detail to determine any crossings. A transmission line crossing or located in close proximity may affect the eligibility and/or value for disposal of these parcels.

Special Management Areas

Route 8G would cross approximately 9.9 miles of the SRBOP (compared to 25.1 miles of the Segment 8 Revised Proposed Route) and 0.4 mile of the Oregon NHT SRMA (compared to 0.2 mile of the Revised Proposed Route; Table 3.17-8). This route would also cross 9.5 miles of the Black Mountain HMA, compared to 4.8 miles for the Revised Proposed Route; and 6.7 miles of the Saylor Creek HMA, which the Revised Proposed Route does not cross. Unlike the Revised Proposed Route, Route 8G does not cross the Owyhee Front SRMA or Snake River Canyon SRMA (Table 3.17-11). The 1.9 miles of existing 500-kV line that would be removed as part of Route 8G are not located on any SMA.

Table 3.17-11. Special Management Areas Crossed by Route 8G

Route	Length (Miles)	Management Area	Miles Crossed
Route 8G	146.9	Black Mountain HMA	9.5
		Oregon NHT SRMA	0.4
		Saylor Creek HMA	6.7
		SRBOP	9.9

Miles are rounded to tenths of a mile; columns/rows may therefore not sum exactly.
HMA – Herd Management Area; NHT – National Historic Trail; SRBOP – Morley Nelson Snake River Birds of Prey National Conservation Area; SRMA – Special Recreation Management Area

Historic Trails
Route 8G would cross the Oregon NHT in one location that is considered a "High Potential Segment" (see Section 3.1 – National Historic Trails). It would not cross the alternate portions of the Oregon NHT or Kelton Road that are crossed by the Revised Proposed Route.

OHV Use
Route 8G would cross 36.8 miles of public land where OHV use is limited, compared to 26.1 miles for the Segment 8 Revised Proposed Route (Table 3.17-5). This route would cross three trails closed to OHV use (once each), and new road construction would result in an additional three crossings.

The 1.9 miles of existing 500-kV line that would be removed as part of Route 8G would not cross any public land that is closed to or limits OHV use.

Route 8H

Route 8H is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows a combination of portions of the alignments analyzed for 8G and the Revised Proposed Route for Segment 9. The route is 137.5 miles long (including a 1.9-mile-long rebuild of the existing 500-kV line and a 25.7-mile removal of an existing 138-kV line), compared to the 129.7-mile-long Segment 8 Revised Proposed Route. Approximately 44 miles of the route follows the 8G alignment; the remainder of 8H follows the alignment of the Segment 9 Revised Proposed Route.

Land Ownership
Route 8H would cross 103 miles of BLM-managed land, about 26 fewer miles than the Revised Proposed Route (Table 3.17-12). The remainder of the route would cross state (14.3 miles) and private (19.7 miles) land. The length of state land crossed is slightly longer than the Revised Proposed Route, while Route 8H crosses approximately half as much private land. The 1.9 miles of existing 500-kV line that would be removed as part of Route 8H is located nearly entirely on private land, with less than a tenth of a mile on BLM-managed land (Table 3.17-12). The majority of the existing 138-kV line that would be removed as part of 8H is located on BLM-managed land (21.0 miles), with the remaining 4.7 miles located on State (3.2 miles) and private (1.5 miles) lands.

Table 3.17-12. Miles Crossed by Land Ownership – Route 8H

Route	Total	BLM	NFS	Other[1/]	State	Private
Route 8H	137.5	103.0	–	0.1	14.3	19.7
Existing 500-kV Removal	1.9	t[2/]	–	–	0.0	1.8
Existing 138-kV Removal	25.7	21.0	–	–	3.2	1.5

Miles are rounded to tenths of a mile; columns/rows may therefore not sum exactly.
1/ The "Other" miles crossed are Bureau of Reclamation lands.
2/ "t" indicates values less than 0.1.

Designated Corridors and Existing ROW
Route 8H would be within or adjacent to existing transmission corridors for 71.9 miles (52.3 percent of its length) as compared to 117.1 miles (90.3 percent) of the Segment 8 Revised Proposed Route. Approximately 46.2 miles (33.6 percent) of Route 8H would be within the WWE corridor (29.8 miles [21.7 percent] on federal lands and 16.4 miles

[11.9 percent] on other land ownerships that are interspersed along the WWE corridor), with 9.9 miles (7.2 percent) of Route 8H adjacent to the WWE corridor (Table 2.5-2). Overall, Route 8H is within or adjacent to existing transmission corridors or the WWE corridor for nearly three-quarters of its length, 74.4 percent, compared to 93.5 percent for the Revised Proposed Route.

Specific Land Uses and Recreational Resources

Land Use

Land uses crossed by Route 8H are presented in miles in Table 3.17-13. In terms of miles crossed, the vast majority of Route 8H (90 percent) would cross rangeland (124.4 miles), slightly more than the Segment 8 Revised Proposed Route. The remainder of the route crosses cropland (7.6 percent; 10.4 miles), existing ROW (less than 1 percent; 1.4 miles), and small portions of water and wetlands, developed, and other land uses (all less than 1 mile; Table 3.17-13). This is similar to the Segment 8 Revised Proposed Route. The 1.9 miles of existing 500-kV line that would be rebuilt as part of Route 8H are located primarily on rangeland (1.2 miles) with small portions on right-of-way (less than 1 mile) and developed lands (less than 1 mile). Unlike the 500-kV removal section for the Revised Proposed Route, this section does not impact cropland. The majority of the existing 138-kV line that would be removed as part of Route 8H would also be located on rangeland.

Table 3.17-13. Miles Crossed by Land Use – Route 8H

Route/Variation	Total	Rangeland	Agriculture	Forest	Water and Wetlands	ROW	Developed	Other
Route 8H	137.5	124.4	10.4	–	0.8	1.4	0.3	0.2
Existing 500-kV Removal	1.9	1.2	–	–	–	0.5	0.1	–
Existing 138-kV Removal	25.7	24.0	0.5	–	0.1	0.9	t	–

Notes:
Miles are rounded to tenths of a mile; columns/rows may therefore not sum exactly.
ROW – right-of-way
"t" indicates values less than 0.1

Route 8H would pass within 1,000 feet of 37 residences, 4 of which are within 300 feet of the ROW centerline, compared to 37 total residences and 5 within 300 feet for the Segment 8 Revised Proposed Route. The 500-kV removal section for Route 8H would pass within 300 feet of one residence.

Route 8H would cross (10) or pass within 1,000 feet (29) of 39 center-pivots used for agricultural irrigation, 37 fewer than the Revised Proposed Route (Table D.17-1). Route 8H would cross two CAFOs and pass within 1,000 feet of two wind energy facilities (Table D.17-1). Unlike the Revised Proposed Route, Route 8H would not directly cross any wind energy facilities.

On the SRBOP, the Route 8H would cross the Cove non-motorized area and would also pass close to a Special Recreational Permit area used by hobbyists to launch rockets (the hobbyists need about a mile of area clear [e.g., no transmission lines] in order to safely launch their rockets; Fluckiger 2015a). The route would cross the southern edge of the Cove Recreation Site (approximately 75 feet inside the boundary) and pass south

of Bruneau Dunes State Park, approximately 0.2 mile away at the closest point. Route 8H would not inhibit use of either park area. The southern portion of the Cove Recreation Site where 8H would cross for about a quarter mile does not include camping facilities and is not typically used by recreationists (BLM 2003b; Fluckiger 2015b). However, from certain viewpoints, there would be moderate to high visual impacts to visitors at the Cove Recreation Site and high visual impacts to visitors at Bruneau Dunes State Park. These are assessed in Section 3.2 – Visual Resources.

From MPs 46.5 to 54.4, Route 8H would be just inside the east boundary of the general Jarbidge Military Operations Area. Within the general Military Operating Area, the height of transmission structures normally cannot extend more than 100 feet above ground level. Consultation between Twin Falls County and the U.S. Air Force has determined that this height restriction would not apply and this minor encroachment would be acceptable (Kramer 2009).

Route 8H would also pass through the Saylor Creek Air Force Range restricted area and to the south of Bruneau Dunes State Park in the vicinity of MPs 91 to 95.8. Consultation between representatives of the BLM, U.S. Air Force, Idaho Department of Parks and Recreation, and the Proponents has determined that the location of Route 8H within the restricted military operations area and just to the south of Bruneau Dunes State Park is acceptable. Unlike the Revised Proposed Route, Route 8H avoids crossing the OCTC.

Route 8H may cross or come within close proximity to BLM parcels identified as available for public disposal (within the Jarbidge RMP), and would need to be reviewed in more detail to determine any crossings. A transmission line crossing or located in close proximity may affect the eligibility and/or value for disposal of these parcels.

Special Management Areas

Route 8H would cross approximately 61.1 miles of the SRBOP (compared to 25.1 miles of the Segment 8 Revised Proposed Route) and 0.4 mile of the Oregon NHT SRMA (compared to 0.2 mile of the Revised Proposed Route; Table 3.17-8). This route would also cross 9.7 miles of the Black Mountain HMA, compared to 4.8 miles for the Revised Proposed Route; and 6.7 miles of the Saylor Creek HMA, which the Revised Proposed Route does not cross. Unlike the Revised Proposed Route, Route 8H does not cross any portion of the Deer Flat NWR. However, Route 8H would cross the C.J. Strike SRMA and Saylor Creek HMA.

The 1.9 miles of existing 500-kV line that would be removed as part of Route 8H are not located on any SMA. The majority of the existing 138-kV line that would be removed as part of Route 8H would cross the SRBOP, including parts of the C.J. Strike and Oregon NHT SRMAs (Table 3.17-14).

Table 3.17-14. Special Management Areas Crossed by Route 8H

Route	Length (Miles)	Management Area	Miles Crossed
Route 8H	137.6	Black Mountain HMA	9.7
		C.J. Strike Reservoir SRMA	2.0
		C.J. Strike SRMA	6.4
		Saylor Creek HMA	6.7
		Oregon NHT SRMA	0.4
		Owyhee Front SRMA	1.2
		SRBOP	61.1
		Snake River Canyon SRMA	1.3
Existing 138-kV Removal	25.7	C.J. Strike Reservoir SRMA	1.1
		C.J. Strike SRMA	4.4
		Oregon NHT SRMA	0.1
		SRBOP	25.7

Miles are rounded to tenths of a mile; columns/rows may therefore not sum exactly.
ACEC – Area of Critical Environmental Concern; HMA – Herd Management Area; NA – not applicable; NHT – National Historic Trail; NWR – National Wildlife Refuge; SRMA –Special Recreation Management Area; SRBOP – Morley Nelson Snake River Birds of Prey National Conservation Area

Historic Trails

Route 8H would cross the Oregon NHT, Oregon NHT South Alternate, and Kelton Road, which are also crossed by the Revised Proposed Route. Potential impacts to historic trails are assessed in Section 3.3 – Cultural Resources; impacts to NHTs are evaluated in Section 3.1– National Historic Trails.

OHV Use

Route 8H would cross 58.5 miles of public land where OHV use is limited, compared to 26.1 miles for the Segment 8 Revised Proposed Route (Table 3.17-5). This route would cross four trails closed to OHV use. The 1.9 miles of existing 500-kV line that would be removed as part of Route 8H would not cross any public land that is closed to or limits OHV use. The portion of the existing 138-kV line that would be removed would cross 17.5 miles of public land where OHV use is limited.

Segment 9

Revised Proposed Route

The Segment 9 Revised Proposed Route would link the proposed Cedar Hill and existing Hemingway Substations with a 165.3-mile single-circuit 500-kV transmission line that skirts the Jarbidge and Owyhee Military Operating Areas to the north, then follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering the Hemingway Substation (see Figure A-1). It follows an alignment similar to the 2013 FEIS Alternative 9D/9G between MP 95.6 and 154.7, except that two portions of the route (totaling 25.7 miles) would be double-circuited with existing 138-kV lines. The first area is 5.2 miles near C.J. Strike Reservoir and the Bruneau Arm (MP 106.2 to 109.3 and 109.9 to 112.1), and the second area is 20.2 miles along the Baja Road (MP 121.0 to 141.2). Several rebuilds totaling approximately 0.6 mile are also required to tie the existing 138-kV lines into the new double-circuit alignments. Except for minor variations, the Segment 9 Revised Proposed Route is similar to the 2013 FEIS Alternative 9D/9G between MP 141.2 to

154.7. From MP 154.7 and into the Hemingway Substation, the Segment 9 Revised Proposed Route is the same as the 2013 FEIS Proposed Route.

Land Ownership

The majority (86 percent) of the Segment 9 Revised Proposed Route, approximately 142.6 miles, would cross BLM-managed lands, with the remainder crossing private (14.7 miles) and state (7.7 miles) lands (Table 3.17-15). The Revised Proposed Route is slightly longer than the FEIS Proposed Route and crosses more miles of BLM-managed lands.

The majority of the existing 138-kV line that would be removed as part of the Segment 9 Revised Proposed Route action is located on BLM-managed land (21.0 miles), with the remaining 4.7 miles located on State (3.2 miles) and private (1.5 miles) lands.

Table 3.17-15. Miles Crossed by Land Ownership – Segment 9 Revised Proposed Route

Route/Variation	Total	BLM	NFS	Other[1/]	State	Private
Segment 9 Revised Proposed	165.3	142.6	–	0.1	7.7	14.7
Existing 138-kV Removal	25.7	21.0	–	–	3.2	1.5

Miles are rounded to tenths of a mile; columns/rows may therefore not sum exactly.
1/ The "Other" miles crossed by some of the routes are Bureau of Reclamation lands.

Designated Corridors and Existing ROW

The Segment 9 Revised Proposed Route would be within or adjacent to existing transmission line corridors for 55.1 miles (33.3 percent) of its length. The route would be within the WWE corridor for 27.4 miles (16.6 percent) of its total length (21.7 miles [13.1 percent] on federal land and 5.8 miles [3.5 percent] on other land ownerships that are interspersed along the WWE corridor), with 4.4 miles (2.7 percent) of the Revised Proposed Route adjacent to the WWE corridor (Table 2.5-2).

Salmon Falls Creek Wild and Scenic River Eligibility

The Segment 9 Revised Proposed Route was developed in cooperation with Twin Falls County to cross Salmon Falls Creek at Lilly Grade Road. The Revised Proposed Route shares the same alignment as the FEIS Proposed Route in this location (as shown in Figure 3.17-10 in the 2013 FEIS). The reason for the crossing is to keep the Project on public lands and off private agriculture lands. The revised route crossing near the Lilly Grade Road would be north of the Salmon Falls Creek WSA and would not affect the use. However, the route would cross the Salmon Falls Creek ACEC and a Recreation portion of an eligible WSR segment.

The segment of Salmon Falls Creek from Lilly Grade to Balanced Rock is eligible as a WSR because it is free-flowing and possesses scenic, recreational, and geological outstandingly remarkable values (ORVs); this segment's tentative classification is Recreation. BLM (2012c) Manual 6400, Wild and Scenic Rivers, states at page 3-8:

> *To the extent possible under existing legal authorities (e.g., FLPMA, Clean Water Act, Endangered Species Act, and Archaeological Resources Protection Act), the BLM's policy goal for eligible and suitable rivers is to manage their free-flowing condition, water quality, tentative classification, and any outstandingly remarkable values to assure a*

> *decision on suitability can be made for eligible rivers; or in the case of suitable rivers, until Congress designates the river or releases it for other uses. To that end, the BLM has broad discretionary authority, on a case-by-case basis through project-level decisionmaking and the NEPA processes, not to impact river values or make decisions that might lead to a determination of ineligibility or nonsuitability.*

Although scenery is one of the river's ORVs, the crossing point currently includes an existing single-phase low voltage distribution line and a paved road and bridge—the Lilly Grade Road. The towers would be located outside the WSR corridor (generally 0.25 mile wide). Only the transmission lines would cross the WSR eligible segment.

Section 2(b) of the WSR Act specifies the following:

> *Recreational River Areas: Recreational river areas are those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along the shorelines, and that may have undergone some impoundment or diversion in the past.*

Therefore, a transmission line crossing this portion of this eligible WSR segment would not affect the river's suitability as a Recreation River.

Specific Land Uses and Recreational Resources

Land Use

Viewed in terms of miles crossed, the majority of the Segment 9 Revised Proposed Route (95 percent; 156.5 miles) for Segment 9 would cross rangeland, with 3 percent (5.6 miles) crossing cropland and 1 percent (1.5 miles) crossing existing ROW (Table 3.17-16). The Revised Proposed Route would cross more miles of rangeland than the FEIS Proposed Route and fewer miles of cropland. The majority of the existing 138-kV line that would be removed as part of the Revised Proposed Route action would also be located on rangeland.

Table 3.17-16. Miles Crossed by Land Use – Segment 9 Revised Proposed Route

Route / Variation	Total	Rangeland	Agriculture	Forest	Water and Wetlands	ROW[1/]	Developed	Other
Segment 9 Revised Proposed	165.3	156.7	5.5	–	<1	1.4	<1	<1
Existing 138 kV Removal	25.7	24.0	<1.0	-	t	<1	<1	<1

Miles are rounded to tenths of a mile; columns/rows may therefore not sum exactly. ROW – right-of-way
1/ Right-of-way (ROW) includes lands used for roads, transmission lines, gas pipelines, and other linear facilities.

The Segment 9 Revised Proposed Route would pass within 1,000 feet of 10 residences; 2 of these residences are located within 300 feet of the proposed ROW centerline.

Commercial, industrial, and institutional land uses crossed or within 1,000 feet of the Revised Proposed Route are itemized by milepost in Table D.17-1 in Appendix D and summarized below.

The Segment 9 Revised Proposed Route for Segment 9 would cross (7) or pass within 1,000 feet (21) of 28 center-pivots used for agricultural irrigation. The Revised Proposed Route would also pass within 1,000 feet of a gravel pit, a clay pit, an animal pen, a water

tank, and Locust Park, which is owned and maintained by Idaho Power. The Revised Proposed Route would also cross 8.2 miles of South Hills, which is an Audubon Society Important Bird Area (Table D.17-1).

On the SRBOP, the Segment 9 Revised Proposed Route would cross the Cove non-motorized area and would also pass close to a Special Recreational Permit area used by hobbyists to launch rockets (the hobbyists need about a mile of area clear [e.g., no transmission lines] in order to safely launch their rockets; Fluckiger 2015a). The Revised Proposed Route would cross the southern edge of the Cove Recreation Site (approximately 75 feet inside the boundary) and pass south of Bruneau Dunes State Park, approximately 0.2 mile away at the closest point. The Revised Proposed Route would not inhibit use of either park area. The southern portion of the Cove Recreation Site where the Revised Proposed Route would cross for about a quarter mile does not include camping facilities and is not typically used by recreationists (BLM 2003b; Fluckiger 2015b). However, from certain viewpoints, there would be moderate to high visual impacts to visitors at the Cove Recreation Site and high visual impacts to visitors at Bruneau Dunes State Park. These are assessed in Section 3.2 – Visual Resources.

From MPs 46.5 to 54.4, the Segment 9 Revised Proposed Route would be just inside the east boundary of the general Jarbidge Military Operations Area. Within the general Military Operating Area, the height of transmission structures normally cannot extend more than 100 feet above ground level. Consultation between Twin Falls County and the U.S. Air Force has determined that this height restriction would not apply and this minor encroachment would be acceptable (Kramer 2009).

The Segment 9 Revised Proposed Route would also pass through the Saylor Creek Air Force Range restricted area and to the south of Bruneau Dunes State Park in the vicinity of MPs 91 to 95.8. Consultation between representatives of the BLM, U.S. Air Force, Idaho Department of Parks and Recreation, and the Proponents has determined that the location of the Revised Proposed Route within the restricted military operations area and just to the south of Bruneau Dunes State Park is acceptable. The Revised Proposed Route would not cross the OCTC.

There are multiple groupings of parcels available for public disposal identified in the Jarbidge RMP between Range 5 and 13 East along Segment 9 that would need to be reviewed in more detail to determine any crossings. A transmission line crossing located in close proximity may affect the eligibility and/or value for disposal of these parcels.

Special Management Areas

As with FEIS Proposed 9, the Segment 9 Revised Proposed Route would cross approximately 2.7 miles of the Salmon Falls Creek ACEC (Table 3.17-17). This is discussed in more detail in Appendix F.

The Revised Proposed Route would cross approximately 61.8 miles of the SRBOP as well as 11.2 miles among four SRMAs managed under the SRBOP RMP: the Oregon NHT, Owyhee Front, Snake River Canyon, and C.J. Strike SRMAs (Table 3.17-17). The Revised Proposed Route would also cross the Black Mountain HMA and the Saylor Creek HMA (Table 3.17-17).

The FEIS Proposed Route would cross approximately 13.6 miles of the SRBOP and would also cross the Owyhee Front SRMA, the Black Mountain HMA, and the Saylor Creek HMA.

Construction of a transmission line through some of these areas would require amendments to the SRBOP RMP as noted above in the Federal Land Use Plan Amendments section.

The majority of the existing 138-kV line that would be removed as part of the Segment 9 Revised Proposed Route action would cross the SRBOP, including parts of the C.J. Strike and Oregon NHT SRMAs (Table 3.17-17).

Table 3.17-17. Special Management Areas Crossed by the Revised Proposed Route for Segment 9

Route	Length (Miles)	Management Area	Miles Crossed
Segment 9 Revised Proposed	165.3	Black Mountain HMA	9.6
		C.J. Strike Reservoir SRMA	2.0
		C.J. Strike SRMA	6.4
		Oregon NHT SRMA	0.3
		Owyhee Front SRMA	1.2
		Salmon Falls Creek ACEC	2.7
		Saylor Creek HMA	12.9
		SRBOP	61.8
		Snake River Canyon SRMA	1.3
Existing 138-kV Removal	25.8	C.J. Strike Reservoir SRMA	1.1
		C.J. Strike SRMA	4.4
		Oregon NHT SRMA	0.1
		SRBOP	25.7

Miles are rounded to tenths of a mile; columns/rows may therefore not sum exactly.
ACEC – Area of Critical Environmental Concern; HMA – Herd Management Area; NA – not applicable; NHT – National Historic Trail; NWR – National Wildlife Refuge; SRMA –Special Recreation Management Area; SRBOP – Morley Nelson Snake River Birds of Prey National Conservation Area

Where the transmission line would cross the SRBOP, participants in internationally attended horse endurance rides held annually in the area for the past 10 years may be affected if potential route changes are required to avoid the transmission line. In addition, potential transmission line–related impacts to visual resources could affect the recreation experience for those participating.

Historic Trails

The Segment 9 Revised Proposed Route would cross the Toana Freight Wagon Road and the Oregon NHT South Alternate. The portion of the existing 138-kV line that would be removed as part of the Revised Proposed Route crosses the Oregon NHT South Alternate. The Boise City-Silver City Road, which would be crossed by the FEIS Proposed Route along Segment 9, would not be crossed by the Revised Proposed Route. Potential impacts to historic trails are assessed in Section 3.3 – Cultural Resources; impacts to National Historic Trails are evaluated in Section 3.1.

OHV Use

The Segment 9 Revised Proposed Route would cross 3.1 miles of public land closed to OHV use and 61.9 miles where OHV use is limited, resulting in increased opportunities

for unauthorized OHV access, and potential for disruption of existing uses. The portion of the existing 138-kV line that would be removed as part of the Revised Proposed Route would cross 17.5 miles of public land where OHV use is limited.

The Segment 9 Revised Proposed Route would cross two trails closed to OHV use, with a total of five crossings. New road construction associated with the Revised Proposed Route would result in four additional trail crossings.

The FEIS Proposed Route would also cross 3.1 miles of public land closed to OHV use and 36.9 miles where OHV use is limited. The FEIS Proposed Route would cross one trail closed to OHV use. New road construction associated with the FEIS Proposed Route would result in one additional trail crossing.

The Segment 9 Revised Proposed Route would follow existing transmission line corridors for 55.1 miles (33.3 percent) of its length, reducing the potential for unauthorized access in these areas. New access roads outside of existing corridors could provide OHV users access to areas that were previously inaccessible resulting in inappropriate uses such as camping and bonfires being set in areas not authorized for these uses. The Proponents would post signs identifying these areas as closed to OHV use and implement blocking measures where practical. Potential impacts from unauthorized access are also addressed as part of the Proponents' MEP (see Section 3.17.2.4 below).

FEIS Proposed 9

The Proponents originally designed the 162.2-mile-long FEIS Proposed Route in Segment 9 to follow existing utility corridors and avoid the SRBOP and other protected areas where feasible. Approximately 54 miles of the route is within or adjacent to a utility corridor. FEIS Proposed 9 is approximately 3.1 miles shorter than the Revised Proposed Route but it crosses 13.6 miles of the SRBOP compared to 54.2 miles for the Revised Proposed Route. Both the Revised Proposed Route and FEIS Proposed 9 cross the Salmon Falls Creek at Lilly Grade adjacent to an existing single-phase 34.5-kV distribution line just north of the Salmon Falls Creek WSA.

Land Ownership

The majority (80 percent) of the FEIS Proposed Route for Segment 9, approximately 129.4 miles, would cross BLM-managed lands, with the remainder crossing private (28.3 miles) and state (4.6 miles) lands (Table 3.17-18).

Table 3.17-18. Miles Crossed by Land Ownership – FEIS Proposed 9

Route	Total	BLM	NFS	Other[1/]	State	Private
FEIS Proposed 9	162.2	129.4	–	–	4.6	28.3

Miles are rounded to tenths of a mile; columns/rows may therefore not sum exactly.
1/ The "Other" miles crossed are Bureau of Reclamation lands.

Designated Corridors and Existing ROW

The FEIS Proposed Route would follow existing transmission line corridors for 17.6 miles (10.9 percent) of its length. The route would be within the WWE corridor for 67.8 miles (41.8 percent) of its total length and adjacent to the WWE corridor for 10.6 miles (6.5 percent).

Salmon Falls Creek Wild and Scenic River Eligibility

See discussion below under Revised Proposed Route for Segment 9 of the crossing of Salmon Falls Creek at Lilly Grade Road. The Revised Proposed Route shares the same alignment as the FEIS Proposed Route in this location (as shown in Figure 3.17-10 in the 2013 FEIS).

Specific Land Uses and Recreational Resources

Land Use

Land uses crossed by the FEIS Proposed Route are presented in miles in Table 3.17-19. The vast majority of this route (89.8 percent) would cross rangeland (145.6 miles), slightly less than the Segment 9 Revised Proposed Route. The remainder of the route crosses cropland (8.3 percent; 13.5 miles), existing ROW (less than 1 percent; 1.3 miles), and small portions of water and wetlands, developed, and other land uses (all 1 mile or less; Table 3.17-19). This is similar to the Revised Proposed Route.

Table 3.17-19. Miles Crossed by Land Use – FEIS Proposed Route 9

Route/Variation	Total	Rangeland	Agriculture	Forest	Water and Wetlands	ROW	Developed	Other
FEIS Proposed 9	162.2	145.6	13.5	–	0.7	1.3	0.2	1.0

Miles are rounded to tenths of a mile; columns/rows may therefore not sum exactly. ROW – right-of-way

The FEIS Proposed Route would pass within 1,000 feet of 28 residences, 8 of which are within 300 feet of the route, as compared to 10 total residences (2 within 300 feet) for the Revised Proposed Route.

Commercial, industrial, and institutional land uses crossed or within 1,000 feet of the FEIS Proposed Route are itemized by milepost in Table D.17-1 in Appendix D and summarized below.

FEIS Proposed 9 would cross (5) or pass within 1,000 feet (12) of 17 center-pivots used for agricultural irrigation, 11 less than the Revised Proposed Route for Segment 9. FEIS Proposed 9 would cross a small segment of the Jarbidge Military Operations Area and Saylor Creek Air Force Range, at the same locations as the Revised Proposed Route, discussed further in that section below. While the Revised Proposed Route avoids crossing any CAFOs, the FEIS Proposed 9 route would cross CAFOs at 13 locations. FEIS Proposed 9 would also pass within 1,000 feet of a gravel pit, a clay pit, and a cemetery. The route would also cross 8.3 miles of South Hills, which is an Audubon Society Important Bird Area (Table D.17-1).

There are multiple groupings of parcels available for public disposal identified in the Jarbidge RMP between Range 5 and 13 East along Segment 9 that would need to be reviewed in more detail to determine any crossings. A transmission line crossing located in close proximity may affect the eligibility and/or value for disposal of these parcels.

Special Management Areas

FEIS Proposed 9 would cross approximately 2.7 miles of the Salmon Falls Creek ACEC (Table 3.17-20). This is also the case for the Revised Proposed Route, and is discussed in more detail in Appendix F.

The FEIS Proposed Route would cross approximately 13.6 miles of the SRBOP, 12.9 miles of the Saylor Creek HMA, 9.5 miles of the Black Mountain HMA, and 4.7 miles of the Owyhee Front SRMA (managed under the SRBOP RMP) (Table 3.17-20). Construction of a transmission line through some of these areas would require federal land use plan amendments, as noted earlier.

Table 3.17-20. Special Management Areas Crossed by the FEIS Proposed 9

Route	Length (Miles)	Management Area	Miles Crossed
FEIS Proposed 9	162.2	Black Mountain HMA	9.5
		Owyhee Front SRMA	4.7
		Salmon Falls Creek ACEC	2.7
		Saylor Creek HMA	12.9
		SRBOP	13.6

Miles are rounded to tenths of a mile; columns/rows may therefore not sum exactly.
HMA – Herd Management Area; NHT – National Historic Trail; NWR – National Wildlife Refuge; SRBOP – Morley Nelson Snake River Birds of Prey National Conservation Area; SRMA – Special Recreation Management Area

Historic Trails

FEIS Proposed 9 would cross several trails such as stage and wagon roads that have potential historic significance (Section 3.3 – Cultural Resources). These included the Toana Freight Wagon Road and Boise City-Silver City Road. Potential impacts to historic trails are assessed in Section 3.3 – Cultural Resources; impacts to NHTs are evaluated in Section 3.1 – National Historic Trails.

OHV Use

FEIS Proposed 9 would cross 36.9 miles of public land where OHV use is limited, compared to 61.9 miles for the Segment 9 Revised Proposed Route (Table 3.17-5). This route would cross one trail closed to OHV use, the Centennial Trail.

Route 9K

Route 9K is being considered by the BLM as a modified version of FEIS Alternative 9E (the FEIS Preferred Route) to avoid crossing the northwestern portion of the SRBOP and to minimize direct and indirect impacts to priority sage-grouse habitat. The route is approximately 174.6 miles long, compared to the 165.3-mile-long Segment 9 Revised Proposed Route (see Figure A-1).

Land Ownership

The majority (90 percent; 156.2 miles) of Route 9K would cross BLM-managed lands, with the remainder crossing private (13.8 miles) and state (4.6 miles) lands (Table 3.17-21). Land ownership for Route 9K is very similar to the Segment 9 Revised Proposed Route for Segment 9, with slightly less state and private land and about 14 more miles of BLM-managed land.

Table 3.17-21. Miles Crossed by Land Ownership – Route 9K

Route/Variation	Total	BLM	NFS	Other[1/]	State	Private
Route 9K	174.6	156.2	–	–	4.6	13.8

Miles are rounded to tenths of a mile; columns/rows may therefore not sum exactly.
1/ The “Other” miles crossed by some of the routes are Bureau of Reclamation lands.

Designated Corridors and Existing ROW

Route 9K would be within or adjacent to existing transmission corridors for 18.2 miles (10.4 percent of its length) as compared to 55.1 miles (33.4 percent) of the Segment 9 Revised Proposed Route. Approximately 30.8 miles (17.6 percent) of Route 9K would be within the WWE corridor (24.5 miles [14 percent] on federal lands and 6.3 miles [3.6 percent] on other land ownerships that are interspersed along the WWE corridor), with 9.3 miles (5.3 percent) of Route 9K adjacent to the WWE corridor (Table 2.5-2). Overall, Route 9K is within or adjacent to existing transmission corridors or the WWE corridor for 27.9 percent of its length, compared to 46.8 percent for the Revised Proposed Route.

Specific Land Uses and Recreational Resources

Land Use

In terms of miles crossed, the vast majority (96 percent, 167.4 miles) of Route 9K would cross rangeland, with 2 percent (4.2 miles) crossing cropland, 1 percent (1.2 miles) crossing existing ROW, and 1 percent (1.2 miles) crossing other land uses. Less than a mile of Route 9K would cross water and wetlands or developed areas (Table 3.17-22). Compared to the Segment 9 Revised Proposed Route, Route 9K crosses similar amounts of the same land uses, with slightly more of the line located on rangeland than cropland.

Table 3.17-22. Miles Crossed by Land Use – Route 9K

Route / Variation	Total	Rangeland	Agriculture	Forest	Water and Wetlands	ROW[1/]	Developed	Other
Route 9K	174.6	167.4	4.2	–	<1	1.2	<1	1.2

Miles are rounded to tenths of a mile; columns/rows may therefore not sum exactly. ROW – right-of-way
1/ Right-of-way (ROW) includes lands used for roads, transmission lines, gas pipelines, and other linear facilities.

Route 9K would pass within 1,000 feet of 11 residences, with 2 located within 300 feet of the ROW centerline (compared to 10 and 2, respectively, for the Segment 9 Revised Proposed Route).

Land use features crossed or within 1,000 feet of Route 9K are itemized by milepost in Table D.17-1 in Appendix D and summarized below.

Route 9K would cross (5) or pass within 1,000 feet (13) of 18 center-pivots used for agricultural irrigation, ten fewer than the Segment 9 Revised Proposed Route. Similar to the Revised Proposed Route, Route 9K would pass within 1,000 feet of five CAFOs or animal pens, a gravel pit, a clay pit, and a number of dams. As with the Revised Proposed Route, Route 9K would cross the South Hills Important Bird Area and pass to the south of Bruneau Dunes State Park, though for only half the distance before Route 9K diverges to the south.

Route 9K would cross the Jarbidge Military Operations Area and Saylor Creek Air Force Range restricted area in the same locations as the Revised Proposed Route, discussed above. However, Route 9K would not cross the OCTC Military Operations Area.

Route 9K may cross or come within close proximity to BLM parcels identified as available for public disposal, and would need to be reviewed in more detail to determine

any potential crossings. A transmission line crossing or located in close proximity may affect the eligibility and/or value for disposal of these parcels.

Special Management Areas
As with the Segment 9 Revised Proposed Route, Route 9K would cross the same 2.7 miles of the Salmon Falls Creek ACEC (Table 3.17-23).

Route 9K would cross less of the SRBOP, approximately 9.8 miles compared to 61.8 miles for the Segment 9 Revised Proposed Route (Table 3.17-23). Route 9K would cross a similar amount of the Black Mountain HMA (9.4 miles compared to 9.6 miles for the Revised Proposed Route), and the same amount (12.9 miles) of the Saylor Creek HMA. Unlike the Revised Proposed Route, Route 9K does not cross the Oregon NHT SRMA, Owyhee Front SRMA, Snake River Canyon SRMA, or the C.J. Strike SRMAs.

Table 3.17-23. Special Management Areas Crossed by Route 9K

Route	Length (Miles)	Management Area	Miles Crossed
Route 9K	174.6	Black Mountain HMA	9.4
		Salmon Falls Creek ACEC	2.7
		Saylor Creek HMA	12.9
		SRBOP	9.8

Miles are rounded to tenths of a mile; columns/rows may therefore not sum exactly.
ACEC – Area of Critical Environmental Concern; HMA – Herd Management Area; SRBOP – Morley Nelson Snake River Birds of Prey National Conservation Area

Historic Trails
Route 9K would not cross any NHTs, though it would cross Toana Freight Wagon Road. Effects to historic trails are assessed in Section 3.3 – Cultural Resources.

OHV Use
Route 9K would cross 40.2 miles of public land where OHV use is limited and none where it is closed to OHV use, compared to 61.9 miles where it is limited and 3.1 where it is closed for the Segment 9 Revised Proposed Route (Table 3.17-5). This route would cross one trail closed to OHV use at a single location, with new road construction resulting in one additional crossing.

Toana Road Variations 1 and 1-A and the Comparison Portion of the Segment 9 Revised Proposed Route

Toana Road Variation 1 to the Segment 9 Revised Proposed Route was recommended by the BLM Jarbidge Field Office archaeologist to avoid paralleling the Toana Freight Wagon Road, an NRHP site. The Segment 9 Revised Proposed Route parallels within 0.25 mile of the Toana Road between MP 38.2 and 40.6, and parallels within 1 mile of the road through Blue Gulch between MP 40.6 and 43.5. Variation 1 is approximately 8.5 miles in length. Approximately 0.3 mile of the route crosses state land, with the remainder on land managed by the BLM. The Toana Road Variation 1-A to the Segment 9 Revised Proposed Route was recommended by the BLM to minimize visual impacts to the Toana Freight Wagon Road, and was also intended to utilize existing roads in order to minimize new road construction in the area. Variation 1-A is approximately 8.9 miles long. Approximately 1 mile of the route crosses state land, with the remainder on land managed by the BLM.

Land Ownership

The 8.7-mile-long proposed comparison portion of the Segment 9 Revised Proposed Route for the Toana Road Variations is located entirely on BLM-managed land. Variations 1 and 1-A are mainly located on BLM-managed lands, but both cross a section of state land. Variation 1 crosses 0.3 mile of state land and Variation 1-A crosses 1.0 mile (Table 3.17-24).

Table 3.17-24. Miles Crossed by Land Ownership – Toana Road Variations

Route/Variation	Total	BLM	NFS	Other[1/]	State	Private
Segment 9 Revised Proposed – Comparison portion for Toana Road Variations 1/1-A	8.7	8.7	–	–	0.0	–
Toana Road Variation 1	8.5	8.2	–	–	0.3	–
Toana Road Variation 1-A	8.9	7.8	–	–	1.0	–

Miles are rounded to tenths of a mile; columns/rows may therefore not sum exactly.
1/ The "Other" miles crossed by some of the routes are Bureau of Reclamation lands.

Designated Corridors and Existing ROW

The 8.7-mile-long comparison portion of the Segment 9 Revised Proposed Route for the Toana Road Variations is not adjacent to an existing transmission line or within or adjacent to the WWE corridor. This is also the case with Variations 1 and 1-A (Table 2.5-2).

Specific Land Uses and Recreational Resources

Land Use

The 8.7-mile-long comparison portion of the Segment 9 Revised Proposed Route for the Toana Road Variations would be almost entirely located on rangeland; this is also the case with both of the Toana Road Variations (1 and 1-A; Table 3.17-25).

Table 3.17-25. Miles Crossed by Land Use – Toana Road Variations

Route / Variation	Total	Rangeland	Agriculture	Forest	Water / Wetlands	ROW[1/]	Developed	Other
Segment 9 Comp. portion for Toana Road Variations 1/1-A	8.7	8.6	–	–	–	<1	–	–
Toana Road Variation 1	8.5	8.5	–	–	–	<1	–	–
Toana Road Variation 1-A	8.9	8.8	–	–	–	<1	–	–

Miles are rounded to tenths of a mile; columns/rows may therefore not sum exactly. ROW – right-of-way
1/ Right-of-way (ROW) includes lands used for roads, transmission lines, gas pipelines, and other linear facilities.

Neither the comparison portion of the Revised Proposed Route nor the Toana Road Variations would pass within 1,000 feet of a residence.

Both of the Toana Road Variations (Variations 1 and 1-A) would cross and pass within 1,000 feet of similar land uses as the comparison portion of the Revised Proposed Route (Table D.17-1).

Special Management Areas
Neither the comparison portion of the Segment 9 Revised Proposed Route nor the Toana Road Variations would cross any special management areas.

Historic Trails
The comparison portion for the Toana Road Variations and the two variations themselves would all cross the Toana Freight Wagon Road. Potential impacts to historic trails are assessed in Section 3.3 – Cultural Resources.

OHV Use
The Toana Road Variations would not cross any public land that is closed to or limits OHV use, nor any trails closed to OHV use.

3.17.2.4 Direct and Indirect Effects of the Alternatives

This section assesses the direct and indirect effects of the seven BLM action alternatives, referencing the above discussion of effects by route and presenting new data analysis results as appropriate. Following a comparative review of proposed federal land use plan amendments, each BLM action alternative is discussed in individual subsections. The alternatives are visually displayed in Figures A-2 through A-8.

Federal Land Use Plan Amendments

Table 3.17-26 summarizes the plan amendments under each of the BLM Alternatives. Neither of the Toana Road Variations would require a federal land use plan amendment.

Under all action alternatives, the Twin Falls and SRBOP management plans would be amended; however, amendments vary by alternative (Table 3.17-26). Alternatives 1 through 3, as well as 6 and 7, would require different amendments to the 1987 Jarbidge RMP. Alternatives 1 through 3 would also require amendments to the Bennett Hills/Timmerman Hills and Kuna MFPs. Except for Alternative 1, each alternative would require an amendment to the Bruneau RMP.

Table 3.17-26. Federal Land Use Plan Amendments and Applicable Action Alternative

Management Plan	Amendment Description (Number)	Alternative						
		1	2	3	4	5	6	7
Twin Falls	Allow a 500-kV transmission line ROW outside of existing corridors. (SEIS-1)	x	x	x	x	x	x	x
	The Class I and II areas adjacent to the Roseworth Corridor (established by the 2015 Jarbidge RMP) will be reclassified to match the VRM classes in the Jarbidge RMP. Allow a 500-kV transmission line to cross Salmon Falls Canyon through the ACEC, consistent with the corridor established in the Jarbidge 2015 RMP. (SEIS-2)	x	x	x	x	x	x	x
1987 Jarbidge RMP	The current Lands decision is amended to reclassify the area identified as restricted in Section 35, T. 04 S., R. 09 E. to allow the overhead lines of a 500-kV powerline right of way while protecting the Oregon Trail ruts. (SEIS-3)	x	x	x				
	The existing ruts of the main route, north and south alternate routes of the Oregon Trail and Kelton Road will be protected by not allowing incompatible uses to occur within ½ mile corridor of ruts except where visual impacts are already compromised. Protect existing trail ruts from surface disturbance. (SEIS-4)	x	x	x				
	The VRM decisions and Map 9 are amended to accommodate a major powerline R/W. These VRM boundaries are modified according to the new manual to reclassify the VRM Class I area associated with Oregon Trail and the Proposed 500-kV line as VRM Class IV. (SEIS-5)	x	x	x				
	The VRM decisions and Map 9 are amended to accommodate a major powerline R/W. The VRM Classification is amended to change the VRM Class to VRM Class III, adjacent to the proposed line, where the towers would be visible and dominate the landscape. (SEIS-14)	x					x	x
SRBOP RMP	Restrict major utility developments to the two utility corridors identified and allow an additional major powerline ROW as applicable with laws and values for which the SRBOP NCA was designated. Designate an additional corridor to include the existing Sun Lake 500-kV line and one additional 500-kV line. (SEIS-6)	x	x	x				
	Restrict major utility developments to the two utility corridors identified (Lands Map 3) and allow an additional major powerline ROW as applicable with laws and values for which the SRBOP NCA was designated. Designate an additional corridor to include one additional 500-kV line. (SEIS-7)		x		x		x	
	Gateway West will be allowed within 0.5 mile of occupied, sensitive plant habitat, with appropriate mitigation to protect sensitive plants, including slickspot peppergrass. (SEIS-8)	x	x	x	x	x	x	x
	Restrict major utility developments to the two utility corridors identified (Lands Map 3) and allow an additional major powerline ROW as applicable with laws and values for which the SRBOP NCA was designated. Designate an additional corridor to include two 500 kV lines. (SEIS-13)					x		
	A corridor 250 feet from the centerline of the proposed powerline would be established with a VRM of Class III. This corridor would maintain a distance of at least 0.5 mile from the NHT, except where it crosses the trail. (SEIS-15)	x					x	x

Table 3.17-26. Federal Land Use Plan Amendments and Applicable Action Alternative (continued)

Management Plan	Amendment Description (Number)	Alternative						
		1	2	3	4	5	6	7
SRBOP RMP	This SRMA consists of 22,300 acres in the Snake River Canyon downstream from Grandview, Idaho that is managed for the protection of cultural and scenic values. Allow a 500-kV transmission line to cross the SRMA while protecting cultural resources from surface disturbance. (SEIS-16)	x					x	x
	C.J. Strike SRMA: This SRMA consists of 20,000 acres surrounding C.J. Strike Reservoir along the Snake River. The purpose of the SRMA is to provide enhanced recreation management associated with the reservoir, and protection of the Oregon Trail adjacent to the reservoir. Allow a 500-kV transmission line to cross the SRMA while protecting the Oregon Trail from surface disturbance. (SEIS-17)							
	VRM Class II areas associated with the Oregon Trail and Snake River that are in view of the 500-kV transmission line that would not meet VRM Class II objectives of the C. J. Strike SRMA would be reclassified to VRM Class III. (SEIS-18)	x					x	x
	The area is closed to motorized vehicle use, subject to authorized use. (SEIS-19)	x					x	x
	Restrict major utility developments to the two utility corridors identified (Lands Map 3) and allow an additional major powerline ROW, as applicable with laws and values for which the SRBOP NCA was designated. Designate an additional corridor to include portions of the existing 138-kV line and one additional 500-kV line. (SEIS-20)	x					x	x
	Restrict major utility developments to the two utility corridors identified (Lands Map 3) and allow an additional major powerline ROW as applicable with laws and values for which the SRBOP NCA was designated. Designate an additional corridor to include a 500 kV line. (SEIS-21)			x				x
	Restrict major utility developments to the two utility corridors identified (Lands Map 3) and allow an additional major powerline ROW as applicable with laws and values for which the SRBOP NCA was designated. Designate an additional corridor to include a 500 kV line. (SEIS-22)				x			
Bennett Hills/ Timmerman Hills MFP	The VRM Class II area within 3,000 feet to the north of the existing transmission line ROW will be reclassified to VRM III (including the existing ROW). (SEIS-9)	x	x	x				
	Manage all cultural resources with applicable laws and policies. (SEIS-10)	x	x	x				
Kuna MFP	L-4.1 – Confine major new utility R/Ws (i.e., 500 kV or larger or 24-inch pipeline) to existing corridors as shown on Overlay L-4. The R/Ws will be subject to reasonable stipulations to protect other resource uses. Amend Overlay L-4 to add a major transmission line (500 kV) right-of-way. (SEIS-11)	x	x	x				
Bruneau MFP	The area designated as VRM Class II adjacent to Castle Creek will be reclassified to VRM Class III. (SEIS-12)		x	x	x	x	x	x

ACEC: Area of Critical Environmental Concern; kV: kilovolt; MFP: Management Framework Plan; NHT: National Historic Trail; R/W or ROW: right-of-way; R: Range; RMP: Resource Management Plan; SRBOP: Morley Nelson Snake River Birds of Prey National Conservation Area; SRMA: Special Recreation Management Area; T: Township; VRM: Visual Resource Management

Alternative 1 – Proposed Action (the Revised Proposed Routes for Segments 8 and 9)

Alternative 1, the Proposed Action, consists of the Revised Proposed Routes for Segments 8 and 9, and the impacts associated with this alternative correspond to those described above for these two routes combined. Therefore, Alternative 1 impacts to land use are generally greater than when considering each individual route alone. Associated quantitative and qualitative impacts of Alternative 1 are described below by subtopic, incorporating the previous route analysis by reference as appropriate.

Land Ownership

Alternative 1 would cross a total of 221 miles of BLM-managed land, 50.5 miles of private land, 19.2 miles of state land, and 4 miles of Bureau of Reclamation lands.

Designated Corridors and Existing ROW

Alternative 1 would be within or adjacent to existing transmission corridors for 172.2 miles (58.4 percent of its length). Approximately 61.2 miles (20.7 percent) would be within the WWE corridor, and 10 miles (3.4 percent) would be adjacent to the WWE corridor.

Specific Land Uses and Recreational Resources

See earlier discussion for additional details regarding the Revised Proposed Routes for Segments 8 and 9.

Land Use

The majority (92 percent) of Alternative 1 would cross rangeland, for a total of 270.5 miles. The remainder would cross agricultural lands (18.8 miles; 6.4 percent), existing ROW (2.3 miles; 1 percent), and approximately one mile or less of water and wetlands, developed, and other lands.

Special Management Areas

Alternative 1 would cross the Black Mountain HMA (14.4 miles), C.J. Strike Reservoir SRMA (2 miles), C.J. Strike SRMA (6.4 miles), Deer Flat NWR (0.3 mile), Oregon NHT SRMA (0.5 mile), Owyhee Front SRMA (1.7 miles), Salmon Falls Creek ACEC (2.7 miles), Saylor Creek HMA (12.9 miles), SRBOP (86.9 miles), and Snake River Canyon SRMA (3.2 miles).

Historic Trails

Alternative 1 would cross the Oregon NHT, the Oregon NHT South Alternate, the North Alternate Oregon NHT, Kelton Road, and the Toana Freight Wagon Road. See Section 3.3 – Cultural Resources for further analysis.

OHV Use

Alternative 1 would cross 3.1 miles of public land closed to OHV use and 88 miles where OHV use is limited. This alternative would cross six trails closed to OHV use, with a total of 11 ROW crossings and 10 additional crossings by new road construction. As a result, Alternative 1 would increase opportunities for unauthorized OHV access and potential for disruption of existing land uses.

Toana Road Variations

Effects to land use under Alternative 1 would be very similar if either Toana Road Variation 1 or 1-A were implemented. Slightly more state land would be crossed (0.3 or 1 mile, respectively) than the comparison portion of Alternative 1, with a corresponding decrease in affected BLM-managed lands. Toana Road Variation 1 would avoid paralleling the Toana Freight Wagon Road for a portion of Alternative 1. Toana Road Variation 1-A would minimize visual impacts to the Toana Freight Wagon Road and utilize more existing roads to reduce new road construction.

Alternative 2 – Revised Proposed 8 and FEIS Proposed 9

Alternative 2 consists of the Revised Proposed Route for Segment 8 and the FEIS Proposed Route for Segment 9. The impacts associated with this alternative correspond to those described above for these two routes combined. Therefore, Alternative 2 impacts to land use are generally greater than when considering each individual route alone. The following subsections provide additional quantitative and qualitative impact information for Alternative 2, compared to Alternative 1 (the Proposed Action). Earlier route analysis is referenced as appropriate.

Land Ownership

Alternative 2 would be about three miles shorter overall than Alternative 1, crossing a total of 207.8 miles of BLM-managed land, 64.1 miles of private land, 16.1 miles of state land, and 3.9 miles of Bureau of Reclamation lands. This is slightly less BLM-managed land and slightly more state land than the Proposed Action, with similar amounts of state and Bureau of Reclamation lands crossed.

Designated Corridors and Existing ROW

Alternative 2 would be within or adjacent to existing transmission lines for 134.7 miles (46.1 percent of its length), about 37.5 miles less than Alternative 1. However, more of Alternative 2 would be within or adjacent to the WWE corridor: approximately 101.6 miles (34.8 percent) would be within the WWE corridor (40 more miles than Alternative 1), and 16.2 miles (5.5 percent) would be adjacent to the WWE corridor (6.2 more miles than Alternative 1).

Specific Land Uses and Recreational Resources

See earlier discussion for additional details regarding the Revised Proposed Route for Segment 8 and FEIS Proposed Route for Segment 9.

Land Use

Similar to Alternative 1, the majority (88.9 percent) of Alternative 2 would cross rangeland, for a total of 259.4 miles. The remainder would cross agricultural lands (26.8 miles; 9.2 percent), existing ROW (2.2 miles; 0.8 percent), water and wetlands (1.7 miles; 0.6 percent), other (1 mile; 0.3 percent), and less than 1 mile of developed land (0.1 percent).

Special Management Areas

Similar to Alternative 1, Alternative 2 would cross the Black Mountain HMA (14.3 miles), Deer Flat NWR (0.3 mile), Oregon NHT SRMA (0.2 mile), Owyhee Front SRMA (5.2 miles), Salmon Falls Creek ACEC (2.7 miles), Saylor Creek HMA (12.9 miles), and

Snake River Canyon SRMA (1.9 miles). Alternative 2 would also cross the SRBOP, for a total of 38.7 miles, which is 48.2 miles less than Alternative 1. Unlike Alternative 1, Alternative 2 would not cross the C.J. Strike SRMA.

Historic Trails

Alternative 2 would cross a number of NHTs and other trails such as stage and wagon roads that have potential historic significance. These include the Oregon NHT, the Oregon NHT South Alternate, the North Alternate Oregon NHT, Kelton Road, the Toana Freight Wagon Road, and Boise City-Silver City Road. This is similar to Alternative 1, with the addition of Boise City-Silver City Road. See Section 3.3 – Cultural Resources for further analysis.

OHV Use

As under Alternative 1, Alternative 2 would cross 3.1 miles of public land closed to OHV use; however Alternative 2 would cross 62.9 miles where OHV use is limited, which is 25.1 miles less than Alternative 1. Alternative 2 would cross five trails closed to OHV use, one less than Alternative 1. Overall, Alternative 2 would result in similar or slightly fewer opportunities for unauthorized OHV access and other disruption than Alternative 1.

Toana Road Variations

Effects to land use under Alternative 2 would be very similar if either Toana Road Variation 1 or 1-A were implemented. Slightly more state land would be crossed (0.3 or 1 mile, respectively) than the comparison portion of Alternative 2, with a corresponding decrease in affected BLM-managed lands. Toana Road Variation 1 would avoid paralleling the Toana Freight Wagon Road for a portion of Alternative 2. Toana Road Variation 1-A would minimize visual impacts to the Toana Freight Wagon Road and utilize more existing roads to reduce new road construction.

Alternative 3 – Revised Proposed 8 and the 9K Route

Alternative 3 consists of the Revised Proposed Route for Segment 8 and Route 9K. The impacts associated with this alternative correspond to those described above for these two routes combined. Therefore, Alternative 3 impacts to land use are generally greater than when considering each individual route alone. The following subsections provide additional quantitative and qualitative impact information for Alternative 3, compared to Alternative 1 (the Proposed Action). Earlier route analysis is referenced as appropriate.

Land Ownership

Alternative 3 would be nearly 10 miles longer overall than Alternative 1, crossing a total of 234.6 miles of BLM-managed land, 49.6 miles of private land, 16.1 miles of state land, and 3.9 miles of Bureau of Reclamation lands. This is slightly more BLM-managed land and slightly less private and state land than Alternative 1, with a similar length of Bureau of Reclamation land crossed.

Designated Corridors and Existing ROW

Alternative 3 would be within or adjacent to existing transmission lines for 135.3 miles (44.5 percent of its length), about 98.4 miles less than Alternative 1. Similar to

Alternative 1, Alternative 3 would be within the WWE corridor for 64.6 miles (21.2 percent), and adjacent to the WWE corridor for 14.9 miles (4.9 percent).

Specific Land Uses and Recreational Resources

See earlier discussion for additional details regarding the Revised Proposed Route for Segment 8 and Route 9K.

Land Use

As under Alternative 1, the majority (92.4 percent) of Alternative 3 would cross rangeland, for a total of 281.2 miles. The remainder would cross agricultural lands (17.5 miles; 5.8 percent), existing ROW (2.1 miles; 0.7 percent), water and wetlands (1.4 miles; 0.5 percent), other (1.2 miles; 0.4 percent), and less than one mile of developed land (0.3 percent).

Special Management Areas

Similar to Alternative 1, Alternative 3 would cross the Black Mountain HMA (14.2 miles), Deer Flat NWR (0.3 mile), Oregon NHT SRMA (0.2 mile), Owyhee Front SRMA (0.5 mile), Salmon Falls Creek ACEC (2.7 miles), Saylor Creek HMA (12.9 miles), and Snake River Canyon SRMA (1.9 miles). Alternative 3 would also cross the SRBOP, for a total of 34.9 miles, which is 52 miles less than Alternative 1. Unlike Alternative 1, Alternative 3 would not cross the C.J. Strike SRMA.

Historic Trails

Alternative 3 would cross a number of NHTs and other trails such as stage and wagon roads that have potential historic significance. These include the Oregon NHT, the Oregon NHT South Alternate, the North Alternate Oregon NHT, Kelton Road, and the Toana Freight Wagon Road. This is the same as under Alternative 1. See Section 3.3 – Cultural Resources for further analysis.

OHV Use

Unlike Alternative 1, Alternative 3 would not cross any public land closed to OHV use. In addition, Alternative 3 would cross 66.2 miles where OHV use is limited, which is 21.8 miles less than Alternative 1. Alternative 3 would cross five trails closed to OHV use, one less than Alternative 1. Overall, Alternative 3 would result in fewer opportunities than Alternative 1 for unauthorized OHV access and other disruption to existing land uses.

Toana Road Variations

Effects to land use under Alternative 3 would be very similar if either Toana Road Variation 1 or 1-A were implemented. Slightly more state land would be crossed (0.3 or 1 mile, respectively) than the comparison portion of Alternative 3, with a corresponding decrease in affected BLM-managed lands. Toana Road Variation 1 would avoid paralleling the Toana Freight Wagon Road for a portion of Alternative 3. Toana Road Variation 1-A would minimize visual impacts to the Toana Freight Wagon Road and utilize more existing roads to reduce new road construction.

Alternative 4 – The 8G Route and FEIS Proposed 9

Alternative 4 consists of Route 8G and the FEIS Proposed 9. The impacts associated with this alternative correspond to those described above for these two routes

combined. Therefore, Alternative 4 impacts to land use are generally greater than when considering each individual route alone. The following subsections provide additional quantitative and qualitative impact information for Alternative 4, compared to Alternative 1 (the Proposed Action). Earlier route analysis is referenced as appropriate.

Land Ownership

Alternative 4 would be about 14 miles longer overall than Alternative 1, crossing a total of 243.9 miles of BLM-managed land, 47.2 miles of private land, and 18.2 miles of state land. This is slightly more BLM-managed land and less state and private land than Alternative 1; unlike Alternative 1, Alternative 4 does not cross any Bureau of Reclamation land.

Designated Corridors and Existing ROW

Alternative 4 would be within or adjacent to existing transmission corridors for 56.5 miles (18.3 percent of its length), about 115.7 miles less than Alternative 1. However, more of Alternative 4 would be within or adjacent to the WWE corridor: approximately 117.6 miles (38 percent) would be within the WWE corridor (56.4 more miles than Alternative 1), and 25.6 miles (8.3 percent) would be adjacent to the WWE corridor (15.6 more miles than Alternative 1).

Specific Land Uses and Recreational Resources

See earlier discussion for additional details regarding Route 8G and the FEIS Proposed Route for Segment 9.

Land Use

Similar to Alternative 1, the majority (90.6 percent) of Alternative 4 would cross rangeland, for a total of 280.1 miles. The remainder would cross agricultural lands (22.8 miles; 7.4 percent), existing ROW (2.6 miles; 0.8 percent), other (2 miles; 0.6 percent), and less than one mile of water and wetlands (0.2 percent) and developed land (0.1 percent).

Special Management Areas

Similar to Alternative 1, Alternative 4 would cross the Black Mountain HMA (19 miles), Oregon NHT SRMA (0.4 mile), Owyhee Front SRMA (4.7 miles), Salmon Falls Creek ACEC (2.7 miles), and Saylor Creek HMA (19.6 miles). Alternative 4 would also cross the SRBOP, for a total of 23.5 miles, which is 63.4 miles less than Alternative 1. Unlike Alternative 1, Alternative 4 would not cross the Deer Flat NWR nor C.J. Strike SRMA.

Historic Trails

Alternative 4 would cross several trails such as stage and wagon roads that have potential historic significance. These include the Oregon NHT, Toana Freight Wagon Road, and Boise City-Silver City Road. The Oregon NHT crossing under Alternative 4 is at a location considered to be a “High Potential Segment” (See Section 3.1 – National Historic Trails). It would not cross the alternate portions of the Oregon NHT or Kelton Road crossed by Alternative 1.

OHV Use

Unlike Alternative 1, Alternative 4 would not cross any public land closed to OHV use. In addition, Alternative 4 would cross 73.7 miles where OHV use is limited, which is 14.3

miles less than Alternative 1. Alternative 4 would cross four trails closed to OHV use, two less than Alternative 1. Overall, Alternative 4 would result in fewer opportunities than Alternative 1 for unauthorized OHV access and other disruption to existing land uses.

Toana Road Variations

Effects to land use under Alternative 4 would be very similar if either Toana Road Variation 1 or 1-A were implemented. Slightly more state land would be crossed (0.3 or 1 mile, respectively) than the comparison portion of Alternative 4, with a corresponding decrease in affected BLM-managed lands. Toana Road Variation 1 would avoid paralleling the Toana Freight Wagon Road for a portion of Alternative 4. Toana Road Variation 1-A would minimize visual impacts to the Toana Freight Wagon Road and utilize more existing roads to reduce new road construction.

Alternative 5 – The 8G and 9K Routes

Alternative 5 consists of Route 8G and Route 9K. The impacts associated with this alternative correspond to those described above for these two routes combined. Therefore, Alternative 5 impacts to land use are generally greater than when considering each individual route alone. The following subsections provide additional quantitative and qualitative impact information for Alternative 5, compared to Alternative 1 (the Proposed Action). Earlier route analysis is referenced as appropriate.

Land Ownership

Alternative 5 would be 26.5 miles longer overall than Alternative 1, crossing a total of 301.9 miles of BLM-managed land, 32.7 miles of private land, and 18.2 miles of state land. This is more BLM-managed land and less private and state land than Alternative 1. Alternative 5 would avoid crossing Bureau of Reclamation lands.

Designated Corridors and Existing ROW

Alternative 5 would be within or adjacent to existing transmission corridors for 57.1 miles (17.8 percent of its length), which is 115,1 miles less than under Alternative 1. More of Alternative 5 would be within the WWE corridor than Alternative 1, with 80.6 miles (25.1 percent) as compared to 61.2 miles (20.7 percent). Alternative 5 would be adjacent to the WWE corridor for 24.3 miles, 14.3 more miles than Alternative 1.

Specific Land Uses and Recreational Resources

See earlier discussion for additional details regarding Route 8G and Route 9K.

Land Use

As compared to Alternative 1, a slightly greater majority of Alternative 5 (93.9 percent) would cross rangeland, for a total of 301.9 miles. The remainder would cross agricultural lands (13.5 miles; 4.2 percent), existing ROW (2.5 miles; 0.8 percent), other (2.2 miles; 0.7 percent); developed land (1 mile; 0.3 percent), and less than a mile of water and wetlands (0.1 percent). This is similar to Alternative 1.

Special Management Areas

Alternative 5 would cross fewer special management areas than Alternative 1; this alternative would cross the Black Mountain HMA (18.9 miles), Saylor Creek HMA (19.6

miles), Salmon Falls Creek ACEC (2.7 miles), and the Oregon NHT SRMA (0.4 mile). Alternative 5 would also cross the SRBOP for 19.7 miles, which is 67.2 miles less than Alternative 1. Unlike Alternative 1, Alternative 5 would not cross the C.J. Strike Reservoir, Deer Flat NWR, or Snake River Canyon SRMA.

Historic Trails

Alternative 5 would cross the Oregon NHT in one location that is considered a "High Potential Segment" (see Section 3.1 – National Historic Trails) as well as the Toana Freight Wagon Road. It would avoid crossing the Oregon NHT South Alternate, the North Alternate Oregon NHT, and Kelton Road, which are all crossed under Alternative 1.

OHV Use

Alternative 5 would cross 1.1 miles of public land closed to OHV use and 77 miles where OHV use is limited, slightly less than Alternative 1. Alternative 5 would cross four trails closed to OHV use, two less than Alternative 1. Overall, Alternative 5 would result in similar or slightly fewer opportunities for unauthorized OHV access and other disruption than Alternative 1.

Toana Road Variations

Effects to land use under Alternative 5 would be very similar if either Toana Road Variation 1 or 1-A were implemented. Slightly more state land would be crossed (0.3 or 1 mile, respectively) than the comparison portion of Alternative 5, with a corresponding decrease in affected BLM-managed lands. Toana Road Variation 1 would avoid paralleling the Toana Freight Wagon Road for a portion of Alternative 5. Toana Road Variation 1-A would minimize visual impacts to the Toana Freight Wagon Road and utilize more existing roads to reduce new road construction.

Alternative 6 – The 8H Route and FEIS Proposed 9

Alternative 6 consists of Route 8H and the FEIS Proposed Route for Segment 9. The impacts associated with this alternative correspond to those described above for these two routes combined. Therefore, Alternative 6 impacts to land use are generally greater than when considering each individual route alone. The following subsections provide additional quantitative and qualitative impact information for Alternative 6, compared to Alternative 1 (the Proposed Action). Earlier route analysis is referenced as appropriate.

Land Ownership

Alternative 6 would be slightly longer overall than Alternative 1, crossing a total of 232.4 miles of BLM-managed land, 48 miles of private land, and 18.9 miles of state land. This is slightly more BLM-managed land and slightly less private and state land than Alternative 1. Alternative 6 would also cross a small portion (0.1 mile) of Bureau of Reclamation lands, compared to 4 miles under Alternative 1.

Designated Corridors and Existing ROW

Alternative 6 would be within or adjacent to existing transmission corridors for 89.5 miles (29.8 percent of its length), which is 82.7 miles less than under Alternative 1. However, more of Alternative 6 would be within the WWE corridor than Alternative 1, with 114.0 miles (38.0 percent) as compared to 61.2 miles (20.7 percent) for Alternative

1. Alternative 6 would be adjacent to the WWE corridor for 20.5 miles, 10.5 miles more than Alternative 1.

Specific Land Uses and Recreational Resources

See earlier discussion for additional details regarding Route 8H and FEIS Proposed 9.

Land Use

Similar to Alternative 1, the vast majority of Alternative 6 (90.1 percent) would cross rangeland, for a total of 270 miles. The remainder would cross agricultural lands (23.9 miles; 8 percent), existing ROW (2.7 miles; 0.9 percent), water and wetlands (1.5 miles; 0.5 percent), other (1.2 miles; 0.4 percent), and a half mile of developed land (0.2 percent).

Special Management Areas

Similar to Alternative 1, Alternative 6 would cross the Black Mountain HMA (19.2 miles), C.J. Strike Reservoir SRMA (2 miles), C.J. Strike SRMA (6.4 miles), Saylor Creek HMA (19.6 miles), Oregon NHT SRMA (0.4 mile), Owyhee Front SRMA (5.9 miles), Snake River Canyon SRMA (1.3 miles), and Salmon Falls Creek ACEC (2.7 miles). Alternative 6 would also cross the SRBOP for 74.7 miles, 12.2 miles less than Alternative 1. Alternative 6 avoids crossing the Deer Flat NWR crossed by Alternative 1.

Historic Trails

Alternative 6 would cross the Oregon NHT, Oregon NHT South Alternate, Kelton Road, and the Toana Freight Wagon Road, which are also crossed by Alternative 1. In addition, this alternative would cross Boise City-Silver City Road.

OHV Use

Alternative 6 would cross 4.2 miles of public land closed to OHV use and 95.4 miles where OHV use is limited, slightly more than Alternative 1. Alternative 6 would cross five trails closed to OHV use, one less than Alternative 1. Overall, Alternative 6 would result in similar opportunities for unauthorized OHV access and other disruption to current land uses as Alternative 1.

Toana Road Variations

Effects to land use under Alternative 6 would be very similar if either Toana Road Variation 1 or 1-A were implemented. Slightly more state land would be crossed (0.3 or 1 mile, respectively) than the comparison portion of Alternative 6, with a corresponding decrease in affected BLM-managed lands. Toana Road Variation 1 would avoid paralleling the Toana Freight Wagon Road for a portion of Alternative 6. Toana Road Variation 1-A would minimize visual impacts to the Toana Freight Wagon Road and utilize more existing roads to reduce new road construction.

Alternative 7 – The 8H and 9K Routes

Alternative 7 consists of Route 8H and FEIS Proposed 9. The impacts associated with this alternative correspond to those described above for these two routes combined. Therefore, Alternative 7 impacts to land use are generally greater than when considering each individual route alone. The following subsections provide additional quantitative and qualitative impact information for Alternative 7, compared to Alternative 1 (the Proposed Action). Earlier route analysis is referenced as appropriate.

Land Ownership

Alternative 7 would be about 17 miles longer overall than Alternative 1, crossing a total of 259.2 miles of BLM-managed land, 33.5 miles of private land, 18.9 miles of state land, and 0.1 mile of Bureau of Reclamation land. This is more BLM-managed land, less private land, and less Bureau of Reclamation land than Alternative 1.

Designated Corridors and Existing ROW

Alternative 7 would be within or adjacent to existing transmission corridors for 90.1 miles (28.8 percent of its length), 82.1 miles less than under Alternative 1. However, more of Alternative 7 would be within the WWE corridor than Alternative 1, with 77.0 miles (24.7 percent) as compared to 61.2 miles (20.7 percent). Alternative 7 would be adjacent to the WWE corridor for 9.3 miles, 0.7 miles less than Alternative 1.

Specific Land Uses and Recreational Resources

See earlier discussion for additional details regarding Route 8H and Route 9K.

Land Use

As compared to Alternative 1, a slightly greater majority of Alternative 7 (93.5 percent) would cross rangeland, for a total of 291.8 miles. The remainder would cross agricultural lands (14.6 miles; 4.7 percent); existing ROW (2.6 miles; 0.8 percent); other (1.4 miles; 0.4 percent); water and wetlands (1.2 miles; 0.4 percent); and less than a mile of developed land (0.1 percent).

Special Management Areas

Similar to Alternative 1, Alternative 7 would cross the Black Mountain HMA (19.1 miles), C.J. Strike Reservoir SRMA (2 miles), C.J. Strike SRMA (6.4 miles), Saylor Creek HMA (19.6 miles), Oregon NHT SRMA (0.4 mile), Owyhee Front SRMA (1.2 miles), Snake River Canyon SRMA (1.3 miles), and Salmon Falls Creek ACEC (2.7 miles). Alternative 7 would also cross the SRBOP for 70.9 miles, 16 miles less than Alternative 1. Alternative 7 avoids crossing the Deer Flat NWR crossed by Alternative 1.

Historic Trails

Alternative 7 would cross the Oregon NHT, Oregon NHT South Alternate, Kelton Road, and the Toana Freight Wagon Road, which are also crossed by Alternative 1. It would avoid the North Alternate Oregon NHT crossed by Alternative 1.

OHV Use

Alternative 7 would cross 1.1 miles of public land closed to OHV use, slightly less than Alternative 1, and would cross 98.7 miles where OHV use is limited, 10.7 miles more than Alternative 1. Alternative 7 would cross five trails closed to OHV use, one less than Alternative 1. Overall, Alternative 7 would result in similar or greater opportunities for unauthorized OHV access and other disruption to current land uses than Alternative 1.

Toana Road Variations

Effects to land use under Alternative 7 would be very similar if either Toana Road Variation 1 or 1-A were implemented. Slightly more state land would be crossed (0.3 or 1 mile, respectively) than the comparison portion of Alternative 7, with a corresponding decrease in affected BLM-managed lands. Toana Road Variation 1 would avoid paralleling the Toana Freight Wagon Road for a portion of Alternative 7. Toana Road

Variation 1-A would minimize visual impacts to the Toana Freight Wagon Road and utilize more existing roads to reduce new road construction.

3.17.2.5 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, as well as additional measures proposed by the Project Proponents specifically for the SRBOP.

Environmental Protection Measures

The Proponents have committed to Project design features and EPMs to minimize or avoid impacts on environmental resources. These measures, the areas where they would be applicable (e.g., private, state, or federal-managed lands), as well as the details of each measure are provided in Table 2.7-1 of the FEIS. Many of these measures would be either directly or indirectly applicable to land use and recreation (i.e., they would avoid or minimize impact to land use or recreation).

Measures that would indirectly apply to land use and recreation (i.e., measures that were not developed directly to benefit land use/recreation, but if implemented could avoid or minimize impacts to land use/recreation) include G-1, G-3, OM-1, OM-4 through 6, VIS-1 through 3, VIS-7 through 9, VIS-11 and VIS-12, and TRANS-5 (see Table 2.7-1 in the FEIS).

The following measure, which was identified in Table 2.7-1 of the FEIS, is directly related to land use and would be applicable to Segments 8 and 9. No measures were developed directly for recreational resources; however, recreation would benefit from the other applicable measures noted above.

LU-1 Signs shall be posted at access points to access roads where public access is restricted by a land use plan, and on private, state, and Tribal lands at the request of the landowner, agency, or Tribal government. Signs shall indicate the restriction or regulation, location, penalty for violation, and appropriate contact information for reporting violations. Signage shall be maintained and replaced as part of the routine maintenance.

This EPM would avoid or minimize the extent of impacts that could occur to land use and recreation such as helping to prevent creating new access to areas restricted to the general public. These EPMs are a part of the current Project description, and as such, the effects of their implementation are included in the impact discussion found in Sections 3.17.2.2, 3.17.2.3, and 3.17.2.4.

Proponent-Proposed MEP and Potential Effects to the MEP within the SRBOP

The Proponents have developed an MEP to mitigate the effects of Project-related impacts within the SRBOP, as well as comply with the SRBOP's enabling statute (P.L. 103-64) which requires enhancement of resources within the SRBOP. The Proponents' plan contains two forms of mitigation: "compensation mitigation" and "enhancement." For this analysis, mitigation is defined as avoidance, minimization, and compensation measures aimed at offsetting adverse impacts of the Project; enhancement is defined

as additional mitigation measures that are required in order to enhance the objectives and values for which the SRBOP was established.

The Proponents' MEP offers a portfolio that contains five types of mitigation/enhancement proposals. The following discusses the benefit and/or impact that these proposed mitigation/enhancement proposals could have on land use and recreation.

Habitat Restoration

The goal for the Proponents' habitat restoration proposal is to convert "non-native grasslands to native perennial plant communities" as well as to conduct "noxious weed control." The proposed habitat restoration proposal would have neither a beneficial or detrimental effect on land use or recreation.

Purchase of Private Inholdings

There are private lands within the SRBOP that could contain important cultural and natural resources. The Proponents have proposed (as part of the MEP) to purchase a portion of these lands and deed them to the U.S. government, to be managed by the BLM. The Proponents have indicated that the selection of the parcels that would be purchased and deeded to the BLM would be determined by the agencies' Oversight Committee. However, the composition and exact membership of the individuals and agencies within the proposed Oversight Committee have not been identified to date. Therefore, the effectiveness of the Oversight Committee cannot be determined until the individuals and agencies that will be included in the committee are identified, and the process that will be used by the committee to make its final decisions is determined. The MEP makes a preliminary estimate of $3,000 an acre for the cost of purchasing lands and transferring them to the BLM for management; however, it acknowledges that the exact price is uncertain until the parcels are identified by the Oversight Committee and purchase negotiations begin. The amount of land to be acquired is also unknown.

This proposal is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute (e.g., P.L. 103-64 states that "The Secretary is authorized to acquire lands and interests therein within the boundaries of the conservation area by donation, purchase with donated or appropriated funds, exchange, or transfer from another Federal agency, except that such lands or interests owned by the State of Idaho or a political subdivision thereof may be acquired only by donation or exchange").

The Proponents have indicated that all efforts proposed in regard to the purchasing of private inholdings are intended to apply to enhancement of the SRBOP (with no mitigation component).

Purchasing private inholdings and transferring control of the land to the BLM would likely result in a change in how the lands are managed. The BLM would manage the lands in accordance with the BLM's RMP as well as the SRBOP's enabling statute. However, the current management or use of the private lands cannot be determined at this time because no specific parcels or willing landowners have been identified to date. Therefore, although this proposal could result in a change in land use and increase

access to the public for recreation use, this cannot be determined definitely as until the exact parcels are identified. As such, a determination of this proposal's ability to enhance the objectives and values for which the SRBOP was established cannot be made until the specific parcels are identified by the Oversight Committee.

Law Enforcement

The Proponents' MEP contains a proposal for the funding of increased law enforcement within the SRBOP for a period of 10 years. The goal of this increased funding is to change adverse behaviors in the SRBOP by aiding law enforcement in their coverage and ability to manage public induced damage to resource. The proposed enhancement of law enforcement would have neither a beneficial nor detrimental effect on land use or recreation.

Visitor Enhancement

The MEP contains a proposal to fund programs intended to enhance the experiences of visitors to the SRBOP, with estimated annual funding of $50,000 per year for 10 years. The Oversight Committee would be responsible for selecting the programs that would be funded. Examples of programs that could be funded include a "Raptor Camp" that would provide an opportunity for the public to learn about the natural resources in the SRBOP, public service announcements, and other uses, including cultural resource education and outreach, visitor education materials such as displays, videos, and brochures, and funding for other ongoing visitor programs.

Enhancement of the visitors' experience is an important component of the SRBOP and visitor experience is called out specifically in the SRBOP's enabling statute (see Section 4 of P.L. 103-64 "Management and Use"). Enhancement of visitor experience could result in positive impacts to recreation visitors who participate in the programs that would be funded. However, as the exact programs that would be funded have not been identified to date, a determination of this proposal's ability to enhance the objectives and values for which the SRBOP was established cannot be made.

Line and Substation Removal

The Proponents have identified portions of two existing transmission lines and an existing substation within the SRBOP that could be removed. Removal would also require some reconstruction of existing lines and a short length of new line (see the Supplemental POD in Appendix B).

<u>Land Use</u>

Approximately 17.2 miles of the existing infrastructure that would be removed or reconstructed is located on BLM-managed lands. Implementation of the Line and Substation Removal portion of the Proponents' MEP would result in the removal of 12.6 miles of existing transmission line (7 miles of existing 46-kV and 5.6 miles of existing 69-kV lines) on BLM-managed lands, as well as removal of the existing Gage Substation. Approximately 1 mile of new 46-kV transmission line would need to be constructed, most likely on private lands.

Specific Land Uses and Recreational Resources

The majority of the land that would be affected by the proposed Line and Substation Removal proposals is either used as rangeland or transmission line ROWs. Specific land uses crossed or within 1,000 feet of the Line and Substation Removal proposals are summarized in Table D.17-1 in Appendix D. These land uses include private residences (31 within 1,000 feet of the MEP actions) and several wind turbines.

The existing infrastructure that would be removed or reconstructed crosses the Guffey Butte-Black Butte Archaeological District and Snake River Canyon SRMA (Table D.17-1). These activities would also cross 16.8 miles of BLM-managed land where OHV use is limited; the remaining 0.2 mile of BLM-managed land crossed is open for OHV use (Table 3.17-5).

3.17.2.6 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

Summary of Remaining Impacts

After implementation of the EPMs and MEP discussed above, some Project-related impacts would likely remain. The impact assessment found in Sections 3.17.2.2, 3.17.2.3, and 3.17.24 incorporates the avoidance and minimization contributions of the EPMs in the impact analysis; as a result, Sections 3.17.2.2, 3.17.2.3, and 3.17.24 take these measures and their impact offsets into consideration. The design features outlined in the Proponents' MEP may reduce the magnitude of impacts to some degree; however the extent of this reduction cannot be fully determined at this time (as discussed above).

BLM Compensatory Mitigation Categories

The Gateway West Project would cause, but not be limited to, an increase in land use, vehicular traffic and public presence. As they did during the RAC meetings, the Proponents proposed funding for law enforcement in their MEP to reduce inappropriate behavior within the SRBOP. The MEP provides for a BLM ranger to offset potential unlawful activity that may be associated with the increased access created by new rights-of-way and maintenance roads. The Proponents' MEP proposes that the funding would be scaled by impact and would last 10 years followed by an additional 10 years but with funding for fewer hours per week. BLM supports such a mitigating measure; however, the agency believes it should last for the term of the grant (30-year period) followed by any additional years if renewed. In addition to funding for law enforcement, the BLM is considering the following mitigation categories to address remaining impacts on land use and recreation:

- Increase applied research and monitoring to inform adaptive management.
- Increase funding for recreation and visitor management.
- Acquire private lands as deemed appropriate by the Authorizing Officer.

3.18 AGRICULTURE

This section addresses potential impacts to agriculture from the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H and 9K; and the Toana Road Variations to the Segment 9 Revised Proposed Route. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). This section analyzes the potential impacts of the Project, including the potential impacts on prime farmland; livestock grazing; crop production; lands enrolled in the Conservation Reserve Program (CRP), Grassland Reserve Program (GRP), Wetlands Reserve Program (WRP); and dairy farms. Effects associated with the routes analyzed in the 2013 FEIS were disclosed in that document. With the exception of FEIS Proposed 9, those FEIS routes are not being re-analyzed here, as only new information is included in this resource-specific section.

3.18.1 Affected Environment

This section of the SEIS begins with a discussion of the Analysis Area considered, identifies the issues that have driven the analysis, and characterizes the existing conditions in the area crossed by Project. We reviewed the data and regulatory requirements in the FEIS and concluded that they are still valid for this SEIS. Data on farms and grazing have been updated. The Analysis Area for this SEIS is restricted to that area crossed by the routes in Segments 8 and 9; therefore, not all agriculture types discussed in the FEIS would be affected by the routes and alternatives being considered.

The Project would cross landscape primarily used for rangeland and pasture, as well as other agricultural purposes, with occasional towns, cities, or other urbanized or developed areas. The Project would cross the Snake River Plain, which is characterized by agricultural crop production, as well as areas of urban development. Figure 3.17-1 in the FEIS shows generalized land use in the areas crossed by the Revised Proposed Routes for Segments 8 and 9.

Morley Nelson Snake River Birds of Prey National Conservation Area

Portions of the Project would cross through the SRBOP. Agriculture is not one of the environmental resources and values for which the SRBOP was established to manage and protect.

3.18.1.1 Analysis Area

The Analysis Area for impacts on agriculture consists of an area 250 feet on each side of the proposed routes and variations, as well as 25 feet on each side of the centerline for access roads that extend outside this area, and includes the areas needed for new or expanded substations as well as temporary facilities such as multi-purpose yards and fly yards. Agricultural land use in the Analysis Area is discussed in Section 3.17 – Land Use and Recreation.

3.18.1.2 Issues Related to Agriculture

The following agriculture-related issues relevant to Segments 8 and 9 were brought up by the public during public scoping (Tetra Tech 2009) or in comments on the DEIS,

raised by federal and state agencies during scoping and agency discussions, or are issues that must be considered as stipulated in law or regulation:

- How much agricultural land would be impacted, and what the effects would be;
- What the effects on livestock grazing would be from construction and operations of the transmission line;
- Whether there would be a loss of prime farmland;
- What the impacts would be to agricultural production including equipment operation and aerial spraying;
- Whether there would be a disruption to dairy operations and other types of CAFOs;
- How the transmission line would interfere with crop dusting; and
- Whether the transmission line would cause electrical and/or electronic interference with agricultural equipment.

We reviewed the scoping comments received for this SEIS and determined that agriculture-related issues considered in the FEIS have not changed. No additional issues were identified.

3.18.1.3 Methods

The Agriculture section in the 2013 FEIS discusses those aspects of the environment that could be impacted by the Project, as well as the methods that were used to assess potential Project-related impacts to these resources. We reviewed the data analysis methods used in the FEIS and concluded that they are still valid for this SEIS. No significant new data were identified with respect to agriculture in the analysis area.

3.18.1.4 Existing Conditions

Rangeland in the Analysis Area occurs on both public land and private land. Cropland in the Analysis Area is primarily in private ownership and includes annually cultivated or rotated cropland, land in perennial field crops, improved pasture, hayfields, and hay meadows. Cropland is divided for the purposes of analysis into irrigated cropland and dryland farming. Some private land in Idaho is managed as CRP lands. CRP lands are treated as agricultural land for this analysis.

Prime Farmland

According to the NRCS, prime farmland is defined as land that contains soils with the best physical and chemical characteristics for production of food, feed, forage, fiber, and oilseed crops, which have not already been targeted for urban development or water storage. 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. The NRCS identifies soil mapping units that qualify as prime based on specific soil criteria. Soil mapping units may be classified as prime farmland under current conditions or as prime farmland if certain qualifying conditions exist on the site (e.g., “prime farmland if irrigated,” “prime farmland when protected from flooding,” etc.). In such cases, if the

qualifying conditions do not exist, then the unit is considered "not prime." For this analysis, "prime farmland with no restrictions," "prime farmland when irrigated," and "prime farmland when drained" are included in the definition and estimated acres of prime farmland. The 2013 FEIS indicated that about one-third of the combined Analysis Area for Segments 8 and 9 was considered prime farmland.

Livestock Grazing

Livestock grazing occurs on both publicly managed and private lands. Rangeland and pasture are the dominant land uses in the Analysis Area.

The Analysis Area includes lands that are part of BLM-managed grazing allotments, as well as Idaho state lands that are leased for grazing. BLM allotments typically include a mixture of public, private, and state lands. BLM grazing allotments that are within the Analysis Area are listed by name and segment/route in Table 3.18-1. This table also identifies grazing leases by number.

Table 3.18-1. Grazing Allotments and Leases within the Analysis Area by Segment and Route

Segment/Route	BLM Allotment (Range)	Grazing Lease
Revised Proposed Route 8	Bowns Creek, Camp 1, Clover Creek, Cornell, Davis Mtn, Dempsey, Ditto Creek, Double Anchor FFR, East Reynolds Creek, Emigrant Crossing, Goodtime, Hammett #1, Hardtrigger, Hog Creek, Indian, Indian Creek FFR, King Hill, King Hill Canyon, Martha Avenue, Melba Seeding, Mountain Home Subunit, Mud Springs, North Cold Springs, Pioneer, Poleline, Rabbit Creek/Peters Gulch, Sand Bt, Seven Mile, South Cold Springs, Sunnyside Spring/Fall, Sunnyside Winter, West Pioneer, White Butte	G600044, G6005, G6009, G6057, G6326, G6383, G6535, G6710, G700105, G700158, G7603
Segment 8 Proposed – Existing 500-kV Removal	Sunnyside Spring/Fall	
Route 8G	Battle Creek, Black Mesa, Browns Gulch, Bruneau Hill, Camp 1, Cheatgrass, Common, Diamond Basin, East Castle Creek, East Reynolds Creek, Fossil Butte, Goodtime, Hagerman Group, Hardtrigger, Joyce FFR, Little Three Island, Lower Saylor Creek, Northwest, Poleline, Rabbit Creek/Peters Gulch, Sand Bt, Saylor Creek/N Three Island, Seven Mile, Silver City, Thompson, Three Island, W Saylor Creek, Wendell Ct, West Castle, West Castle Creek	C700006, G600007, G600062, G6091, G6255, G6317, G700061, G700077, G700086, G700115, G7056, G7631
Route 8H	Battle Creek, Black Mesa, Browns Gulch, Bruneau Arm, Bruneau Hill, Camp 1, Chattin Hill, Cheatgrass, Common, Con Shea, East Reynolds Creek, Flat Iron, Goodtime, Hagerman Group, Hardtrigger, Little Three Island, Lower Saylor Creek, Poleline, Rabbit Creek/Peters Gulch, Sand Bt, Saylor Creek/N Three Island, Seven Mile, Sinker Butte, Sunnyside Winter, Thompson, Three Island, W Saylor Creek, Wendell Ct	C700006, G600085, G600100, G6152, G6255, G6466, G6634, G6636, G700061, G700077, G700086, G700115, G7056, G7300, G7302, G7631
Route 8H – Existing 138-kV Removal	Battle Creek, Bruneau Arm, Chattin Hill, Sunnyside Winter	G600085, G600100, G6152, G6466

Table 3.18-1. Grazing Allotments and Leases within the Analysis Area by Segment and Route (continued)

Segment/Route	BLM Allotment (Range)	Grazing Lease
Revised Proposed Route 9	Artesian-Kidd, Battle Creek, Browns Gulch, Bruneau Arm, Bruneau Hill, Buhl Group-Berger, Chattin Hill, Cheatgrass, Con Shea, Devil Creek Balanced Rock, East Reynolds Creek, Ellis Tews-Berger, Griff, Hardtrigger, Hub Butte-Western Sg, Kerr-Berger, Kinyon, Kubic, Lilly Grade, Little Three Island, Loughmiller, Lower Saylor Creek, Martens Bros.-Berger, Noh Field, Rabbit Creek/Peters Gulch, Roseworth Point, Salmon Tract-U2, Saylor Creek/N Three Island, Sinker Butte, Squaw Joe, Squaw Joe Isolated, Sunnyside Winter, Thompson, Three Island, Twin Butte, W Saylor Creek, Western Stockgrowers	G600085, G600100, G6152, G6255, G6466, G6634, G6636, G7056, G7128
Segment 9 FEIS Proposed Route	Artesian-Kidd, Battle Creek, Black Mesa, Browns Gulch, Bruneau Arm, Bruneau Hill, Buhl Group-Berger, Cheatgrass, Con Shea, Devil Creek Balanced Rock, E Roseworth Point, East Castle Creek, East Reynolds Creek, Ellis Tews-Berger, Flat Iron, Fossil Butte, Griff, Hardtrigger, Hub Butte, Hub Butte-Western Sg, Joyce FFR, Kerr-Berger, Kinyon, Kubic, Lilly Grade, Little Three Island, Loughmiller, Lower Saylor Creek, Martens Bros.-Berger, Noh Field, Northwest, Pvga-Berger, Rabbit Creek/Peters Gulch, Roseworth Point, Salmon Tract-U2, Saylor Creek/N Three Island, Silver City, Squaw Joe, Squaw Joe Isolated, Thompson, Three Island, Twin Butte, Vinson Wash, W Saylor Creek, West Castle, West Castle Creek, Western Stockgrowers, Yahoo	G600035, G6255, G7056, G7128, G7300, G7302
Route 9K	Artesian-Kidd, Battle Creek, Browns Gulch, Bruneau Hill, Buhl Group-Berger, Cheatgrass, Devil Creek Balanced Rock, Diamond Basin, East Castle Creek, East Reynolds Creek, Ellis Tews-Berger, Fossil Butte, Griff, Hardtrigger, Hub Butte-Western Sg, Joyce FFR, Kerr-Berger, Kinyon, Kubic, Lilly Grade, Little Three Island, Loughmiller, Lower Saylor Creek, Martens Bros.-Berger, Noh Field, Northwest, Rabbit Creek/Peters Gulch, Roseworth Point, Salmon Tract-U2, Saylor Creek/N Three Island, Silver City, Squaw Joe, Squaw Joe Isolated, Thompson, Three Island, Twin Butte, W Saylor Creek, West Castle, West Castle Creek, Western Stockgrowers	G600007, G6255, G7056, G7128
Segment 9 Proposed - Comparison portion for Toana Road Variations 1/1-A	Devil Creek Balanced Rock, Kinyon	G7006
Toana Road Variation 1	Devil Creek Balanced Rock, Kinyon	G7006
Toana Road Variation 1-A	Devil Creek Balanced Rock, Kinyon	G7006
Segment 9 Proposed – Existing 138-kV Removal	Battle Creek, Bruneau Arm, Sunnyside Winter	G600085, G600100, G6152, G6466

Source: BLM GIS

Crop Production

Crop production in the Analysis Area includes annually cultivated or rotated cropland, land in perennial field crops, improved pasture, hayfields, and hay meadows. Crop production is divided for the purposes of analysis into irrigated cropland and dryland farming.

Irrigated cropland includes cropland irrigated using pivot, wheel and hand line, and flood irrigation systems. Irrigated land may have existing subsurface drainage systems (drain tiles) and surface irrigation ditches. Dryland farming does not involve any type of irrigation. Dryland farmed acres in the Analysis Area for Segments 8 and 9 are typically used to grow grains or hay.

Crop Spraying

Crop spraying is used to apply fertilizer, fungicides, or pesticides during the growing season. Aerial crop spraying is supported by a network of controlled airports and secondary airstrips. The quantity of farmed land receiving aerial crop spraying is unknown. As a result, the following analysis assumes that all irrigated farmland could receive aerial spraying. Airstrips within 3 miles of the proposed routes and variations are identified in Section 3.19.1.4.

USDA Reserve Lands

CRP is a popular USDA set-aside program that encourages farmers to convert highly erodible cropland or other environmentally sensitive acreage to vegetative cover, such as tame or native grasses, wildlife plantings, trees, filterstrips, or riparian buffers. Farmers receive an annual rental payment for the term of the multi-year contract. Cost sharing may be provided to establish the vegetative cover practices.

Dairy Farms

The detailed mapping conducted by Tetra Tech (2010) grouped dairy operations and feed lots with other commercial agricultural operations. These areas, identified as CAFOs for the purposes of this analysis, are discussed by segment in Section 3.18.2.3.

3.18.2 Direct and Indirect Effects

This section is organized to present effects to agricultural resources from construction, then operations, followed by decommissioning activities for the proposed Project.

A comprehensive list of all Project design features and EPMs, as well as the land ownership to which they apply, can be found in Table 2.7-1 of Chapter 2 of the FEIS. The following impact assessment takes these Project design features and EPMs into account when considering the potential impact that the Project could have on environmental resources.

Plan Amendments

Amendments to the BLM RMPs and MFPs are summarized for each alternative in Table 2.3-1 (see Chapter 2 for more details). The BLM plan amendments are discussed in detail in Appendices F and G. Amendments are needed to permit the Project to cross various areas of BLM-managed land. No amendments specific to agriculture are

proposed for the Project and no impacts to agriculture resulting from approving the amendments beyond the impacts of the Project are anticipated.

3.18.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West and the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of this Project. No Project-related impacts to agriculture would occur; however, impacts would continue as a result of natural events (such as fire, drought, and severe weather) as well as from existing and planned developments within the Analysis Area, and from other projects, including wind farms, mining, agricultural, or other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project and the area would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, impacts similar to those described below may occur due to new transmission lines built to meet the increasing demand in place of this Project.

3.18.2.2 Effects Common to All Routes

The general impacts that would occur to agricultural resources from construction, operations, and decommissioning of the Gateway West Project were assessed in detail in Section 3.18.2.2 of the FEIS and summarized in the following section. Direct and indirect effects by route are assessed below in Section 3.18.2.3; the direct and indirect effects of the alternatives are assessed in Section 3.18.2.4. Proponent-proposed design features and mitigation measures are presented in Sections 3.18.2.5 and 3.18.2.6, which include an assessment of potential impacts related to the MEP, as well as a list of additional mitigation measures that would be recommended by the BLM related to impacts on the SRBOP.

Construction

Short-term disruption of farming activities along the ROW could occur locally during construction. However, with implementation of the EPMs identified below in the section pertaining to agricultural protection plans, impacts are expected to be minimal. Viewed in terms of agricultural operations in the potentially affected counties, the total estimated Project-related construction disturbance represents a small share of the nearly 11.5 million acres of agricultural land in the Analysis Area counties and is unlikely to noticeably affect overall agricultural production and employment in any of the affected counties. The Proponents do, however, recognize that construction of the proposed Project could have detrimental impacts on farms and have stated that they would negotiate damage-related issues, such as temporary reductions in the acreage available for cultivation, with affected farmers during the easement acquisition process.

Prime Farmland

Direct impacts to prime farmland would generally result from construction-related soil disturbance expected to occur at tower locations, work areas, multipurpose yards, wire-pulling/splicing sites, substation sites, regeneration sites, and access roads. Potential

soil impacts to prime farmland from transmission line construction include soil erosion, disruption of drainage patterns, mixing of topsoil and subsoil, potential loss of topsoil, and soil compaction. Estimated acres of prime farmland soils that would be disturbed during construction are identified by county and route and alternative in Sections 3.18.2.3 and 3.18.2.4, respectively. The reclamation measures presented in the Framework Reclamation Plan (see Appendix B of the FEIS) would be used to keep prime farmland soil losses to a minimum. Affected areas not subsequently used for operations would be reclaimed as soon as possible following construction.

Most prime farmland in the Analysis Area is privately owned and actively cultivated. Potential impacts to cropland common to all action alternatives are discussed below under crop production.

Livestock Grazing

Construction could affect livestock grazing by temporarily reducing forage and displacing livestock. In addition, increased dust in areas adjacent to construction sites could reduce forage palatability. Dust has also been known to cause livestock health impacts. Construction using helicopters may displace livestock where it occurs. Construction may affect livestock control and distribution if a gate is left open or a fence is damaged. Vehicular access during construction would increase the likelihood of livestock injury or death from collisions. However, construction crews would be required to immediately repair any damaged fences or gates to ensure livestock are adequately controlled.

Transmission line construction is linear in nature, with periods of intense activity separated by relatively long intervals of little or no activity. Disturbance in any one area would, however, generally last for most of one construction season, given that there are several sequential steps required. In some situations, disturbance may begin in one season and, due to weather or timing restrictions, not be completed until the next year. During intense construction periods, some areas currently used for livestock grazing would be temporarily off limits. These sites would be identified in advance of construction, and any needed restrictions and the method of restriction (e.g., fencing, gates) would be coordinated with the respective landowner or land-managing agency.

Potential impacts to livestock grazing from construction are presented below for the proposed routes, alternatives, and Toana Road Variations in terms of temporary reductions of forage and expressed in acres. In all cases, the potentially affected acres represent a small share of the total acres used for livestock grazing within the Analysis Area and surrounding area, and would result in relatively small temporary reductions in the area available for grazing. Other potential economic impacts related to livestock grazing are discussed in Section 3.4 – Socioeconomics.

Crop Production

Construction could affect crop production by temporarily reducing the area available for cultivation. Construction-related impacts would depend on the type of crop, the season, and whether the land was in use or fallow. Without proper coordination between the Proponents and farm operators, impacts associated with ingress and egress to the

ROW, damage to irrigation systems, timing notification, segregation and protection of topsoil, and compaction could be potentially substantial.

The effects to farming operations could also result in impacts outside the areas where soil would be disturbed as part of construction activities. These effects could include damage to or loss of crops, decreases in crop yield, restrictions to farm vehicle access or aerial spraying operations, and disruption of drainage and irrigation systems. These types of potential effects are difficult to quantify and would likely be determined through negotiation with landowners. As a result, the affected acres analyzed in this section refer to areas where the soil would be directly disturbed by the Project, and do not include other areas that might be indirectly affected. These types of additional potential impacts are assumed for the purposes of analysis to be proportional to the direct estimated impacts based on surface disturbance. Potential economic impacts related to cropland are discussed in Section 3.4 – Socioeconomics and in Appendix K of the FEIS. The analysis presented in Appendix K focused on Power, Cassia, and Jerome Counties but the analysis of how structure and line placement would affect irrigated farm land would also apply to other lands in southern Idaho.

Crop Spraying

Construction of the transmission line could reduce the extent of crops that could be treated by aerial spraying. Transmission towers or construction cranes could interfere with the flight paths of aerial applications. This potential effect would vary, depending on the location of tall structures relative to crop planting patterns, the presence of other tall structures, and the comfort level of the individual pilot. Aerial spraying is also sometimes used to control large-scale insect infestations on public and private land. The short-term inability to use aerial spraying could reduce productivity and cause economic effects to farming or rangeland operations (see Section 3.4 – Socioeconomics). The presence of construction workers could also delay applications.

CRP Lands

The location of CRP lands is not public information. Section 1619 of the 2008 Farm Bill prohibits FSA disclosure of any information provided by an agricultural producer or owner of agricultural land participating in federal agricultural programs. The Idaho NRCS/FSA office provided the BLM with a list of CRP land miles crossed by the Project for the FEIS, and a partial list in support of the SEIS. They are, however, prohibited from providing the location and extent of CRP acreage that may be affected. Therefore, the amount of CRP lands that could be removed from the CRP is not known. The Proponents would address the issue by consulting with the FSA and landowners to determine if construction would affect the CRP status of the land (see EPM AGRI-1 below).

AGRI-1 Consult with the Farm Service Agency and landowners to determine how construction may affect the CRP status of the land currently enrolled in CRP.

Section 3.18.2 of the FEIS discusses FSA Handbook for the Agricultural Resource Conservation Program for State and County Offices (USDA 2008, p. 12-8) guidance for managing CRP lands affected by the Project. The FSA Handbook indicates that

transmission line towers and roads would not be compatible with CRP, GRP, or WRP lands; however, the land under the transmission lines between the towers (which are generally placed 1,200 to 1,300 feet apart) would remain eligible. The land under the roads and towers would be removed from the conservation program. As noted above, EPM AGRI-1 would be implemented to address this issue.

Operations

The total estimated Project-related operations disturbance represents a small share of the agricultural land in the seven counties crossed in Segments 8 and 9 and is unlikely to noticeably affect overall agricultural production and employment in any of the affected counties. The Proponents have stated, however, that they recognize that construction of the Project has the potential to have detrimental impacts on farms and would negotiate damage-related issues, such as reductions in the acreage available for cultivation, with affected farmers during the easement acquisition process.

ROWs for transmission line facilities on private agricultural lands would be obtained in fee simple or perpetual easement by the Proponents. The effect that a transmission line easement may have on agricultural property values is a damage-related issue that would be negotiated between the landowner and Proponents during the fee-simple or easement acquisition process. The easement acquisition process is designed to provide fair compensation to the landowner for the right to use the property for transmission line construction and operation. The easement value in theory is equal to the difference in value of the affected property before and after easement acquisition and construction of the proposed facilities.

Prime Farmland

Reclamation after construction would reduce the Project's long-term effects to prime farmland. Estimated acres of prime farmland soils that would be disturbed during Project operations are identified by county and route and alternative in Sections 3.18.2.3 and 3.18.2.4, respectively. Impacts to prime farmland during Project operations would primarily be related to those areas that would be occupied by tower structures and not available for agricultural use.

Livestock Grazing

During Project operations, rangeland and pasture occupied by support structures, substations, regeneration stations, or access roads would no longer be available for grazing. As discussed above with respect to construction, the estimated acres of lands used for livestock and grazing that would be permanently affected by the Segment 8 and 9 routes, alternatives, and variations represent a small share of the total acres used for livestock grazing within the Analysis Area and surrounding area, and would result in relatively small temporary and permanent reductions in the area available for grazing. In addition, metal fences or large metal objects adjacent to, running parallel to, or passing under the proposed Gateway West transmission lines may develop a different electrical potential than the surrounding ground if not properly grounded. Most cows would need a current of 3 to 4 volts before behavioral changes could be noticed. More than 4 volts are needed before the most sensitive cows resist drinking water (Lefcourt 1991).

Long-term impacts to private grazing landowners or public land grazing permittees would need to be mitigated, likely through negotiated terms of land leases or easements. In some cases, the acres of individual BLM grazing allotments may need to be reduced. Other operations and maintenance activities would not affect livestock grazing.

Crop Production, Crop Spraying

Effects to crop production, including effects on the use of aerial spraying, are described in Section 3.18.2.2 of the FEIS. No additional effects associated with the Project routes, alternatives, or variations were identified.

GPS Interference, Irrigation System Electrolysis, Induced Current

Possible GPS interference, electrolysis, and induced current effects are described in Section 3.18.2.2 of the FEIS. No additional effects associated with the Project routes, alternatives, or variations were identified.

CRP Lands

As noted with respect to construction, the agencies recommend that the Proponents consult with the FSA and landowners to determine if construction would affect the CRP status of the land or if special construction or revegetation techniques would be necessary. If the Project were to result in lands being removed from the CRP, the economic costs to private agricultural landowners would be mitigated by the Proponents on a case-by-case basis, most likely through negotiated terms of easements between the landowner and the Proponents.

CAFOs

CAFOs, including dairy farms, could be subjected to stray voltage during Project operations. Stray voltage in this context refers to a phenomenon that is primarily of concern in wet environments, such as a dairy barn or feedlot. Stray voltage occurs when an animal makes contact with a metal object that is at a different electrical potential than another point in contact with the animal (e.g., the nearby ground or earth). This may occur when there is poor grounding or bonding of the metal object to the earth and the electrical ground. Most often, this arises from electrical equipment on the farm and local electrical wiring, not because of the operation of nearby transmission lines. Metal fences or large metal objects adjacent to, running parallel to, or passing under the proposed Gateway West transmission lines may develop a different potential than the surrounding ground if not properly grounded. Most cows would need a current of 3 to 4 volts before behavioral changes could be noticed. More than 4 volts is needed before the most sensitive cows resist drinking water (Lefcourt 1991).

Refer to Section 3.21.1.4 of the FEIS for a discussion of the effects of EMF on the health of farm animals.

Honeybee Hives

Effects to honeybee hives are described in Section 3.18.2.2 of the FEIS. No additional effects associated with the Project routes, alternatives, or variations were identified. Impacts to honeybee hives outside of the wire zone are not expected.

Decommissioning

Project facilities would be removed at the end of the operational life of the transmission line. Conductors, structures, and related facilities would be removed. Foundations would be removed to below the ground surface level. Post-operations decommissioning of the transmission line would cause similar levels of disturbance and disruption as construction. However, once reclamation is complete, areas would be restored to the prior condition. Additional details concerning decommissioning are provided in Appendix B of the FEIS.

3.18.2.3 Direct and Indirect Effects by Route

This section evaluates the impacts of the Revised Proposed Routes, other routes (FEIS Proposed 9, 8G, 8H, and 9K), and the Toana Road Variations on prime farmland, livestock grazing, crop production, CRP lands, and dairy farms (this section generally corresponds to Section 3.18.2.3 of the FEIS).

Segment 8

Revised Proposed Route, Route 8G, and Route 8H

The Revised Proposed Route in Segment 8 is a single-circuit 500-kV transmission line that would extend 129.7 miles and link the Midpoint and Hemingway Substations (see Figure A-1). This route stays north of the Snake River until it crosses just north of Guffey Butte, generally parallel to an existing 500-kV transmission line, before ending at the Hemingway Substation. The Revised Proposed Route is similar to the original proposed route in the 2013 FEIS except that the line would be 250 feet north of the existing 500-kV line rather than 1,500 feet south of the line from the eastern boundary of the SRBOP (MP 99.7) to the Hemingway Substation. The route east of that point is unchanged from the 2013 FEIS Proposed Route.

Route 8G is being considered by the BLM to avoid crossing the northern portion of the SRBOP. This route follows an alignment similar to the ones analyzed for Routes 8A and 9B in the FEIS for approximately 44 miles, although it generally parallels 250 feet north of the existing 500-kV line rather than1,500 feet to the south in order to avoid the Hagerman Fossil Beds National Monument and development near Hagerman (see Figure A-1). The route then parallels 250 feet north of Route 9K for most of the remaining distance into the Hemingway Substation. Route 8G is approximately 146.9 miles long (including a 1.9-mile rebuild of the existing 500-kV line), compared to the 129.7-mile-long Revised Proposed Route.

Route 8H is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows a combination of portions of the alignments analyzed for 8G and the Revised Proposed Route for Segment 9. The route is 137.5 miles long (including a 1.9-mile rebuild of the existing 500-kV line and a 25.7-mile removal and rebuild of a 138-kV line), compared to the 129.7-mile-long Segment 8 Revised Proposed Route. Approximately 44 miles of the route follows the 8G alignment, while the remainder of 8H follows the alignment of the Segment 9 Revised Proposed Route.

Prime Farmland

Approximately 533 acres of prime farmland would be disturbed during construction of the Revised Proposed Route 8, and 50 acres would be permanently disturbed (Table 3.18-2). Construction of Route 8G would disturb approximately 689 acres of prime farmland, with 86 acres expected to be permanently disturbed. Construction of Route 8H would disturb approximately 1,163 acres of prime farmland, with 116 acres expected to be permanently disturbed.

Table 3.18-2. Prime Farmland Affected by Construction and Operations in Segment 8

Route	County	Prime Farmland Acres Affected	
		Construction	Operations
Segment 8 Revised Proposed Route	Ada	149	12
	Canyon	63	6
	Elmore	156	19
	Gooding	165	14
	Total	**533**	**50**
Route 8G	Elmore	9	1
	Gooding	107	11
	Owyhee	572	74
	Total	**689**	**86**
Route 8H	Ada	206	13
	Elmore	242	20
	Gooding	99	11
	Owyhee	617	71
	Total	**1,163**	**116**

Acres are based on GIS; numbers are not exact and may not sum due to rounding.

Livestock Grazing

Construction of the Revised Proposed Route would disturb an estimated 1,989 acres of rangeland and pasture, with an estimated 194 acres permanently disturbed (Table 3.18-3). The 1.1 miles of existing 500-kV line that would be removed as part of the Revised Proposed Action are located on rangeland and cropland (Table 3.17-7).

Route 8G would disturb an estimated 2,449 acres of rangeland and pasture during construction, with an estimated 280 acres permanently disturbed. The 1.9 miles of existing 500-kV line that would be rebuilt as part of Route 8G are located primarily on rangeland (1.2 miles) with small portions on ROW (less than 1 mile) and developed lands (less than 1 mile) (Table 3.17-10).

Route 8H would disturb an estimated 2,242 acres of rangeland and pasture during construction, with an estimated 220 acres permanently disturbed. The 1.9 miles of existing 500-kV line that would be rebuilt as part of Route 8H are located primarily on rangeland (1.2 miles) with small portions on ROW (less than 1 mile) and developed lands (less than 1 mile). The majority of the existing 138-kV line that would be removed as part of Route 8H would also be located on rangeland (Table 3.17-13).

Table 3.18-3. Agricultural Land Disturbed during Construction and Operations along Segment 8

Route	Acres Disturbed by Route		
	Rangeland and Pasture	Irrigated Cropland	Dryland Farming
Construction			
Segment 8 Revised Proposed Route	1,989	188	–
Route 8G	2,449	163	–
Route 8H	2,242	184	2
Operations			
Segment 8 Revised Proposed Route	194	15	–
Route 8G	280	12	–
Route 8H	220	14	t[1/]

Acreages are rounded to nearest acre.
1/ "t" indicates values <0.1

Crop Production

Approximately 188 acres of irrigated cropland would be disturbed during construction of the Revised Proposed Route, with 15 acres permanently disturbed (Table 3.18-3). Construction of Route 8G would disturb approximately 163 acres of irrigated cropland, with 12 acres expected to be permanently disturbed. Construction of Route 8H would disturb approximately 184 acres of irrigated cropland, with 14 acres expected to be permanently disturbed. Route 8H would also disturb about 2 acres of dryland farming (Table 3.18-3).

CRP Lands

The Idaho NRCS/FSA office provided the BLM with a list of CRP land miles crossed by the Project for the FEIS, and a partial list in support of the SEIS. They are, however, prohibited from providing the location and extent of CRP acreage that may be affected. Therefore, the amount of CRP lands that could be removed from the CRP is not known. The Proponents would address this issue by consulting with the FSA and landowners to determine if construction would affect the CRP status of the land (see EPM AGRI-1 below).

Dairy Farms

Based on the indicative route used for this analysis, the Revised Proposed Route in Segment 8 would cross one CAFO, pass within 100 feet of another, and within 300 feet of eight more. Route 8G would pass within 20 feet of one CAFO and within 300 feet of five others. Route 8H would pass within 300 feet of one CAFO (Table D.17-1). However, during Project design, micrositing changes to avoid or reduce impacts would be considered. Siting and construction of the transmission line on private lands, including areas where the transmission line would cross or pass in close proximity of a CAFO, would require county approval.

Segment 9

Revised Proposed Route, FEIS Proposed 9, and 9K

The Revised Proposed Route in Segment 9 would link the proposed Cedar Hill and existing Hemingway Substations with a 165.3-mile single-circuit 500-kV transmission line that skirts the Jarbidge and Owyhee Military Operating Areas to the north, then

follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering the Hemingway Substation (see Figure A-1). It follows an alignment similar to the 2013 FEIS Route 9D/9G between MP 95.6 and 154.7, except that two portions of the route (totaling 25.7 miles) would be double-circuited with existing 138-kV lines. The first area is 5.2 miles near C.J. Strike Reservoir and the Bruneau Arm (MP 106.2 to 109.3 and 109.9 to 112.1), and the second area is 20.2 miles along the Baja Road (MP 121.0 to 141.2). Several rebuilds totaling approximately 0.6 mile are also required to tie the existing 138-kV lines into the new double-circuit alignments. Except for minor variations, the route is similar to the 2013 FEIS Route 9D/9G between MP 141.2 to 154.7. From MP 154.7 and into the Hemingway Substation, the route is the same as FEIS Proposed 9.

The Proponents originally designed the 162.2-mile-long FEIS Proposed 9 to follow existing utility corridors and avoid the SRBOP and other protected areas where feasible. Approximately 54 miles of the route is within or adjacent to a utility corridor. FEIS Proposed 9 is approximately 3.1 miles shorter than the Revised Proposed Route but it crosses 13.6 miles of the SRBOP compared to 54.2 miles for the Revised Proposed Route. Both the Revised Proposed Route and FEIS Proposed 9 cross the Salmon Falls Creek at Lilly Grade adjacent to an existing single-phase 34.5-kV distribution line just north of the Salmon Falls Creek WSA.

Route 9K is being considered by the BLM as a modified version of FEIS Route 9E (the FEIS Preferred Route) to avoid crossing the northwestern portion of the SRBOP and to minimize direct and indirect impacts to priority sage-grouse habitat. The route is approximately 174.6 miles long, compared to the 165.3-mile-long Revised Proposed Route (see Figure A-1).

Prime Farmland

Approximately 1,531 acres of prime farmland would be disturbed during construction of the Revised Proposed Route, and 140 acres would be permanently disturbed (Table 3.18-4). Construction of the FEIS Proposed 9 would disturb approximately 1,024 acres of prime farmland, with 99 acres expected to be permanently disturbed. Construction of Route 9K would disturb approximately 964 acres of prime farmland, with 110 acres expected to be permanently disturbed.

Table 3.18-4. Prime Farmland Affected by Construction and Operations in Segment 9

Route	County	Prime Farmland Acres Affected	
		Construction	Operations
Revised Proposed Route	Ada	228	13
	Cassia	29	2
	Elmore	266	20
	Owyhee	635	69
	Twin Falls	373	37
	Total	**1,531**	**140**
FEIS Proposed 9	Cassia	38	2
	Elmore	22	1
	Owyhee	560	57
	Twin Falls	405	39
	Total	**1,024**	**99**

Table 3.18-4. Prime Farmland Affected by Construction and Operations in Segment 9 (continued)

Route	County	Prime Farmland Acres Affected	
		Construction	Operations
Route 9K	Cassia	29	2
	Elmore	10	1
	Owyhee	551	71
	Twin Falls	373	37
	Total	**964**	**110**
Existing 138-kV Line Removal	Ada	23	–
	Elmore	14	–
	Owyhee	2	--
	Total	**39**	**--**
Revised Proposed Route – Comparison portion for Toana Road Variations 1/1-A	Owyhee	–	–
	Twin Falls	–	–
Toana Road Variation 1	Owyhee	–	–
	Twin Falls	–	–
Toana Road Variation 1-A	Owyhee	–	–
	Twin Falls	–	–

Acres are based on GIS; numbers are not exact and may not sum due to rounding.

Livestock Grazing

Construction of the Revised Proposed Route would disturb an estimated 2,910 acres of rangeland and pasture, with an estimated 299 acres permanently disturbed (Table 3.18-5). The majority of the existing 138-kV line that would be removed as part of the Revised Proposed Action would be located on rangeland (Table 3.17-19). FEIS Proposed 9 would disturb an estimated 2,801 acres of rangeland and pasture during construction, with an estimated 312 acres permanently disturbed. Route 9K would disturb an estimated 3,084 acres of rangeland and pasture during construction, with an estimated 365 acres permanently disturbed.

Table 3.18-5. Agricultural Land Disturbed during Construction and Operations in Segment 9

Route	Acres Disturbed by Route		
	Rangeland and Pasture	Irrigated Cropland	Dryland Farming
Construction			
Revised Proposed Route	2,910	142	2
FEIS Proposed 9	2,801	397	t[1/]
Route 9K	3,084	121	--
Operations			
Revised Proposed Route	299	9	<1
FEIS Proposed 9	312	34	t[1/]
Route 9K	365	8	--

Acreages are rounded to nearest acre.
1/ "t" indicates values <0.1

Crop Production

Approximately 142 acres of irrigated cropland would be disturbed during construction of the Revised Proposed Route, with 9 acres permanently disturbed (Table 3.18-4). Construction of FEIS Proposed 9 would disturb approximately 397 acres of irrigated cropland, with 34 acres expected to be permanently disturbed. Construction of 9K would disturb approximately 121 acres of irrigated cropland, with 8 acres expected to be permanently disturbed. The Revised Proposed Route would also disturb about 2 acres of dryland farming (Table 3.18-3).

CRP Lands
As discussed with respect to Segment 8, the amount of CRP lands that could be removed from the CRP is not known and the Proponents would address this issue by consulting with the FSA and landowners to determine if construction would affect the CRP status of the land (see EPM AGRI-1 below).

Dairy Farms
The Revised Proposed Route, FEIS Proposed 9, and 9K do not cross any CAFOs. However, based on the indicative route used for this analysis, the Revised Proposed Route would pass within 300 feet of three CAFOs, FEIS Proposed 9 would pass within 300 feet of two, and 9K would pass within 300 feet of five (Table D.17-1).

Toana Road Variations 1 and 1-A and the Comparison Portion of the Segment 9 Revised Proposed Route

Toana Road Variation 1 to the Segment 9 Revised Proposed Route was recommended by the BLM Jarbidge Field Office archaeologist to avoid paralleling the Toana Freight Wagon Road, an NRHP site. The Revised Proposed Route parallels within 0.25 mile of the Toana Road between MP 38.2 and 40.6, and parallels within 1 mile of the road through Blue Gulch between MP 40.6 and 43.5. Variation 1 is approximately 8.5 miles in length. Approximately 0.3 mile of the route crosses state land, with the remainder on land managed by the BLM. The Toana Road Variation 1-A to the Revised Proposed Route was recommended by the BLM to minimize visual impacts to the Toana Freight Wagon Road, and was also intended to utilize existing roads in order to minimize new road construction in the area. Variation 1-A is approximately 8.9 miles long. Approximately 1 mile of the route crosses state land, with the remainder on land managed by the BLM.

Neither of the two Toana Road Variations would affect irrigated farmland. Both would cross similar amounts of rangeland as the comparison portion of the Revised Proposed Route. Construction of Toana Road Variations 1 and 1-A would each affect approximately 150 acres of rangeland, while the comparison portion of the Revised Proposed Route would affect an estimated 161 acres. Based on the indicative route used for this analysis, Toana Road Variation 1-A would come within 100 feet of a CAFO. Siting and construction of the transmission line in this area would require county approval.

3.18.2.4 Direct and Indirect Effects of the Alternatives

This section assesses the potential impacts of the seven BLM action alternatives, which are summarized in Tables 3.18-6 and 3.18-7. The alternatives are visually displayed in Figures A-2 through A-8.

Table 3.18-6. Prime Farmland Affected by Construction and Operations of the Seven Action Alternatives

Alternative		Construction	Operations
1	Proposed Action	2,064	190
2	Revised Proposed 8 and FEIS Proposed 9	1,557	149
3	Revised Proposed 8 and the 9K Route	1,497	160
4	The 8G Route and FEIS Proposed 9	1,713	185
5	The 8G and 9K Routes	1,653	196
6	The 8H Route and FEIS Proposed 9	2,187	215
7	The 8H and 9K Routes	2,127	226

Table 3.18-7. Agricultural Land Disturbed during Construction and Operations of the Seven Action Alternatives

Alternative		Acres Disturbed by Alternative		
		Rangeland and Pasture	Irrigated Cropland	Dryland Farming
Construction				
1	Proposed Action	4,899	330	2
2	Revised Proposed 8 and FEIS Proposed 9	4,790	585	0
3	Revised Proposed 8 and the 9K Route	5,073	309	0
4	The 8G Route and FEIS Proposed 9	5,250	560	0
5	The 8G and 9K Routes	5,533	284	0
6	The 8H Route and FEIS Proposed 9	5,043	581	2
7	The 8H and 9K Routes	5,326	305	2
Operation				
1	Proposed Action	493	24	0
2	Revised Proposed 8 and FEIS Proposed 9	507	49	0
3	Revised Proposed 8 and the 9K Route	559	23	0
4	The 8G Route and FEIS Proposed 9	593	46	0
5	The 8G and 9K Routes	645	20	0
6	The 8H Route and FEIS Proposed 9	533	48	0
7	The 8H and 9K Routes	585	22	0

Alternative 1 – Proposed Action (the Revised Proposed Routes for Segments 8 and 9)

Alternative 1 consists of the Revised Proposed Routes for Segments 8 and 9; therefore, the impacts associated with this alternative correspond to those described for those routes (Section 3.18.2.2). Construction of Alternative 1 would disturb approximately 2,064 acres of prime farmland, with 190 acres expected to be permanently disturbed (Table 3.18-6). Alternative 1 would disturb approximately 4,899 acres of rangeland and pasture during construction, with an estimated 493 acres expected to be permanently disturbed (Table 3.18-7). Construction of Alternative 1 would also disturb approximately 330 acres of irrigated cropland, with 24 acres expected to be permanently disturbed (Table 3.18-7). Alternative 1 would cross one CAFO, pass within 100 feet of another CAFO, and within 300 feet of 11 more.

Alternative 2 – Revised Proposed 8 and FEIS Proposed 9

Alternative 2 consists of the Revised Proposed Route for Segment 8 and FEIS Proposed 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.18.2.3). Construction of

Alternative 2 would disturb approximately 1,557 acres of prime farmland, with 149 acres expected to be permanently disturbed (Table 3.18-6). Alternative 2 would disturb approximately 4,790 acres of rangeland and pasture during construction, with an estimated 507 acres expected to be permanently disturbed (Table 3.18-7). Construction of Alternative 2 would also disturb approximately 585 acres of irrigated cropland, with 49 acres expected to be permanently disturbed (Table 3.18-7). Alternative 2 would cross one CAFO, pass within 100 feet of another CAFO, and within 300 feet of 10 more.

Alternative 3 – Revised Proposed 8 and the 9K Route

Alternative 3 consists of the Revised Proposed Route for Segment 8 and Route 9K; therefore, the impacts associated with this alternative correspond to those described above for the these two routes combined (see Section 3.18.2.3). Construction of Alternative 3 would disturb approximately 1,497 acres of prime farmland, with 160 acres expected to be permanently disturbed (Table 3.18-6). Alternative 3 would disturb approximately 5,073 acres of rangeland and pasture during construction, with an estimated 559 acres expected to be permanently disturbed (Table 3.18-7). Construction of Alternative 3 would also disturb approximately 309 acres of irrigated cropland, with 23 acres expected to be permanently disturbed (Table 3.18-7). Alternative 3 would cross one CAFO, pass within 100 feet of another CAFO, and within 300 feet of 13 more.

Alternative 4 – The 8G Route and FEIS Proposed 9

Alternative 4 consists of the Route 8G and FEIS Proposed 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.18.2.3). Construction of Alternative 4 would disturb approximately 1,713 acres of prime farmland, with 185 acres expected to be permanently disturbed (Table 3.18-6). Alternative 4 would disturb approximately 5,250 acres of rangeland and pasture during construction, with an estimated 593 acres expected to be permanently disturbed (Table 3.18-7). Construction of Alternative 4 would also disturb approximately 560 acres of irrigated cropland, with 46 acres expected to be permanently disturbed (Table 3.18-7). Alternative 4 would not cross any CAFOs, but would pass within 20 feet of one CAFO, and within 300 feet of seven more.

Alternative 5 – The 8G and 9K Routes

Alternative 5 consists of Routes 8G and 9K; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.18.2.3). Construction of Alternative 5 would disturb approximately 1,653 acres of prime farmland, with 196 acres expected to be permanently disturbed (Table 3.18-6). Alternative 5 would disturb approximately 5,533 acres of rangeland and pasture during construction, with an estimated 645 acres expected to be permanently disturbed (Table 3.18-7). Construction of Alternative 5 would also disturb approximately 284 acres of irrigated cropland, with 20 acres expected to be permanently disturbed (Table 3.18-7). Alternative 5 would not cross any CAFOs, but would pass within 20 feet of one CAFO, and within 300 feet of 10 more.

Alternative 6 – The 8H Route and FEIS Proposed 9

Alternative 6 consists of Route 8H and FEIS Proposed 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.18.2.3). Construction of Alternative 6 would disturb approximately 2,187 acres of prime farmland, with 215 acres expected to be permanently disturbed (Table 3.18-6). Alternative 6 would disturb approximately 5,043 acres of rangeland and pasture during construction, with an estimated 533 acres expected to be permanently disturbed (Table 3.18-7). Construction of Alternative 6 would also disturb approximately 581 acres of irrigated cropland, with 48 acres expected to be permanently disturbed (Table 3.18-7). Alternative 6 would not cross any CAFOs, but would pass within 300 feet of three CAFOs.

Alternative 7 – The 8H and 9K Routes

Alternative 7 consists of Routes 8H and 9K; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.18.2.3). Construction of Alternative 7 would disturb approximately 2,127 acres of prime farmland, with 226 acres expected to be permanently disturbed (Table 3.18-6). Alternative 7 would disturb approximately 5,326 acres of rangeland and pasture during construction, with an estimated 585 acres expected to be permanently disturbed (Table 3.18-7). Construction of Alternative 7 would also disturb approximately 305 acres of irrigated cropland, with 22 acres expected to be permanently disturbed (Table 3.18-7). Alternative 7 would not cross any CAFOs, but would pass within 300 feet of six CAFOs.

3.18.2.5 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, as well as additional measures proposed by the Project Proponents specifically for the SRBOP.

Environmental Protection Measures

The Proponents have committed to Project design features and EPMs to minimize or avoid impacts on environmental resources. These measures, the areas where they would be applicable (e.g., private, state, or federal-managed lands), as well as the details of each measure are provided in Table 2.7-1 of the FEIS. The following measure identified in Table 2.7-1 of the FEIS directly relates to agriculture and would be applicable to Segments 8 and 9:

AGRI-1 Consult with the Farm Service Agency and landowners to determine how construction may affect the CRP status of the land currently enrolled in CRP.

In addition, many of the other measures identified in Table 2.7-1 that were not developed to specifically protect agricultural resources would have the effect of helping to avoid or minimize effects to agriculture. These include measures related to operations and maintenance, reclamation, vegetation, weeds, soils, water quality, transportation, and fire (see Table 2.7-1 of the FEIS).

Proponent-Proposed MEP and Potential Effects of the MEP within the SRBOP

The Proponents have developed an MEP that contains design features specific to the SRBOP. This plan was developed to mitigate the effects of Project-related impacts within the SRBOP, as well as comply with the SRBOP's enabling statute (P.L. 103-64) which requires enhancement of resources within the SRBOP. The Proponents' plan contains two forms of mitigation: "compensation mitigation" and "enhancement." For this analysis, mitigation is defined as avoidance, minimization, and compensation measures aimed at offsetting adverse impacts of the Project; enhancement is defined as additional mitigation measures that are required in order to enhance the objectives and values for which the SRBOP was established.

The Proponents' MEP offers a portfolio that contains five types of mitigation/enhancement proposals, including 1) habitat restoration, 2) purchasing of private properties, 3) enhanced law enforcement, 4) visitor enhancement, and 5) line and substation removal.

The following discusses the benefit and/or impact that these proposed mitigation/enhancement proposals could have to agricultural resources. Note that only the proposal to purchase private lands around or near the SRBOP could have a direct effect on agricultural resources.

Habitat Restoration

The goal for the Proponents' habitat restoration proposal is to convert "non-native grasslands to native perennial plant communities" as well as to conduct "noxious weed control." Proposed funding to restore habitats within the SRBOP would have no effect on agricultural resources. Habitat restoration could occur in areas currently used as rangeland and pasture, but this potential reduction in rangeland and pasture would likely only affect a very small share of this type of land in the Analysis Area.

Purchase of Private Inholdings

There are private lands within the SRBOP that could contain important cultural and natural resources. The Proponents have proposed (as part of the MEP) to purchase a portion of these lands and deed them to the U.S. government, to be managed by the BLM. The Proponents have indicated that the selection of the parcels that would be purchased and deeded to the BLM would be determined by the Oversight Committee. However, the composition and exact membership of the individuals and agencies within the proposed Oversight Committee have not been identified to date.

No specific parcels or willing landowners have been identified to date; however, it is possible that some of the private lands that would be purchased could consist at least partially of areas currently used for agriculture. Therefore, this proposal could reduce the extent of privately held agricultural land in the region. The likelihood of this, as well as the extent that the purchased properties would consist of agricultural areas, cannot be determined at this time, until the location of the parcels that would be purchased has been identified by the Oversight Committee. Although the amount of land to be acquired is unknown, it would represent a very small share of total private lands in the affected county or counties, depending on the location of the transferred parcels. Assuming an average value of $3,000 per acre, for example, a total expenditure of

$320,000 (as proposed by the Proponents) would allow the acquisition of approximately 106 acres of inholdings.

Law Enforcement

The Proponents' MEP contains a proposal for the funding of increased law enforcement within the SRBOP for a period of 10 years. The goal of this increased funding is to change adverse behaviors in the SRBOP by aiding law enforcement in their coverage and ability to manage public induced damage to resource. Proposed funding to enhance law enforcement resources within SRBOP would have little to no effect on agricultural resources.

Visitor Enhancement

The MEP contains a proposal to fund programs meant to enhance the experiences of visitors to the SRBOP. Proposed funding to enhance the experience of visitors to the SRBOP would have no effect on agricultural resources.

Line and Substation Removal

The Proponents have identified portions of two existing transmission lines and an existing substation within the SRBOP that could be removed. Removal would also require some reconstruction of existing lines and a short length of new line (see the Supplemental POD in Appendix B). Table 3.18-8 identifies the acres of agricultural land that would be affected by county during construction. The vast majority of the affected area is rangeland and pasture (53 acres), with less than 2 acres of irrigated farming potentially affected. More than two-thirds of the affected acres (39 acres) are considered prime farmland (Table 3.18-8).

Table 3.18-8. Agricultural Land Potentially Disturbed as Part of MEP Line and Substation Removal (acres)

County	Dryland Farming	Irrigated Farming	Rangeland and Pasture	Grand Total	Prime Farmland
Ada	–	1	34	**35**	35
Canyon	–	1	<1	**1**	2
Elmore	–	–	19	**19**	2
Total	–	**2**	**53**	**55**	**39**

Acres are based on GIS; numbers are not exact and may not sum due to rounding.

Short-term impacts associated with removal, reconstruction, and removal would be similar to those described above in Section 3.18.2.2. In areas where facilities would be removed, once reclamation is complete, areas would be restored to their prior condition.

3.18.2.6 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

Summary of Remaining Impacts

After implementation of the EPMs and MEP discussed above, some Project-related impacts would likely remain. The impact assessment found in Sections 3.18.2.2,

3.18.2.3, and 3.18.2.4 incorporates the avoidance and minimization contributions of the EPMs in the impact analysis; as a result, Sections 3.18.2.2, 3.18.2.3, and 3.18.2.4 take these measures and their impact offsets into consideration. The design features outlined in the Proponents' MEP (discussed above) may reduce the magnitude of these impacts to some degree (thereby reducing the need for additional compensatory mitigation); however, the extent of this reduction cannot be fully quantified at this time (as discussed in detail above).

Note that Sections 3.18.2.2, 3.18.2.3, and 3.18.2.4 outline the current extent of known impacts that would occur Project-wide

BLM Compensatory Mitigation Categories

In addition to the above design features and EPMs meant to avoid and minimize impacts, the Gateway West POD (Appendix B to the ROD [BLM 2013b]) includes a Framework Agriculture Protection Plan. Mitigation for Project impacts to agriculture would be under the authority of the Counties and may be required under the County permitting process.

3.19 TRANSPORTATION

This section provides a description of the existing transportation and traffic system and airports and analyzes the impacts that would be caused to the existing infrastructure by the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; and the Toana Road Variations to the Segment 9 Revised Proposed Route. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). Effects on crop dusting are discussed in Section 3.18 – Agriculture. Potential impacts that would be caused by the Revised Proposed Routes, other routes, and the Toana Road Variations relating to geologic hazards, soils, land use, and OHV use are discussed in Sections 3.14 – Geologic Hazards, 3.15 – Soils, and 3.17 – Land Use and Recreation, respectively. Effects associated with the routes analyzed in the 2013 FEIS, other than FEIS Proposed 9, were disclosed in that document. With the exception of FEIS Proposed 9, those FEIS routes are not being re-analyzed here, as only new information is included in this resource-specific section.

3.19.1 Affected Environment

The Transportation section of the 2013 FEIS discusses those aspects of the environment that could be impacted by the Project. It begins with a discussion of the Analysis Area considered, identifies the issues that have driven the analysis, the methods used in the analysis, and characterizes the existing conditions in the area crossed by Project. We reviewed the data and regulatory requirements in the FEIS and concluded that they are still valid for this SEIS.

Morley Nelson Snake River Birds of Prey National Conservation Area

Portions of the Project would cross through the SRBOP. Transportation-related issues are not one of the environmental resources and values for which the SRBOP was established to manage and protect.

3.19.1.1 Analysis Area

The Analysis Area for transportation includes the existing transportation infrastructure that would be affected by construction and operations of the proposed Project, other routes, and variations. Transportation facilities in the vicinity of the Project range from Interstate highways to two-track trails, bridges, railroads, and airports. Roads throughout the Analysis Area are managed by federal, state, and local agencies. Motorized recreational activities occur throughout the vicinity of the Project. On federal and state lands, these activities are managed by agencies through land use plans and policies, with some enforcement, while these types of activities on private lands are legally limited by the landowner. Airports and landing strips are used for transportation of passengers and cargo and agricultural activities.

The Analysis Area for roads comprises four parts:

1. Existing federal, state, and county maintained roads within 1 mile of the Revised Proposed Route and other routes that would be mostly unaffected except for

traffic increases that could temporarily affect the level of service or could result in some road damage;

2. Off-ROW existing roads needing improvement to a standard to support construction traffic;
3. Off-ROW new roads needed to access individual structure locations or the ROW; and
4. Roads built within the ROW connecting structure locations.

The Analysis Area for airports includes portions of routes that intersect areas within 3 miles of an airport or airstrip, including the controlled airspace. The Analysis Area for railroads and pipelines is the point of intersection with the ROW. No railroads or pipelines closely parallel the Revised Proposed Routes, other routes, or variations.

3.19.1.2 Issues Related to Transportation

The following transportation-related issues were brought up by the public during public scoping (Tetra Tech 2009) and comments on the DEIS, raised by federal and state agencies during scoping and agency discussions, or are issues that must be considered as stipulated in law or regulation:

- Whether a full map and inventory of all new temporary and permanent access roads for the Project would be developed;
- How vehicles taking materials and personnel to and from the Project site would affect traffic patterns;
- How roads, highways, railroads, and airports would be affected;
- Whether there would be an increase in off-highway vehicle use, and what the environmental impacts of this would be (discussed in Section 3.17 – Land Use and Recreation);
- Whether construction and operations of the Project would cut off access to any previously-accessible areas (discussed in Section 3.17 – Land Use and Recreation);
- What the environmental effects of new temporary and permanent roads constructed for this Project would be (discussed in the appropriate sections of Chapter 3, e.g., effects of roads on wildlife is discussed in Section 3.10 – General Wildlife and Fish).

We reviewed the scoping comments received for this SEIS and determined that transportation-related issues considered in the FEIS are still relevant to the SEIS.

3.19.1.3 Methods

Data for the transportation network were collected and analyzed from highway maps, GIS coverages, route alignment maps, and other maps from various reports and websites of the affected state and local agencies. Specific GIS data used were the ESRI StreetMap Streets data layer for roads and highways (2009); the ESRI Airports layer, derived from the FAA National Airspace System Resource Aeronautical Data Product (2014); the Railroads layer from the Bureau of Transportation Statistics (2014);

and a bridges layer taken from the U.S. Department of Transportation, Federal Highway Administration (2014). Traffic volume data were obtained from Idaho Transportation Department databases. Locations of airports and landing strips were obtained from the 2007 Bureau of Transportation Statistics Airport database and aerial photography. These analyses provide information to the decision-maker regarding possible new road construction and use, and are located in the Administrative Record.

3.19.1.4 Existing Conditions

Highways, Roads, Bridges, and Railroads

Some federal and state highways intersect the Revised Proposed Routes and other routes; however, most roads crossed by the Project are low standard roads, often little more than two tracks. Table D.19-1 in Appendix D shows the miles of federal-, state-, and county-maintained roads and bridges within 1 mile of the Revised Proposed Routes, other routes, and variations. Major roads near the Project include US 30 (less than 1,000 vehicles per day) and I-84 (more than 10,000 vehicles per day; ITD 2010). Mainline rail lines operating in the region include Burlington Northern Santa Fe and UPRR.

Airports

There are three airports and five landing strips (plus one ultralight landing strip), within 3 miles of the Revised Proposed Routes. Of these facilities, one landing strip is within 1 mile. There is an additional landing strip within 3 miles of the existing 500-kV line proposed for removal along the 1.1-mile section of the Segment 8 Revised Proposed Route and one heliport along the section of the proposed MEP between Mountain Home and Bennett. Table D.19-2 in Appendix D lists the airports, airstrips, and heliports within 1 and 3 miles of all routes considered in detail in this SEIS.

3.19.2 Direct and Indirect Effects

This section is organized to present effects to existing transportation facilities from construction, then operations, followed by decommissioning activities for the Segment 8 and 9 Revised Proposed Routes, Routes 8G, 8H, FEIS Proposed 9, and 9K, and the Toana Road Variations. Each route is analyzed in detail below in Section 3.19.2.3.

A comprehensive list of all Project design features and EPMs, as well as the land ownership to which they apply, can be found in Table 2.7-1 of Chapter 2 of the FEIS. The following impact assessment takes these Project design features and EPMs into account when considering the potential impact that the Project could have on resources.

Plan Amendments

Plan amendments are proposed for areas on BLM-managed where the Project would not be consistent with the land use plans. Proposed amendments to BLM RMPs and MFPs are summarized in Tables 2.3-1a-b, while the BLM plan amendments associated with the other routes/alternatives are summarized in Tables 2.3-2a-e (see Chapter 2 for more details). BLM plan amendments are discussed in detail in Appendices F and G. Plan amendments that could directly impact transportation by leading to new road

construction or road improvement in areas where these activities are not currently permitted include the following:

- SRBOP RMP: Segment 9 Revised Proposed Route, and Route 8H – The area is closed to motorized vehicle use, subject to authorized use.
- Twin Falls MFP: Segment 9 Revised Proposed Route, FEIS Proposed 9, and 9K – permit the Project to cross the Salmon Falls Creek ACEC, which restricts motorized vehicle access.

Plan amendments that could indirectly impact transportation by leading to new road construction or road improvement in areas where these activities are not currently permitted would include amendments allowing the Project outside of existing utility corridors or changing VRM classes.

3.19.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West and the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of this Project. No project-related impacts to transportation would occur; however, impacts would continue as a result of natural events (such as fire, drought, and severe weather) as well as from existing and planned developments within the Analysis Area and from other projects, including new or improved roads associated with wind farm development, mining, agricultural, or other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project and the area would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, impacts similar to those described below may occur due to new transmission lines built to meet the increasing demand in place of this Project.

3.19.2.2 Effects Common to All Routes

Construction and Operations

The general impacts that would occur to transportation resources from construction, operations, and decommissioning of the Gateway West Project were analyzed in detail within Section 3.19.2.2 of the FEIS. The assessment of quantitative impacts specifically related the Revised Proposed Route along Segments 8 and 9, as well as other routes (8G, 8H, FEIS Proposed 9, and 9K) and the Toana Road Variations, is presented in Section 3.19.2.3 of this SEIS. The assessment of potential impacts related to the MEP, as well as a list of additional mitigation measures that would be recommended by the BLM related to impacts on the SRBOP, is presented in Sections 3.19.2.5 and 3.19.2.6.

Decommissioning

Project facilities would be removed at the end of the operational life of the transmission line. Structures and foundations would be removed to below the ground surface level. They would not be removed in their entirety due to the large ground disturbance this would create. Soil and plants would be restored over the top of these underground

foundation structures. Traffic generated during decommissioning would be similar to that created during facility construction. Decommissioning would involve heavy vehicles for removal and disposal of materials, as well as personal vehicles used by the construction work force to both commute to and from the work site and to move around within the work site during the day. Additional details concerning decommissioning are provided in Appendix B of the FEIS.

3.19.2.3 Direct and Indirect Effects by Route

Table 3.19-1 lists the number of highways, roads, and railroads crossed by the Revised Proposed Routes, other routes, and the Toana Road Variations. Table D.19-1 in Appendix D summarizes the roads, railroads, and bridges within 1 mile of the Revised Proposed Routes, other routes, and the Toana Road Variations. Impacts to transportation and infrastructure are expected to decrease with a greater number of existing roads in the area due to the diffusion of Project traffic. With more roads and access points to Project structures, the finite number of Project-related vehicles can disperse and thus not be forced to use one or a few access points or roads. This dispersal would also result in less noticeable increases in traffic loads, resulting in reduced effects on emergency access and safety issues.

Table 3.19-1. Transportation Facilities Crossed by the Segments 8 and 9 Revised Proposed Routes, Other Routes, and Route Variations

Routes	Segment Length (Miles)[1/]	Interstate Highway Crossings	Other Highway/Road Crossings	Railroad Crossings
Segment 8 Revised Proposed	129.7	1	154	3
Segment 8 – Existing 500-kV Removal	1.1	0	2	0
Segment 8 – Revised Proposed Actions – Total Crossings	**na**	**1**	**156**	**3**
Route 8G	146.9	1	139	1
Route 8G – Existing 500-kV Removal	1.9	0	5	0
Route 8G– Total Crossings	na	**1**	**144**	**1**
Route 8H	137.5	1	167	1
Route 8H – Existing 500-kV Removal	1.9	0	5	0
Route 8H – Existing 138-kV Removal	25.7	0	38	0
Route **8H– Total Crossings**	na	**1**	**210**	**1**
Segment 9 Revised Proposed	165.3	0	222	1
Segment 9 – Existing 138-kV Removal	25.7	0	39	0
Segment 9 – Total Crossings		**0**	**261**	**1**
FEIS Proposed 9	162.2	0	200	1
Route 9K	174.6	0	180	1
Segment 9 Revised Proposed – Comparison Portion for Toana Road Variations	8.7	0	10	0
Toana Road Variation 1	8.5	0	13	0
Toana Road Variation 1-A	8.9	0	13	0

Source: ESRI StreetMap 2002
1/ Miles are rounded to the nearest tenth of a mile.

Impacts on traffic would decrease with increasing quality and size of existing roads. However, Project-related impacts would increase with higher numbers of crossings of Interstate highways, other highways and roads, and railways because of potential

disruptions to traffic and damage to roads and railways. The number of crossings within a 1-mile corridor from the centerlines of the Revised Proposed Routes, other routes, and variations is also presented below, because these crossings would likely serve project-related traffic, resulting in more wear on these structures than would occur otherwise. To assess impacts specifically by segment and variation, the road density within the Analysis Area; the number of road, railroad, and bridge crossings; and whether these roads are small local roads or large highways are given in Table 3.19-1 and by segment.

Segment 8

Revised Proposed Route

The Segment 8 Revised Proposed Route would link the Midpoint and Hemingway Substations (see Figure A-1). This 129.7-mile single-circuit 500-kV transmission line would stay north of the Snake River until it crosses just north of Guffey Butte, generally parallel to an existing 500-kV transmission line, before ending at the Hemingway Substation. This route is similar to the original proposed route in the 2013 FEIS except that the line would be 250 feet north of the existing 500-kV line rather than 1,500 feet south of the line from the eastern boundary of the SRBOP (MP 99.7) to the Hemingway Substation. The route east of that point is unchanged from the 2013 FEIS Proposed Route.

The Revised Proposed Route for Segment 8 would follow, for most of its length, a system of existing transmission lines that are intersected by existing roads.

For the Revised Proposed Route, 100.8 miles of new road would be constructed and 113.5 miles of existing roads would be improved. This would also be 40.0 miles fewer new road miles, and 42.0 miles fewer existing road miles to be improved, when compared to 8G.

There would be one landing strip within 1 mile of the Revised Proposed Route and one additional landing strip within 3 miles of the route, in addition to two airports and one ultralight strip. The Revised Proposed Route would be within 1 mile of 20.2 miles of state/federal highways and Interstates, and five substantial bridges.

Amendments to the SRBOP RMP would be needed if the Revised Proposed Route is selected to allow the Project to cross the SRBOP outside the existing established utility corridors, as well as near sensitive plant habitat. An amendment to the Bennett Hills/Timmerman Hills MFP would be needed to change VRM classes, amendments to the 1987 Jarbidge RMP would be needed to change VRM Classes and cultural restrictions, and an amendment to the Kuna MFP would create an additional ROW.

Route 8G

Route 8G is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows an alignment similar to the ones analyzed for 8A and 9B in the FEIS for approximately 44 miles, although it generally parallels 250 feet north of the existing 500-kV line rather than1,500 feet to the south in order to avoid the Hagerman Fossil Beds National Monument and development near Hagerman (see Figure A-1). The route then parallels 250 feet north of the Segment 9 Proposed Route and 9K for

most of the remaining distance into the Hemingway Substation. The route is 146.9 miles long (including a 1.9-mile rebuild of the existing 500-kV line), compared to the 129.7-mile-long Revised Proposed Route.

For 8G, there would be 140.8 miles of new access road constructed and 155.5 miles of existing access roads to be improved. This is 40 miles more new road construction than in the Revised Proposed Route and 42 more miles of roads to be improved.

There would be one landing strip within 1 mile of 8G and three additional landing strips within 3 miles, in addition to three airports. This is one more airport and two more landing strips than the Revised Proposed Route; however, the Revised Proposed Route would also be within 3 miles of an ultralight landing strip. Route 8G would be within 1 mile of 25.3 miles of state/federal highways and Interstates, compared to 20.2 miles for the Revised Proposed Route. There would be 15 fewer road crossings on 8G (139) than on the Revised Proposed Route (154). Route 8G would have one railway crossing compared to the Revised Proposed Route, which would have three. Both the Revised Proposed Route and 8G would be within 1 mile of five substantial bridges. The Revised Proposed Route would be within 1 mile of 7.6 miles of railroad, while 8G would be within 1 mile of 2.8 miles of railroad.

Amendments to the SRBOP RMP would be needed if 8G is selected to allow the Project to cross the SRBOP outside the existing utility corridors and to be within 0.5 mile of occupied sensitive plant habitat. An amendment to the Bruneau RMP would be needed to change VRM classes.

Route 8H

Route 8H is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows a combination of portions of the alignments analyzed for 8G and the Revised Proposed Route for Segment 9. The route is 137.5 miles long (including a 1.9-mile rebuild of the existing 500-kV line and a 25.7-mile removal and rebuild of a 138-kV line), compared to the 129.7-mile-long Segment 8 Revised Proposed Route. Approximately 44 miles of the route follows the 8G alignment, while the remainder of 8H follows the alignment of the Segment 9 Revised Proposed Route.

For 8H, there would be 96.6 miles of new access road constructed and 120.5 miles of existing access roads to be improved. This is 4.2 miles fewer new road construction than in the Revised Proposed Route and 7 more miles of roads to be improved.

There would not be any landing strips within 1 mile of 8H, however there would be 3 landing strips within 3 miles, in addition to 1 airport. This is fewer landing strips and airports than the Revised Proposed Route and 8G. Route 8H would be within 1 mile of 21.5 miles of state/federal highways and Interstates, compared to 20.2 miles for the Revised Proposed Route. There would be 13 more road crossings on 8H (168) than on the Revised Proposed Route (155). Route 8H would have one railway crossing compared to the Revised Proposed Route which would have three. Route 8H would be within 1 mile of five bridges (as well as two other bridges related to the 138-kV removal). The Revised Proposed Route would be within 1 mile of 7.6 miles of railroad, while 8H would be within 1 mile of 2.8 miles of railroad.

Amendments to the SRBOP RMP would be needed if 8H is selected to allow the Project to cross the SRBOP outside the existing utility corridors and to be within 0.5 mile of occupied sensitive plant habitat, as well as for crossing SRMAs and changing VRM classes. An amendment would be needed to the 1987 Jarbidge RMP to change VRM classes.

Segment 9

Revised Proposed Route

The Segment 9 Revised Proposed Route would link the proposed Cedar Hill and existing Hemingway Substations with a 165.3-mile single-circuit 500-kV transmission line that skirts the Jarbidge and Owyhee Military Operating Areas to the north, then follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering the Hemingway Substation (see Figure A-1). It follows an alignment similar to the 2013 FEIS Route 9D/9G between MP 95.6 and 154.7, except that two portions of the route (totaling 25.7 miles) would be double-circuited with existing 138-kV lines. The first area is 5.2 miles near C.J. Strike Reservoir and the Bruneau Arm (MP 106.2 to 109.3 and 109.9 to 112.1), and the second area is 20.2 miles along the Baja Road (MP 121.0 to 141.2). Several rebuilds totaling approximately 0.6 mile are also required to tie the existing 138-kV lines into the new double-circuit alignments. Except for minor variations, the route is similar to the 2013 FEIS Route 9D/9G between MP 141.2 to 154.7. From MP 154.7 and into the Hemingway Substation, the route is the same as the 2013 FEIS Proposed Route.

Approximately 25.6 miles of the Revised Proposed Route for Segment 9 would be a double-circuit line. Approximately 5.4 miles of the existing 138-kV line near the C.J. Strike Reservoir and 20.2 miles along the Baja Road would be removed and both the138-kV line and the Gateway West 500-kV line would be placed on the double-circuit towers.

Between the Cedar Hill Substation and Lilly Grade (see Figure A-11, Appendix A of the FEIS), portions of the alignment would cross an area of well-developed and maintained section line roads that would provide good dispersed access to the transmission line routes. However, west of this boundary, it would be mostly on public land with fewer and less-developed roads until it crosses SR 78 at approximately MP 101. From MP 101 to the Hemingway Substation, the route follows a similar route as the FEIS Preferred Route and, like that route, would rely on a good system of roads to the north and south of the Snake River and then be on public land and parallel to an existing transmission line until it crosses to the south side of the Snake River at MP 143.2 in the western area of the SRBOP. The route then heads west, crossing SR 78 again, at MP 153.3, and joining up with the FEIS Proposed Route at MP 154.7. From the highway crossings there would be dispersed access from local roads to the ROW.

Approximately 125.7 miles of new road would be constructed for the Revised Proposed Route and 178.7 miles of existing roads would be improved. In terms of road crossings, the number of bridges within 1 mile of the route would increase from three to eight.

An amendment to the SRBOP RMP would be needed if the Segment 9 Revised Proposed Route is selected to allow the Project to cross the SRBOP outside of existing

utility corridors. In addition, an amendment would be needed for the route to cross the western portion of the Cove non-motorized area. Amendments to the SRBOP RMP would also be needed to cross VRM Class II and Class l management areas. Amendments to the Twin Falls MFP would be needed to allow the Revised Proposed Route to cross the Salmon Falls ACEC, which does not allow motorized vehicles or surface disturbance. This route would cross below the Wild portion of the WSR eligible section of Salmon Falls Creek. Other amendments to the Twin Falls MFP would change VRM classes and allow the Project outside of existing utility corridors. The 1987 Jarbidge RMP would be amended to change VRM classes.

FEIS Proposed 9

The Proponents originally designed the 162.2-mile-long FEIS Proposed 9 to follow existing utility corridors and avoid the SRBOP and other protected areas where feasible. Approximately 54 miles of the route is within or adjacent to a utility corridor. FEIS Proposed 9 is approximately 3.1 miles shorter than the Revised Proposed Route but it crosses 13.6 miles of the SRBOP compared to 54.2 miles for the Revised Proposed Route. Both the Revised Proposed Route and FEIS Proposed 9 cross the Salmon Falls Creek at Lilly Grade adjacent to an existing single-phase 34.5-kV distribution line just north of the Salmon Falls Creek WSA.

For FEIS Proposed 9, 135.5 miles of new road would be constructed and 180.1 miles of existing roads would be improved. In terms of road crossings, there would be 200 road crossings, compared to 222 for the Revised Proposed Route (and an additional 39 crossings associated with 138-kV line removal for the Revised Proposed Route).

For FEIS Proposed 9, there would be 140.8 miles of new access road constructed and 155.5 miles of existing access roads to be improved. This is 40 miles more new road construction than in the Revised Proposed Route and 42 more miles of roads to be improved.

In terms of road crossings, the number of bridges within 1 mile of the route would be three. FEIS Proposed 9 and the Revised Proposed Route would both cross one railroad. There would be two landing strips within 1 mile of FEIS Proposed 9 and one airport within 3 miles. There are no airports 1 mile of FEIS Proposed 9. FEIS Proposed 9 would be within 1 mile of 27.5 miles of county-maintained/lettered road, state highways, and US highways, compared to 22.9 miles for the Revised Proposed Route. FEIS Proposed 9 would be within 1 mile of three substantial bridges, while the Revised Proposed Route would be within 1 mile of eight. FEIS Proposed 9, Route 9K, and the Revised Proposed Route would all be within 1 mile of 2.1 miles of railroad.

Amendments to the SRBOP RMP would be needed if FEIS Proposed 9 is selected to allow the Project outside of existing corridors and within 0.5 mile of occupied sensitive plant habitat. An amendment to the Bruneau MFP would also be needed to change the VRM classifications.

Route 9K

Route 9K is being considered by the BLM as a modified version of FEIS Route 9E (the FEIS Preferred Route) to avoid crossing the northwestern portion of the SRBOP and to minimize direct and indirect impacts to priority sage-grouse habitat. The route is

approximately 174.6 miles long, compared to the 165.3-mile-long Revised Proposed Route (see Figure A-1).

For 9K, there would be 173.9 miles of new access road constructed and 212.6 miles of existing access roads to be improved. This is 48.2 miles more new road construction than in the Segment 9 Revised Proposed Route and 33.9 more miles of roads to be improved.

There would be one landing strip within 1 mile of 9K and three additional landing strips within 3 miles, in addition to three airports. There are no airports or landing strips within 1 mile of 9K. This is two more airports and one fewer landing strips than the Revised Proposed Route. 9K would be within 1 mile of 14.4 miles of county-maintained/lettered road, state highways, and US highways, compared to 22.9 miles for the Revised Proposed Route. 9K would be within 1 mile of four substantial bridges, while the Revised Proposed Route would be within 1 mile of eight. Both 9K and the Revised Proposed Route would be within 1 mile of 2.1 miles of railroad.

Route 9K would require amendments to the Twin Falls MFP to allow road construction within the Salmon Falls Creek ACEC, change VRM classes, and allow the Project outside of existing corridors.

Toana Road Variations 1 and 1-A and the Comparison Portion of the Segment 9 Revised Proposed Route

Toana Road Variation 1 to the Segment 9 Revised Proposed Route was recommended by the BLM Jarbidge Field Office archaeologist to avoid paralleling the Toana Freight Wagon Road, an NRHP site. The Segment 9 Revised Proposed Route parallels within 0.25 mile of the Toana Road between MP 38.2 and 40.6, and parallels within 1 mile of the road through Blue Gulch between MP 40.6 and 43.5. Variation 1 is approximately 8.5 miles in length. Approximately 0.3 mile of the route crosses state land, with the remainder on land managed by the BLM. The Toana Road Variation 1-A to the Segment 9 Revised Proposed Route was recommended by the BLM to minimize visual impacts to the Toana Freight Wagon Road, and was also intended to utilize existing roads in order to minimize new road construction in the area. Variation 1-A is approximately 8.9 miles long. Approximately 1 mile of the route crosses state land, with the remainder on land managed by the BLM.

Toana Road Variation 1 would result in 6.4 miles of new road construction and 7.7 miles of existing road being improved. This is 1.2 fewer miles of new road construction and 0.4 mile more reconstructed road than the comparison portion of the Segment 9 Revised Proposed Route. There would be 13 road crossings (some of these being 4x4 tracks), which is 3 more than the comparison portion of the Revised Proposed Route.

Toana Road Variation 1-A would result in 5.4 miles of new road construction and 3.8 miles of existing road being improved. This is 2.2 fewer miles of new road construction and 3.5 fewer miles of reconstructed road than the comparison portion of the Segment 9 Revised Proposed Route. There would be 13 road crossings (some of these being 4x4 tracks), which would be 3 more crossings than the comparison portion of the Revised Proposed Route.

Both of the Toana Road Variations would conform to direction in the 2015 Jarbidge RMP.

3.19.2.4 Direct and Indirect Effects of Alternatives

The following section provides a review of the seven BLM Alternatives and comparisons of effects related to visual resources. Table 3.19-2 lists the quantitative impacts that would occur to transportation resources under these Action Alternatives. The alternatives are visually displayed in Figures A-2 through A-8.

Table 3.19-2. Comparison of Impacts to Transportation from the Seven Action Alternatives

Alternative	Road Crossings	Airports and Landing Strips		Miles of New Road Constructed[7/]		Miles of Road to be Improved[7/]	
		Within 1 mile	Within 3 miles	Segment 8	Segment 9	Segment 8	Segment 9
Alternative 1	377 (41[1/])	1	9 (2[5/])	100.8	125.7	113.5	178.7
Alternative 2	355 (2[1/])[2/]	4	7 (1[5/])	100.8	135.5	113.5	180.1
Alternative 3	335 (2[1/])	2	10 (1[5/])	100.8	173.9	113.5	212.6
Alternative 4	340 (5[1/])[3/]	2	7[6/]	140.8	135.5	155.5	180.1
Alternative 5	320 (5[1/]) [2/,4/]	1	6	140.8	173.9	155.5	212.6
Alternative 6	368 (43[1/])[3/]	3	7[6/]	96.6	135.5	120.5	180.1
Alternative 7	348 (43[1/])[3/]	1	8[6/]	96.6	173.9	120.5	212.6

1/ Additional crossings associated with removal of existing 500-kV and/or 138-kV lines.
2/ Inclusion of the Toana Road Variation 1 for the Co-Preferred Alternative would add 3 crossings.
3/ Actual road crossings would be less as the routes parallel each other through the northern portion of the Jarbidge Field Office.
4/ Actual road crossings for this alternative are substantially less as the routes parallel each other for much of their length, and where the routes are 250 feet apart, they would use the same roads.
5/ Existing 500-kV removal (which is part of this alternative) would be within 3 miles of a landing strip.
6/ Analysis areas for the two routs overlap and may be over-estimating impacts for this alternative.
7/ Actual miles of new road and improved road for each alternative are less than just combining the two routes as some routes would use the same roads, where they are near each other (for example Alternative 5 with 8G and 9K), other alternatives, such as Alternative 1, would share fewer roads.

<u>Alternative 1 – Proposed Action (the Revised Proposed Routes for Segments 8 and 9)</u>

Alternative 1 consists of the Revised Proposed Routes for Segments 8 and 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.19.2.3). The quantitative impacts on transportation resources associated with these two routes are listed in Appendix D.

There would be a total of 377 road crossings for Alternative 1 and an additional 41 road crossings related to the removal of an existing 500-kV line on Segment 8 (2 additional crossings) and removal of existing 138-kV line on Segment 9 (39 additional crossings).

There would be 226.5 combined miles of new road construction for both routes.

Inclusion of the Toana Road Variations (1 or 1-A) into Alternative 1 would result in three more road crossings than the comparison portion of the Revised Proposed Route for Segment 9.

Alternative 2 – Revised Proposed 8 and FEIS Proposed 9

Alternative 2 consists of the Revised Proposed Route for Segments 8 and FEIS Proposed 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.19.2.3). The quantitative impacts on transportation resources associated with these two routes are listed in Appendix D.

There would be a total of 355 road crossings for Alternative 2 and an additional 2 road crossings related to the removal of an existing 500-kV line on Segment 8. There would be 358 new road crossings with the Toana Road Variation 1, along with the 2 additional road crossings related to the 500-kV line removal. Alternative 2 has 21 fewer road crossings than Alternative 1 and does not have the 39 road crossings associated with removal of the 138-kV line on Revised Proposed Route for Segment 9 (Alternative 1).

Inclusion of the Toana Road Variations (1 or 1-A) into Alternative 2 would also result in three more road crossings than the comparison portion of FEIS Proposed 9.

Alternative 3 – Revised Proposed 8 and the 9K Route

Alternative 3 consists of the Revised Proposed Routes for Segment 8 and Route 9K; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.19.2.3). The quantitative impacts on transportation resources associated with these two routes are listed in Appendix D.

There would be a total of 335 road crossings for Alternative 3 and an additional 2 road crossings related to the removal of an existing 500-kV line on Segment 8. This is 46 fewer crossings related to new line construction than Alternative 1 and 39 fewer crossings related to removal of existing 138-kV line on Segment 9 (Alternative 1).

Inclusion of the Toana Road Variations (1 or 1-A) into Alternative 3 would result in three more road crossings than the comparison portion of Route 9K.

Alternative 4 – The 8G Route and FEIS Proposed 9

Alternative 4 consists of the 8G for Segment 8 and FEIS Proposed 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.19.2.3). The quantitative impacts on transportation resources associated with these two routes are listed in Appendix D.

There would be a total of 340 road crossings for Alternative 4 and an additional 5 road crossings related to the removal of an existing 500-kV line on Segment 8. This is 37 fewer crossings related to new line construction than Alternative 1; 3 more crossings related to removal of existing 500-kV line than Alternatives 1, 2, and 3; and 39 fewer crossings related to removal of existing 138-kV line on Segment 9 (Alternative 1). These calculations do not take into consideration the parallel alignment of the two routes for approximately 23 miles within the northern portion of the Jarbidge FO and the southeast section of the SRBOP.

Inclusion of the Toana Road Variations (1 or 1-A) into Alternative 4 would result in three more road crossings than the comparison portion of FEIS Proposed 9.

Alternative 5 – The 8G and 9K Routes

Alternative 5 consists of Routes 8G and 9K; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.19.2.3). The quantitative impacts on transportation resources associated with these two routes are listed in Appendix D.

There would be a total of 320 road crossings for Alternative 5 and an additional 5 road crossings related to the removal of an existing 500-kV line on Segment 8. There would be 324 new road crossings with the Toana Road Variation 1, along with the 5 additional road crossings related to the 500-kV line removal. Alternative 5 has the fewest road crossings associated with construction of the new routes (57 fewer than Alternative 1, 35 fewer than Alternative 2, 15 fewer than Alternative 3, 20 fewer than Alternative 4, 48 fewer than Alternative 6, and 28 fewer than Alternative 7). This alternative does not have the 39 road crossings associated with removal of the 138-kV line on the Revised Proposed Route for Segment 9 (Alternative 1), but has 3 more crossings associated with removal of existing 500-kV line for Segment 8 than for the Revised Proposed Route for Segment 8 (Alternatives 1, 2, and 3). These estimates do not take into account the fact that, under this alternative, Segments 8 and 9 would share the same roads after MP 72. This is approximately 49 percent of Route 8G and 41 percent of the total length of 9K.

Inclusion of the Toana Road Variations (1 or 1-A) into Alternative 5 would also result in three more road crossings than the comparison portion of Route 9K.

Alternative 6 – The 8H Route and FEIS Proposed 9

Alternative 6 consists of the 8H for Segment 8 and FEIS Proposed 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.19.2.3). The quantitative impacts on transportation resources associated with these two routes are listed in Appendix D.

There would be a total of 368 road crossings for Alternative 6 and an additional 39 road crossings related to the removal of an existing 138-kV line on Segment 8 (Route 8H) and no removal of 500-kV lines. This alternative has the second most new crossings; 9 fewer crossings related to new line construction than Alternative 1, and 48 more crossings than Alternative 5. There are the same number of crossings associated with 138-kV line removal as for Alternative 1 (as it follows much the same alignment as the Revised Proposed Route for Segment 9), but no crossings associated with 500-kV line removal. These calculations do not take into consideration the parallel alignment of the two routes for approximately 23 miles within the northern portion of the Jarbidge Field Office and the southeast section of the SRBOP.

Inclusion of the Toana Road Variations (1 or 1-A) into Alternative 6 would result in three more road crossings than the comparison portion of FEIS Proposed 9.

Alternative 7 – The 8H and 9K Routes

Alternative 7 consists of the 8H for Segment 8 and Route 9K; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.19.2.3). The quantitative impacts on transportation resources associated with these two routes are listed in Appendix D.

There would be a total of 348 road crossings for Alternative 7 and an additional 39 road crossings related to the removal of an existing 138-kV line on Segment 8 (Route 8H) and no removal of 500-kV lines. Alternative 7 has the third highest number of road crossings: 29 less than Alternative 1 (but the same number of crossings related to 138-kV line removal) and 28 more than Alternative 5. These calculations do not take into consideration the parallel alignment of the two routes for approximately 23 miles within the northern portion of the Jarbidge Field Office and the southeast section of the SRBOP.

Inclusion of the Toana Road Variations (1 or 1-A) into Alternative 7 would result in three more road crossings than the comparison portion of Route 9K.

3.19.2.5 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, as well as additional measures proposed by the Project Proponents specifically for the SRBOP.

Environmental Protection Measures

The Proponents have committed to Project design features and EPMs to minimize or avoid impacts on environmental resources. These measures, the areas where they would be applicable (e.g., private, state, or federal-managed lands), as well as the details of each measure are provided in Table 2.7-1 of the FEIS. Some of these measures would be either directly or indirectly applicable to transportation resources (i.e., they would avoid or minimize impact to transportation).

Measures that would indirectly apply to transportation resources (i.e., measures that were not developed directly to benefit transportation, but if implemented could avoid or minimize impacts to transportation) include OM-1 through OM-27, VIS-5, VIS-10, VIS-11, REC-20, REC-21, VEG-2 through VEG-4, VEG-8, WEED-4, FISH-1, FISH-2, WILD-2, SOIL-3, WQA-23 through WQA-25, WQA-27 through WQA-29, LU-1, AIR-1 through AIR-5, and FIRE-3 through FIRE-4 (see Table 2.7-1 in the FEIS).

The following measures, which were identified in Table 2.7-1 of the FEIS, are directly related to transportation and would be applicable to Segments 8 and 9:

TRANS-1 A Traffic and Transportation Management Plan will be developed and implemented to provide site-specific details showing how the Project will comply with the EPMs listed in this attachment. This plan will be submitted to and approved by the appropriate federal, state, and local agencies with authority to regulate use of public roads, and approved, prior to the issuance of a Notice to Proceed with construction.

TRANS-2 If a construction method requires the closure of a state- or county-maintained road for more than 1 hour, a plan will be developed to accommodate traffic as required by a county or state permit.

TRANS-3 On county- and state-maintained roads, caution signs will be posted on roads, where appropriate, to alert motorists of construction and warn them of slow traffic. Traffic control measures such as traffic control

personnel, warning signs, lights, and barriers will be used during construction to ensure safety and to minimize traffic congestion.

TRANS-4 To reduce traffic congestion and roadside parking hazards, an equipment yard will be provided for primary parking for employee personal vehicles.

TRANS-5 Unauthorized vehicles will not be allowed within the construction ROW or along roadsides near the ROW.

TRANS-6 Construction vehicles will follow a 25 mph speed limit on unposted project roads.

TRANS-7 Landowners will be notified at least 48 hours prior to the start of construction within 0.25 mile of a residence.

TRANS-8 Emergency vehicle access to private property will be maintained

TRANS-9 Roads in residential areas will be restored as soon as possible, and construction areas near residences will be fenced off at the end of the construction day.

TRANS-10 Roads negatively affected by construction and as identified by the agencies will be returned to pre-construction condition

TRANS-11 Roads developed specifically for this project that are identified by the Proponents as no longer necessary will be reclaimed as specified in the Final Reclamation Plan. Culverts will be removed.

TRANS-12 The Proponents will attempt to identify existing two-track trails as preferred access roads for construction.

TRANS-13 Roads will be designed so proper drainage is not impaired and roads will be built to minimize soil erosion. Consult with appropriate Agencies during design stage.

TRANS-14 Access roads built for the Project on federal lands shall be closed to the public unless otherwise agreed upon with the land management agency. Signs shall indicate the restriction or regulation, location, penalty for violation, and appropriate contact information for reporting violations. Signage and road closure measures shall be evaluated during routine visits and maintained or replaced as necessary as part of routine maintenance. Access roads constructed solely for use by the Proponents will be maintained by the Proponents as needed for Proponents use in accordance with the ROW grant/special use permits.

TRANS-15 Roads to be abandoned may be left intact through mutual agreement of the land management agency, landowner, the tenant, and the Proponents, unless located in flood areas or drainage hazard areas or otherwise restricted by federal, state, or local regulations.

These EPMs would avoid or minimize the extent of impacts that could occur to transportation. These EPMs are a part of the current Project description, and as such, the effects of their implementation are included in the impact discussion found in Sections 3.19.2.2, 3.19.2.3, and 3.19.2.4.

Proponent-Proposed MEP and Potential Effects to the MEP within the SRBOP

The Proponents have developed an MEP to mitigate the effects of Project-related impacts within the SRBOP, as well as comply with the SRBOP's enabling statute (P.L. 103-64) which requires enhancement of resources within the SRBOP. The Proponents' plan contains two forms of mitigation: "compensation mitigation" and "enhancement." For this analysis, mitigation is defined as avoidance, minimization, and compensation measures aimed at offsetting adverse impacts of the Project; enhancement is defined as additional mitigation measures that are required in order to enhance the objectives and values for which the SRBOP was established.

The Proponents' MEP offers a portfolio that contains five types of mitigation/enhancement proposals. The following discusses the benefit and/or impact that these proposed mitigation/enhancement proposals could have to transportation.

Habitat Restoration

The goal for the Proponents' habitat restoration proposal is to convert "non-native grasslands to native perennial plant communities" as well as to conduct "noxious weed control." As the exact location that these restoration efforts would be conducted is unknown at this time, the impacts it could have to transportation cannot be determined or quantified at this time based on the available information.

Purchase of Private Inholdings

There are private lands within the SRBOP that could contain important cultural and natural resources. The Proponents have proposed (as part of the MEP) to purchase a portion of these lands and deed them to the U.S. government, to be managed by the BLM. This proposal would have neither a beneficial nor detrimental effect on transportation.

Law Enforcement

The Proponents' MEP contains a proposal for the funding of increased law enforcement within the SRBOP for a period of 10 years. The goal of this increased funding is to change adverse behaviors in the SRBOP by aiding law enforcement in their coverage and ability to manage public induced damage to resource. This proposal is in compliance with the objectives and goals of the BLM's RMP as well as the SRBOP's enabling statute.

Under the Proponents' proposal, approximately 17 percent of the funding would go to mitigation, while the remaining funding would go to enhancement; however, the MEP does not provide the rational for this financial breakdown (i.e., why 17 percent would apply to mitigation and 83 percent to enhancement). The Proponents' stated intent for the mitigation funding is to prevent an increase in illegal behavior that could occur as a result of the presence of new Project-related roads in the area. Although the Proponents' intent for the enhancement funding, is to "permanently reduce illegal

behaviors in the SRBOP thereby further protecting the objectives and values for which the SRBOP was established," the MEP only offers this funding for a period of 10 years, which would not constitute a permanent fund nor would this funding last for the life of the Project.

The increase in law enforcement funding could have a beneficial impact to transportation by providing additional protection and enforcement along roads and other transportation avenues (e.g., trails) on the SRBOP.

Visitor Enhancement

The MEP contains a proposal to fund programs meant to enhance the experiences of visitors to the SRBOP. The proposed enhancement of the visitor experience would have neither a beneficial nor detrimental effect on transportation.

Line and Substation Removal

The Proponents have proposed to remove some existing infrastructure within the SRBOP. This includes:

- Removing approximately 7 miles of existing 46-kV line on BLM-managed lands, including all structures (although structures may remain if requested by BLM), from the Bowmont Substation to Gage Substation;
- Constructing an approximately 1-mile-long section on private land to connect the remaining portion of the line to the Idaho Power system;
- Reconstructing 3.9 miles of existing 12.5-kV lines, including 0.25 mile on BLM-managed lands;
- Converting approximately 4 miles of the existing 46-kV line on existing BLM ROW between the Gage and Ferry Substations to a 12.5-kV distribution line; and
- Removing the existing Gage Substation and associated equipment/apparatus, which are on BLM-managed land.

The MEP actions would include work necessary to remove the existing lines and a substation, as well as reconstruct or reconnect the existing lines. This would result in short-term disturbances to existing infrastructure while lines are being removed, converted, or reconstructed. There would be 0.3 mile of new access road construction and improvement of 17.4 miles of existing road associated with the MEP actions. There are 41 road crossings of the transmission lines targeted in the MEP, including one Interstate highway crossing, and two railroad crossings. Impacts to existing roads and railway lines would be similar to those described for decommissioning and construction (depending on the MEP action being taken).

3.19.2.6 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

Summary of Remaining Impacts

After implementation of the EPMs and MEP discussed above, some Project-related impacts would likely remain. The impact assessment found in Sections 3.19.2.2, 3.19.2.3, and 3.19.2.4 incorporates the avoidance and minimization contributions of the EPMs in the impact analysis; as a result, Sections 3.19.2.2, 3.19.2.3, and 3.19.2.4 take these measures and their impact offsets into consideration The design features outlined in the Proponents' MEP (discussed above) may reduce the magnitude of these impacts to some degree (thereby reducing the need for additional compensatory mitigation); however, the extent of this reduction cannot be fully quantified at this time (as discussed in detail above).

Note that Sections 3.19.2.2, 3.19.2.3, and 3.19.2.4 outline the current extent of known impacts that would occur Project-wide

BLM Compensatory Mitigation Categories

No additional mitigation plans were developed specifically for transportation resources.

The BLM may require additional mitigation for some remaining impacts of the Project on environmental resources that occur outside of the SRBOP, per the guidelines found in the BLM Regional Mitigation Manual (BLM 2013c) and DOI Manual 600 DM 6, *Implementing Mitigation at the Landscape-scale* (DOI 2015). Mitigation for Project-related impacts that would occur within the SRBOP is discussed below.

The BLM will continue to work with applicable stakeholders to identify the impacts that would remain on the SRBOP after implementation of the EPMs and MEP, as well as the existing compensatory mitigation plans discussed above in Section 3.19.2.5. The BLM will then design mitigation options that address applicable remaining impacts (see Section 3.0 for a discussion of the BLM's policy regarding mitigation). These options will contain components that will ensure that impacts to resources and values on the SRBOP that require mitigation are compensated for, as well as that enhancement of these resources is provided in order to comply with the enabling statute of the SRBOP. Based on internal and external scoping, the BLM is considering eight mitigation categories (see Section 2.6.2 in Chapter 2). The following mitigation categories are being considered to address remaining impacts to transportation resources within the SRBOP:

- Evaluate, maintain, enhance, or expand fuels management/fuel breaks;
- Increase wildfire preparedness and suppression;
- Increase applied research and monitoring to inform adaptive management;
- Increase funding for recreation and visitor management;
- Acquire private lands as deemed appropriate by the Authorizing Officer; and
- Increase funding to law enforcement on the SRBOP.

3.20 AIR QUALITY

This section addresses potential impacts during construction, operations, and decommissioning from the Segment 8 and Segment 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H and 9K; and the Toana Road Variations to the Segment 9 Revised Proposed Route. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). Emissions of air pollutants from the proposed Project would primarily be generated from the following activities: 1) construction of on- and off-ROW access roads, 2) construction of the support structure pad sites and structure erection, and 3) post-construction activities involved with the ongoing use and maintenance of the transmission line, substations, and corridor. Effects associated with the routes analyzed in the 2013 FEIS were disclosed in that document. With the exception of FEIS Proposed 9, those FEIS routes are not being re-analyzed here, as only new information is included in this resource-specific section. Idaho air quality regulations are applicable to construction and operations of the Project.

3.20.1 Affected Environment

The Air Quality section in the 2013 FEIS discusses those aspects of the environment that could be impacted by the Project. It begins with a discussion of the Analysis Area considered, identifies the issues that have driven the analysis, and characterizes the existing conditions in the area crossed by Project. We reviewed the methods, data, and regulatory requirements presented in the FEIS and concluded that they are still valid for this SEIS.

Some information on air quality in Idaho has been updated since 2013. For instance, the Center for Climate Strategies [CCS] released new data on greenhouse gas emissions (GHG). Table 3.20-2 presents the results from the CCS (2010) study. Refer to Table 3.20-4 in the FEIS for the 2008 study results. However, no significant new data were identified for air quality in the Analysis Area.

Morley Nelson Snake River Birds of Prey National Conservation Area

Portions of the Project would cross through the SRBOP. Air quality is not one of the environmental resources and values for which the SRBOP was established to manage and protect.

3.20.1.1 Analysis Area

The Analysis Area for purposes of the air quality assessment encompasses the geographic areas defined by applicable state air quality plans, federal General Conformity thresholds, and local requirements within the geographic areas crossed by the Proposed Action, Alternatives, and Route Variations. The Analysis Area for the SEIS is the same as the Analysis Area for Segments 8 and 9 in the FEIS.

3.20.1.2 Issues Related to Air Quality

The following air quality-related issues were brought up by the public during public scoping (Tetra Tech 2009) and comments on the DEIS, were raised by federal and

state agencies during scoping and agency discussions, or are issues that must be considered as stipulated in law or regulation:

- Would the proposed Project be inconsistent with the applicable air quality plans?
- What would be the effects on human health of any increase in airborne pollutants caused by the Project?
- Would the proposed Project generate emissions of air pollutants that would exceed established thresholds, or cause adverse impacts on air quality?
- Would the proposed Project cause or contribute to any violation of any state or federal ambient air quality standards?
- Would the proposed Project expose sensitive receptors, i.e., schools, daycare centers, convalescent care centers, and hospitals, to substantial pollutant concentrations?
- What would be the methods used to control dust?
- What would be the steps taken to minimize air quality impacts?
- How much GHG emissions would be associated with this Project, and what would be the effect of the Project on climate change?

We reviewed the scoping comments received for this SEIS and determined that air quality-related issues considered in the FEIS have not changed.

3.20.1.3 Methods

The methods used in assessing air quality impacts for this SEIS are the same as those used to prepare Section 3.20 of the FEIS and the Air Quality Technical Report found in the Administrative Record.

3.20.1.4 Existing Conditions

Climate

Idaho lies entirely west of the Continental Divide. The northern part of the state averages lower in elevation than the much larger central and southern portions, where numerous mountain ranges form barriers to the free flow of air from all points of the compass. In the north the main barrier is the rugged chain of Bitterroot Mountains forming much of the boundary between Idaho and Montana. The extreme range of elevation in the state is from 738 feet at the confluence of the Clearwater and Snake Rivers to 12,655 feet at Mt. Borah in Custer County. Comprising rugged mountain ranges, canyons, high grassy valleys, arid plains, and fertile lowlands, the state reflects in its topography and vegetation a wide range of climates.

To a large extent, the source of moisture for precipitation in Idaho is the Pacific Ocean. In summer, there are some exceptions to this when moisture-laden air is brought in from the south at high levels to produce thunderstorm activity, particularly in the eastern part of Idaho. Sizeable areas in the Clearwater, Payette, and Boise River Basins receive an average of 40 to 50 inches per year, with a few points or small areas receiving in excess of 60 inches. Large areas including the northeastern valleys, much of the Upper Snake River Plains, Central Plains, and the lower elevations of the Southwestern Valleys receive less than 10 inches annually. Snowfall distribution is affected both by availability of moisture and by elevation. Annual snowfall totals in Northern Idaho have

reached nearly 500 inches in the past. The major mountain ranges of the state accumulate a deep snow cover during the winter months, and the release of water from the melting snowpack in late spring furnishes irrigation water for more than 2 million acres, mainly within the Snake River Basin above Weiser.

Air Quality

Federal and state air regulations are designed to ensure that ambient air quality, including background, existing, and new sources, are in compliance with the ambient standards. The USEPA has established National Ambient Air Quality Standards for criteria pollutants for the purpose of protecting human health (primary standards) and public welfare (secondary standards). These criteria pollutants are nitrogen dioxide, CO, ozone, SO_2, lead, PM_{10}, and $PM_{2.5}$.

The USEPA has designated all areas of the United States as “attainment,” “non-attainment,” or “unclassified” with respect to ambient air quality standards. (Section 3.20.1.3 of the Final EIS provides a discussion of the regulatory framework for air quality, including the implications of attainment or nonattainment status.) Existing air quality in Idaho is generally good to excellent. Table 3.20-1 delineates the most recent federal and state-specific ambient air quality standards.

Table 3.20-1. Ambient Air Quality Standards

Pollutant	Averaging Time	Idaho Standards Concentration	National Standards Concentration
Ozone	1 hour	0.12 ppm	–
	8 hours	–	0.07 ppm (137 µg/m^3) (3-year average of annual 4th-highest daily maximum)
Carbon Monoxide	8 hours	9 ppm	9 ppm (10,000 µg/m^3)
	1 hour	35 ppm	35 ppm (40,000 µg/m^3)
Nitrogen Dioxide	Annual Average	0.05 ppm	0.053 ppm (100 µg/m^3)
	1 hour	–	0.1 ppm
Sulfur Dioxide	Annual Average	80 µg/m^3	0.03 ppm (80 µg/m^3)
	24 hours	365 µg/m^3	0.14 ppm (365 µg/m^3)
	3 hours	1,300 µg/m^3	0.5 ppm (1,300 µg/m^3)
	1 hour	–	0.75 ppm 3-year average of 99th percentiles of 1-hour daily maximum)
PM_{10}	24 hours	150 µg/m^3	150 µg/m^3 (not to be exceeded more than 1/year on average over 3 years)
	Annual Arithmetic Mean	50 µg/m^3	–
$PM_{2.5}$	Annual Arithmetic Mean	–	15 µg/m^3 (secondary: 3-year average)
	24 hours	–	35 µg/m^3 (3-year average of 98th percentiles)
Lead	Calendar Quarter	1.5 µg/m^3	0.15 µg/m^3 (not to be exceeded)

µg/m^3 – microgram per cubic meter
ppm – part per million
$PM_{2.5}$ – particulate matter with a diameter of less than 2.5 microns
PM_{10} – particulate matter with a diameter of less than 10 microns

Figure 3.20-1 shows the current locations of the Idaho nonattainment areas and other areas of air quality concern. Segments 8 and 9 cross through areas that are in attainment, with the exception of the north Ada County CO and PM_{10} nonattainment (maintenance) area. Canyon and Ada Counties include the Treasure Valley Ozone and $PM_{2.5}$ Area of Concern.

The 1977 Clean Air Act established a national visibility goal and designated 156 federal wilderness areas and national parks as Class I areas subject to visibility protection. Idaho has numerous Class I areas. Figure 3.20-1 shows the Class I area locations in Idaho. The closest Class I areas to Segments 8 and 9 are the Jarbidge Wilderness Class I area in Nevada and the Sawtooth Class I area in Idaho. Both are more than 50 miles from the Segment 8 and 9 Revised Proposed Routes.

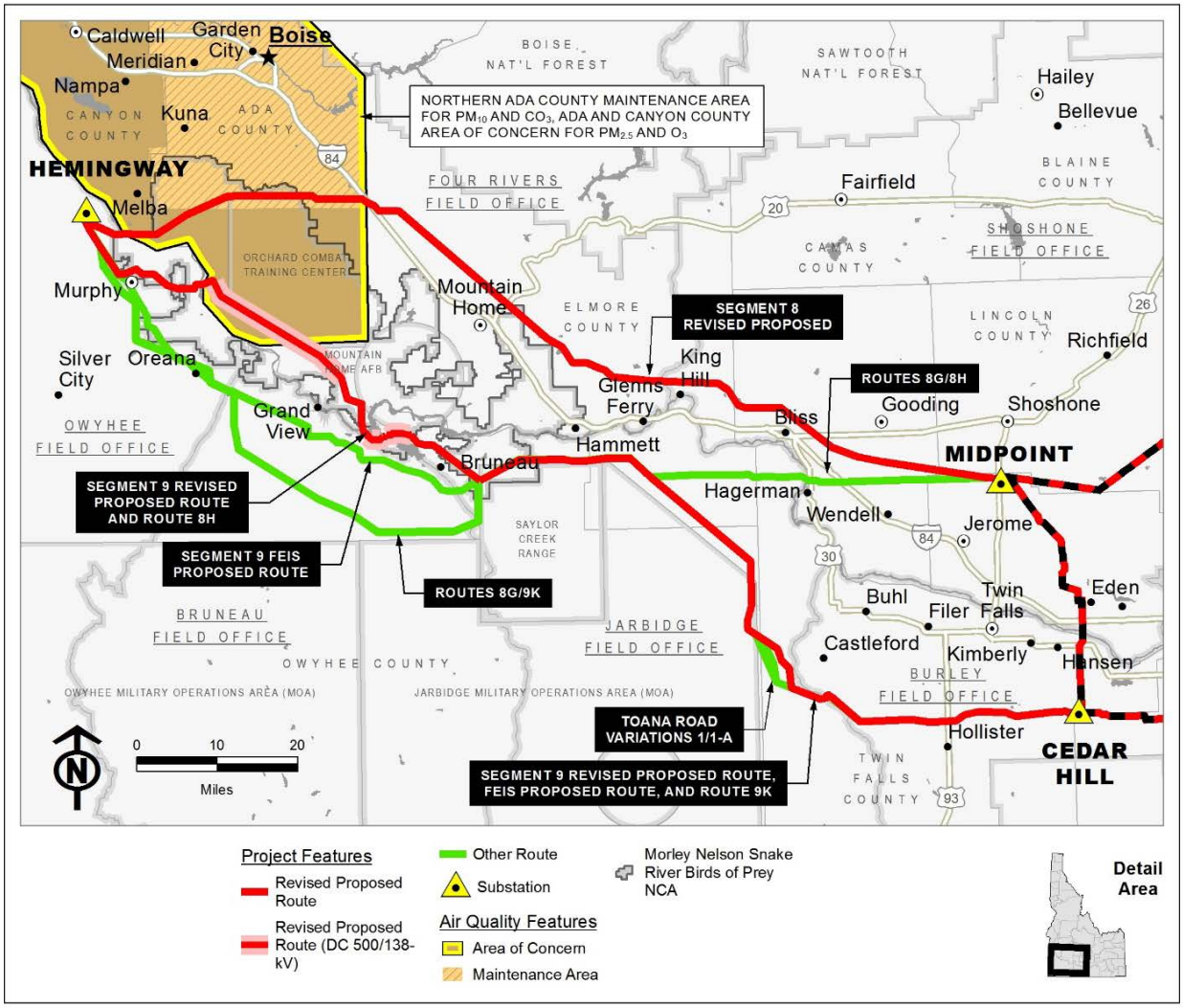

Figure 3.20-1. Nonattainment Areas in Idaho

Greenhouse Gas Emissions

Preliminary GHG emissions inventories have been prepared for each state via a cooperative effort between the CCS and the Departments of Environmental Quality for

each state. These inventories do not represent reporting from all identified sectors, so the inventories most likely do not represent a complete analysis capture of GHG emissions for each state. Table 3.20-2 presents a summary of GHG (CO_2 equivalent or CO_2e) emissions data for Idaho for reporting years 2005, 2010, and 2020. The year 2020 data represent the inventory year closest to the beginning of construction for Segments 8 and 9 of the proposed Project.

Table 3.20-2. Greenhouse Gas Summary (CO_2e)

State	2005[2/]	2010[2/]	2020[2/]
Idaho[1/]	40,565,056	41,777,599	46,958,462

1/ CCS (2010)
2/ Values converted from metric tons to short tons.
CO_2e – carbon dioxide equivalent

3.20.2 Direct and Indirect Effects

This section is organized to present first construction, then operations, followed by the decommissioning effects from the Proposed Action. The Proposed Action includes measures designed to mitigate and enhance the SRBOP, as required by the enabling statute for the SRBOP and the SRBOP RMP. Effects of implementing the MEP, as well as from the Route Variations, are analyzed in detail in Section 3.20.2.5 and 3.20.2.6. The emissions associated with both construction and operations for NO_x, CO, SO_X, VOCs, $PM_{10}/PM_{2.5}$, and greenhouse gases (CO_2, methane [CH_4], and NO_x) are estimated for the revised Proposed Action, two Toana Road Variations, and Alternatives 8G and 9K. The Air Quality Technical Report (in the Administrative Record) presents the supporting data and methodologies used to estimate emissions from construction and operation of the Project.

A comprehensive list of all project design features and EPMs, as well as the land ownership to which they apply, can be found in Table 2.7-1 of Chapter 2 of the FEIS. The following impact assessment takes these Project design features and EPMs into account when considering the potential impact that the Project could have on environmental resources.

Plan Amendments

Amendments to the BLM RMPs and MFPs are summarized for each alternative in Table 2.3-1 (see Chapter 2 for more details). The BLM plan amendments are discussed in detail in Appendices F and G. Amendments are needed to permit the Project to cross various areas of BLM-managed lands. Effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved. Amendments that alter land management designations could change future use of these areas. No amendments specific to air quality are proposed for the Project, and no impacts to air quality resulting from approving the amendments beyond the impacts of the Project are anticipated.

3.20.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West for Segments 8 and 9 and this portion of the Project would not be constructed across federal lands. No land management plans would be amended

to allow for the construction of this Project. No Project-related impacts to air quality would occur; however, impacts would continue as a result of natural events (such as fire, drought, and severe weather) as well as from existing and planned developments within the Analysis Area and from other projects, including wind farms, mining, agricultural, or other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project and the area would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, impacts similar to those described below may occur due to new transmission lines built to meet the increasing demand in place of this Project.

3.20.2.2 Effects Common to All Routes

Construction Emissions

Construction activities for the Proposed Action would take place in the following sequence: site preparation/trenching; foundation work; installation of structures and conductors; and ROW/site restoration. The anticipated construction periods for the various components of the proposed Project are described in Appendix B to this document. Construction would occur over a 1- to 2-year period depending on the transmission segment length. The construction activities that would generate emissions include land clearing, ground excavation, and cut and fill operations. These construction activities would occur 6 days per week for up to 12 hours per day during the construction periods. The intermittent and short-term emissions generated by these activities would include dust from soil disruption and combustion emissions from the construction equipment. Emissions associated with construction equipment include PM_{10}, $PM_{2.5}$, NO_x, CO, VOCs, SO_x, and small amounts of air toxics. These emissions could result in minor, temporary impacts on air quality in the vicinity, i.e., within 1,000 feet of the centerline of the Proposed Action construction route.

Emissions from construction of the transmission line, substations, and regeneration facilities are not expected to cause or significantly contribute to a violation of an applicable ambient air quality standard or contribute substantially to an existing or projected air quality violation because the construction equipment would be operated on an as-needed basis during daylight hours only and the emissions from gasoline and diesel engines would be minimized because the engines must be built to meet the standards for mobile sources established by the USEPA. Most of the construction equipment would be powered by diesel engines that would meet current USEPA emissions standards based upon engine size and date of manufacture, and Project-related vehicles and construction equipment would be required to use the new low sulfur diesel fuel as soon as it is commercially available.

EPMs would substantially reduce impacts to air quality. The Proponents have incorporated these measures into their POD (refer to Table 2.7-1 in the FEIS for a complete list of EPMs).

None of the above related construction activities are required to have stationary or indirect source permits by the State of Idaho, and the activities are exempt from the major regulatory programs such as New Source Review, Prevention of Significant

Deterioration (PSD), National Emission Standards for Hazardous Air Pollutants, Title IV, and Title V. The construction activities must, however, comply with the applicable state fugitive dust control requirements as outlined in Table 3.20-1 of the FEIS.

Fugitive dust emissions (e.g., PM_{10}/$PM_{2.5}$) would depend on the moisture content and texture of the soils that would be disturbed. The construction emissions would vary from day to day depending on the level of activity, the specific operations, and prevailing weather. The Air Quality Technical Report (in the Administrative Record) presents the supporting data and methodologies used to estimate emissions from the construction phase. The Project includes dust suppression techniques, such as watering construction areas or removing dirt tracked onto a paved road as necessary to prevent safety hazards or nuisances on access roads and in construction zones near residential and commercial areas and along major highways and interstates (refer to Table 2.7-1 in the FEIS).

Table 3.20-3 presents the construction emissions on a per mile basis.

Table 3.20-3. Construction Period Emissions on a per-mile Basis

Pollutant	Idaho Average Emissions (Tons per Mile)
NO_x (nitrogen oxides)	2.05
CO (carbon monoxide)	0.88
VOC (volatile organic compounds)	0.22
SO_x (sulfur oxides)	0.01
PM_{10} (particulate matter with a diameter of less than 10 microns)	0.60
$PM_{2.5}$ (particulate matter with a diameter of less than 2.5 microns)	0.20
CO_2 (carbon dioxide)	231.70

Operations Emissions

Operations-related emissions would be from the following types of sources and activities:

- Use of motor vehicles to transport inspection and maintenance personnel along the final route to perform inspection and maintenance as required; and
- Travel on the unpaved access roads during the inspection and maintenance related activities.

Greenhouse Gas Emissions Estimates

Emissions of GHGs such as CO_2, CH_4, and N_2O (nitrous oxides) from the construction and operation of the transmission line are derived primarily from the fuel combustion sources involved in construction and operations. Supporting data for the GHG analysis herein were derived from the California Climate Action Registry *General Reporting Protocol, Version 3.1* (2009a), and *Power Generation /Electric Utility Reporting Protocol, Version 1.1* (2009b). The Air Quality Technical Report presents the emissions calculations, methodologies, and supporting data for the GHG emissions. The results are summarized in Table 3.20-4.

Table 3.20-4. Estimated Greenhouse Gas Emissions

Phase and Fuel Category	CO_2 (tons)	CO_4 (tons)	N_2O (tons)
Construction–All Fuels	35,668	1.99	1.23
IPCC Multiplier	1	21	310
Total Construction CO_2e	**35,668**	**42**	**383**
Operations–All Fuels	10.14	0.002	0.001
IPCC Multiplier	1	21	310
Total Operation CO_2e	**10.14**	**0.042**	**0.31**

CO_2 – carbon dioxide
CO_4 – methane
N_2O – nitrous oxides
IPCC – Intergovernmental Panel on Climate Change

Decommissioning

Project facilities would be removed at the end of the operational life of the transmission line. Structures and foundations would be removed to below the ground surface level. Removal of Project structures following decommissioning would result in temporary impacts to air quality.

Decommissioning activities would not be expected to result in air emissions similar in magnitude to those associated with construction. The types and numbers of equipment used in demolition and removal of the substations and tower structures would be far less than those proposed for use during construction. Demolition and removal time frames would be significantly less than construction time frames, and surface disturbance activities during demolition and removal would be significantly less than those associated with initial construction. Additional details concerning decommissioning are provided in Appendix B of the FEIS.

3.20.2.3 Direct and Indirect Effects by Route

Construction Emissions

Air emissions for the construction of the respective Segment 8 and 9 routes have been estimated based on the length of each route and the per-mile average emission factors for the criteria pollutants identified in Table 3.20-3. Table 3.20-5 lists the estimated emissions of these criteria pollutants that would be generated by construction of the Revised Proposed Action facilities by segment.

Table 3.20-5. Estimated Emissions of Criteria Pollutants from Project Construction

Segment	~Length miles	NO_x (tons)	CO (tons)	VOC (tons)	SO_x (tons)	PM_{10} (tons)[1/]	$PM_{2.5}$ (tons)[1/]	CO_2 (tons)
Segment 8 Revised Proposed Route	129.7	265.9	114.1	28.5	1.3	78.3	25.9	30,051.5
Segment 8 Line Removal [3/]	1.1	2.3	1.0	<0.1	<0.1	0.7	0.2	254.9
Route 8G	146.9	301.4	129.4	32.3	1.5	88.2	29.4	34,059.9
Route 8G – Existing 500-kV Removal	1.9	4.0	1.7	0.2	0.2	1.2	0.3	440.2
Route 8H	137.5	281.9	121.0	30.3	1.4	82.5	27.5	31,858.8
Route 8H – Existing 138-kV Removal	25.7	52.7	22.6	5.7	0.3	15.4	5.1	5,954.7

Table 3.20-5. Estimated Emissions of Criteria Pollutants from Project Construction (continued)

Segment	~Length miles	NO_x (tons)	CO (tons)	VOC (tons)	SO_x (tons)	PM_{10} (tons)[1/]	$PM_{2.5}$ (tons)[1/]	CO_2 (tons)
Route 8H – Existing 500-kV Removal	1.9	4.0	1.7	0.2	0.2	1.2	0.3	440.2
Segment 9 Revised Proposed Route	165.3	338.7	145.4	36.3	1.6	99.1	33.0	38,276.5
Segment 9 Line Removal [3/]	25.7	52.7	22.6	5.7	0.3	15.4	5.1	5,954.7
Segment 9 FEIS Proposed Route	162.2	332.5	142.7	35.7	1.6	97.3	32.4	37,581.7
Route 9K	174.6	357.9	153.6	38.4	1.7	104.8	34.9	40,454.8
Proposed Route – Comparison portion for Toana Road Variations 1/1-A	8.7	17.8	7.7	1.9	0.1	5.2	1.7	2,015.8
Toana Road Variation 1	8.5	17.4	7.5	1.9	0.1	5.1	1.7	1,969.5
Toana Road Variation 1-A	8.9	18.2	7.8	2.0	0.1	5.3	1.8	2,062.1

1/ PM_{10} and $PM_{2.5}$ include fugitive dust and equipment exhaust PM.
2/ Totals may not be exact due to mileage multiplication and rounding.
3/ Portions of the disturbance area may overlap; therefore, actual effects may be less than presented.
NO_x – nitrogen oxides
CO – carbon monoxide
VOC – volatile organic compounds
CO_2 – carbon dioxide
SO_x – sulfur oxides
$PM_{2.5}$ – particulate matter with a diameter of less than 2.5 microns
PM_{10} – particulate matter with a diameter of less than 10 microns

As noted above, none of the applicable construction activities are required to have stationary or indirect source permits by the State of Idaho, and the activities are exempt from the major regulatory programs such as New Source Review, PSD, National Emission Standards for Hazardous Air Pollutants, Title IV, and Title V. The construction activities must, however, comply with the applicable state fugitive dust control requirements as outlined in Table 3.20-1 of the FEIS.

For purposes of conformity, the values in Table 3.20-3 can be used on an annualized basis to estimate the emissions from construction activities that occur in any identified nonattainment or maintenance area along the route. The only Proposed Action locations within nonattainment or maintenance areas are as follows:

- Approximately 40 miles of the centerline of Segment 8 Revised Proposed Route, Midpoint to Hemingway, crosses Canyon and Ada Counties, which contain the Treasure Valley Ozone and $PM_{2.5}$ Area of Concern and the Ada County CO and PM_{10} Nonattainment (Maintenance) Area. Approximately 11 miles overlap the maintenance area.
- Approximately 16 miles of the centerline of Segment 9 Revised Proposed Route, Cedar Hill to Hemingway, crosses Ada County, which comprises part of the Treasure Valley Ozone and $PM_{2.5}$ Area of Concern. (The Ada County CO and PM_{10} Nonattainment [Maintenance] Area is located in the northern part of Ada

County, and is not crossed by Segment 9). This 16-mile portion of Segment 9 is within the area of concern.

Table 3.20-6 presents the estimated annualized emissions for the area of concern for purposes of conformity comparison. (As noted above, the Air Quality Technical Report presents the supporting data and methodologies used to estimate emissions from construction and operation of the Project. Construction period emissions on a per mile per year basis are identified in Table 3.20-11 of the FEIS.) Values presented in Table 3.20-6 indicate that emissions in the nonattainment or maintenance area or the area of concern would not trigger the need for a conformity determination.

Table 3.20-6. Annualized Construction Emissions Estimates for Areas of Concern

Pollutant	Canyon/Ada County Area
NO_x (nitrogen oxides)	21.3 tons/year
CO (carbon monoxide)	9.0 tons/year
VOC (volatile organic compounds)	2.2 tons/year
SO_x (sulfur oxides)	0.11 ton/year
PM_{10} (particulate matter with a diameter of less than 10 microns)	6.0 tons/year
$PM_{2.5}$ (particulate matter with a diameter of less than 2.5 microns)	2.1 tons/year

Annualized, per-mile emission rates are estimated over a 5.4-year project construction period. The actual construction period may be less.

Operations Emissions

Table 3.20-7 presents the total estimated emissions associated with all phases of the operations phase for the Revised Proposed Routes in Segments 8 and 9. (As noted above, the Air Quality Technical Report presents the supporting data and methodologies used to estimate emissions from construction and operation of the Project.) Routes 8G and 8H are approximately 13 percent and 6 percent longer, respectively, than the Segment 8 Revised Proposed Route, and emissions during Project operations would be higher by corresponding amounts. Similarly, operations emissions for Route 9K would be approximately 6 percent higher than those indicated for the Segment 9 Revised Proposed Route, and operations emissions for FEIS Proposed 9 would be about 2 percent less than those for the Segment 9 Revised Proposed Route.

Table 3.20-7. Estimated Emissions during Project Operations for the Revised proposed Routes (Inspection and Maintenance) 1/

Segment	~Length miles	NO_x (tons)	CO (tons)	VOC (tons)	SO_x (tons)	PM_{10} (tons) 2/	$PM_{2.5}$ (tons) 2/	CO_2 (tons)
Segment 8	129.7	18.7	20.8	5.2	0.3	14.3	5.2	5,544.7
Segment 9	165.3	62.8	26.4	6.6	0.3	18.2	6.6	7,062.3

1/ Emissions for other Routes are expected to be similar.
2/ PM_{10} and $PM_{2.5}$ include fugitive dust and equipment exhaust PM. Totals may not be exact due to mileage multiplication and rounding.

NO_x – nitrogen oxides
CO – carbon monoxide
VOC – volatile organic compounds
CO_2 – carbon dioxide
SO_x – sulfur oxides
$PM_{2.5}$ – particulate matter with a diameter of less than 2.5 microns
PM_{10} – particulate matter with a diameter of less than 10 microns

3.20.2.4 Direct and Indirect Effects of the Alternatives

Assessing the direct and indirect air quality effects of the alternatives involves aggregating the estimated construction and operations emissions for the respective routes that comprise each alternative. Table 3.20-8 provides the applicable results for construction emissions; the entries for the alternatives were derived by combining the corresponding data for routes that were previously identified in Table 3.20-5. The lengths for the alternatives represent the combined lengths of the routes included in each alternative, exclusive of the miles of existing line removal associated with any route; the emission amounts for the alternatives represent the combined amounts for the routes within each alternative and include the amounts associated with the miles of existing line removal for each route. The alternatives are visually displayed in Figures A-2 through A-8.

Table 3.20-8. Estimated Emissions of Criteria Pollutants from Project Construction, by Alternative

Alternative	~Length miles	NO_x (tons)	CO (tons)	VOC (tons)	SO_x (tons)	PM_{10} (tons)[1/]	$PM_{2.5}$ (tons)[1/]	CO_2 (tons)
Alternative 1	295.0	659.6	283.1	70.5	3.2	193.5	64.2	74,537.6
Alternative 2	291.9	600.7	257.8	64.2	2.9	176.3	58.5	67,888.1
Alternative 3	304.3	626.1	268.7	66.9	3.0	183.8	61.0	70,761.2
Alternative 4	309.1	637.9	273.8	68.2	3.3	186.7	62.1	72,081.8
Alternative 5	321.5	663.3	284.7	70.9	3.4	194.2	64.6	74,854.9
Alternative 6	299.7	671.1	288.0	71.9	3.5	196.4	65.3	75,835.4
Alternative 7	312.1	696.5	298.9	74.6	3.6	203.9	67.8	78,708.5

1/ PM_{10} and $PM_{2.5}$ include fugitive dust and equipment exhaust PM.
2/ Totals may not be exact due to mileage multiplication and rounding.
3/ Portions of the disturbance area may overlap; therefore, actual effects may be less than presented.

NO_x – nitrogen oxides
CO – carbon monoxide
VOC – volatile organic compounds
CO_2 – carbon dioxide
SO_x – sulfur oxides
$PM_{2.5}$ – particulate matter with a diameter of less than 2.5 microns
PM_{10} – particulate matter with a diameter of less than 10 microns

Table 3.20-7 and the associated text addressed emissions during Project operations for the respective Segments 8 and 9 routes. That information indicates that, for any given route and constituent, aggregate emissions during the operations period are a small fraction (approximately 10 percent or less) of the emissions estimated for the construction period. In addition, the previous information about emissions from Project operations and maintenance indicated that there was little variability in the emissions rates among the respective routes. Therefore, there would be little difference in emissions during Project operations among the seven alternatives. Based on total route mileage and the pattern evident for estimated construction emissions, operations-period emissions would be lowest for Alternative 2 and would be slightly higher for the remaining alternatives.

Alternative 1 – Proposed Action (the Revised Proposed Routes for Segments 8 and 9)

Alternative 1 has a combined length of 295 miles, and would require removal of existing transmission line along a total of 26.8 miles. As indicated in Table 3.20-8, estimated emission rates for construction of this alternative are in the middle of the range for the

seven alternatives. For any given constituent, construction emissions for Alternative 1 would be approximately 10 percent more than those for Alternative 2, which has the minimum level of estimated construction emissions among the seven action alternatives. However, Alternative 1 would have the greatest effect on air quality within the SRBOP of all the action alternatives because more of the alignment would be within the NCA. Selection of Toana Road Variation 1 or 1-A would have negligible effect on the total emissions for this alternative, as the estimated emissions for both variations are very similar to those for the corresponding portion of the Revised Proposed Route for Segment 9 (see Table 3.20-5).

Alternative 2 – Revised Proposed 8 and FEIS Proposed 9

Alternative 2 (one of the Co-Preferred Alternatives) has a combined length of 291.9 miles, which is the shortest length among the seven alternatives, and would require removal of existing transmission line along 1.1 miles of the route. As indicated in Table 3.20-8, estimated emission rates for construction of this alternative are the lowest among the seven alternatives. For most constituents, construction emissions for Alternative 2 would be approximately 4 percent less than the emissions for Alternative 3, and 9 percent less than the emissions for Alternative 1. As discussed above for Alternative 1, selecting Toana Road Variation 1 or 1-A would have negligible effect on the total emissions for Alternative 2.

Alternative 3 – Revised Proposed 8 and the 9K Route

Alternative 3 has a combined length of 304.3 miles and would require removal of existing transmission line along 1.1 miles of the route. As indicated in Table 3.20-8, estimated emission rates for construction of this alternative are the second-lowest among the seven alternatives. For most constituents, construction emissions for Alternative 3 would be approximately 4 percent more than those for Alternative 2 and about 5 percent less than those for Alternative 1. As discussed above for Alternative 1, selecting Toana Road variation 1 or 1-A would have negligible effect on the total emissions for Alternative 3.

Alternative 4 – The 8G Route and FEIS Proposed 9

Alternative 4 has a combined length of 309.1 miles and would require removal of existing transmission line along 1.9 miles of the route. As indicated in Table 3.20-8, estimated emission rates for construction of this alternative are near the middle of the range for the seven alternatives. For most constituents, construction emissions for Alternative 4 would be approximately 6 percent more than those for Alternative 2, and about 3 percent less than those for Alternative 1. However, Alternative 4 would have the least effect on air quality within the SRBOP of all the action alternatives other than Alternative 5 because the alignment largely avoids crossing the NCA. As discussed above for Alternative 1, selecting Toana Road Variation 1 or 1-A would have negligible effect on the total emissions for Alternative 4.

Alternative 5 – The 8G and 9K Routes

Alternative 5 has a combined length of 321.5 miles, which is the highest total length among the seven alternatives, and would require removal of existing transmission line along 1.9 miles of the route. As indicated in Table 3.20-8, estimated emission rates for construction of this alternative are near the middle of the range for the seven

alternatives. For any given constituent, construction emissions for Alternative 5 would be approximately 10 percent more than those for Alternative 2 and almost 1 percent less than those for Alternative 1. However, Alternative 5 would have the least effect on air quality within the SRBOP of all the action alternatives because the alignment largely avoids crossing the NCA. As discussed above for Alternative 1, selecting Toana Road Variation 1 or 1-A would have negligible effect on the total emissions for Alternative 5.

Alternative 6 – The 8H Route and FEIS Proposed 9

Alternative 6 has a combined length of 299.7 miles, and would require removal of existing transmission line along 25.7 miles of the route. As indicated in Table 3.20-8, estimated emission rates for construction of this alternative are in the upper part of the range for the seven alternatives. For most constituents, construction emissions for Alternative 6 would be approximately 12 percent more than those for Alternative 2 and about 2 percent more than those for Alternative 1. As discussed above for Alternative 1, selecting Toana Road Variation 1 or 1-A would have negligible effect on the total emissions for Alternative 6.

Alternative 7 – The 8H and 9K Routes

Alternative 7 has a combined length of 312.1 miles, and would require removal of existing transmission line along 25.7 miles of the route. As indicated in Table 3.20-8, estimated emission rates for construction of this alternative are the highest among the seven alternatives. For most constituents, construction emissions for Alternative 7 would be approximately 16 percent more than those for Alternative 2 and about 6 percent more than those for Alternative 1. As discussed above for Alternative 1, selecting Toana Road Variation 1 or 1-A would have negligible effect on the total emissions for Alternative 7.

3.20.2.5 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, as well as additional measures proposed by the Project Proponents specifically for the SRBOP.

Environmental Protection Measures

The Proponents have committed to Project design features and EPMs to minimize or avoid impacts on environmental resources. These measures, the areas where they would be applicable (e.g., private, state, or federally-managed lands), as well as the details of each measure are provided in Table 2.7-1 of the FEIS. Many of these measures would be either directly or indirectly applicable to air quality (i.e., they would avoid or minimize impact to air quality).

The following measures, which were identified in Table 2.7-1 of the FEIS, are directly related to air quality and would be applicable to Segments 8 and 9:

- AIR-1 Minimize idling time for diesel equipment whenever possible.
- AIR-2 Ensure that diesel-powered construction equipment is properly tuned and maintained, and shut off when not in direct use.
- AIR-3 Prohibit engine tampering to increase horsepower.

AIR-4 Reduce construction-related trips as feasible for workers and equipment, including trucks.

AIR-5 Dust suppression techniques will be applied, such as watering construction areas or removing dirt tracked onto a paved road as necessary to prevent safety hazards or nuisances on access roads and in construction zones near residential and commercial areas and along major highways and interstates.

These EPMs would avoid or minimize the extent of impacts that could occur to air quality. These EPMs are a part of the current Project description, and as such, the effects of their implementation are included in the impact discussion found in Sections 3.20.2.2, 3.20.2.3, and 3.20.2.4.

Proponent-Proposed MEP and Potential Effects to the MEP within the SRBOP

The Proponents have developed an MEP that contains design features specific to the SRBOP. This plan was developed to mitigate the effects of Project-related impacts within the SRBOP, as well as comply with the SRBOP's enabling statute (P.L. 103-64) which requires enhancement of resources within the SRBOP. The Proponents' plan contains two forms of mitigation: "compensation mitigation" and "enhancement." For this analysis, mitigation is defined as avoidance, minimization, and compensation measures aimed at offsetting adverse impacts of the Project; enhancement is defined as additional mitigation measures that are required in order to enhance the objectives and values for which the SRBOP was established.

The Proponents' MEP offers a portfolio that contains five types of mitigation/enhancement proposals. The following discusses the benefit and/or impact that these proposed mitigation/enhancement proposals could have to air quality.

Habitat Restoration

The goal for the Proponents' habitat restoration proposal is to convert "non-native grasslands to native perennial plant communities" as well as to conduct "noxious weed control." Efforts to restore habitats within the SRBOP could have some impacts to air quality, as it can be assumed that implementation of this proposal would involve the use of some heavy equipment, which would emit GHGs in the form of vehicle and equipment exhaust. However, the Proponents' MEP does not identify the location, extent, or methods that would be used during this effort. Therefore, the impact that this effort would have to air quality cannot be quantified based on the available information.

Purchase of Private Inholdings

There are private lands within the SRBOP that could contain important cultural and natural resources. The Proponents have proposed (as part of the MEP) to purchase a portion of these lands and deed them to the U.S. government, to be managed by the BLM. This proposal would have neither a beneficial nor detrimental effect on air quality.

Law Enforcement

The Proponents' MEP contains a proposal for the funding of increased law enforcement within the SRBOP for a period of 10 years. The goal of this increased funding is to change adverse behaviors in the SRBOP by aiding law enforcement in their coverage

and ability to manage public induced damage to resource. The proposed enhancement of law enforcement would have neither a beneficial nor detrimental effect on air quality.

Visitor Enhancement

The MEP contains a proposal to fund programs meant to enhance the experiences of visitors to the SRBOP. The proposed enhancement of the visitor experience would have neither a beneficial nor detrimental effect on air quality.

Line and Substation Removal

The Proponents have proposed to remove some existing infrastructure within the SRBOP. This includes:

- Removing approximately 7 miles of existing 46-kV line on BLM-managed lands, from the Bowmont Substation to Gage Substation;
- Constructing an approximately 1-mile-long section on private land to connect the remaining portion of the line to the Idaho Power system;
- Reconstructing 3.9 miles of existing 12.5-kV lines, including 0.25 mile on BLM-managed lands;
- Converting approximately 4 miles of the existing 46-kV line on BLM-managed lands between the Gage and Ferry substations to a 12.5-kV distribution line; and
- Removing the existing Gage Substation and associated equipment/apparatus, which are on BLM-managed land.

Although not specifically addressed or called out in the SRBOP's enabling statute, this proposal does not contradict the objectives and goals of the BLM's RMP or the SRBOP's enabling statute.

The Proponents have indicated that all efforts proposed as part of the line and substation removal effort are intended to apply to enhancement of the SRBOP (with no mitigation component).

Table 3.20-9 presents the estimated emissions associated with line and substation components of the MEP, which includes removal of 7 miles of existing 46-kV line and a substation on BLM-managed land. Emissions for these actions were estimated following the calculations factors and methodologies outlined in the Air Quality Technical Report.

Table 3.20-9. Estimated Emissions Associated with the MEP

NO_x (tons)	CO (tons)	VOC (tons)	SO_x (tons)	PM_{10} (tons)1/	$PM_{2.5}$ (tons)1/	CO_2 (tons)
5.15	22,09	5.52	0.21	9.04	5.02	46.35

1/ PM_{10} and $PM_{2.5}$ include fugitive dust and equipment exhaust PM.
2/ Numbers may not be exact due to mileage multiplication and rounding.
NO_x – nitrogen oxides
CO – carbon monoxide
VOC – volatile organic compounds
CO_2 – carbon dioxide
SO_x – sulfur oxides
$PM_{2.5}$ – particulate matter with a diameter of less than 2.5 microns
PM_{10} – particulate matter with a diameter of less than 10 microns

3.20.2.6 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that

remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

Summary of Remaining Impacts

After implementation of the EPMs and MEP discussed above, some Project-related impacts would likely remain. The impact assessment found in Sections 3.20.2.2, 3.20.2.3, and 3.20.2.4 incorporates the avoidance and minimization contributions of the EPMs in the impact analysis; as a result, Sections 3.20.2.2, 3.20.2.3, and 3.20.2.4 take these measures and their impact offsets into consideration The design features outlined in the Proponents' MEP (discussed above) may reduce the magnitude of impacts to some degree (thereby reducing the need for additional compensatory mitigation); however, the extent of this reduction cannot be fully quantified at this time (as discussed in detail above).

Note that Sections 3.20.2.2, 3.20.2.3, and 3.20.2.4 outline the current extent of known impacts that would occur Project-wide.

BLM Compensatory Mitigation Categories

No additional plans for compensatory mitigation have been developed specifically for air quality. The BLM may require additional mitigation for some remaining impacts of the Project, per the guidelines found in the BLM Regional Mitigation Manual (BLM 2013c) and DOI Manual 600 DM 6, *Implementing Mitigation at the Landscape-scale* (DOI 2015).

3.21 ELECTRICAL ENVIRONMENT

This section provides a description of the electrical environment of the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; the Toana Road Variations to the Segment 9 Revised Proposed Route; and other nearby transmission lines. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). The effect of transmission line audible noise is discussed in Section 3.23 – Noise. Effects associated with the various routes analyzed in the 2013 FEIS were disclosed in that document. With the exception of FEIS Proposed 9, those FEIS routes are not being re-analyzed here, as only new information is included in this resource-specific section.

3.21.1 Affected Environment

The Electrical Effects section in the 2013 FEIS discusses those aspects of the environment that could be impacted by the Project. It begins with a discussion of the Analysis Area considered, identifies the issues that have driven the analysis, and characterizes the existing conditions in the area crossed by the Project. We reviewed the data and regulatory requirements in the FEIS and concluded that they are still valid for this SEIS. No significant new regulatory requirements were identified for electrical effects in the analysis area. The Analysis Area for this SEIS is restricted to that area crossed by the Segments 8 and 9 Revised Proposed Routes, other routes, and variations being considered.

Morley Nelson Snake River Birds of Prey National Conservation Area

Portions of the Project would cross through the SRBOP. The electrical environment is not one of the environmental resources and values for which the SRBOP was established to manage and protect.

3.21.1.1 Issues Related to Electrical Environment

Issues often associated with the electrical environment of proposed transmission projects that were considered consist of the following:

- Whether voltage on the conductors of the transmission lines would build up, for example in large vehicles or pivot irrigation systems, and produce nuisance shocks, or lead to fuel ignition;
- Whether EMF associated with transmission lines would cause health effects;
- Whether the audible noise during operations would be loud enough to be annoying or interfere with normal communication;
- Whether stray voltage would be a concern in the context of animal care where unwanted voltage on feeders, watering stations, or equipment such as milking machines, can lead to reduced food or water intake; and
- Whether services such as GPS receivers, satellite dish receivers, cell phones, AM/FM radio, television, and Internet would be disrupted.

We reviewed the scoping comments received for this SEIS and determined that the issues considered in the FEIS have not changed.

3.21.2 Direct and Indirect Effects

Electrical effects would occur only when the transmission line is energized; therefore, this section presents electrical effects only from the operations phase of the proposed Project. The Revised Proposed Action includes measures designed to mitigate and enhance the SRBOP, as required by the enabling statute for the SRBOP and the SRBOP RMP. Effects on sensitive land uses from implementing the MEP, as well as from the Route Variations, are analyzed in detail below.

A comprehensive list of all EPMs and the land ownership to which they apply can be found in Table 2.7-1 of Chapter 2 of the FEIS. The draft MEP submitted by the Proponents is included in Appendix B to the SEIS.

Plan Amendments

Amendments to the BLM RMPs and MFPs are summarized for each alternative in Table 2.3-1 (see Chapter 2 for more details). BLM plan amendments are discussed in detail in Appendices F and G. Amendments are needed to permit the Project to cross various areas of BLM-managed lands. Effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved. Amendments that alter land management designations could change future use of these areas. No amendments specific to the electrical environment are proposed for the Project, and no impacts from the electrical environment resulting from approving the amendments beyond the impacts of the Project are anticipated.

3.21.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant for Segments 8 and 9 to the Proponents of Gateway West and this portion of the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of these segments of the Project. No Project-related electrical effects would occur; however, impacts would continue as a result of natural events (such as fire, drought, and severe weather) as well as from existing and planned developments within the Analysis Area and other projects, including wind farms, mining, agricultural, or other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project and the area would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, impacts similar to those described below may occur due to new transmission lines built to meet the increasing demand in place of this Project.

3.21.2.2 Effects Common to All Routes

The FEIS provides a discussion of potential effects related to EMF that would be generated by the Project and by existing transmission lines in its vicinity. The FEIS described potential effects of audible and radio noise, electromagnetic interference with

communication systems, induced currents and nuisance shocks, and effects on human and animal health. The FEIS concluded that the Project would not result in significant adverse impacts due to electromagnetic effects. The Segments 8 and 9 Revised Proposed Routes, other routes (FEIS Proposed 9, 8G, 8H, and 9K), and Route Variations analyzed in this SEIS would generate EMFs and field effects (e.g., audible and radio noise and ozone generation) comparable in strength to the segments analyzed in the FEIS, and would therefore have similarly non-significant impacts. As discussed in the FEIS:

- The Project is designed to limit induced currents to less than 5 milliamperes (mA) for all common vehicle types or can readily be modified where large vehicles (tractor-trailers) would be expected so that the line complies with the National Electrical Safety Code (NESC) 5 mA safety requirement.
- Magnetically induced currents would be mitigated through proper grounding of metallic objects near the ROW during construction.
- With the EMF type and levels generated by the Project, research has found no conclusive evidence of adverse effects to livestock, wildlife, or human health.
- The Project would generate audible noise similar to other 500-kV lines but would not exceed federal, state, or local noise limits.
- Radio noise levels from the Project would be comparable to other 500-kV lines, and consistent with applicable guidelines (IEEE 1986).
- Ozone created by corona activity would be of such low levels that it would not adversely affect local ambient air quality.
- The Project would not cause significant interference with GPS, satellite receivers, or cellular communications.

There are approximately eight residential structures relatively close to the Segment 8 Revised Proposed Route, and four residential structures relatively close to the Segment 9 Revised Proposed Route. However, none of these structures are within the ROW. As shown in Figures 3.21-1, 3.21-2, and 3.21-3 (in the next section), the EMF levels drop to background levels near the edge of the ROW. Therefore, public exposure to Project EMFs would be limited.

The following sections describe the characteristics of the proposed line segments and the resulting EMF strengths and audible and radio noise level. These have been calculated using the methodology described in the FEIS, using the BPA Corona and Field Effects (CAFE) modeling program. The EMFs were calculated at the point of minimum clearance between the lowest conductor and ground. The minimum conductor height used for the 500-kV lines was 35 feet, and 25 feet was used for lower voltage (e.g., 138-kV) lines.

Decommissioning

Upon decommissioning, the Project would be de-energized. This would result in no current and no voltage on the transmission lines. There would be no physical changes in the lines or structures that would occur associated with de-energization. Once de-

energized, there would not be any short-term or long-term impacts from the lines. Additional details concerning decommissioning are provided in Appendix B of the FEIS.

3.21.2.3 Effects by Route

This section details the effects of EMF from the Revised Proposed Routes, other routes (FEIS Proposed 9, 8G, 9H, and 9K), and Route Variations for electrical effects from Project operations.

Table 3.21-1 lists the Gateway West proposed design line segments with the characteristics and the peak loadings used for calculation of the magnetic fields.

Table 3.21-1. Line Segments and Routes

Segment	Connecting Point A – Point B	Line Description	Line Status	Type	Peak Loading
Segment 8 Revised Proposed Route	Midpoint – Hemingway	Single Circuit – 500 kV	New	Lattice tower	1,500 MW
Route 8G	Midpoint – Hemingway (1.9-mile rebuild)	Single Circuit – 500 kV	New and rebuild of existing line	Lattice tower	1,500 MW
Route 8H	Midpoint - Hemingway	Single Circuit – 500 kV with some double-circuit 500 kV/138 kV	New and rebuild of existing line	Lattice tower	1,500 MW
Segment 9 Revised Proposed Route	Cedar Hill – Hemingway	Double Circuit – 500 kV/138 kV	New	Lattice tower	1,500 MW[1/]
Segment 9 FEIS Proposed Route, 9K	Midpoint – Hemingway	Single Circuit – 500 kV	New	Lattice tower	1,500 MW

1/ 138-kV load would remain unchanged.

<u>Segment 8</u>

Revised Proposed Route

The Segment 8 Revised Proposed Route would link the Midpoint and Hemingway Substations (see Figure A-1). This 129.7-mile single-circuit 500-kV transmission line would stay north of the Snake River generally parallel to an existing 500-kV transmission line, before ending at the Hemingway Substation. This route is similar to the original proposed route in the 2013 FEIS except that the line would be 250 feet north of the existing 500-kV line rather than 1,500 feet south of the line from the eastern boundary of the SRBOP (MP 99.7) to the Hemingway Substation. The route east of that point is unchanged from the 2013 FEIS Proposed Route.

The Segment 8 Revised Proposed Route would be constructed as a single-circuit 500-kV transmission line on steel lattice towers, similar to Project Segments 2, 3, 4, 5, and 10 analyzed in the FEIS. A portion of the Segment 8 Revised Proposed Route differs from those segments in that it would be constructed 250 feet (centerline-to-centerline) north of the existing 500-kV line; it is this configuration that is analyzed in this SEIS.

The FEIS describes the electrical effects of the Project assuming that it would be no less than 1,500 feet from the existing 500-kV transmission line, a distance at which there would be no interaction between the existing and proposed lines' EMF or field effects. With a 250-foot separation the interaction between the two lines would be negligible; the presence of the Project line would not substantively increase the peak EMF strength of the existing 500-kV line, and vice versa (see Figures 3.21-1 and 3.21-2). The combined field strength between the two lines would be higher than at the same position relative to each line if considered independently, but the field strength between the lines would remain lower than the peak field strength under each line. The presence of the Project would not substantively increase the intensity of the EMF in the transmission corridor, though it would double the width of the area subject to increased EMF.

Figure 3.21-1 illustrates the individual and combined peak electric fields generated by the Project and the adjacent, existing 500-kV line. Figure 3.21-2 illustrates the individual and combined peak magnetic fields generated by the Project and the adjacent existing 500-kV line. The Project line would be to the left (north) in both of these figures. Both lines have been considered in the calculation of the EMF profiles across the distance of 250 feet between the two lines plus 500 feet on either side of the lines, for a total plot width of 1,250 feet.

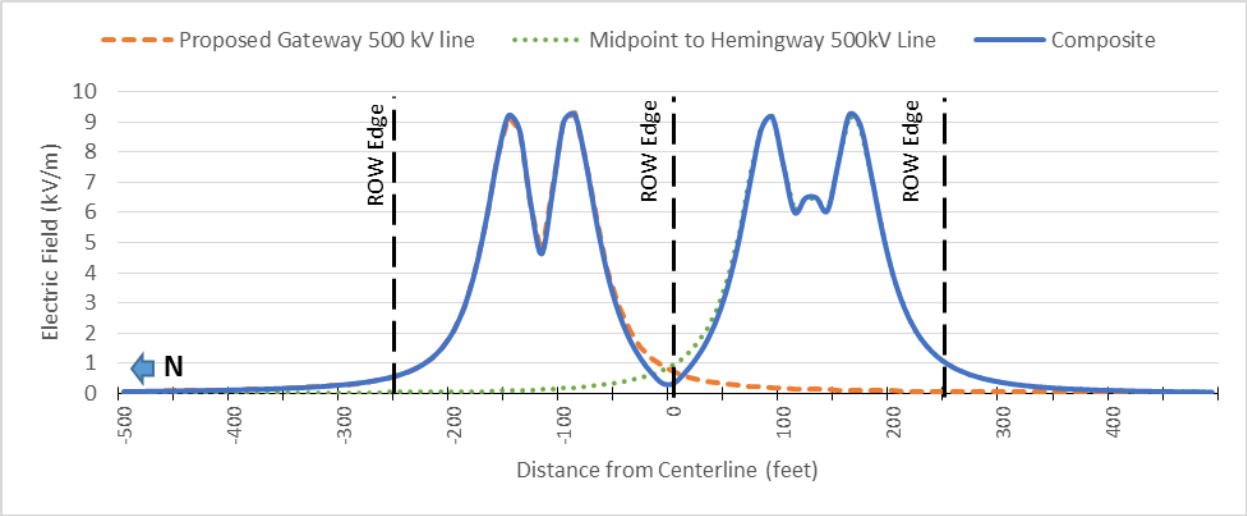

Figure 3.21-1. Electric Field Profiles at Midspan, Segment 8 Revised Proposed Route 500-kV Lattice and Existing Midpoint – Hemingway 500-kV Line

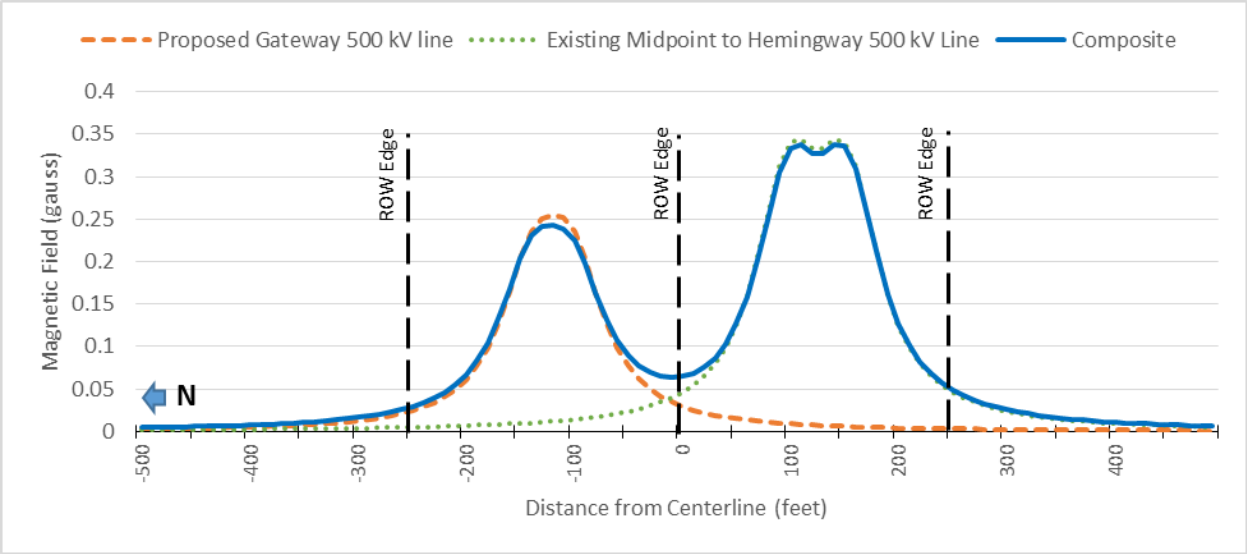

Figure 3.21-2. Magnetic Field Profiles at Midspan, Segment 8 Revised Proposed Route 500-kV Lattice and Existing Midpoint – Hemingway 500-kV Line

Route 8G

Route 8G is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows an alignment similar to the ones analyzed for Routes 8A and 9B in the FEIS for approximately 44 miles, although it generally parallels 250 feet north of the existing 500-kV line rather than1,500 feet to the south in order to avoid the Hagerman Fossil Beds National Monument and development near Hagerman (see Figure A-1). The route then parallels 250 feet north of the Segment 9 Proposed Route and Route 9K for most of the remaining distance into the Hemingway Substation. The route is 146.9 miles long (including a 1.9-mile rebuild of the existing 500-kV line using the same lattice tower and conductor type as the Project), compared to the 129.7-mile-long Revised Proposed Route.

Figure 3.21-3 illustrates the individual and combined peak electric fields generated by the Project and the adjacent rebuilt 500-kV line for Route 8G. Figure 3.21-4 illustrates the individual and combined peak magnetic fields generated by the Project and the adjacent rebuilt 500-kV line for Route 8G. Both lines have been considered in the calculation of the EMF profiles across the distance of 250 feet between the two lines plus 500 feet on either side of the lines, for a total plot width of 1,250 feet.

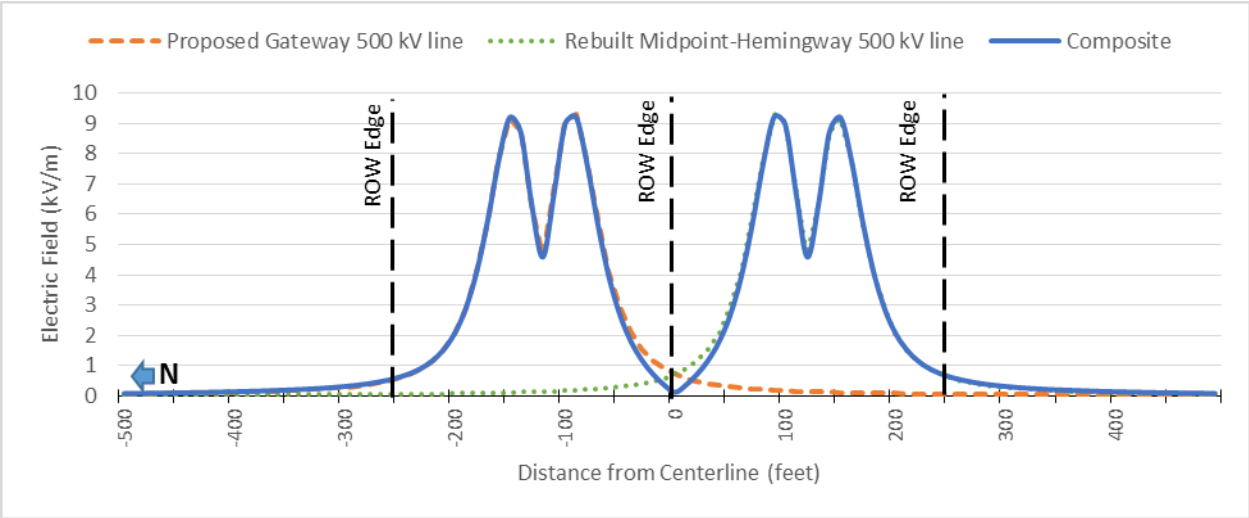

Figure 3.21-3. Electric Field Profiles at Midspan, Route 8G 500-kV Lattice and Rebuilt Midpoint – Hemingway 500-kV Line

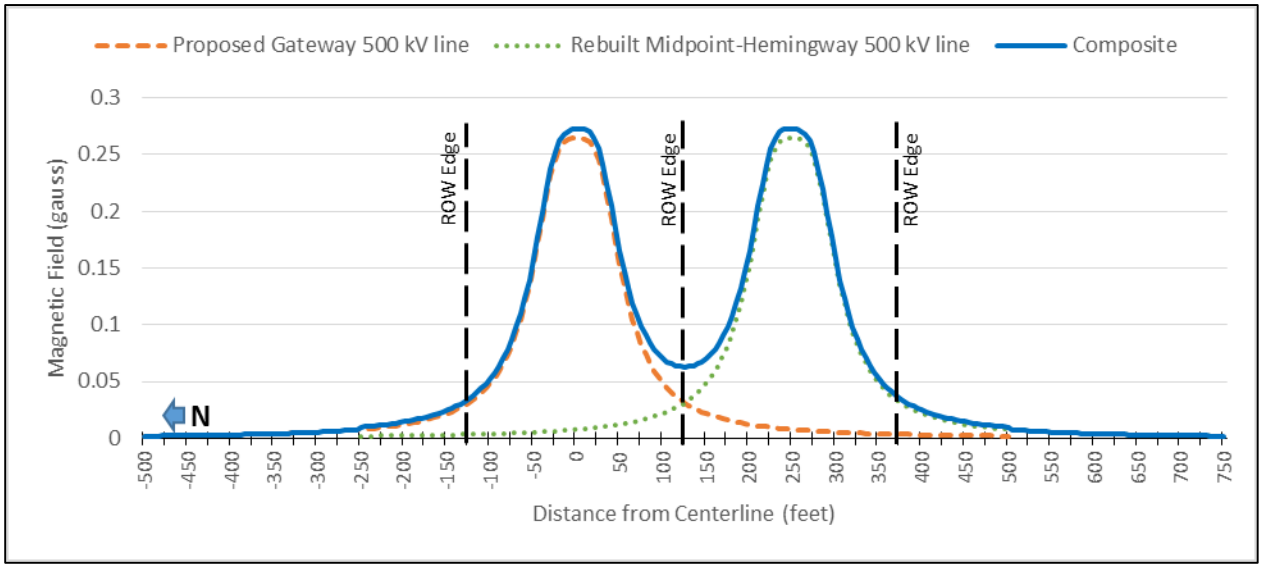

Figure 3.21-4. Magnetic Field Profiles at Midspan, Route 8G 500-kV Lattice and Rebuilt Midpoint – Hemingway 500-kV Line

Route 8H

Route 8H is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows a combination of the adjustments analyzed for Route 8G and the Revised Proposed Route for Segment 9. The route is 137.5 miles long (including a 1.9-mile rebuild of the existing 500-kV line and a 25.7-mile removal and rebuild of a 138-kV line), compared to the 129.7-mile-long Segment 8 Revised Proposed Route. Approximately 44 miles of the route follows the Route 8G alignment, while the remainder of Route 8H follows the alignment of the Segment 9 Revised Proposed Route.

Effects to the electrical environment would vary depending on the structure type (i.e., single-circuit vs. double-circuit) and the proximity to existing 500-kV transmission lines. Four structure types would be implemented for Route 8H:

1. Single-circuit 500-kV lattice
2. Single-circuit 500-kV lattice located 250-feet from the existing Midpoint-Hemingway 500-kV line
3. Single-circuit 500-kV lattice located 250-feet from the rebuilt Midpoint-Hemingway 500-kV line
4. Double-circuit 500-kV/138-kV lattice

The FEIS disclosed the magnetic fields generated by single-circuit 500-kV lattice structure. Figure 3.21-5 illustrates the individual and combined peak electric fields generated by the Project and the adjacent rebuilt 500-kV line for Route 8H. Figure 3.21-4 illustrates the individual and combined peak magnetic fields generated by the Project and the adjacent rebuilt 500-kV line for Route 8G, which would be the same for Route 8H. Both lines have been considered in the calculation of the EMF profiles across the distance of 250 feet between the two lines plus 500 feet on either side of the lines, for a total plot width of 1,250 feet. This SEIS also analyzes the electrical effects arising from the portion of the Route 8H that would be constructed as a double-circuit 500/138-kV transmission system, where portions of two existing 138-kV lines would be rebuilt to share towers with the Project circuit. Figure 3.21-5 illustrates the EMF profiles for the 500/138-kV double-circuit portion of Route 8H; the 138-kV circuit would be to the left in this graph.

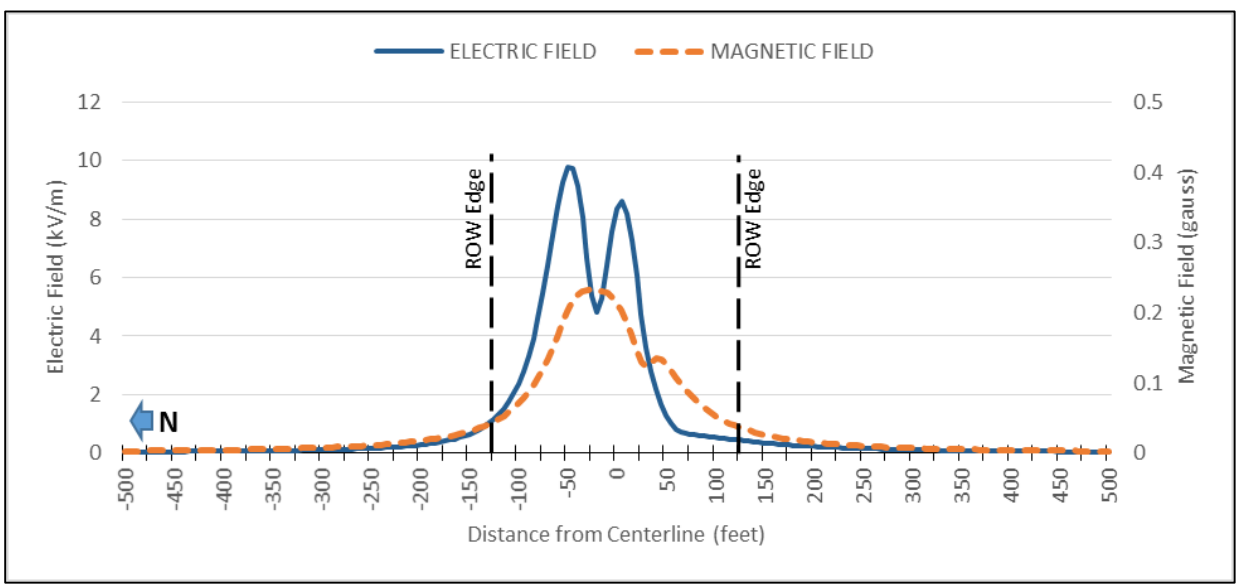

Figure 3.21-5. Electric and Magnetic Field Profiles at Midspan, Route 8H and Segment 9 Revised Proposed Route, Double-Circuit 500/138-kV Section

Segment 9

Revised Proposed Route

The Segment 9 Revised Proposed Route would link the proposed Cedar Hill and existing Hemingway Substations with a 165.3-mile single-circuit 500-kV transmission line. The line skirts the Jarbidge and Owyhee Military Operating Areas to the north, then follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering the Hemingway Substation (see Figure A-1). It follows an alignment similar to the 2013 FEIS Route 9D/9G between MP 95.6 and 154.7, except that two portions of the route (totaling 25.7 miles) would be double-circuited with existing 138-kV lines. The first area is 5.2 miles near C.J. Strike Reservoir and the Bruneau Arm (MP 106.2 to 109.3 and 109.9 to 112.1), and the second area is 20.2 miles along the Baja Road (MP 121.0 to 141.2). Several rebuilds totaling approximately 0.6 mile are also required to tie the existing 138-kV lines into the new double-circuit alignments. Except for minor variations, the route is similar to the 2013 FEIS Route 9D/9G between MP 141.2 to 154.7. From MP 154.7 and into the Hemingway Substation, the route is the same as the 2013 FEIS Proposed Route.

This SEIS analyzes the electrical effects arising from the portion of the Segment 9 Revised Proposed Route that would be constructed as a double-circuit 500/138-kV transmission system, where portions of two existing 138-kV lines would be rebuilt to share towers with the Project circuit. Figure 3.21-5 illustrates the EMF profiles for the 500/138-kV double-circuit portion of Segment 9; the 138-kV circuit would be to the left in this graph.

Tables 3.21-2 and 3.21-3 indicate the calculated peak electric field and magnetic field strength, respectively, and the field strengths at the north and south edges of the Project ROW for the Segment 8 Revised Proposed Route, Route 8G, Route 8H, and the Segment 9 Revised Proposed Route. The calculated field strengths for both Project Segments are consistent with those of the other Project Segments analyzed in the FEIS, and are consistent with applicable standards.

Table 3.21-2. Electric Fields under Peak Loading

Segment	ROW Width (feet)	North/West ROW Edge (kV/m)	Maximum within ROW (kV/m)	South/East ROW Edge (kV/m)
Segment 8 Revised Proposed Route (500 kV)[1/]	250	0.60	9.26	0.96
Route 8G (500 kV)[2/]	250	0.62	9.23	0.62
Route 8H (500 kV single circuit & 500/138-kV double circuit)	250	1.15	10.01	0.96
Segment 9 Revised Proposed Route (500/138-kV double circuit) [3/]	250	1.15	10.01	0.44
Segment 9 FEIS Proposed Route, Route 9K[3/]	250	0.77	9.67	0.77

1/ Values represent the combined fields of the Project 500-kV line and the existing, adjacent 500-kV line.
2/ Values represent the combined fields of the Project 500-kV line and the rebuilt, adjacent 500-kV line.
3/ Selecting either of the Toana Road Variations would not result in any change to the electrical environment for Segment 9.
kV/m – kilovolt per meter; ROW – right-of-way

Table 3.21-3. Magnetic Fields under Peak Loading

Segment	ROW Width (feet)	North/West ROW Edge (mG)	Maximum within ROW (mG)	South/East ROW Edge (mG)
Segment 8 Revised Proposed Route (500 kV) 1/	250	29	338	49
Route 8G (500 kV) 2/	250	27	249	27
Route 8H (500 kV single circuit & 500/138-kV double circuit)	250	45	338	49
Segment 9 Revised Proposed Route (500/138-kV double circuit)3/	250	45	233	36
Segment 9 FEIS Proposed Route, Route 9K3/	250	37	311	37

1/ Values represent the combined fields of the Project 500-kV line and the existing, adjacent 500-kV line.
2/ Values represent the combined fields of the Project 500-kV line and the rebuilt, adjacent 500-kV line.
3/ Selecting either of the Toana Road Variations would not result in any change to the electrical environment for Segment 9.
mG – milligauss; ROW – right-of-way

FEIS Proposed 9

The Proponents originally designed the 162.2-mile-long FEIS Proposed Route in Segment 9 to follow existing utility corridors and avoid the SRBOP and other protected areas where feasible. Approximately 54 miles of the route is within or adjacent to a utility corridor. FEIS Proposed 9 is approximately 3.1 miles shorter than the Revised Proposed Route but it crosses 13.6 miles of the SRBOP compared to 54.2 miles for the Revised Proposed Route. All Segment 9 routes (Revised Proposed Route and, FEIS Proposed 9, and 9K) cross the Salmon Falls Creek at Lilly Grade adjacent to an existing single-phase 34.5-kV distribution line just north of the Salmon Falls Creek wilderness study area.

Included in this SEIS is analysis of the electrical effects from FEIS Proposed 9, which are the same as what was disclosed in the FEIS. Figures 3.21-6 and 3.21-7 illustrate the electric and magnetic field profiles, respectively, for the FEIS Proposed 9 500-kV single-circuit lattice tower.

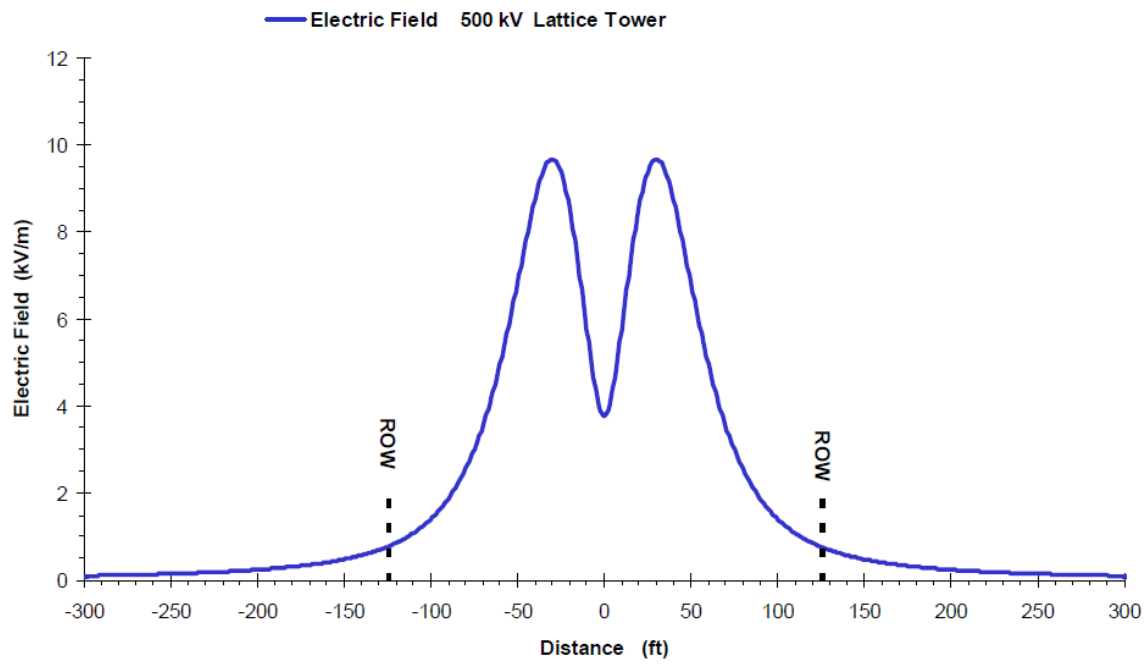

Figure 3.21-6. Electric Field Profiles at Midspan, FEIS Proposed 9 and 9K, Single-Circuit 500-kV

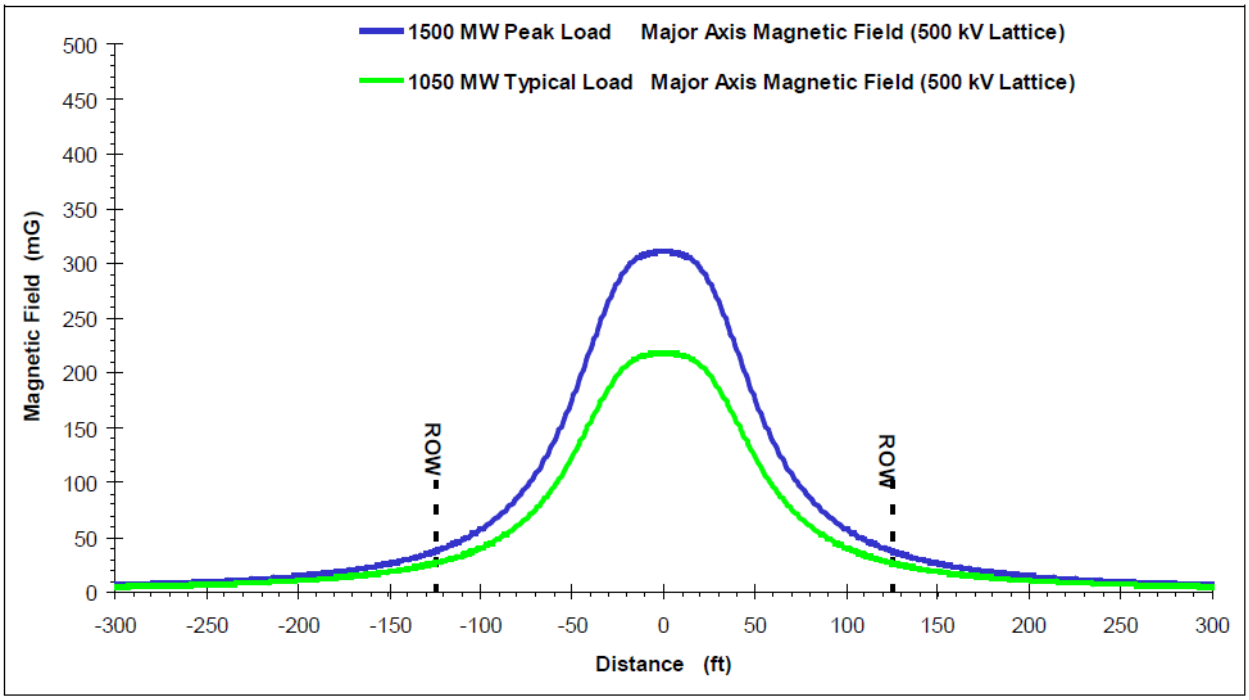

Figure 3.21-7. Magnetic Field Profiles at Midspan, FEIS Proposed 9 and 9K, Single-Circuit 500-kV

Route 9K

Route 9K is being considered by the BLM as a modified version of FEIS Route 9E (the FEIS Preferred Route) to avoid crossing the northwestern portion of the SRBOP and to minimize direct and indirect impacts to priority sage-grouse habitat. The route is approximately 174.6 miles long, compared to the 165.3-mile-long Revised Proposed Route (see Figure A-1).

Electrical effects of Route 9K would be the same as those from the Segment 9 Revised Proposed Route.

Toana Road Variations 1 and 1-A and the Comparison Portion of the Revised Proposed Route

Toana Road Variation 1 to the Segment 9 Revised Proposed Route was recommended by the BLM Jarbidge Field Office archaeologist to avoid paralleling the Toana Freight Wagon Road, an NRHP site. The Segment 9 Revised Proposed Route parallels within 0.25 mile of the Toana Road between MP 38.2 and 40.6, and parallels within 1 mile of the road through Blue Gulch between MP 40.6 and 43.5. Variation 1 is approximately 8.5 miles in length. Approximately 0.3 mile of the route crosses state land, with the remainder on land managed by the BLM. The Toana Road Variation 1-A to the Segment 9 Revised Proposed Route was recommended by the BLM to minimize visual impacts to the Toana Freight Wagon Road, and was also intended to utilize existing roads in order to minimize new road construction in the area. Variation 1-A is approximately 8.9 miles long. Approximately 1 mile of the route crosses state land, with the remainder on land managed by the BLM.

The effects from either of the Toana Road Variations would be the same as those from the Segment 9 Revised Proposed Route.

Audible Noise

Figure 3.21-8 and Figure 3.21-9 illustrate the audible noise profile of the Segment 8 Revised Proposed Route and Routes 8G and 8H, respectively, and the adjacent, existing 500-kV transmission line. Figure 3.21-10 illustrates the audible noise profile of the double-circuit portion of Route 8H and the Segment 9 Revised Proposed Route, and Figure 3.21-11 illustrates the audible noise profile for FEIS Proposed 9. Because audible noise is generated by corona activity, which increases with precipitation, these figures show noise profiles for both fair and foul weather conditions.

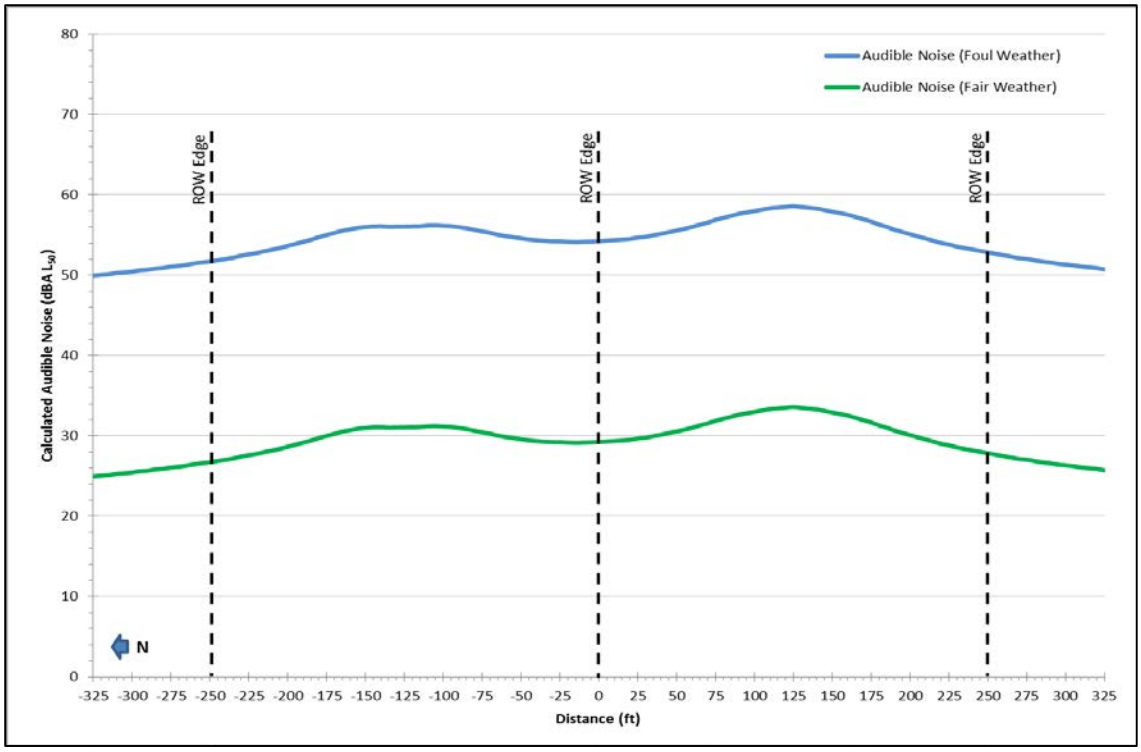

Figure 3.21-8. Audible Noise Profile at Midspan, Segment 8 Revised Proposed Route 500-kV Lattice and Existing Midpoint – Hemingway 500-kV Line

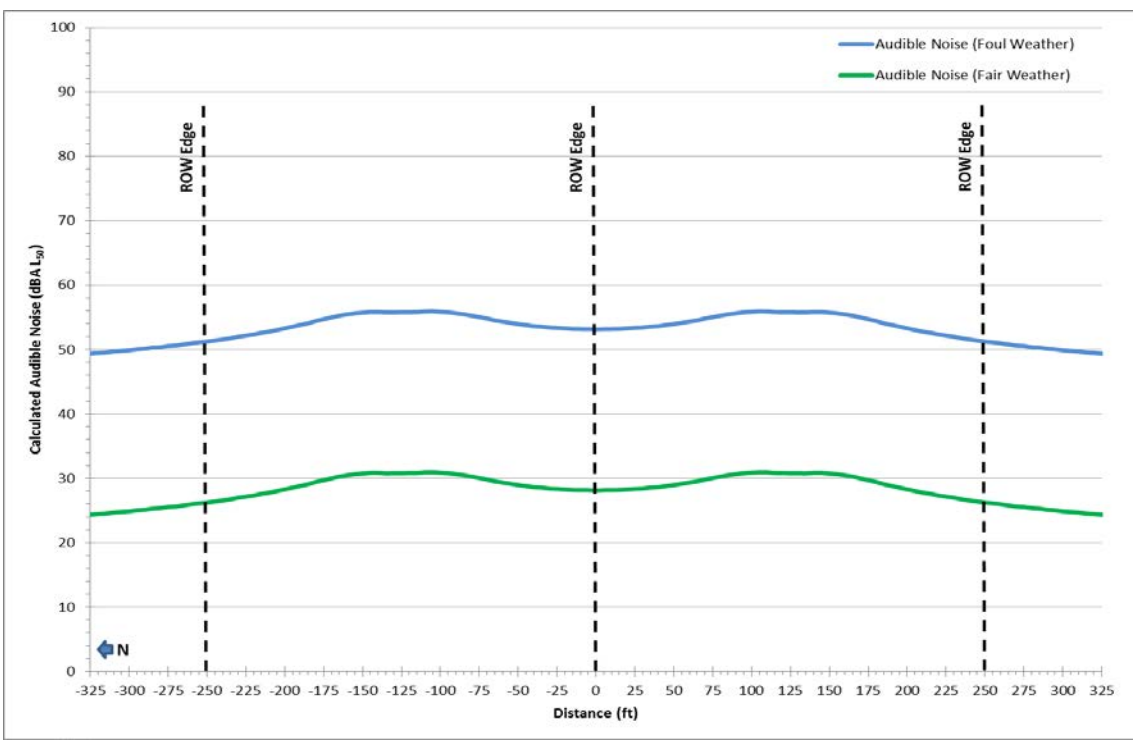

Figure 3.21-9. Audible Noise Profile at Midspan, Segment 8 Revised Proposed Route 500-kV Lattice and Rebuilt Midpoint – Hemingway 500-kV Line

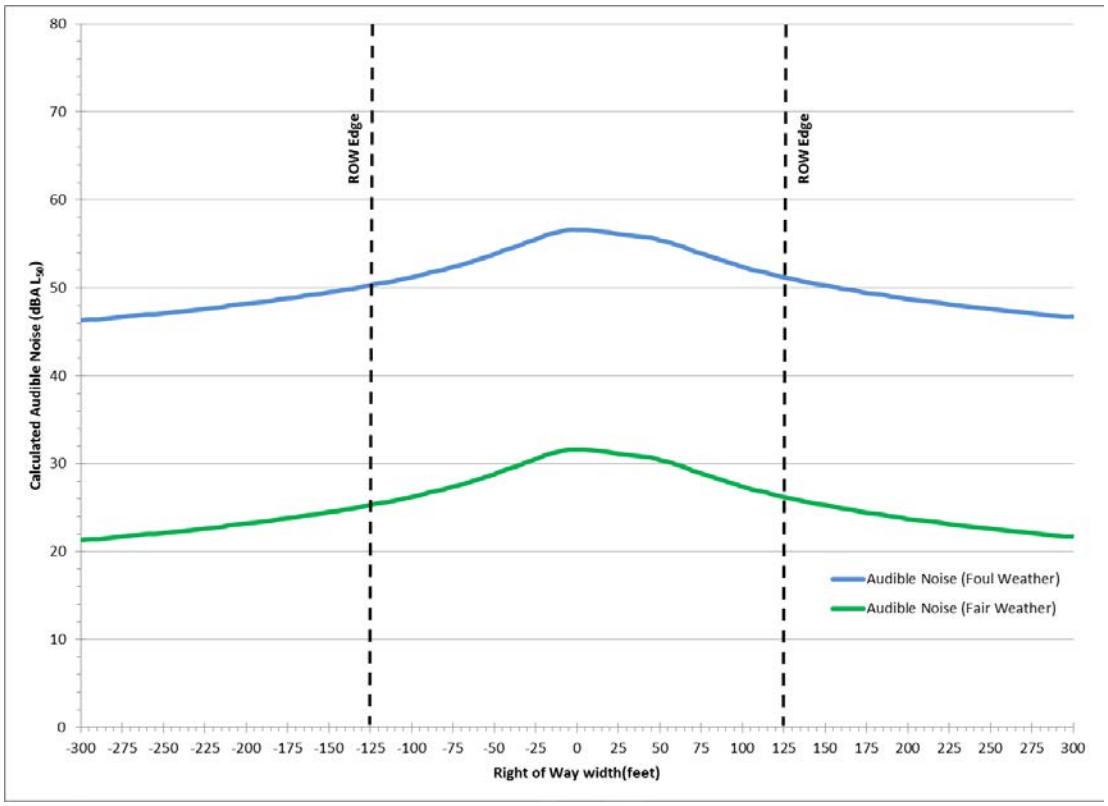

Figure 3.21-10. Audible Noise Profile at Midspan, Route 8H and Segment 9 Revised Proposed Route, Double-Circuit 500/138-kV Section

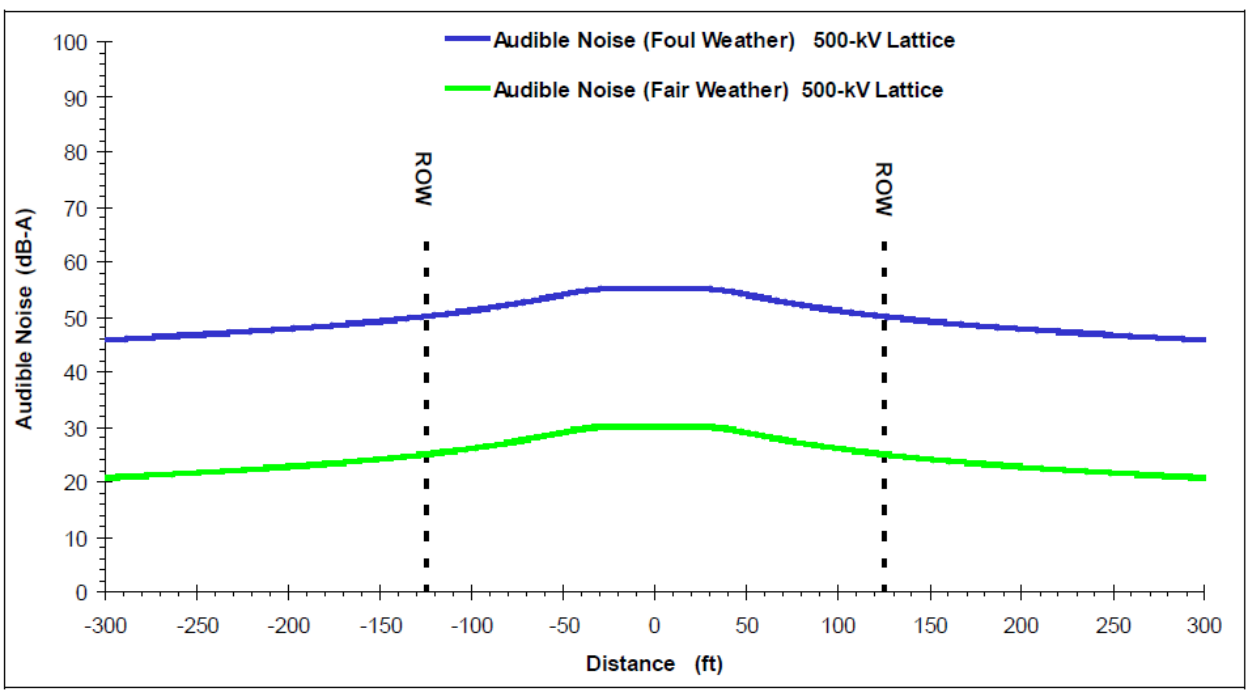

Figure 3.21-11. Audible Noise Profile at Midspan, FEIS Proposed 9 and 9K, Single-Circuit 500-kV Section

Table 3.21-4 indicates the calculated peak audible noise level within the ROW, and the audible noise level at the north and south edges of the Project ROW for the Segments 8 and 9 Revised Proposed Routes, for both fair and foul weather conditions.

Table 3.21-4. Audible Noise in Foul and Fair Weather

Segment	ROW Width (feet)	North/West ROW Edge (dBA)	Maximum within ROW (dBA)	South/East ROW Edge (dBA)
Foul Weather				
Segment 8 Revised Proposed Route (500 kV)[1/]	250	51.7	56.2	54.2
Route 8G (500 kV)[2/]	250	51.2	55.9	51.2
Route 8H (500 kV single circuit and 500/138-kV double circuit)	250	51.7	56.6	54.2
Segment 9 Revised Proposed Route (500/138-kV double circuit)	250	50.3	56.6	51.2
Segment 9 FEIS Proposed Route, Route 9K	250	50	55	50
Fair Weather				
Segment 8 Revised Proposed Route (500 kV)[1/]	250	26.7	31.2	29.2
Route 8G (500 kV)[2/]	250	26.2	30.9	26.2
Route 8H (500 kV single circuit and 500/138-kV double circuit)	250	26.7	31.6	29.2
Segment 9 Revised Proposed Route (500/138-kV double circuit) [3/]	250	25.5	31.6	26.2
Segment 9 FEIS Proposed Route, Route 9K[3/]	250	25	30	25

1/ Values represent the combined effects of the Project 500-kV line and the existing, adjacent 500-kV line.
2/ Values represent the combined effects of the Project 500-kV line and the rebuilt, adjacent 500-kV line.
3/ Selecting either of the Toana Road Variations would not result in any change to the electrical environment for Segment 9.
dBA – A-weighted decibels; ROW – right-of-way

Audible noise levels generated by the Project would be consistent with other 500-kV lines, and within applicable limits. The levels found at the edge of the ROW during fair weather (less than 30 A-weighted decibels [dBA]; see Table 3.21-4) are similar to the noise levels found in a library or a bedroom at night and are likely to be masked by ambient audible noise levels from vegetation movement in breezes and animal and insect activity. Higher levels of audible noise may occur during foul weather but these levels are still at or below the level of conversational speech, and the audible noise from rain and wind during foul weather would help mask these levels. The audible noise levels from the proposed Gateway West lines are similar to the audible noise levels of other 500-kV lines. The levels of audible noise expected at the edge of the ROW during fair or foul weather for the proposed Gateway West transmission lines meet codified federal and state audible noise levels for Idaho. Section 3.23 – Noise addresses noise impacts to potentially sensitive receptors in the vicinity of the route.

Radio Noise

Figure 3.21-12 and Figure 3.21-13 illustrate the radio interference noise profile of the Segment 8 Revised Proposed Route and Routes 8G and 8H, respectively, and the existing, adjacent 500-kV transmission line, and Figure 3.21-14 illustrates the radio interference noise profile of the double-circuit portion of Route 8H and the Segment 9 Revised Proposed Route. Figure 3.21-15 illustrates the radio interference noise profile of the single-circuit structure for Segment 9 FEIS Proposed Route. Because radio frequency interference noise is generated by corona activity, which increases with precipitation, these figures show radio noise profiles for both fair and foul weather conditions.

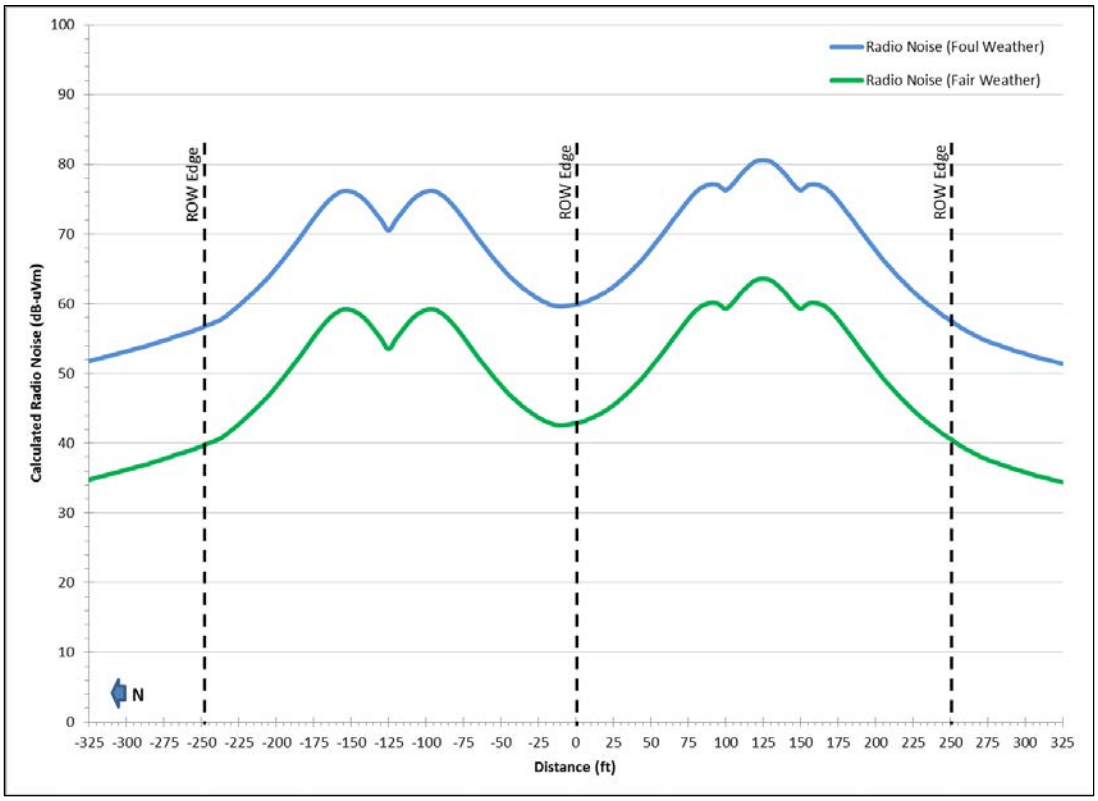

Figure 3.21-12. Radio Noise, Segment 8 Revised Proposed Route 500-kV line and Existing 500-kV Line

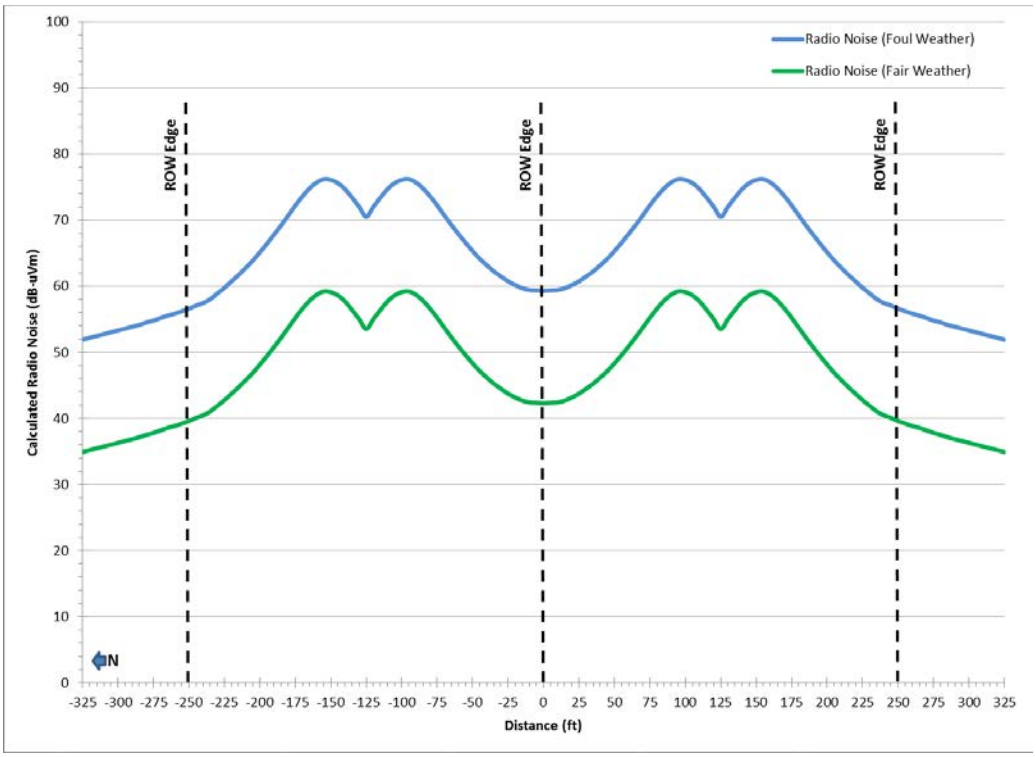

Figure 3.21-13. Radio Noise, Routes 8G and 8H 500-kV line and Existing 500-kV Line

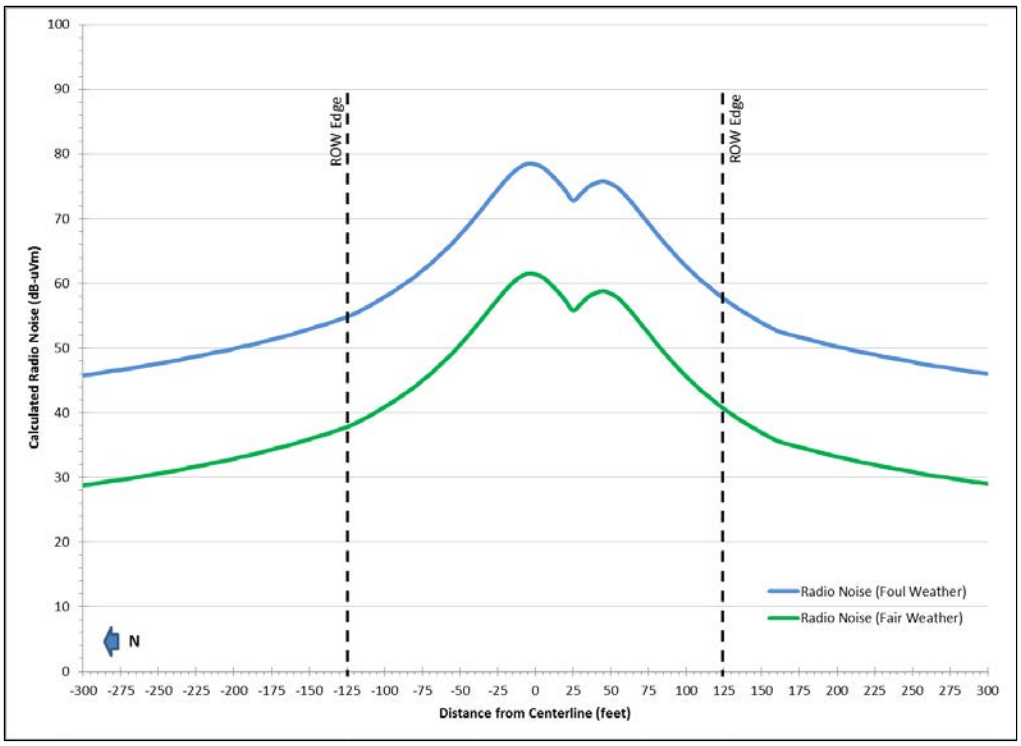

Figure 3.21-14. Radio Noise, Route 8H and Segment 9 Revised Proposed Route Double-Circuit 500-kV/138-kV

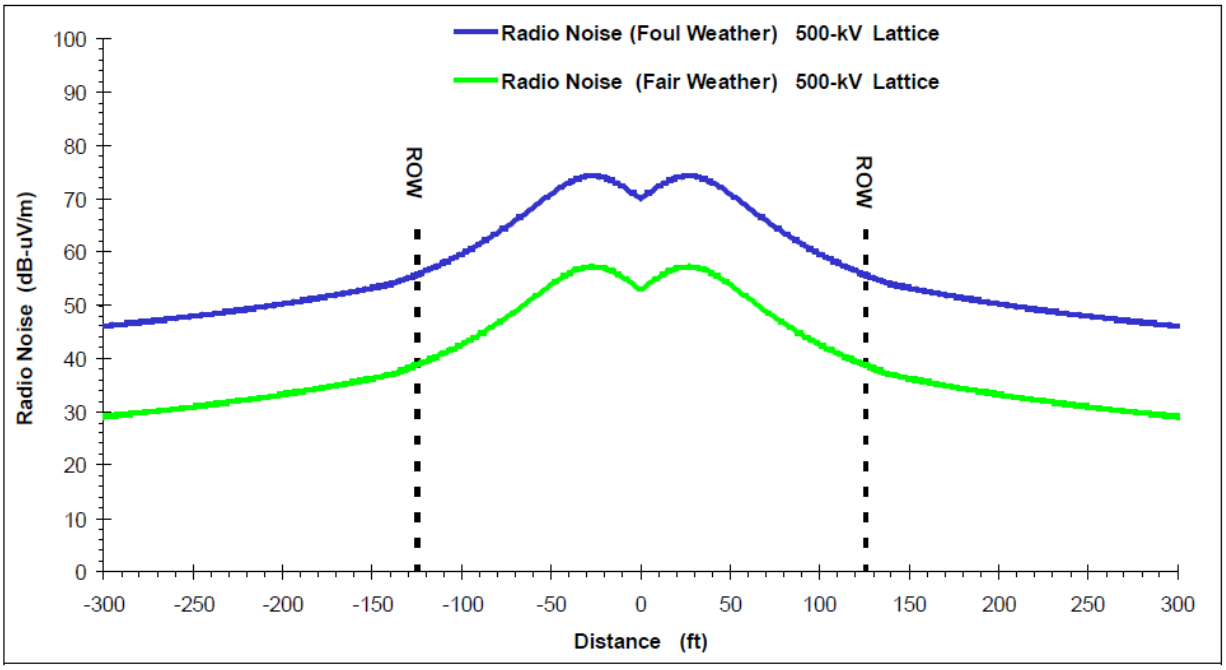

Figure 3.21-15. Radio Noise, FEIS Proposed 9 and 9K Single-Circuit 500-kV

Table 3.21-5 indicates the calculated peak radio interference noise level within the ROW, and the radio noise level at the north and south edges of the Project ROW for the Segments 8 and 9 Revised Proposed Routes and other routes, for fair and foul weather conditions.

Table 3.21-5. Radio Noise in Foul and Fair Weather

Segment	ROW Width (ft)	North/West ROW Edge (dBA)	Maximum within ROW (dBA)	South/East ROW Edge (dBA)
Foul Weather				
Segment 8 revised Proposed Route (500 kV)[1/]	250	56.5	76.2	59.0
Route 8G (500 kV)[2/]	250	56.6	76.2	56.6
Route 8H (500 kV single circuit and 500/138-kV double circuit)	250	56.6	78.5	59.0
Segment 9 Revised Proposed Route (500/138-kV double circuit)	250	54.8	78.5	57.6
Segment 9 FEIS Proposed Route, 9K	250	56	74	56

Table 3.21-5. Radio Noise in Foul and Fair Weather (continued)

Segment	ROW Width (ft)	North/West ROW Edge (dBA)	Maximum within ROW (dBA)	South/East ROW Edge (dBA)
Fair Weather				
Segment 8 Revised Proposed Route (500 kV)[1/]	250	39.5	59.2	42.9
Route 8G (500 kV)[2/]	250	39.6	59.2	39.6
Route 8H (500 kV single circuit & 500/138-kV double circuit)	250	39.6	61.5	42.9
Segment 9 Revised Proposed Route (500/138-kV double circuit)	250	37.8	61.5	40.6
Segment 9 FEIS Proposed Route, 9K	250	39	57	39

1/ Values represent the combined effects of the Project 500-kV line and the existing, adjacent 500-kV line.
2/ Values represent the combined effects of the Project 500-kV line and the rebuilt, adjacent 500-kV line.
dBA – A-weighted decibels; ROW – right-of-way

The Institute of Electrical and Electronic Engineers (IEEE) Radio Noise Design Guide (1986) identifies an acceptable fair-weather radio noise level of 40 decibels (dB) at 100 feet from the outside conductor of a line. Fair-weather radio noise levels at the edges of the Project ROW would be at or below 40 dB, except for at the ROW line between the Segment 8 Revised Proposed Route or Routes 8G and 8H and the adjacent either existing or rebuilt 500-kV line, where the combined radio noise of both lines would be slightly higher.

The radio noise levels from the proposed lines are comparable to those of other 500-kV lines. There are no state limits for radio noise and no set federal limits. Radio noise is governed by the Federal Communications Commission (FCC) under the general rule (47 CFR Part 15) that states that “the radio frequency energy that is emitted does not cause harmful interference. In the event that harmful interference is caused, the operator of the device shall promptly take steps to eliminate the harmful interference.” Power utilities have been able to work well under the FCC rule because the lines are designed to avoid complaints, and mitigation methods exist to address specific complaints if they occur.

Other Effects

Other effects from the proposed Gateway West transmission lines may include visible corona, ozone, field induction, stray voltage, and interference with electronic devices such as GPS systems, cell phones, or satellite receivers. These effects would be localized to the area of the transmission line if they occur. These factors are generally due to the field strength at the surface of the conductor (visible corona, ozone, and interference with electronic devices) or the field strength at ground level (field induction and stray voltage).

As indicated in the FEIS, the following EPMs would be implemented to reduce impacts:

EE-1 During final design, limit the conductor surface gradient in order to meet the IEEE Radio Noise Guideline.

EE-2 During construction, identify objects such as fences, metal buildings, pipelines, and other metal objects within or near the proposed ROW that have the possibility for induced potentials and currents and implement electrical grounding of these objects according to the utility's and National Electric Code standards.

EE-3 During final design and construction, identify areas where large equipment is anticipated and provide sufficient conductor clearance to ground to meet the NESC 5 mA rule or limit size or access of large equipment.

These EPMs would avoid or minimize the extent of impacts that could occur from electrical effects. These EPMs are a part of the current Project description, and as such, the effects of their implementation are included in the impact discussion found in Sections 3.21.2.2, 3.21.2.3, and 3.21.2.4.

Corona is sometimes visible as a faint bluish glow near the conductors of high-voltage lines. Any corona on the conductors would be visible only under the darkest conditions and after the eyes had time to adapt to the dark. It is unlikely it would be noticed or affect the local environment.

The ozone levels from a 500-kV line are at the single digit parts per billion level or below. The ozone from the high-voltage lines is at the limit of ozone detection equipment and well below even the fluctuations of ambient levels and would not affect the ambient air quality.

Induced currents and potential nuisance shocks would be avoided through grounding of objects within or near the ROW that have the potential for induced charges or currents; by providing sufficient conductor-to-ground clearance in locations where large vehicles or equipment may be expected to meet the NESC 5 mA rule; or by limiting vehicle access within the ROW.

Stray voltage is primarily an issue with distribution lines rather than transmission lines, thus should not occur as a result of the Project. Good grounding practices reduce or eliminate the concern.

The peak magnetic fields generated by the Project would be far below the threshold of sensitivity for interference with even the most sensitive modern cardiac pacemakers. The electric fields expected at the edges of the ROW (1.15 kV/m or less, except for the area between the Project line and the existing 500-kV line) are below the threshold level of 1.5 kV/m for the most sensitive pacemaker. The proposed transmission lines would not have an effect on pacemakers outside the ROW.

Corona-generated radio frequency emissions have been shown to have little to no impact on mobile-radio communications systems, cellular telephones, or satellite transmissions including those used by GPS receivers. In the unlikely event that interference occurs with these or other communications, mitigation would be easily achieved with the techniques used for AM radio interference such as a slight antenna relocation or orientation.

3.21.2.4 Direct and Indirect Effects of the Alternatives

A total of seven action alternatives are considered in this SEIS. This section includes a brief description of the alternatives, and the relative effects from electrical effects by alternative. The alternatives are visually displayed in Figures A-2 through A-8.

Alternative 1 – Proposed Action (the Revised Proposed Routes for Segments 8 and 9)

Alternative 1 would follow the Revised Proposed Routes to link the Hemingway Substation with the Midpoint Substation (Segment 8) and the Cedar Hill Substation with the Hemingway Substation (Segment 9). For the Segment 8 portion of the alternative, increased proximity to the existing 500-kV line (compared to the FEIS route) would result in slightly higher magnetic fields, audible noise, and radio noise but slightly lower electrical fields since these effects would somewhat cancel due to the increased proximity. For the Segment 9 portion where the structure is a 500-kV/138-kV double-circuit line, slightly higher EMF, audible noise, and radio noise levels would result.

Selection of either the Toana Road Variation 1 or 1-A would not change the electrical environment effects. This is true for all alternatives. Therefore, the Toana Road Variations are not discussed further in this section.

Alternative 2 – Revised Proposed 8 and FEIS Proposed 9

Alternative 2 would link the Hemingway Substation with the Midpoint Substation using the Revised Proposed Route for Segment 8 and the Cedar Hill Substation and Hemingway Substation using the FEIS Proposed 9. The electrical effects would be slightly less when compared to Alternative 1 because no double-circuit likes would be used.

Alternative 3 – Revised Proposed 8 and the 9K Route

Alternative 3 would link the Midpoint Substation and Hemingway Substation using the Revised Proposed Route 8 and the Cedar Hill Substation and the Hemingway Substation using Route 9K. The electrical effects would be slightly lower than Alternative 1, similar to Alternative 2.

Alternative 4 – The 8G Route and FEIS Proposed 9

Alternative 4 would link the Midpoint Substation and Hemingway Substation using Route 8G and the Cedar Hill Substation and the Hemingway Substation using FEIS Proposed 9. The electrical effects for the portion of the alternative with increased proximity to the existing 500-kV line would result in slightly higher magnetic fields, audible noise, and radio noise but slightly lower electrical fields since these effects would somewhat cancel due to the increased proximity. The remaining portion of the Alternative would be slightly lower than Alternative 1, similar to Alternative 2.

Alternative 5 – The 8G and 9K Routes

Alternative 5 would link the Midpoint Substation and Hemingway Substation using Route 8G and the Cedar Hill Substation and Hemingway Substation using Route 9K., The electrical effects this alternative would be slightly higher for magnetic fields, audible noise, and radio noise but slightly lower for electrical fields compared to Alternative 1 due to the placement of both routes approximately 250 feet apart for most of the

alignment. However, under this alternative, there would be no additional effects to the electrical environment in Segment 8 between the Black Mesa area and Hemingway.

Alternative 6 – The 8H Route and FEIS Proposed 9

Alternative 6 would link the Midpoint Substation and Hemingway Substation using Route 8H and the Cedar Hill Substation and Hemingway Substation using FEIS Proposed 9. The electrical effects are similar to Alternative 1, except that the EMF, audible noise, and radio noise would be slightly higher than under Alternative 1 for the 500-kV/138-kV double-circuit portion of the alignment. As with Alternative 5, there would be no additional effects to the electrical environment in Segment 8 between the Black Mesa area and Hemingway.

Alternative 7 – The 8H and 9K Routes

Alternative 7 would link the Midpoint Substation and Hemingway Substation using Route 8H and the Cedar Hill Substation and Hemingway Substation using Route 9K. The electrical effects would be similar to similar to Alternative 1 for the same reasons described for Alternative 6.

3.21.2.5 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, as well as additional measures proposed by the Project Proponents specifically for the SRBOP.

Environmental Protection Measures

The Proponents have committed to Project design features and EPMs to minimize or avoid impacts on environmental resources. These measures, the areas where they would be applicable (e.g., private, state, or federally managed lands), as well as the details of each measure are provided in Table 2.7-1 of the FEIS. Many of these measures would be either directly or indirectly applicable to the EMF environment (i.e., they would avoid or minimize impact to the EMF environment).

The measures EE-1 through EE-3 listed above under Other Effects, which were identified in Table 2.7-1 of the FEIS, directly relate to the EMF environment and would be applicable to the Segments 8 and 9 Revised Proposed Routes, Route Variations, and Alternatives.

Proponent-Proposed MEP and Potential Effects to the MEP within the SRBOP

The Proponents have developed an MEP that contains design features specific to the SRBOP. This plan was developed to mitigate the effects of Project-related impacts within the SRBOP, as well as comply with the SRBOP's enabling statute (P.L. 103-64) which requires enhancement of resources within the SRBOP. The Proponents' plan contains two forms of mitigation: "compensation mitigation" and "enhancement." For this analysis, mitigation is defined as avoidance, minimization, and compensation measures aimed at offsetting adverse impacts of the Project; enhancement is defined as additional mitigation measures that are required in order to enhance the objectives and values for which the SRBOP was established.

The Proponents' MEP offers a portfolio that contains five types of mitigation/enhancement proposals. The following discusses the benefit and/or impact that these proposed mitigation/enhancement proposals could have on the EMF environment.

Habitat Restoration

The goal for the Proponents' habitat restoration proposal is to convert "non-native grasslands to native perennial plant communities" as well as to conduct "noxious weed control." The proposed habitat restoration proposal would have neither beneficial nor detrimental effects on the EMF environment.

Purchase of Private Inholdings

There are private lands within the SRBOP that could contain important cultural and natural resources. The Proponents have proposed (as part of the MEP) to purchase a portion of these lands and deed them to the U.S. government, to be managed by the BLM. This proposal would have neither beneficial nor detrimental effects on the EMF environment.

Law Enforcement

The Proponents' MEP contains a proposal for the funding of increased law enforcement within the SRBOP for a period of 10 years. The goal of this increased funding is to change adverse behaviors in the SRBOP by aiding law enforcement in their coverage and ability to manage public induced damage to resource. The proposed enhancement of law enforcement would have neither beneficial nor detrimental effects on the EMF environment.

Visitor Enhancement

The MEP contains a proposal to fund programs meant to enhance the experiences of visitors to the SRBOP. The proposed enhancement of the visitor experience would have neither beneficial nor detrimental effects on the EMF environment.

Line and Substation Removal

The Proponents have proposed to remove some existing infrastructure within the SRBOP. This includes:

- Removing approximately 7 miles of existing 46-kV line on BLM-managed lands, including all structures (although structures may remain if requested by BLM), from the Bowmont Substation to Gage Substation;
- Constructing an approximately 1-mile-long section on private land to connect the remaining portion of the line to the Idaho Power system;
- Reconstructing 3.9 miles of existing 12.5-kV lines, including 0.25 mile on BLM-managed lands;
- Converting approximately 4 miles of the existing 46-kV line on existing BLM ROW between the Gage and Ferry substations to a 12.5-kV distribution line; and
- Removing the existing Gage Substation and associated equipment/apparatus, which are on BLM-managed land.

All of these actions would be positive in terms of EMF impacts on federal lands. The removal of the 46-kV line and conversion of a 46-kV line to a 12.5-kV line would eliminate or substantially reduce EMF fields on federal lands. The reconstruction of an existing 12.5-kV line may also serve to reduce EMF, as the new line may incorporate updated technologies. Audible and radio noise associated with corona activity is not generally an issue for power lines less than 230-kV because they are not strong enough to overcome the breakdown strength of the surrounding air molecules. Audible and radio noise is unlikely to be generated by the existing 46-kV lines, and would not occur with the lower-voltage 12.5-kV lines. Ozone is also generated by corona activity, so would not be created by either the existing or the replacement lines. The EMFs around substations are substantial, but due to the configuration of energized equipment generally do not allow for corona activity or the resulting audible and radio interference noise. However, substation equipment, particularly transformers, is known to be a source of audible noise, so the removal of the Gage Substation would eliminate a source of audible noise from that location. All of these actions would serve to eliminate or substantially reduce the potential for induced voltage or current, and nuisance shocks associated with transmission lines.

3.21.2.6 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

Summary of Remaining Impacts

After implementation of the EPMs and MEP discussed above, there are no anticipated Project impacts that would remain.

BLM Compensatory Mitigation Categories

No additional mitigation plans have been developed specifically for the EMF environment because there are no anticipated Project impacts that would remain.

3.22 PUBLIC SAFETY

This section discusses the potential effects on public safety and inconveniences associated with the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9, 8G, 8H, and 9K; and the Toana Road Variations to the Segment 9 Revised Proposed Route. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). Effects associated with the routes analyzed in the 2013 FEIS were disclosed in that document. With the exception of the FEIS Proposed Route for Segment 9, those routes are not being re-analyzed here, as only new information is included in this resource-specific section.

3.22.1 Affected Environment

3.22.1.1 Analysis Area

The Public Safety section in the 2013 FEIS discussed those aspects of the environment that could be impacted by the Project. It begins with a discussion of the Analysis Area considered, identifies the issues that have driven the analysis, and characterizes the existing conditions in the area crossed by the Project. We reviewed the data and regulatory requirements in the FEIS and concluded that they are still valid for this SEIS. No significant new regulatory requirements were identified for public safety in the Analysis Area. The Analysis Area for this SEIS is restricted to 0.25 mile on either side of the centerline of Segments 8 and 9. This area was selected because it is where workers would operate, soil disturbance would occur, and public safety impacts from operation of the transmission line would occur.

Morley Nelson Snake River Birds of Prey National Conservation Area

Portions of the Project would cross through the SRBOP. Public safety is not one of the environmental resources and values for which the SRBOP was established to manage and protect.

3.22.1.2 Issues Related to Public Safety

Issues often associated with public safety of proposed transmission projects that were considered consist of the following:

- Whether the Project would cause environmental contamination or expose workers or the public to contamination;
- What the effects of electric and magnetic fields would be;
- Whether the transmission line would withstand wind and ice storms;
- Whether the transmission line would cause fires or create a fire hazard;
- Whether workers or the public would be safe from electrocution;
- What the effects would be of the transmission line on human health;
- What the Proponents would do to prevent the dangers of downed lines and tower failure;

- How the Proponents would protect against potential vandalism or acts of terrorism to Project structures; and
- Whether electrical safety procedures would be followed.

Other issues related to public health and safety include health risks associated with EMF (health risks associated with EMF can include the following: powerline-induced voltages and currents on conductive objects, such as metal roofs or buildings, fences, and vehicles; and interference with radio/television signals, GPS equipment, and cardiac pacemakers). Impacts relating to EMF issues are discussed in detail in Section 3.21 – Electrical Environment.

We reviewed the scoping comments received for this SEIS and determined that the issues considered in the FEIS have not changed.

3.22.1.3 Methods

The public safety assessment is based on an evaluation of the measures to be taken during design, pre-construction, construction, and operations phases of the Project as discussed in Section 3.22.1.4 of the FEIS.

3.22.1.4 Existing Conditions

The existing conditions of public health and safety are unchanged from the FEIS and are discussed in Section 3.22.1.5 of the FEIS.

3.22.2 Direct and Indirect Effects

A comprehensive list of all EPMs and design features and EPMs, as well as the land ownership to which they apply, can be found in Table 2.7-1 of Chapter 2 of the FEIS. The draft MEP submitted by the Proponents is included in Appendix C to the SEIS.

Plan Amendments

Amendments to the BLM RMPs and MFPs are summarized for each alternative in Table 2.3-1 (see Chapter 2 for more details). The BLM plan amendments are discussed in detail in Appendices F and G. Amendments are needed to permit the Project to cross various areas of BLM-managed lands. Effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved. Amendments that alter land management designations could change future use of these areas. No amendments specific to public safety are proposed for the Project, and no impacts from public safety resulting from approving the amendments beyond the impacts of the Project are anticipated.

3.22.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant for Segments 8 and 9 to the Proponents of Gateway West and this portion of the Project would not be constructed across federal lands. No Project-related impacts to public safety would occur; however, impacts would continue as a result of natural events (such as fire, drought, and severe weather) as well as from existing and planned developments within the Analysis Area and from other projects, including wind farms, agricultural, or other competing land uses. The demand for electricity, especially for renewable energy,

would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project and the area would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, impacts similar to those described below may occur due to new transmission lines built to meet the increasing demand in place of this Project.

3.22.2.2 Effects Common to All Routes

The general impacts that would occur to public safety from construction, operations, and decommissioning of the Gateway West Project were analyzed in detail within Section 3.22.2.2 of the FEIS. The assessment of qualitative impacts specifically related the Revised Proposed Routes along Segments 8 and 9, as well as FEIS Proposed 9, Routes 8G, 8H, and 9K, and the Toana Road Variations, would not differ from those presented in the FEIS. There is no strong geographical distinction driven by public safety. As was found in the FEIS, if the protective measures proposed by the Proponents and additional measures identified by the BLM are incorporated into the Project design, construction, operations, and decommissioning, the expected public safety impacts would be low.

As referenced in the FEIS, measures to reduce risks associated with the use, storage, transportation, production, and disposal of hazardous materials are outlined in the Proponents' POD (in the BLM's ROD [BLM 2013b]) under their Framework Hazardous Material Management Plan.

3.22.2.3 Direct and Indirect Effects by Route

As stated above, there is no strong geographical distinction driven by public safety. As was found in the FEIS, if the protective measures proposed by the Proponents and additional measures identified by the BLM are incorporated into the Project design, construction, operations, and decommissioning, the expected public safety impacts would be low among all routes.

3.22.2.4 Direct and Indirect Effects of the Alternatives

As stated above, there is no strong geographical distinction driven by public safety. As was found in the FEIS, if the protective measures proposed by the Proponents and additional measures identified by the BLM are incorporated into the Project design, construction, operations, and decommissioning, the expected public safety impacts would be low among all alternatives.

3.22.2.5 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, as well as additional measures proposed by the Project Proponents specifically for the SRBOP.

Environmental Protection Measures

The Proponents have committed to EPMs to minimize or avoid impacts on environmental resources. These measures, the areas where they would be applicable (e.g., private, state, or federal-managed lands), as well as the details of each measure are provided in Table 2.7-1 of the FEIS. Many of these measures would be indirectly applicable to public safety (i.e., they would avoid or minimize impact to public safety).

Measures that would indirectly apply to public safety (i.e., measures that were not developed directly to benefit public safety, but if implemented could avoid or minimize impacts to public safety) include REC-22, CON-1, FIRE-1 through 9, and BLA-1 through BLA-5 (see Table 2.7-1 in the FEIS). These EPMs would avoid or minimize the extent of impacts that could occur from public safety. These EPMs are a part of the current Project description, and as such, the effects of their implementation are included in the impact discussion found in Sections 3.22.2.2 and 3.22.2.3 of the FEIS.

Proponent-Proposed MEP and Potential Effects of the MEP within the SRBOP

The Proponents have developed an MEP to mitigate the effects of Project-related impacts within the SRBOP, as well as comply with the SRBOP's enabling statute (P.L. 103-64) which requires enhancement of resources within the SRBOP. The Proponents' plan contains two forms of mitigation: "compensation mitigation" and "enhancement." For this analysis, mitigation is defined as avoidance, minimization, and compensation measures aimed at offsetting adverse impacts of the Project; enhancement is defined as additional mitigation measures that are required in order to enhance the objectives and values for which the SRBOP was established.

The Proponents' MEP offers a portfolio that contains five types of mitigation / enhancement proposals. The following discusses the benefit and/or impact that these proposed mitigation/enhancement proposals could have on public safety.

Habitat Restoration

The goal for the Proponents' habitat restoration proposal is to convert "non-native grasslands to native perennial plant communities" as well as to conduct "noxious weed control." Efforts to restore habitats within the SRBOP would have neither a beneficial nor detrimental effect on public safety.

Property Purchase

The proposed enhancement related to property purchase would have neither a beneficial nor detrimental effect on public safety.

Law Enforcement

The Proponents' MEP contains a proposal for the funding of increased law enforcement within the SRBOP for a period of 10 years. The goal of this increased funding is to change adverse behaviors in the SRBOP by aiding law enforcement in their coverage and ability to manage public induced damage to resource. The proposed enhancement of law enforcement could have a beneficial effect on public safety by increasing law enforcement presence.

Visitor Enhancement

The MEP contains a proposal to fund programs meant to enhance the experiences of visitors to the SRBOP. The proposed enhancement of the visitor experience would have neither a beneficial nor detrimental effect on public safety.

Line and Substation Removal

The Proponents have proposed to remove some existing infrastructure within the SRBOP. This includes:

- Removing approximately 7 miles of existing 46-kV line on BLM-managed lands, including all structures (although structures may remain if requested by BLM), from the Bowmont Substation to Gage Substation;
- Constructing an approximately 1-mile-long section on private land to connect the remaining portion of the line to the Idaho Power system;
- Reconstructing 3.9 miles of existing 12.5-kV lines, including 0.25 mile on BLM-managed lands;
- Converting approximately 4 miles of the existing 46-kV line on existing BLM ROW between the Gage and Ferry Substations to a 12.5-kV distribution line; and
- Removing the existing Gage Substation and associated equipment/apparatus, which are on BLM-managed land.

The proposed line and substation removal would have neither a beneficial nor detrimental effect on public safety.

3.22.2.6 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

Summary of Remaining Impacts

After implementation of the EPMs and MEP discussed above, some Project-related impacts would likely remain. The impact assessment found in Sections 3.22.2.2 and 3.22.2.3 of the FEIS incorporated the avoidance and minimization contributions of the EPMs in the impact analysis; as a result, FEIS Sections 3.22.2.2 and 3.22.2.3 took these measures and their impact offsets into consideration. The design features outlined in the Proponents' MEP (discussed above) may reduce the magnitude of these impacts to some degree (thereby reducing the need for additional compensatory mitigation); however, the extent of this reduction cannot be fully quantified at this time.

Note that FEIS Sections 3.22.2.2 and 3.22.2.3 outline the current extent of known impacts that would occur Project-wide.

Additional BLM Compensatory Mitigation Categories

No additional mitigation measures have been developed specifically for public safety.

The BLM may require additional mitigation for some remaining impacts of the Project on environmental resources (including impacts that occur outside of the SRBOP), per the guidelines found in the BLM Regional Mitigation Manual (BLM 2013c) and DOI Manual 600 DM 6, *Implementing Mitigation at the Landscape-scale* (DOI 2015). Mitigation for Project-related impacts that would occur within the SRBOP is discussed below.

The BLM will continue to work with applicable stakeholders to identify the impacts that would remain on the SRBOP after implementation of the EPMs and MEP, as well as the existing compensatory mitigation plans discussed above. The BLM will then design mitigation options that address applicable remaining impacts (see Section 3.0 for a discussion of the BLM's policy regarding mitigation). These options will contain components that will ensure that impacts to resources and values on the SRBOP that require mitigation are compensated for, as well as that enhancement of these resources is provided in order to comply with the enabling statute of the SRBOP. Based on internal and external scoping, the BLM is considering eight mitigation categories (see Section 2.6.2 in Chapter 2). The following mitigation categories are being considered to address remaining impacts to public safety within the SRBOP:

- Evaluate, maintain, enhance, or expand fuels management/fuel breaks;
- Increase wildfire preparedness and suppression; and
- Increase funding to law enforcement on the SRBOP.

3.23 NOISE

This section addresses potential noise impacts from the Segments 8 and 9 Revised Proposed Routes; the FEIS Proposed 9; Routes 8G, 8H, and 9K; and the Toana Road Variations to the Segment 9 Revised Proposed Route. The BLM has identified seven action alternatives, each a combination of one route from Segment 8 and one from Segment 9 (see Section 2.3.3 in Chapter 2). The corona effect of transmission line audible noise is also discussed in Section 3.21 – Electrical Environment. Effects associated with the various routes analyzed in the 2013 FEIS were disclosed in that document. With the exception of FEIS Proposed 9, those FEIS routes are not being re-analyzed here, as only new information is included in this resource-specific section.

Noise is analyzed by first identifying the assessment criteria (Section 3.23.1.3 of the FEIS), characterizing Project sound sources during construction and operations, and then predicting received sound levels produced by those sources at points of reception. Sound source levels are typically determined based on input from engineering references and guidelines, and/or equipment manufacturers.

3.23.1 Affected Environment

3.23.1.1 Analysis Area

The Analysis Area pertaining to the noise analysis is discussed in Section 3.23.1.1 of the FEIS. A wide range of noise settings occur within the Project acoustic area. Variations in acoustic environment are due in part to existing land uses, population density, and proximity to transportation corridors. Elevated existing ambient noise levels occur near major transportation corridors (i.e., I-84), in areas with higher population densities, and in areas with rural airstrips and small airports. For instance, according to the USEPA, a rural residential area might be described as having an average ambient noise level of 39 dBA day-night sound level (L_{dn}) whereas a more urban residential area might be described as having an average ambient noise level of closer to 60 dBA L_{dn}. The unincorporated areas and communities that would intersect the proposed transmission line are predominantly open land or rural in nature, and have comparatively lower ambient sound levels. Ambient sound levels are also expected to be low in BLM-managed lands and other open areas. These lands range from very quiet, with natural sounds such as birds, insects, and wind dominating, to noisy in localized areas during periods of off-road recreational use, shooting, oil and gas extraction/production/transportation, and other outdoor activities.

We reviewed the data and regulatory requirements in the FEIS (see Section 3.23.1.3 of the FEIS) and concluded that they are still valid for this SEIS. No significant new data were identified for noise in the Analysis Area. The Analysis Area for this SEIS is restricted to that area crossed by Segments 8 and 9. Therefore, not all noise-sensitive areas (NSAs), including residences, schools and day care facilities, hospitals, long-term care facilities, places of worship, libraries, and parks and recreational areas known for their solitude and tranquility such as wilderness areas, discussed in the FEIS would be affected by the Revised Proposed Action or the new Route Alternatives and Route Variations being considered.

Morley Nelson Snake River Birds of Prey National Conservation Area

Portions of the Project would cross through the SRBOP. The acoustic environment is not one of the environmental resources and values for with the SRBOP was established to manage and protect.

3.23.1.2 Issues Related to Noise

The following noise-related issues were identified by the public during the public scoping (Tetra Tech 2009) and comments on the Draft EIS, were raised by federal and state agencies during scoping and agency discussions, or are issues that must be considered as stipulated in law or regulation.

- Exposure of persons to or generation of noise levels in excess of standards as established within existing regulations, ordinances, and standards;
- Substantial temporary or permanent increase in ambient noise levels in the Project vicinity above levels existing prior to Project construction and operation; and
- Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels.

We reviewed the scoping comments received for this SEIS and determined that the issues considered in the FEIS have not changed.

3.23.1.3 Methods

The Noise section in the 2013 FEIS (i.e., Section 3.23) discusses the methods that were used to assess potential Project-related noise impacts. We reviewed the analysis methods in the FEIS and concluded that they are still valid for this SEIS. The data used in the FEIS was reviewed and, where new data was available, updated for this assessment.

3.23.1.4 Existing Condition

A wide range of noise settings occur within the Project acoustic area. Variations in acoustic environment are due in part to existing land uses, population density, and proximity to transportation corridors. Elevated existing ambient noise levels in the region occur near major transportation corridors and in areas with higher population densities and near airstrips and airports. The unincorporated areas and communities that would be crossed by the proposed transmission line are predominantly open land or rural in nature, and have comparatively lower ambient sound levels. Ambient noise levels are expected to be low in BLM-managed lands and other open areas. These lands range from very quiet, with natural sounds such as birds, insects, and wind dominating, to noisy in localized areas during periods of off-road recreational use, shooting, resource extraction/production/transportation, and other outdoor activities.

3.23.2 Direct and Indirect Effects

This section is organized to present noise effects from construction, then operations followed by decommissioning activities for the proposed Project. The Revised Proposed Action includes measures designed to mitigate and enhance the SRBOP, as required by the enabling legislation for the SRBOP and the SRBOP RMP.

A comprehensive list of all Project design features and EPMs, as well as the land ownership to which they apply, can be found in Table 2.7-1 of Chapter 2 of the FEIS. The following impact assessment takes these project design features and EPMs into account when considering the potential impact that the Project could have on environmental resources.

Plan Amendments

Amendments to the BLM RMPs and MFPs are summarized for each alternative in Table 2.3-1 (see Chapter 2 for more details). The BLM plan amendments associated with the SEIS are discussed in detail in Appendices F and G to this document. Amendments would be needed to permit the Project to cross various areas of BLM-managed land. Effects described for areas requiring an amendment in order for the Project to be built would only occur if the amendment were approved. Amendments that alter land management designations could change future use of these areas. No amendments specific to noise are proposed for the Project, and no noise impacts to resulting from approving the amendments beyond the impacts of the Project are anticipated.

3.23.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant for Segments 8 and 9 to the Proponents of Gateway West and this portion of the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of these segments of the Project. No Project-related impacts from noise would occur; however, impacts would continue as a result of natural events (such as fire, drought, and severe weather) as well as from existing and planned developments within the Analysis Area and from other projects, including wind farms, mining, agricultural, or other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.4, Proponents' Objectives for the Project, would not be met with this Project and the region would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, impacts similar to those described below may occur due to new transmission lines that may be built to meet the increasing demand in place of this Project.

3.23.2.2 Effects Common to All Action Alternatives

The general impacts that would occur related to noise from construction, operations, and decommissioning of the Gateway West Project were analyzed in detail within Section 3.23.2.2 of the FEIS. The assessment of quantitative impacts specifically related to the Revised Proposed Routes for Segments 8 and 9, as well as FEIS Proposed 9, Routes 8G, 8H, and 9K, and the Toana Road Variations, is presented in Section 3.12.2.3. The assessment of potential impacts related to the MEP, as well as a list of additional mitigation measures that would be recommended by the BLM related to impacts on the SRBOP, is presented in Sections 3.23.2.5 and 3.23.2.6 as well.

Construction

Construction of the Project would be completed as described in the FEIS; therefore, the critical distances from construction activities where noise impacts would occur are the

same as those in the FEIS (see Section 3.23.2.2 of the FEIS). The variation in construction noise impacts results from the change in Project routes represented by Segments 8 and 9. NSAs situated within the critical distances from construction noise activities (e.g., Blasting and Rock Breaking, Helicopter Operations, Transmission Line, and Substations) were quantified to identify unavoidable noise impacts; however, these impacts would be temporary and intermittent.

Use of helicopters would largely be limited to areas where access is limited or where there are environmental constraints to accessing the Project area with standard construction vehicles or equipment. Helicopters generally fly at low altitudes; therefore, potential temporary increases to ambient sound levels would occur in the area where helicopters are operating as well as along their flight path. Typically, helicopters may generate noise levels of 89 to 99 dBA at 50 feet when in flight at 200 feet. Light-duty helicopters would also be used during the stringing phase of construction. It is anticipated that helicopter stringing activities would proceed at a rate of approximately 2,000 feet per day using 4-hour days. Light-duty helicopters would generate noise levels of approximately 80 dBA at 200 feet. Additional discussion of helicopter use and its associated noise levels is given in Section 3.23.2.2 of the FEIS.

Operations

Operations of the Project for the segments analyzed in this SEIS would be the same as that described in the FEIS except for where the routing of the transmission line has changed and/or where the structure type evaluated is different. The same methods as described in the FEIS were used to identify impacts from operational noise, namely critical distances to the 55 dBA L_{dn} USEPA guideline criterion, were evaluated for Segments 8 and 9 and the number of NSAs within those critical distances were determined. Section 3.21 – Electrical Environment provides detail on the audible noise calculations from transmission line corona noise that were used for determining the critical distances to impact conditions.

The structure type for Segments 8 and 9 would primarily be the 500-kV lattice structure described in detail in the FEIS. The critical distance for this structure type would be the same as that given in the FEIS for the 500-kV single-circuit structure, i.e., 213 feet from the transmission line. However, in some locations the line would be within 250 feet of a 500-kV line or double circuited with a 138-kV line, which affects noise levels because there would be a cumulative effect, roughly equating to a doubling of sound energy. Noise levels would also be greater in areas where Segment 8 and 9 are colocated with the new 500-kV line. The critical distances for Segments 8 and 9 were calculated for each side of the ROW (e.g., north and south) and are provided in Table 3.23-1.

Table 3.23-1. Critical Distances by Project Transmission Line Voltage

Segment Structure or ROW Arrangement	Critical Distance 55 L_{dn} dBA USEPA Guideline (feet)	
	North Side of ROW	South Side of ROW
Segments 8 and 9 Single-Circuit 500-kV Line	213	213
Segments 8 and 9 Double-Circuit 500/138-kV Line	249	357
Segment 8 Single-circuit 500-kV Line Colocated with *Existing* 500-kV Line	357	380
Segment 8 Single-Circuit 500-kV Line Colocated with *New* 500-kV Line	357	357

Decommissioning

Decommissioning noise impacts would be generally shorter term and lower than construction impacts. For instance, no blasting or rock breaking would be required. Additional details concerning decommissioning are provided in Appendix B of the FEIS.

3.23.2.3 Effects by Segment

Construction

Table 3.23-2 shows the number of potentially impacted receptors that may exceed the U.S. Department of Transportation and USEPA guidelines for helicopter construction, general construction, and blasting in areas with shallow bedrock and along the Revised Proposed Routes, Toana Road Variations, and other routes.

Table 3.23-2. Noise Sensitive Areas within Construction Analysis Area of the Revised Proposed Routes, Other Routes, and Toana Road Variations

Segment	Revised Proposed Route, Other Routes, and Variations	Length[1/]	Number of NSAs and Distance from Centerline for General and Helicopter Construction (feet)				Number of NSAs within Potential Blasting Vibration Architectural Damage Zone (131 feet)	Number of NSAs within Blasting Vibration Annoyance Zone (377 feet)
			90	280	407	890		
8	Segment 8 Revised Proposed	129.7	–	4	7	29	–	6
	Segment 8 Revised Proposed – Existing 500-kV Removal	1.1	–	–	–	–	–	–
	Segment 8 Revised Proposed – Total	**130.8**	–	4	7	29	–	6
	Route 8G	146.9	–	4	10	30	1	9
	Route 8G - Existing 500-kV Removal	1.9	–	1	1	1	1	1
	Route 8G - Total	**148.8**	–	5	11	31	2	10
	Route 8H – Total	**137.5**	1	4	9	27	1	9
9	Revised Proposed	165.3	–	2	2	11	–	2
	Revised Proposed – Existing 138-kV Removal	25.7	–	–	–	–	–	–
	Revised Proposed – Total	**191.0**	–	2	2	11	–	2
	FEIS Proposed Route	162.2	1	8	9	25	3	9
	Route 9K	174.6	–	2	2	11	–	2
	Revised Proposed – Comparison Portion for Toana Road Variations 1/1-A	8.7	–	–	–	–	–	–
	Toana Road Variation 1	8.5	–	–	–	–	–	–
	Toana Road Variation 1-A	8.9	–	–	–	–	–	–

1/ Mileages are rounded to nearest tenth of a mile.

The number of potential NSAs at the various construction distance zones is small. Received sound levels at NSAs from construction would fluctuate, depending on the construction activity, equipment type, and separation distances between source and receiver. Construction noise will be minimized to the extent practicable using the noise mitigation measures proposed by the Proponents and additional measures identified by the Agencies.

Operations

The permanent noise sources associated with the Project consist of low-level noise due to transmission line corona effects as described in Section 3.23.2.2. Audible noise levels would be the same for the proposed lattice structure as those in the FEIS along both Segments 8 and 9; however, where Segment 8 is adjacent to the existing 500-kV line and where Segment 9 is a double-circuit 500/138-kV structure, audible noise would be greater. Table 3.23-3 lists NSAs in the operations Analysis Area that would be located within the critical distances presented in Table 3.23-1 as applicable.

Table 3.23-3. Noise Sensitive Areas within the Operations Analysis Area of the Revised Proposed Routes, Other Routes, and Variations

Segment	Revised Proposed Route, Other Routes, and Variations	Length (Colocated Length)[1/]	NSAs from Centerline of 500-kV ROW
8	Revised Proposed Route	129.7	3
	Route 8G – Colocated with Route 9K	145.1 (98.9)	7
	Route 8G – Not Colocated with Route 9K	145.1(0.0)	7
	Route 8H – Colocated with FEIS Proposed 9	137.5 (29.1)	7
	Route 8H – Not Colocated with FEIS Proposed 9	137.5 (0.0)	7
	Route 8H – Colocated with Route 9K	137.5 (25.8)	7
	Route 8H – Not Colocated with Route 9K	137.5 (0.0)	7
9	Revised Proposed – Colocated with Route 8G	165.3 (25.0)	2
	Revised Proposed – Not Colocated with Route 8G	165.3 (0.0)	2
	FEIS Proposed Route – Colocated with Route 8G	162.2 (29.2)	6
	FEIS Proposed Route – Not Colocated with Route 8G	162.2 (0.0)	5
	FEIS Proposed Route – Colocated with Route 8H	162.2 (29.1)	6
	FEIS Proposed Route – Not Colocated with Route 8H	162.2 (0.0)	6
	Route 9K – Colocated with Route 8G	174.6 (98.9)	2
	Route 9K – Not Colocated with Route 8G	174.6 (0.0)	2
	Revised Proposed – Comparison Portion for Toana Road Variations 1/1-A	8.7	--
	Toana Road Variation 1	8.5	--
	Toana Road Variation 1-A	8.9	--

1/ Mileages are rounded to nearest tenth of a mile

The number of potential NSAs within the operational distance zones is small. It should be noted that audible noise from transmission lines is greatest when the line is saturated with water, or during rain events, which are the assumed conditions for the Project noise analysis. When the line is dry, audible noise levels are about 20 dBA lower and would result in no impacts.

Segment 8

Revised Proposed Route

The Revised Proposed Route for Segment 8 would link the Midpoint and Hemingway Substations (see Figure A-1). This 129.7-mile single-circuit 500-kV transmission line would stay north of the Snake River generally parallel to an existing 500-kV transmission line, before ending at the Hemingway Substation. This route is similar to the route proposed in the 2013 FEIS except that the line would be 250 feet north of the existing 500-kV line rather than 1,500 feet south of the line from the eastern boundary of the SRBOP (MP 99.7) to the Hemingway Substation. The route east of that point is unchanged from the 2013 FEIS Proposed Route.

Ninety-nine miles of the segment would be located 1,500 feet north of the existing 500-kV line; however, a 30.7-mile portion of the segment would be colocated 250 feet to the north of the Midpoint – Hemingway line. When the segment is located 250 feet from the existing 500-kV line, there would be almost a doubling of audible noise; hence the larger critical areas under consideration for this portion of Segment 8 as shown in Table 3.23-1.

The Revised Proposed Route for Segment 8 could potentially impact six NSAs during construction activities (Table 3.23-2) and three NSAs during operations (Table 3.23-3).

Route 8G

Route 8G is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows an alignment similar to the ones analyzed for Routes 8A and 9B in the FEIS for approximately 44 miles, although it generally parallels 250 feet north of the existing 500-kV line rather than1,500 feet to the south in order to avoid the Hagerman Fossil Beds National Monument and development near Hagerman (see Figure A-1). The route then follows the same alignment as 9K for the remaining distance into the Hemingway Substation. The route is 146.9 miles long (including a 1.9-mile rebuild of the existing 500-kV line), compared to the 129.7-mile-long Revised Proposed Route.

Route 8G could potentially impact 10 NSAs compared to 6 for the Revised Proposed Route during construction activities (Table 3.23-2) and 7 NSAs during operations compared to 3 for the Revised Proposed Route (Table 3.23-3).

Because there are areas where Route 8G parallels Route 9K, sound levels from the two lines would act cumulatively, resulting in larger critical areas shown in Table 3.23-1 if both routes are selected.

Route 8H

Route 8H is being considered by the BLM to avoid crossing the northern portion of the SRBOP. The route follows a combination of portions of the alignments analyzed for Route 8G and the Revised Proposed Route for Segment 9. The route is 137.5 miles long (including a 1.9-mile rebuild of the existing 500-kV line and a 25.7-mile removal and rebuild of a 138-kV line), compared to the 129.7-mile-long Segment 8 Revised Proposed Route. Approximately 44 miles of the route follows the 8G alignment; the remainder of 8H follows the alignment of the Segment 9 Revised Proposed Route. As described in Table 3.23-3, similar to analysis of Route 8G, when Route 8H is colocated with FEIS

Proposed 9 or Route 9K, there are potential operational noise impacts predicted at seven NSAs (Table 3.23-3).

Route 8H could potentially impact nine NSAs compared to six for the Revised Proposed Route during construction activities (Table 3.23-2) and seven NSAs during operations compared to three for the Revised Proposed Route (Table 3.23-3).

Segment 9

Revised Proposed Route

The Revised Proposed Route for Segment 9 would link the proposed Cedar Hill and existing Hemingway Substations with a 165.3-mile single-circuit 500-kV transmission line that skirts the Jarbidge and Owyhee Military Operating Areas to the north, then follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering the Hemingway Substation (see Figure A-1). It follows an alignment similar to the 2013 FEIS Route 9D/9G between MP 95.6 and 154.7, except that two portions of the route would be double-circuited with existing 138-kV lines. The first area is 5.2 miles near C.J. Strike Reservoir and the Bruneau Arm (MP 106.2 to 109.3 and 109.9 to 112.1), and the second area is 20.2 miles along the Baja Road (MP 121.0 to 141.2). Several rebuilds totaling approximately 0.6 mile are also required to tie the existing 138-kV lines into the new double-circuit alignments. Except for minor variations, the route is similar to the 2013 FEIS Route 9D/9G between MP 141.2 to 154.7. From MP 154.7 and into the Hemingway Substation, the route is the same as the 2013 FEIS Proposed Route.

Most of the segment would implement the single-circuit lattice structure; however, a 25.5-mile portion of the segment would displace an existing 138-kV line. In this area of the segment, the displaced 138-kV line would be colocated on a double-circuit structure with the Project's 500-kV line. As a result, audible noise for the double-circuit structure would be slightly greater than that of the single-circuit lattice structure.

The Revised Proposed Route for Segment 9 could potentially impact two NSAs during construction activities (Table 3.23-2) and two during operations (Table 3.23-3).

FEIS Proposed 9

The Proponents originally designed the 162.2-mile-long FEIS Proposed 9 to follow existing utility corridors and avoid the SRBOP and other protected areas where feasible. Approximately 54 miles of the route is within or adjacent to a utility corridor. FEIS Proposed 9 is approximately 3.1 miles shorter than the Revised Proposed Route but it crosses 13.6 miles of the SRBOP compared to 54.2 miles for the Revised Proposed Route. Both the Revised Proposed Route and FEIS Proposed 9 cross the Salmon Falls Creek at Lilly Grade adjacent to an existing single-phase 34.5-kV distribution line just north of the Salmon Falls Creek WSA.

FEIS Proposed 9 could potentially impact nine NSAs compared to two for the Revised Proposed Route during construction activities (Table 3.23-2) and five NSAs during operations compared to two for the Revised Proposed Route (Table 3.23-3).

Route 9K

Route 9K is being considered by the BLM as a modified version of FEIS Route 9E (the FEIS Preferred Route) to avoid crossing the northwestern portion of the SRBOP and to minimize direct and indirect impacts to priority sage-grouse habitat. The route is approximately 174.6 miles long, compared to the 165.3-mile-long Revised Proposed Route (see Figure A-1).

Because there are areas where Route 9K parallels Route 8G, sound levels from the two lines would act cumulatively, resulting in larger critical areas shown in Table 3.23-1. Critical distances related to cumulative sound levels of the Project with new lines would be less than those with existing lines because newer lines are typically designed to be quieter than older lines.

Route 9K could potentially impact two NSAs during both construction activities and operations, the same number as the Revised Proposed Route in Segment 9 (Tables 3.23-2 and 3.23-3).

Toana Road Variations 1 and 1-A and the Comparison Portion of the Segment 9 Revised Proposed Route

Toana Road Variation 1 to the Segment 9 Revised Proposed Route was recommended by the BLM Jarbidge Field Office archaeologist to avoid paralleling the Toana Freight Wagon Road, an NRHP site. The Segment 9 Revised Proposed Route parallels within 0.25 mile of the Toana Road between MP 38.2 and 40.6, and parallels within 1 mile of the road through Blue Gulch between MP 40.6 and 43.5. Variation 1 is approximately 8.5 miles in length. Approximately 0.3 mile of the route crosses state land, with the remainder on land managed by the BLM. The Toana Road Variation 1-A to the Segment 9 Revised Proposed Route was recommended by the BLM to minimize visual impacts to the Toana Freight Wagon Road, and was also intended to utilize existing roads in order to minimize new road construction in the area. Variation 1-A is approximately 8.9 miles long. Approximately 1 mile of the route crosses state land, with the remainder on land managed by the BLM.

There are no NSAs along the Toana Road Variations that are expected to be adversely impacted during Project construction and operations.

3.23.2.4 Direct and Indirect Effects of the Alternatives

This section assesses the quantitative impacts related to noise from the seven BLM action alternatives. Table 3.23-4-2 lists NSAs in the operations Analysis Area that would be located within the critical distances presented in Table 3.23-1 as applicable. The alternatives are visually displayed in Figures A-2 through A-8.

Table 3.23-4. Potential Operational Noise Impacts at NSAs by Alternative

Alternative	Route	Route Length (miles)[1/]	Total Length (Colocated Length) (miles)[1/]	Total NSA (Colocated NSA)
1	Segment 8 Revised Proposed Route	129.7	294.9	5
	Segment 9 Revised Proposed Route	165.2		
2	Segment 8 Revised Proposed Route	129.7	291.9	9
	FEIS Proposed 9	162.2		
3	Route 9K	174.6	304.3	5
	Segment 8 Revised Proposed Route	129.7		
4	Route 8G	146.9	309.1 (29.2)	14 (2)
	FEIS Proposed 9	162.2		
5	Route 8G	146.9	321.5 (98.9)	10 (1)
	Route 9K	174.6		
6	Route 8H	137.5	299.7 (29.1)	13
	FEIS Proposed 9	162.2		
7	Route 8H	137.5	312.1 (25.8)	9
	Route 9K	174.6		

1/ Mileages are rounded to nearest tenth of a mile

Alternative 1 – Proposed Action (the Revised Proposed Routes for Segments 8 and 9)

Alternative 1 consists of the Revised Proposed Routes for Segments 8 and 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.23.2.3). Table 3.23-4 lists the noise impacts under Alternative 1. There are a total of five potential operational impacts along Alternative 1, three associated with the Segment 8 Revised Proposed Route and two associated with the Segment 9 Revised Proposed Route.

Alternative 2 – Revised Proposed 8 and FEIS Proposed 9

Alternative 2 consists of the Revised Proposed Route for Segment 8 and FEIS Proposed 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.23.2.3). There are a total of nine potential operational impacts along Alternative 2, three associated with the Segment 8 Revised Proposed Route and six associated with FEIS Proposed 9.

Alternative 3 – Revised Proposed 8 and the 9K Route

Alternative 3 consists of the Revised Proposed Route for Segment 8 and Route 9K; therefore, the impacts associated with this alternative correspond to those described above for the these two routes combined (see Section 3.23.2.3). There are a total of five potential operational impacts along Alternative 3, two associated with Route 9K and three associated with the Segment 8 Revised Proposed Route.

Alternative 4 – The 8G Route and FEIS Proposed 9

Alternative 4 consists of the Route 8G and FEIS Proposed 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.23.2.3). There are a total of 14 potential operational impacts along Alternative 4, 8 associated with Route 9K and 6 associated with FEIS Proposed 9. Of those NSAs, one is colocated along both Route 9K and FEIS Proposed 9.

Alternative 5 – The 8G and 9K Routes

Alternative 5 consists of Routes 8G and 9K; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.23.2.3). There are a total of 10 potential operational impacts along Alternative 5, 8 associated with Route 8G and 2 associated with Route 9K. Of those NSAs, there is one colocated along Route 8G.

Alternative 6 – The 8H Route and FEIS Proposed 9

Alternative 6 consists of Route 8H and the FEIS Proposed Route for Segment 9; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.23.2.3). There are a total of 13 potential operational impacts along Alternative 6, 7 associated with Route 8H and 6 associated with FEIS Proposed 9.

Alternative 7 – The 8H and 9K Routes

Alternative 7 consists of Routes 8H and 9K; therefore, the impacts associated with this alternative correspond to those described above for these two routes combined (see Section 3.23.2.3). There are a total of nine potential operational impacts along Alternative 7, seven associated with Route 8H and two associated with Route 9K.

3.23.2.5 Proponent-Proposed Design Features and Measures

This section discusses the general measures that would be implemented to avoid or minimize Project-related impacts, additional measures proposed by the Project Proponents specifically for the SRBOP, as well as the existing compensatory mitigation plans (as defined or required in the FEIS or ROD). This section also describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

Environmental Protection Measures

The Proponents have committed to EPMs to minimize or avoid impacts on environmental resources. These measures, the areas where they would be applicable (e.g., private, state, or federal-managed lands), as well as the details of each measure are provided in Table 2.7-1 of the FEIS. Many of these measures would be either directly or indirectly applicable to noise (i.e., they would avoid or minimize impact to noise).

Measures that would indirectly apply to noise (i.e., measures that were not developed directly to benefit noise, but if implemented could avoid or minimize impacts to noise) include AIR-1 through 4, and BLA-1 through BLA-3 (see Table 2.7-1 in the FEIS).

The following measures, which were identified in Table 2.7-1 of the FEIS, are directly related to noise and would be applicable to Segments 8 and 9.

NOISE-1 Identify and provide a public liaison person before and during construction to respond to concerns of neighboring receptors[1], including residents, about noise construction disturbance.

NOISE-2 Establish a toll-free telephone number for receiving questions or complaints during construction and develop procedures for responding to callers.

NOISE-3 Implement and maintain a noise complaint review process to deal with residents' or other potential queries and complaints as they arise. Such complaints would be logged and investigated on an individual basis to facilitate resolution of the issue of concern.

These EPMs would avoid or minimize the extent of impacts that could occur from noise. These EPMs are a part of the current Project description, and as such, the effects of their implementation are included in the impact discussion found in Sections 3.23.2.2, 3.23.2.3, and 3.23.2.4.

Proponent-Proposed MEP and Potential Effects of the MEP within the SRBOP

The Proponents have developed an MEP to mitigate the effects of Project-related impacts within the SRBOP, as well as comply with the SRBOP's enabling statute (P.L. 103-64) which requires enhancement of resources within the SRBOP. The Proponents' plan contains two forms of mitigation: "compensation mitigation" and "enhancement." For this analysis, mitigation is defined as avoidance, minimization, and compensation measures aimed at offsetting adverse impacts of the Project; enhancement is defined as additional mitigation measures that are required in order to enhance the objectives and values for which the SRBOP was established.

The Proponents' MEP offers a portfolio that contains five types of mitigation/enhancement proposals. The following discusses the benefit and/or impact that these proposed mitigation/enhancement proposals could have on noise levels.

Habitat Restoration

The goal for the Proponents' habitat restoration proposal is to convert "non-native grasslands to native perennial plant communities" as well as to conduct "noxious weed control." Efforts to restore habitats within the SRBOP could have some impacts from noise levels, as it can be assumed that implementation of this proposal would involve the use of some heavy equipment. However, the Proponents' MEP does not identify the location, extent, or methods that would be used during this effort. Therefore, the impact that this effort would have on noise levels cannot be quantified based on the available information.

[1] In addition to residents, neighboring receptors could also include other NSAs such as schools, day care facilities, hospitals, long-term care facilities, places of worship, libraries, parks, and recreational areas.

Property Purchase

It is not known what types of activities might occur within the property purchased within the SRBOP; therefore, it cannot be determined at this time whether the proposed enhancement related to property purchase would have a beneficial or detrimental effect on noise levels.

Law Enforcement

The proposed enhancement of law enforcement would have neither a beneficial nor detrimental effect on noise levels.

Visitor Enhancement

The MEP contains a proposal to fund programs meant to enhance the experiences of visitors to the SRBOP. The proposed enhancement of the visitor experience would have neither a beneficial nor detrimental effect on noise levels.

Line and Substation Removal

The Proponents have proposed to remove some existing infrastructure within the SRBOP. This includes:

- Removing approximately 7 miles of existing 46-kV line on BLM-managed lands, including all structures (although structures may remain if requested by BLM), from the Bowmont Substation to Gage Substation;
- Constructing an approximately 1-mile-long section on private land to connect the remaining portion of the line to the Idaho Power system;
- Reconstructing 3.9 miles of existing 12.5-kV lines, including 0.25 mile on BLM-managed lands;
- Converting approximately 4 miles of the existing 46-kV line on existing BLM ROW between the Gage and Ferry Substations to a 12.5-kV distribution line; and
- Removing the existing Gage Substation and associated equipment/apparatus, which are on BLM-managed land.

Noise-related effects from this action are provided in Table 3.23-2 and would be temporary, associated with construction equipment and/or processes, and would be characterized as minor inconveniences.

3.23.2.6 BLM Compensatory Mitigation Measures

This section describes the process that would be followed to determine if additional mitigation is required and how it would be implemented to address any impacts that remain once all the existing avoidance, minimization, and existing compensatory mitigation is implemented.

Summary of Remaining Impacts

After implementation of the EPMs and MEP discussed above, some Project-related impacts would likely remain. The impact assessment found in Sections 3.23.2.2, 3.23.2.3, and 3.23.2.4 incorporates the avoidance and minimization contributions of the EPMs in the impact analysis; as a result, Sections 3.23.2.2, 3.23.2.3, and 3.23.3.2.4 take these measures and their impact offsets into consideration. The design features

outlined in the Proponents' MEP (discussed above) may reduce the magnitude of these impacts to some degree (thereby reducing the need for additional compensatory mitigation); however, the extent of this reduction cannot be fully quantified at this time (as discussed in detail above).

Note that Sections 3.23.2.2, 3.23.2.3, and 3.23.2.4 outline the current extent of known impacts that would occur Project-wide.

BLM Compensatory Mitigation Categories

No additional mitigation plans have been developed specifically for noise.

The BLM may require additional mitigation for some remaining impacts of the Project on environmental resources (including impacts that occur outside of the SRBOP), per the guidelines found in the BLM Regional Mitigation Manual (BLM 2013c) and DOI Manual 600 DM 6, *Implementing Mitigation at the Landscape-scale* (DOI 2015). Mitigation for Project-related impacts that would occur within the SRBOP is discussed below.

The BLM will continue to work with applicable stakeholders to identify the impacts that would remain on the SRBOP after implementation of the EPMs and MEP, as well as the existing compensatory mitigation plans discussed above. The BLM will then design mitigation options that address applicable remaining impacts (see Section 3.0 for a discussion of the BLM's policy regarding mitigation). These options will contain components that will ensure that impacts to resources and values on the SRBOP that require mitigation are compensated for, as well as that enhancement of these resources is provided in order to comply with the enabling statute of the SRBOP. Based on internal and external scoping, the BLM is considering eight mitigation categories (see Section 2.6.2 in Chapter 2). No mitigation categories are being considered to address remaining impacts to noise resources within the SRBOP.